

## N1MM Logger - Documentation

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# N1MM Logger Quick Start Guide

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## Getting Started with the Quick Start Guide

The purpose of this guide is to give the brand-new user an easy path to getting the software running for the first time. That means using it without any external interfaces, initially and only then adding radio control. Further interfacing (such as CW, PTT and transmit audio) is covered in later chapters, along with related operating techniques. I have not tried to address digital modes in this guide, because while some aspects of program operation are identical, most are different, because of using MMTTY, MMVARI or a terminal unit to decode the digital transmissions.

Special thanks to Bob, K0RC, for his contributions to this second draft. He sanity-tested the original by installing N1MM from scratch and uncovered some errors and omissions that are (hopefully) corrected below.

For starters, I'm assuming that you followed the instructions for downloading the program on the [N1MM website](#) or in the [manual](#), first installing Version 10.0.0 and then updating to the latest version. I'm also assuming that during the base installation you installed the DLPORTIO port driver (for 32-bit Windows 2000, NT, XP Vista and Windows 7; it does not work with 64-bit operating systems, but is only needed for parallel port control functions, and testing of a substitute for that purpose is underway).

With Version 10.X.X, special precautions for installing on Vista or Windows 7 are no longer necessary, so long as you install N1MM Logger somewhere other than in Program Files (C:\ is the default).

Once you have downloaded and installed the program, you're ready to start it for the first time.

### **Country File warning**

If you have been using N1MM Logger for a while, or if you have downloaded files such as a new country file (wl\_cty.dat), then before you see anything else you may see a warning message. Don't be alarmed - the program is simply reminding you that the country file loaded into your current database is less current than the one it found in the program directory. You can fix this at any time from the Tools menu in the Entry Window.

Once that's out of the way, the very first thing you'll see is the following notice:

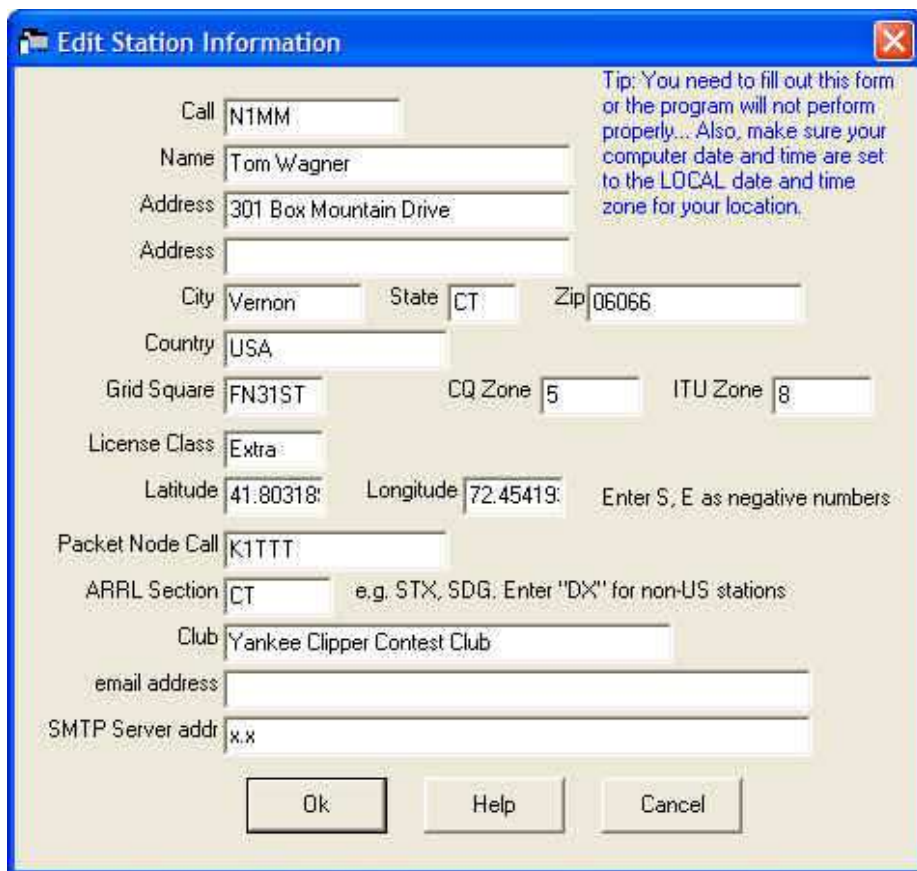


Click on OK, and after a few seconds (the time required is vastly over-stated) what comes next is

what we call the "splash screen."



After that, the next dialog that opens automatically is referred to as Station Data:



Since you have never run the program before, it is filled in with Tom, N1MM's information. You

should replace it with your own information, in the same format. This is very important for proper operation of the program. Later, if you need to change anything, you can re-open this window through the Config menu.

When you see one of the blue 'Tip:' notes, be sure to pay attention! For example, this one warns you to be sure your computer is set up for local time, NOT GMT. N1MM Logger will take care of the conversion for you. Don't worry about the SMTP server address unless you know it off-hand - it is only useful for bug reporting. When you have completed the form, click OK.

Next comes what looks like an error message:

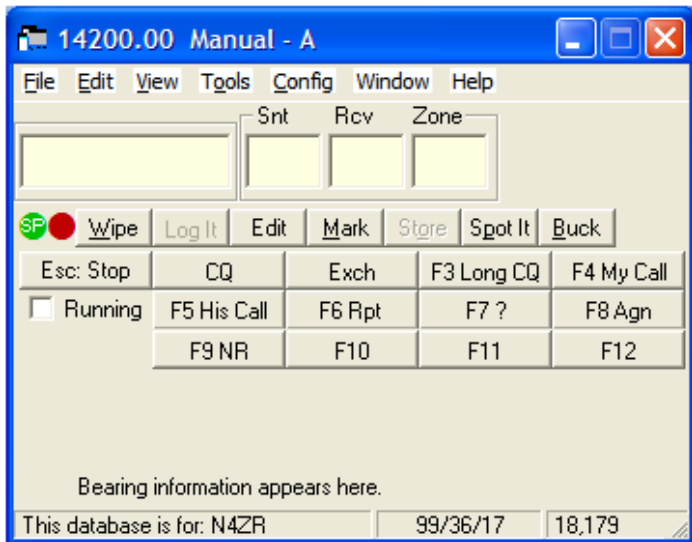


Don't take it seriously - this is related to playback of audio files, something you won't need for a long time yet. Just OK out.

After that you will see an Entry Window. Let's get a little terminology out of the way first. The top blue part of this (or any) window is called the Title Bar. Each of the places where you can type information is called a textbox. The Title Bar displays the current frequency, mode (if one has been selected), and which radio it is (nominally, Radio A). You will have to enter a mode before you begin to operate, and a band and/or mode each time you change either. Simply type a frequency in KHz (3500, 7000, etc.) in the Call-Sign textbox (to the far left) and hit Enter; then type a mode (CW, USB, LSB) there, hit Enter again, and you're set.

The Entry Window is your main starting place for everything you do with N1MM Logger. The first row is a standard Windows-style menu, and we'll be using it in a minute. Take a moment and explore the various drop down menu choices, but don't change anything right now.

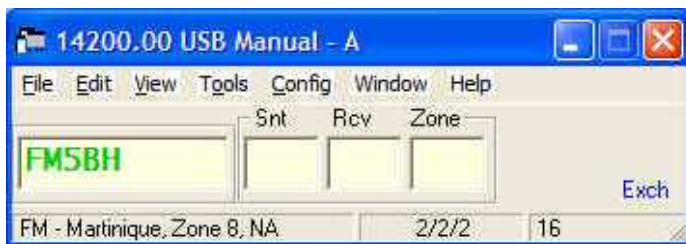
Below the menu is a set of entry textboxes. This row is where you log your contest QSOs. The left-most textbox is the Call-Sign textbox. You always enter the call-sign of the station you are working into this textbox.



The rest of the data entry textboxes are titled above them - depending on how you have resized the window, the titles may not line up perfectly with the entry textboxes, but they are always in the same sequence as those textboxes. Depending upon the specific contest and the required contest exchange, the number of textboxes and the titles may be different. The example Entry Window shown above would be used during the IARU Contest. This contest requires a call sign, sent and received signal reports, and the IARU Zone be logged for each contact

For now, you can ignore the 'Running' check-box, as well as the rest of the buttons alongside it. This controls one of the most important features of N1MM Logger - it distinguishes between Run and Search and Pounce modes, providing different features for each. However, these aren't really relevant until you get into sending stored CW and phone messages, which are covered in Chapter 4. The rest of the buttons in the Entry Window are related to this, and to other advanced capabilities.

If you want to save space on your screen, you can reduce the size of the Entry Window, like this. Just use your mouse to grab the lower right corner or lower edge of the window and drag it upward.



There are two more useful features of the Entry Window. The box in the lower left corner, called the Status Line, provides a lot of useful program status information. For example, if you enter a call sign, the Status Line will tell you what country it represents. If you have set up the Entry Window just a little bigger than the minimum, it will also show you the distance and bearing, like this.

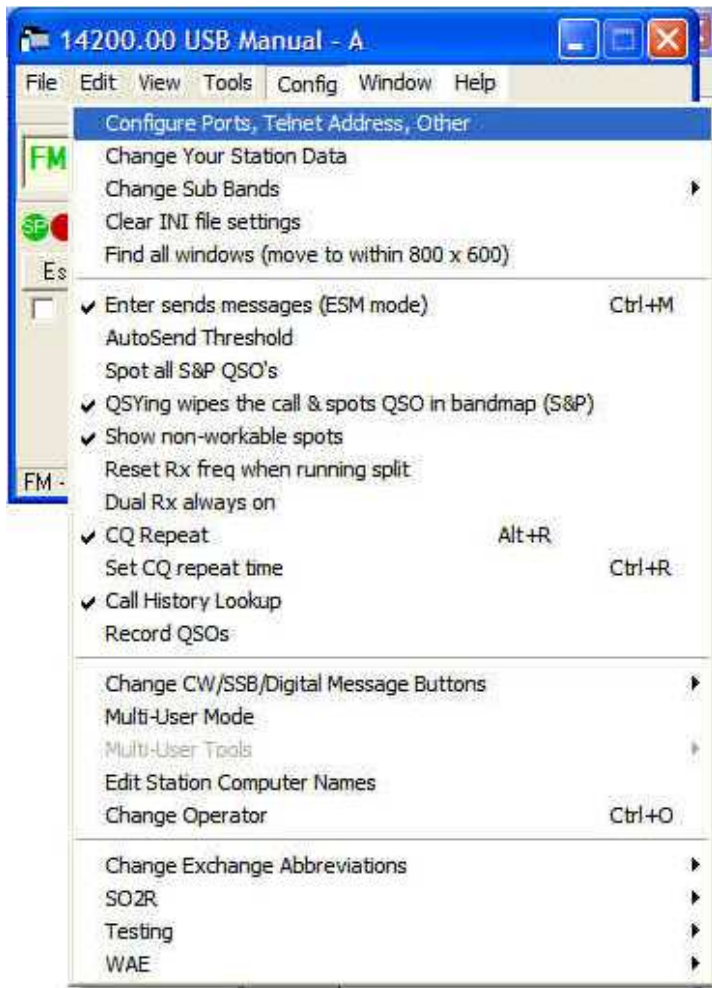


To the right of the Status Line is the progress box, where you can keep track of your QSOs and multipliers without having another window open, and to its right is a running score.

If you press the backslash (\) key, the program opens a second, almost-identical entry window. The only difference is that it will have a "B" instead of the "A" in the title bar of the first entry window, and it may well have a different frequency and/or mode as well. But if you pop up the second Entry Window by mistake, and want to get rid of it, you simply close it by clicking the big red X.

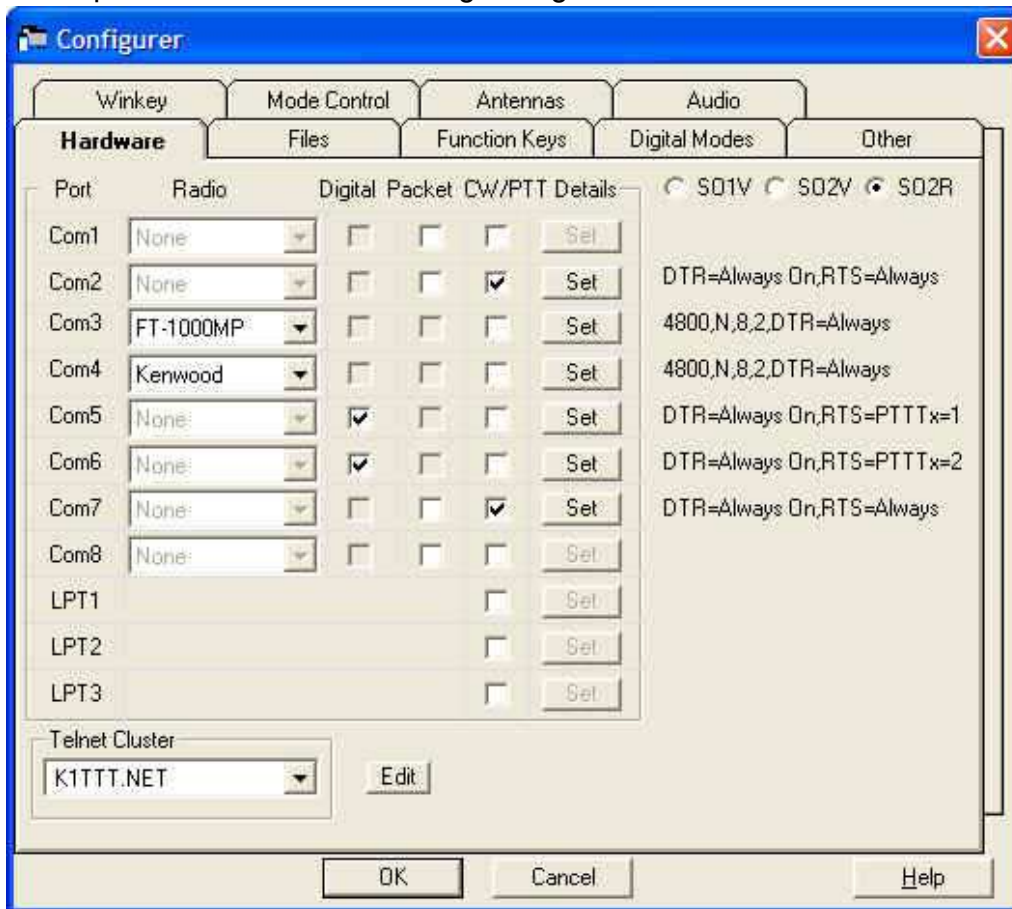
When you first open the program, it will be in SO2V (Single Operator Two VFOs) mode. The idea is this - most modern transceivers have two VFOs, or a main VFO and a sub-VFO. There will be circumstances - during a contest on 40 meter SSB, for example - when you will want to receive on one frequency and transmit on another, widely-separated one.

For the moment, you should change to SO1V (Single Operator One VFO) mode. Select the Config menu, and under the dropdown menu, select Configure Ports, Telnet Address, Other.





That opens this rather intimidating dialog:

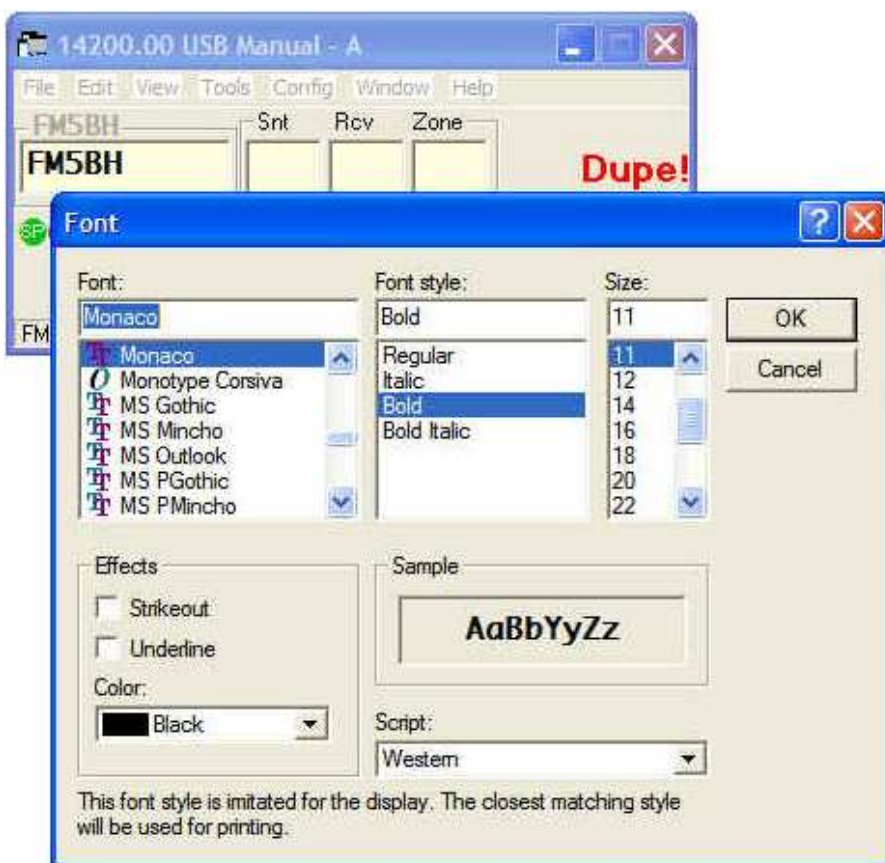


Ignore everything else, and just select your operating mode, from among the choices "SO1V", "SO2V" and "SO2R." SO2R stands for Single Operator 2 Radios. Select SO1V to disable this for now (it prevents the program from opening the second entry window any time you press the "\" key). Now OK out.

In the row below the entry fields in the Entry Window are two colored dots - the green dot denotes which Entry window (if you are using two VFOs, or have more than one radio) has the Entry or Receive Focus. The window with the Entry Focus is where information will be entered if you type it, and also the radio (or VFO) which will transmit any Function Key you press on the keyboard. The blinking Windows cursor denotes the same thing, and so does the change in color of the title bar and frame of the entry window. The red dot denotes the Transmit Focus, which frankly is not very useful, because it denotes the radio (or VFO) that transmitted the last message. More on this whole 2-radio/2-VFO business later.



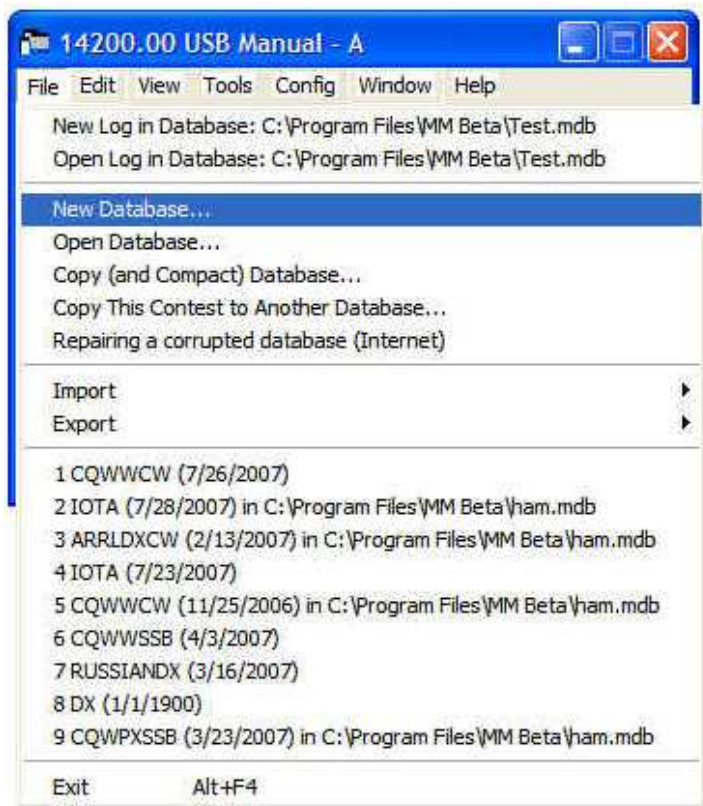
A word about fonts. Windows defaults to a sans-serif font that does not distinguish well between "oh" and zero. If you click on View in the menu row, you'll see "Set Font" as one of the options. Click on that and you'll be given a list of available fonts, like this:



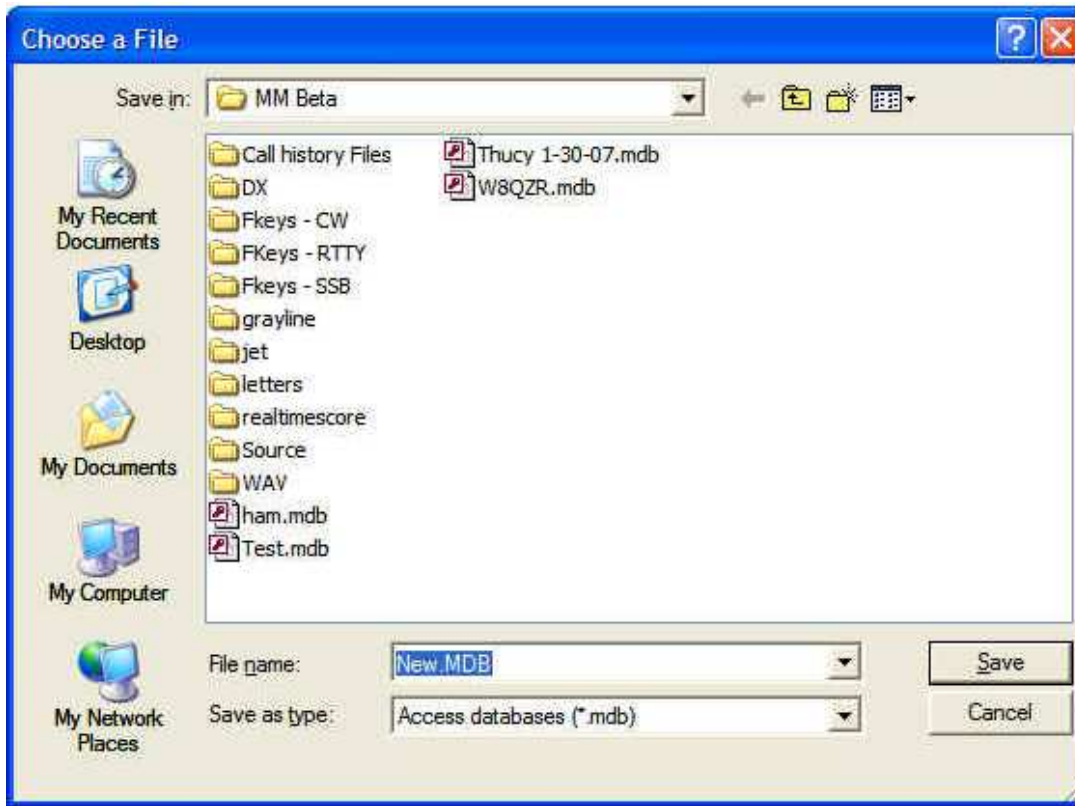
I have chosen Monaco for my font, even though it is normally used by Macs, because it gives a good clear 0/O and I/1 distinction. In addition Monaco bold is a little bit bigger than the unbolded type-face in a given size, which helps legibility in some windows. You can make similar choices in the Log and Check windows, by right-clicking them to get the appropriate sub-menu. You may have to play around a bit with the window size and font characteristics (Bold/Regular, or point size) to fit everything in the exchange field - this is particularly true of the signal reports "59" and "599".

You can download a large set of slash-zero fonts (as they are usually called) [here](#).

Now, we're ready to set up a contest. Note that the first database the program creates is named ham.mdb by default - you can have as many databases as you want, and name them what you want. I'm using ham.mdb, but my program directory is named MM Beta (for historical reasons). Some people prefer to create a database for every contest, while others create one for a period of time, like every year. If you want to create a database, for example "2007.mdb", just click Files to drop down the menu, and then click on "New Database".

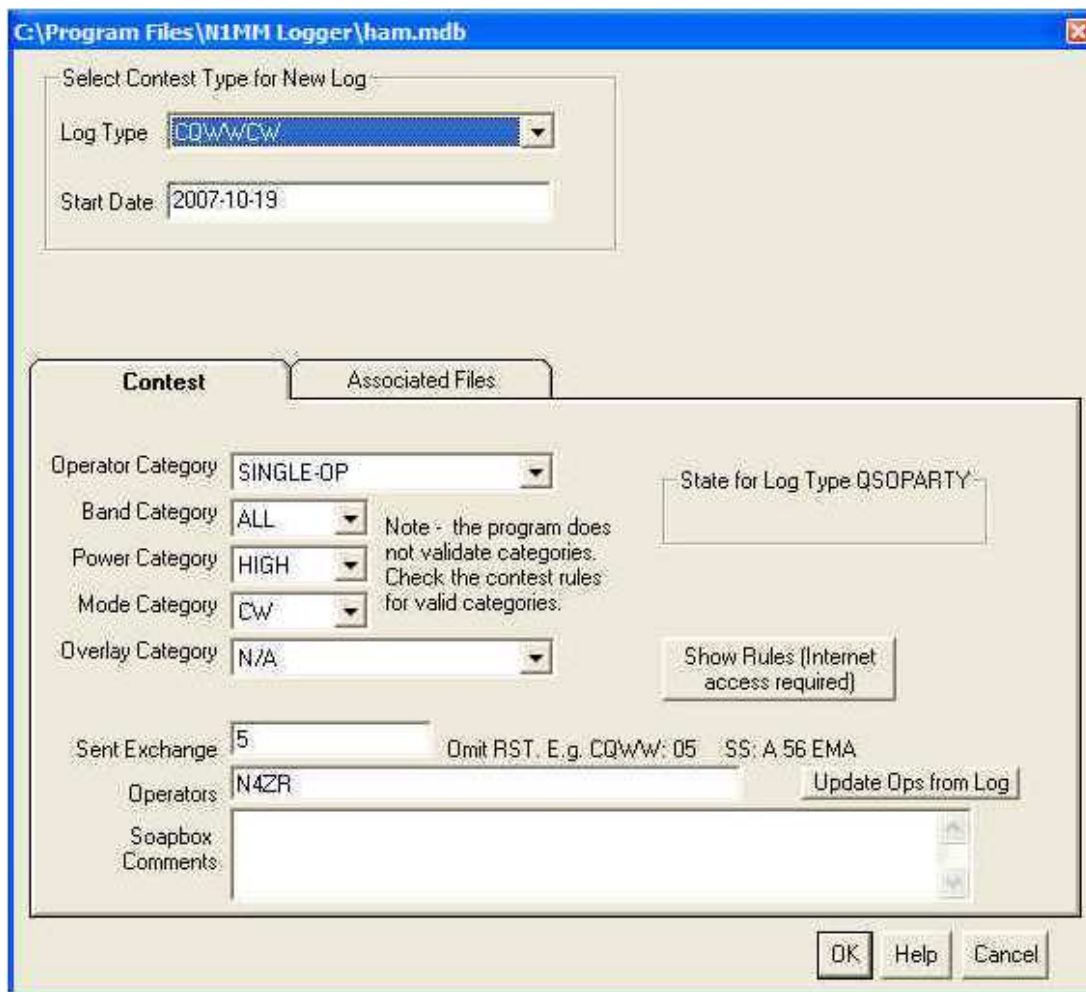


That will open a standard file creation dialog in your program directory



Name your new database and click Save. You'll be switched to the new database and ready to go.

Back to the Files menu again. This time click "New Log in Database: C:\Program Files\N1MM Logger\ham.mdb" A new dialog opens.



The first thing to do is to click on the down button of the Log Type field. That will open a list of abbreviated contest names, as I already have done above. You can use your mouse to scroll through the list, or type the first letter of the contest to jump to the right general area. Once you have found the contest you want and highlighted it, click back in the original field and the drop-down list will close.

C:\Program Files\N1MM Logger\ham.mdb

Select Contest Type for New Log

Log Type: CQWW/CW

Start Date: 2007-10-19

**Contest** | Associated Files

Operator Category: SINGLE-OP

Band Category: ALL

Power Category: HIGH

Mode Category: CW

Overlay Category: N/A

State for Log Type QSO PARTY:

Note - the program does not validate categories. Check the contest rules for valid categories.

Show Rules (Internet access required)

Sent Exchange: 5 Omit RST. E.g. CQ'wW: 05 SS: A 56 EMA

Operators: N4ZR Update Ops from Log

Soapbox Comments:

OK Help Cancel

The program fills in today's date as the start date for that instance of the contest,. You may want to change it to the actual start date of the contest, though this is not mandatory. This is a good idea for calculations of total contest time and to keep track in case you have logs for many different instances of the same contest name, such as QSO parties. Since I'm just illustrating here, the date is today.

Next, fill in the information in the next few fields, denoting the class and category you intend to enter in the contest. In each case, you have drop-down lists available. "Overlay category" refers to contests like WPX, which have both regular classes and categories like Rookie or "Tri-bander plus wires". In most cases, "N", for not applicable, is the answer you want there.

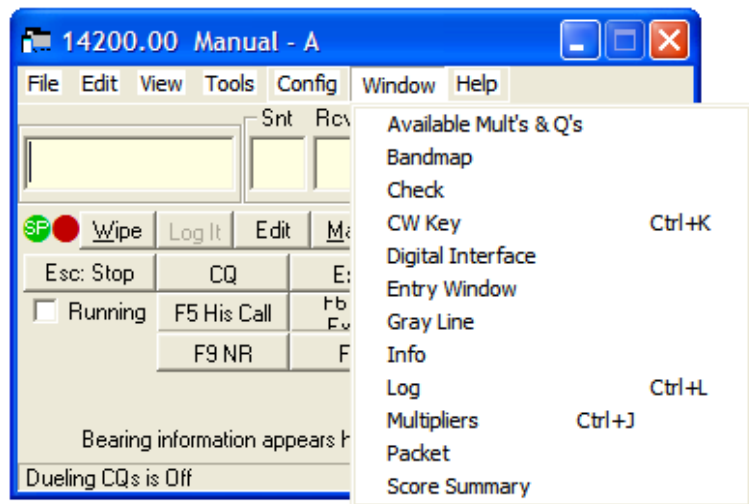
Next comes the most important part of this dialog, the Sent Exchange field.

Sent Exchange: 5 Omit RST. E.g. CQ'wW: 05 SS: A 56 EMA

For many contests, the program guesses what you will want - for example, in this case, since the CQWW contest uses CQ zones, it has already picked zone 5 for me. Note the "Omit RST" warning. If the contest you choose has serial numbers, like WPX or the NA Sprint, then you need to put "001" at the start of the Sent Exchange field, followed by a single space if there is more to the exchange. Hence, for WPX, my Sent Exchange would read 001. An important exception is the

ARRL Sweepstakes. The serial number is "assumed" for this contest only, so my Sent Exchange for SS would read B 54 WV. More information on the Sent Exchange is in the [Supported Contests](#) section of the manual.

Once you have filled in the Sent Exchange, you're done for now. Just Click OK and hit Enter. Now you're almost ready to operate in the contest, but first it's time to open a few more windows. Go back to the Menu line in the Entry Window, and Click "Window". A sub-menu will open, like this:



To begin with, click on the "Log" window. That will open a Log window on the screen, like this:

TS	Call	Freq	SNT	RCY	Mult2	ZN	Mult	Prefix	Points
6/27/2007 20:56:08	FM5BH	14200.00	59	59	Yes	8	Yes	FM	2

First, you should notice that the title bar of the Log Window gives the current date and exact time, the name of the contest, and the database in use. As you log QSOs, they will appear in the log. I have logged one above just to indicate how it looks. The most recent last QSO is highlighted. You'll note that each column has a fixed label - these labels do not change. CQWW is a 2-multiplier contest, so the log shows columns for "Mult" which is the country, and "Mult2" which is the CQ Zone. The "yes" in each simply means that it is the first of that multiplier on that band.

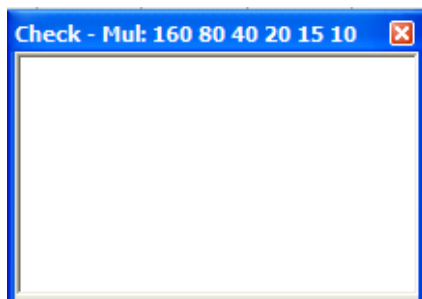
If you click on any column heading, the entire log is sorted by that attribute - for example, if you click on the Mult heading, the log will be sorted so that all of your first QSOs with a given kind of multiplier (in this case, a new country) will be moved up to the front. Click on TS (for timestamp) to switch back to the normal log order.

A further nice touch - if you click a second time on the column heading, for example the "Call", the sort order switches from Ascending to Descending, so that all your "Z" QSOs come first, and your "As" last. Same goes for the TS (TimeStamp) heading - normally, you'll want to leave the Log Window in TS ascending, so that each QSO you log appears immediately at the bottom of the list.

The Log window has two "panes" the one above the dark-grey line is the normal log, while the one below the line is to show you previous QSOs with a station, each time you type its call into the Entry Window. You can resize the entire log window, or move the separator to make the previous QSO pane bigger.

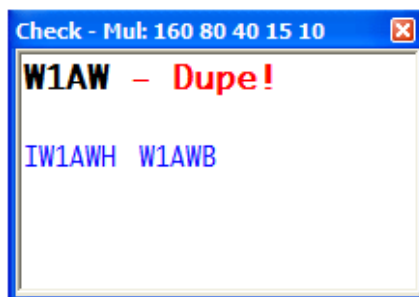
This makes it very easy to see, quickly, all the information about previous QSOs, for that special someone who drops by and asks, "What was the serial number you gave me yesterday?"

Like all windows in N1MM Logger, the Log window is resizable, as are the individual log columns - to resize the whole window, use your mouse to drag the lower right corner, and to resize a column grab the between-column divider and drag it right or left. You can move any window around the screen by dragging its title bar. Also, as I mentioned above, you can change the font in the Log window by right-clicking in the window, and choosing your font as you did for the Entry window.



OK, another important window - the Check window. You open it the same way as you did the Log window., and set the font the same way (with a right-click menu choice).

This window is used to display the results of checking a call-sign against your log and also against a master list of calls, variously called the master.dta or Super Check Partial file. One is provided when you install the program, and the process of updating is covered in the [Entrywindow](#) section of the manual.





First things first, though. When you type a call-sign in the Entry Window, the Check window displays whether a match was found or not. If the match is in your current log, it is shown in the first line of the window, like this:

Note the program warns you that you have already worked that station, and can't do so again on the current band (or maybe in the entire contest, like SS). Also note that two lines below are two possible matches from the master database.



Had the station you copied been W1AWB, when you entered the Check window would change to reflect that, as follows:

Note that the station's call appears in blue, meaning that to work the station would not be a new multiplier, but would be a valid non-dupe QSO. This color coding is consistent throughout the program. Because it appears in the second row, you know that it is from the database and not from your log (if for example, you had worked him on another band, the call would appear on the first line, in blue).

OK, that's probably enough about the Check window for now. These are really the only windows you need to operate your first contest with N1MM Logger. Now let's sit down and operate.

For the purpose of this guide, we'll assume that you're operating in the CQWW SSB contest. In that case, the Entry Window will look like this:



I'm assuming that you're going to operate phone to start, so I have typed in USB in the call-sign field, and hit Enter. I have left the default frequency (20M phone) in place, but if I wanted to show

another band, I need only type a frequency (in KHz) in that band (like 21200, for example) in the call-sign field and hit Enter to change bands.

When I've done these things, I then type a call-sign in the call-sign field. Even before I look at the Check window, I see that the call sign is color-coded green. This means that it is both a new contact and a double multiplier (in this case, both the new country of Martinique and the new Zone 8). The beam heading is displayed below, as are the country, its zone and continent (which affects points per QSO). If I have already worked Zone 8 on this band, then the call sign will be color-coded red, signifying just a new country. If both the country and zone had been worked before, but the station has not, then the color code will be blue. If it is a dupe, the call sign will be coded grey, and the warning "Dupe!" appears to the right of the entry fields.

So, you call him, and he answers. At this point, just hit **Space** to fill in the expected signal reports and move the cursor to the Zone field. N1MM Logger uses the **Space** bar as a "smart tab." The idea is that it will skip fields you are unlikely to want to change and move immediately to the one you may need to. Note, too, that the Zone is highlighted. This means that if you need to change it - for example, if FM5BH really was in Zone 9 (he isn't) - you would just type "9" and the "8" would be replaced.



Ok, but suppose he's a wise-guy and gives you a "57" report instead. No problem - you just use the **Tab** key twice, and the cursor will be on the second digit of the received signal report, ready for you to type over. The **Tab** and **Shift+Tab** work just as you'd expect in Windows, moving forward or backward one field. Here's how it looks:



If you need to correct the call-sign, use the [Space](#) bar to get you quickly there and edit as necessary. Then, once everything is as you want it (and the QSO is done), all you do is hit Enter, and the QSO will be logged.

One thing that trips everyone up at least once is that the program checks to make sure that you have entered everything, and that everything is correctly formatted. For example, if you accidentally fat-finger the zone number, like "89", the program won't let you enter the QSO. This can be disconcerting at first - you get an error message in the status line, like this:



If the program has blocked you from logging the QSO, just use the [Space](#) bar to move to the appropriate field, correct it, and hit Enter to log. If you absolutely can't figure out what the correction should be (for instance, with an ARRL section in Sweepstakes), you can hit [Ctrl+Alt+Enter](#) to bypass the exchange checking and log the QSO "as is." Just in case you want to put a note in the log, when you do this a note window opens. Type whatever note you want and Hit Enter, or just hit Enter to skip it and get back to the contest.

Suppose you miscopied a call sign, or he didn't really come back to your call, so you now have a

mistake in your log. If you need to delete the QSO altogether, just hit **Ctrl+D**. The program will ask you if you really want to move the QSO to a Deleted QSOs file. Just hit Enter to do so, or type N for No.

If you need to edit the QSO, hit **Ctrl+Q**, and put the program in QuickEdit mode.



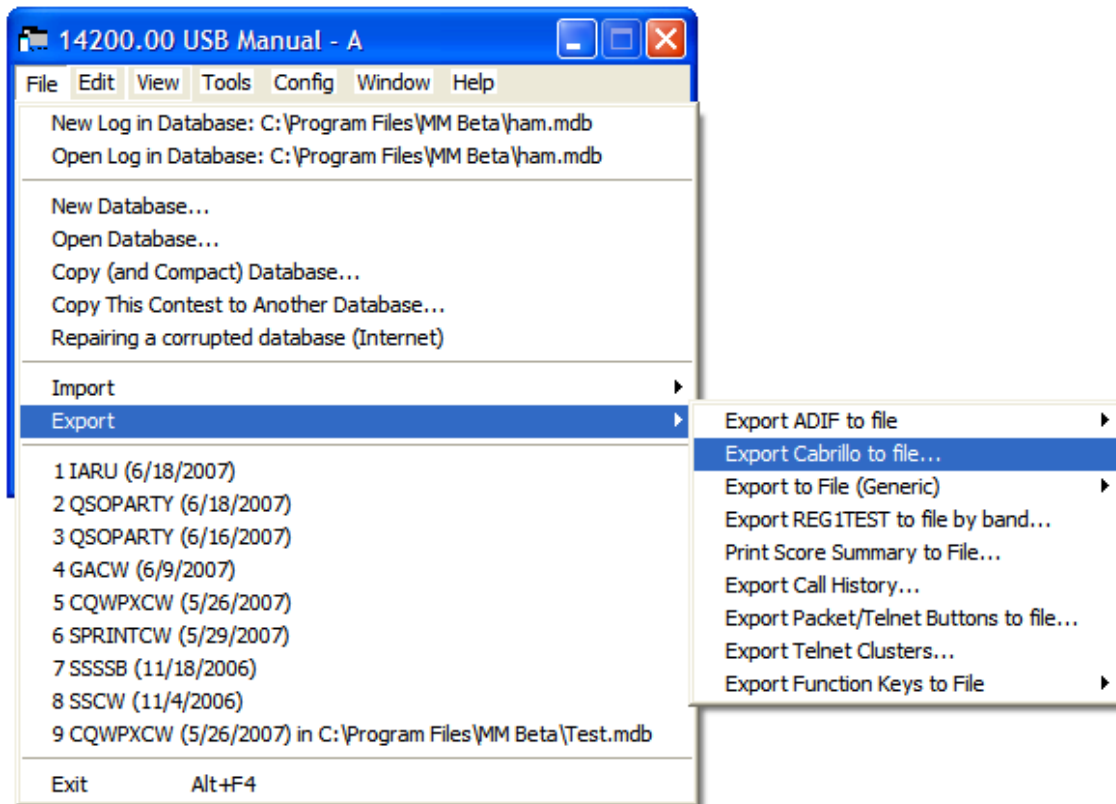
You'll notice the words QuickEdit above the call-sign field, and that the background of all of the entry fields is now blue. You can move through the fields as before and make your corrections. Then hit Enter and the QSO will be corrected in the log, or else hit **Esc** to get back to normal logging mode and cancel any changes. Be careful not to leave the program in QuickEdit mode for your next QSO, or you'll screw up two QSOs at once!

As you log more QSOs, you'll note that the call-sign of your last previous QSO will appear in the space right above the call-sign field. This area, called the Call-Frame, will be very important once you have interfaced the program with your radio, but for the moment it is just a reminder of who that last guy was.

### **Remember**

Remember, each time you change bands, you need to enter the frequency of that band in the call-sign field, and, if you change modes, enter that there too. For example, if you switch to 40M CW, you would need to enter 7000 and then enter CW (separately) before you begin logging QSOs on that band.

So, you've logged a bunch of QSOs, the contest is over, and it's time to send in your log. Almost all contests these days accept Cabrillo-format logs, and that's what N1MM Logger usually provides (check contest rules for any exceptions). To export your log in Cabrillo format, go to the File Menu in the entry window and select "Export Cabrillo to file."



The program will first check to be sure you have the Sent Exchange you want:

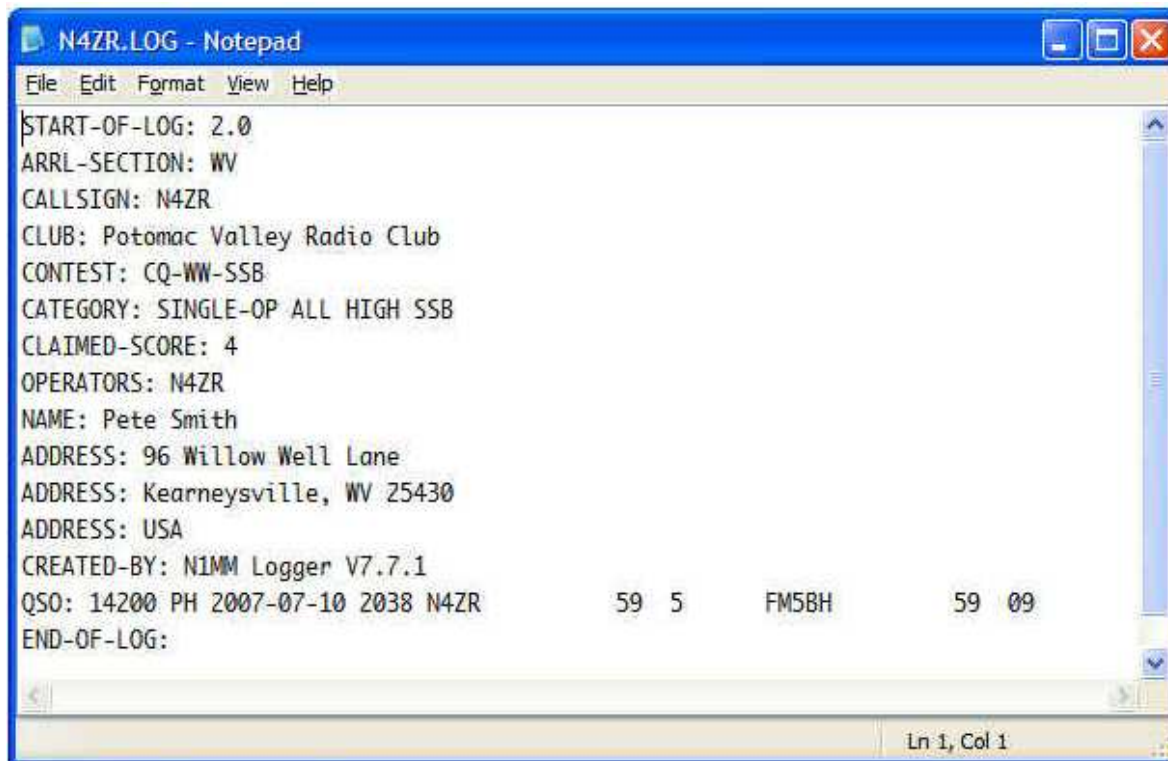


If it's OK, then click OK or Enter. Next you will see a standard Windows "Save-as" dialog. By default, the program goes to the program directory, but I usually change that to Desktop for convenience:



You can name the Cabrillo file as anything you want ([Call sign.log](#) is suggested), and then click Save and your Cabrillo file is automatically produced and saved.

Next, and this is important, open your Cabrillo file in Notepad and check to be sure that the information in the header is in accordance with the instructions for the contest. N1MM Logger tries to keep up with Cabrillo file format changes, but nobody's perfect, so save yourself some hassle and double-check. Contest categories seem to be a particularly tricky area. You also need to be very sure that you specified the Sent Exchange correctly during contest setup - one common mistake is to put the signal report in as part of the exchange.



```

N4ZR.LOG - Notepad
File Edit Format View Help
START-OF-LOG: 2.0
ARRL-SECTION: WV
CALLSIGN: N4ZR
CLUB: Potomac Valley Radio Club
CONTEST: CQ-WW-SSB
CATEGORY: SINGLE-OP ALL HIGH SSB
CLAIMED-SCORE: 4
OPERATORS: N4ZR
NAME: Pete Smith
ADDRESS: 96 Willow Well Lane
ADDRESS: Kearneysville, WV 25430
ADDRESS: USA
CREATED-BY: N1MM Logger V7.7.1
QSO: 14200 PH 2007-07-10 2038 N4ZR          59 5      FM5BH          59 09
END-OF-LOG:
Ln 1, Col 1

```

Okay - that pretty well wraps up the first chapter. Don't hesitate to use the Google Help facility (Search Help Using Google (Internet) ) to look up more information on any of these topics. It works tremendously well for looking up more details on any of the windows, or exploring any other aspect of the program. In the next chapter, you may need this capability a lot, because so much of interfacing is specific to a particular radio, and you really need more detail than I can provide here.

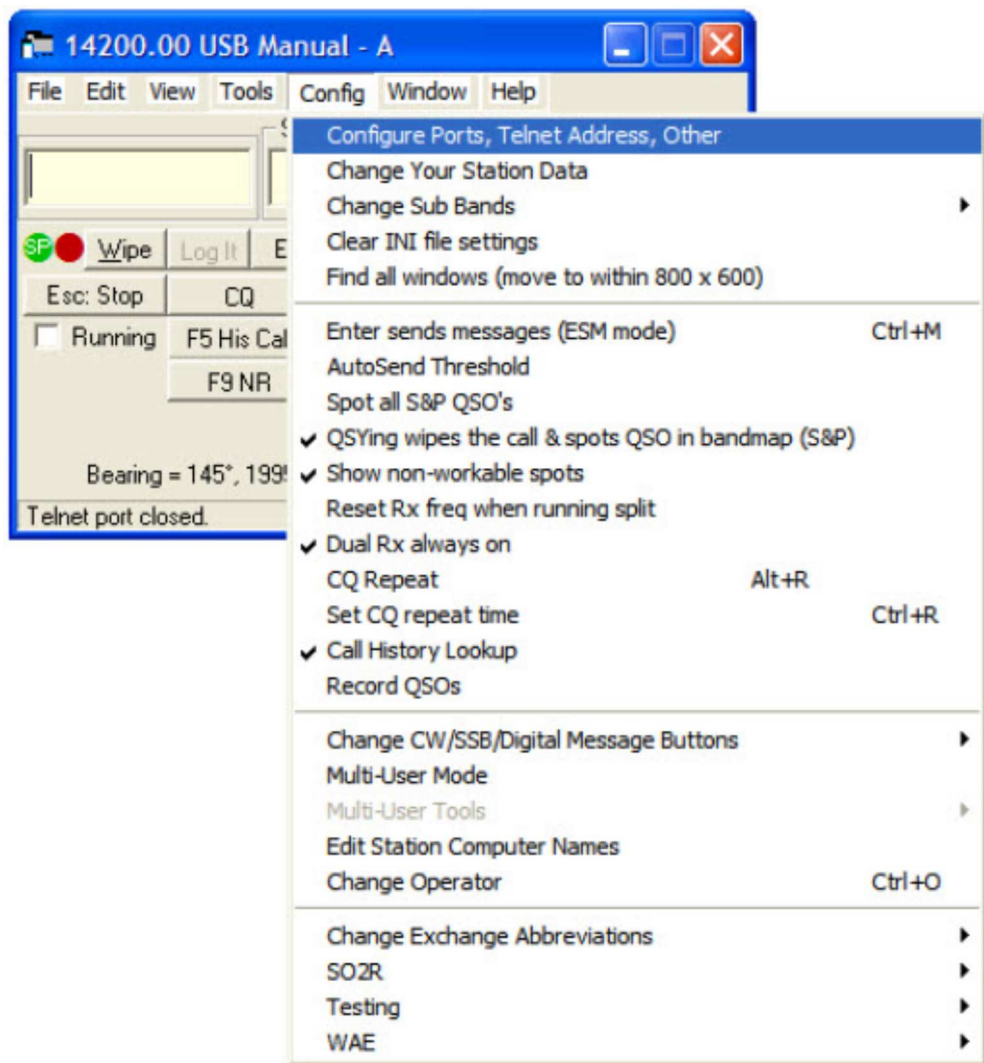
## Basic Radio Control Interfacing

Regardless of whether you want to operate phone, CW or digital modes, the most useful and important interface is the one between your computer, N1MM Logger and your radio. Fortunately, most radios now incorporate a serial port to enable them to swap information and commands with the computer.

A first step is to look up your transceiver in the manual section titled [Supported Radios](#). Assuming you find your radio there, look for any specific settings or peculiarities that need to be addressed and make a note of them.

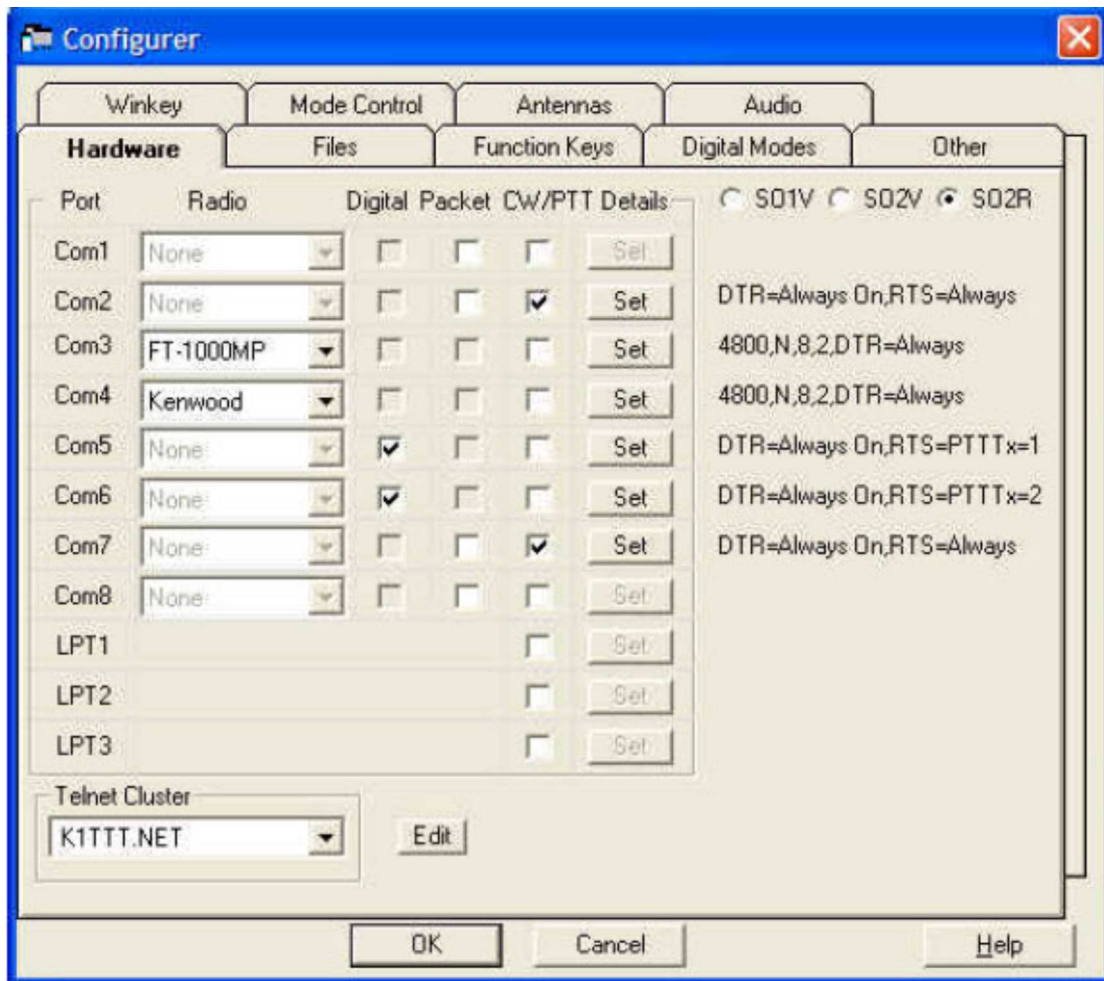
Many modern laptops and a growing number of desktop computers lack both RS-232 serial ports and an LPT parallel port, having replaced both with one or more USB ports. If your radio has a standard RS-232 serial port, once you have purchased a USB-to-serial converter and installed the drivers for it, MM can work with your radio just fine. If your radio uses either Icom's CI-V standard or another non-RS-232 serial port, you'll need an appropriate converter cable to get from either USB or RS-232 to your radio.

Once you have the hardware hooked up between your computer and your radio, start N1MM Logger and open the Config menu in the Entry window. Choose Configure Ports > Telnet Address, Other. Ignore all the other stuff for now.



That brings up the following, rather intimidating dialog. Don't worry, we'll walk you through the part you need now.

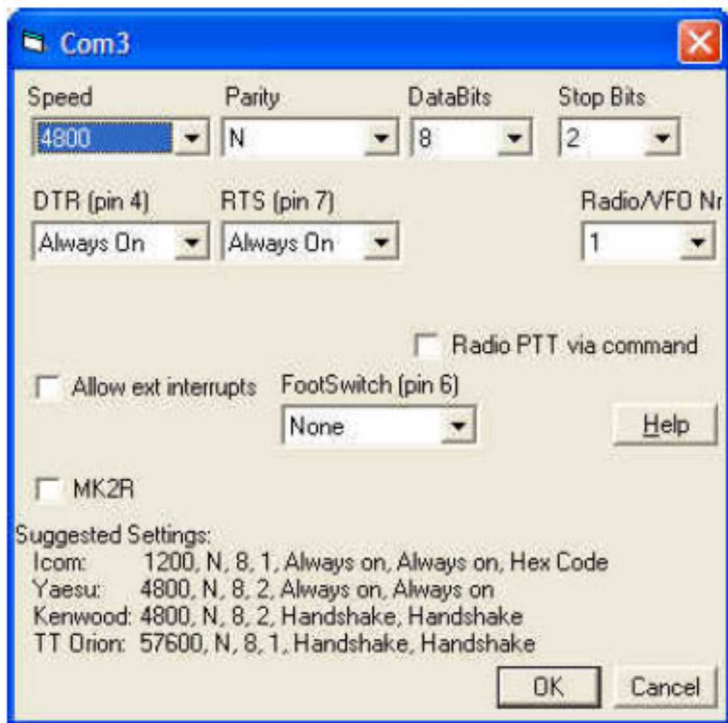




You may want to select SO1V if this is your first experience with N1MM. SO1V allows N1MM to control VFO A in your transceiver. If you are an experienced contester and understand how to operator in split mode (for example, working DX on 40 meter sideband) you may want to select SO2V. It allows N1MM to simultaneously control both VFO A and VFO B in your transceiver. If you are an advanced contester, whose station is configured with TWO transceivers (one for running contacts and the other for searching for new multipliers), then you will want to select SO2R.

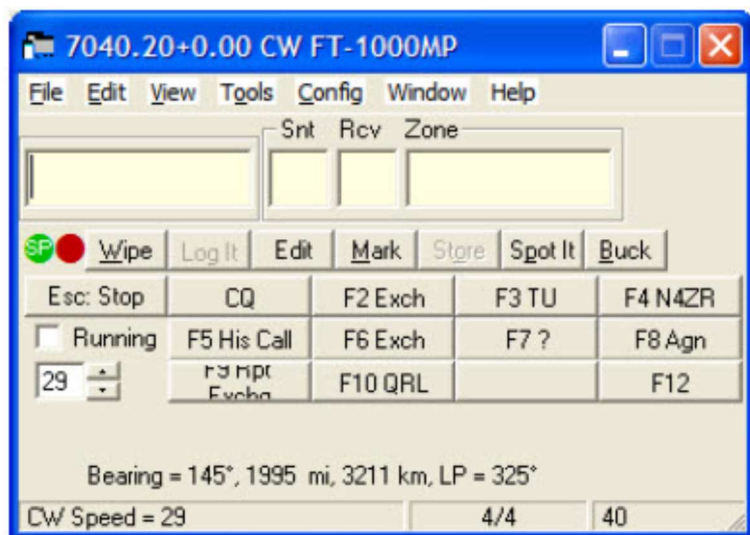
Now identify which port you have physically connected between your computer and the radio (or in the case of USB, the virtual serial port it has created). Click the drop-down arrow under Radio, and select your specific radio model. For this example, I've assumed COM3 and a Yaesu radio. Virtually all Kenwood models use the one common radio configuration, while Yaesu and Icom radios are generally designated by the specific model number - refer to the manual under "Supported Radios" for more information. Icom radios require a Radio Address (Hex Code) - see the manual for more information.

Now click the "Set" button next to the port you have chosen.



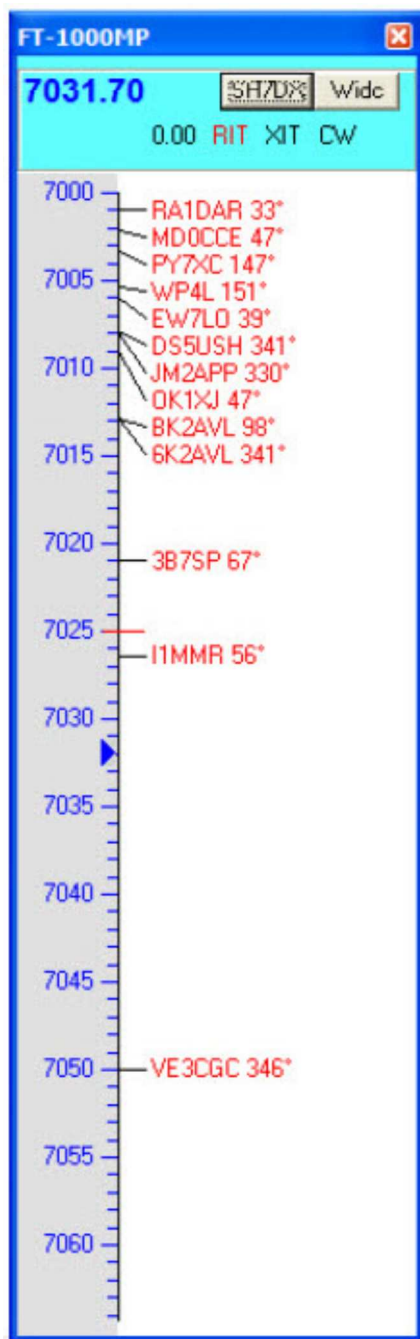
That will bring up this dialog, with connection details. Normally, N1MM Logger chooses the parameters in the first two rows for you, and does a good job. You might want to verify them with your radio manual, just in case. Radio/VFO number should be 1, so that your main VFO will be displayed in the main (first) entry window. The rest of the stuff on this dialog is not important right now, so just click OK to get back to the previous dialog, and then OK again to return to the Entry Window.

If all is well (you did turn your radio on, right?), when that big multi-tabbed dialog closes and the Entry Window reappears, the title bar of the Entry Window will display the radio's frequency and mode. It's magic. The "+0.00" simply means that RIT is turned on, but set to zero (no offset)



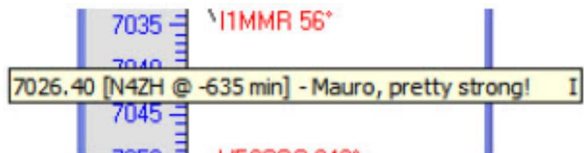
Now that you have radio control, you can do a lot of neat things, but one of the most basic is that

you will never again have to worry about accidentally logging QSOs on the wrong band or mode.



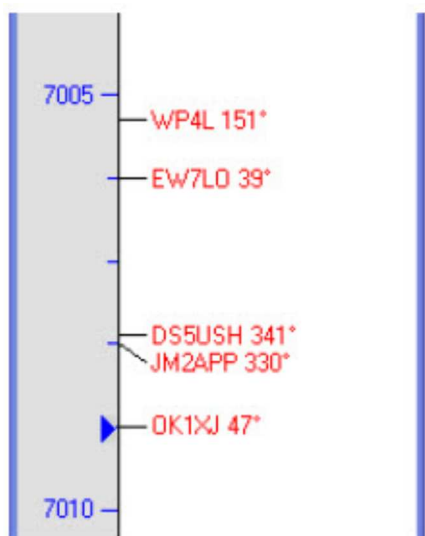
With an interfaced radio, you will find it useful to open a Bandmap window. Click Window, then select Bandmap, and the Bandmap corresponding to your entry window will be displayed.

In the example at left, I have filled the bandmap with spots from a packet cluster, just to illustrate how spots are displayed. The stuff in the top bar is pretty self-explanatory. The SH/DX button, when mouse-clicked, sends that request to the cluster (which you don't know how to set up yet). The button labeled Wide toggles filters in your radio, though you may have to set it up first (the process is explained in the manual). In any case, clicking on it switches TO the filter mode shown. The red RIT means that RIT is on, and the number left of it is the amount of offset. The black XIT means that XIT is not selected. Turn on XIT and you'll see it turn red.



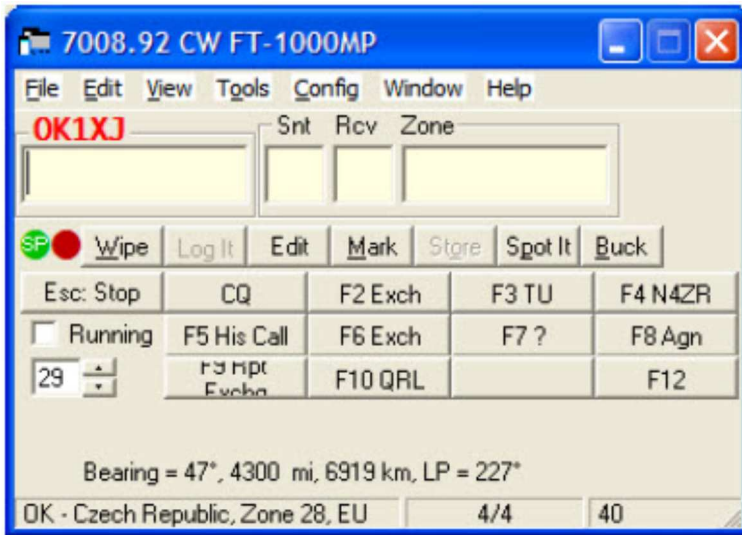
The color-coding of spots in the Bandmap is the same as in the Entry Window, so each of those red calls represents a new multiplier in the contest. If you want, you can mouse over a spot, and the program will tell you more about it. The "635 min" tells you how long ago the spot was posted. Generally, you won't want to keep spots displayed that long, and a little later I'll explain how to clear spots after a certain amount of time has elapsed.

In a busy contest, certain parts of the band can get pretty crowded with spots. Pressing the numeric keypad + key will zoom the bandmap in and spread the spots out, like this:



Pressing the numeric keypad - key will have the opposite effect. You can also zoom the bandmap using the scroll wheel on your mouse, if it has one.

Another useful thing about the bandmap. If you single-click on a spot, your radio will automatically be sent to that spot. If, instead, you click on the frequency scale (anywhere within the width of the frequency hash marks), the radio will go to that frequency. There are also keyboard shortcuts that will move your radio from spot to spot up and down the band. More on this later.

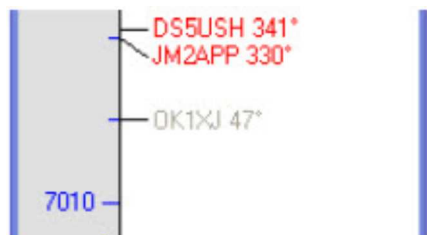


When you single-click on a spot, something else useful happens - the call sign of that station is copied to the Call-Frame of the Entry Window, like this. This is done this way so that if you discover that the station on that frequency isn't OK1XJ after all, you can just type in the correct call. This does happen now and then with packet spots.

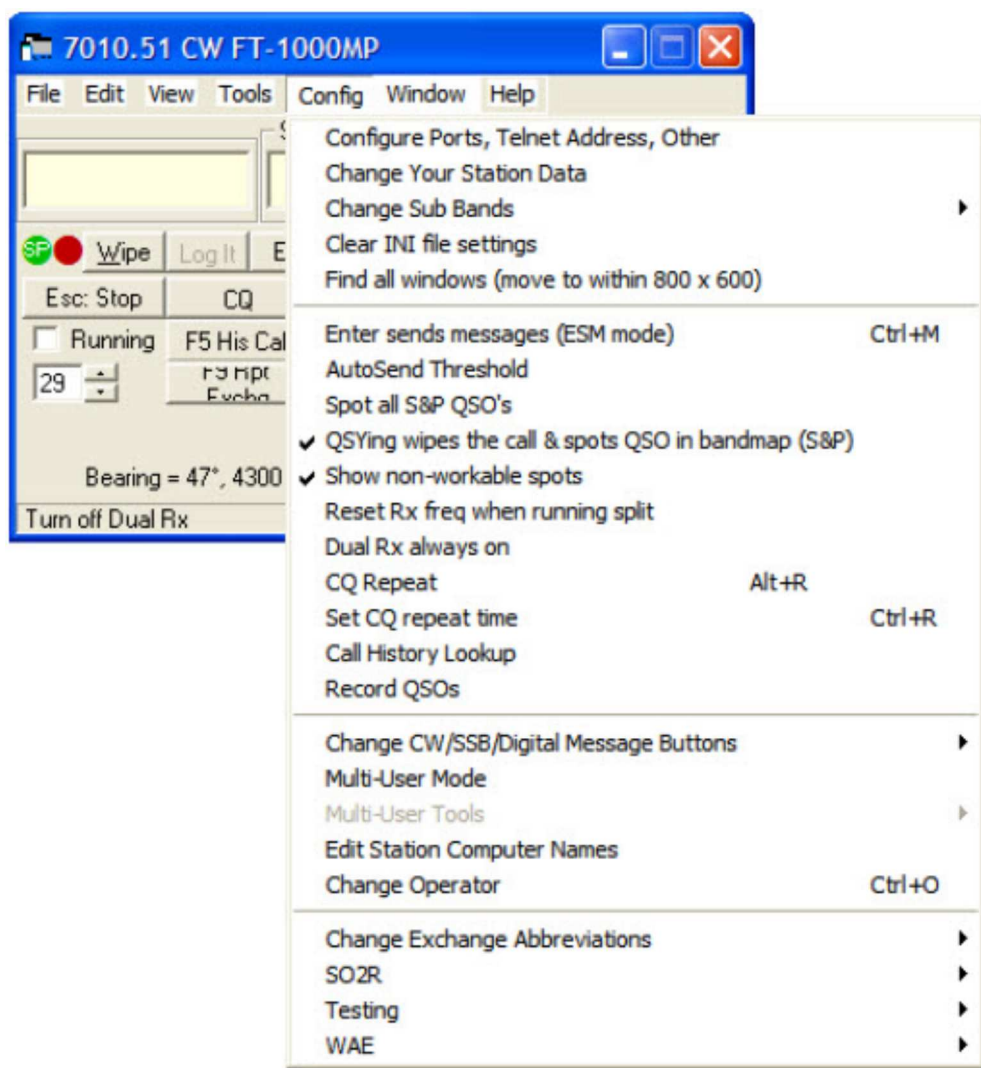
However, let's assume it's OK. In that case, all you have to do is call the station, get him to answer you, and hit [Space](#). Here's what happens - the call sign is pulled down into the Call-sign field, and the QSO is all set for logging, once you complete the exchange.



Another good thing can happen on the band-map when you complete a QSO and tune off the frequency - the spot's color code turns to grey, so that you know at a glance that you have worked the station already, and won't waste time when you come back to that frequency again.



To turn on this feature, click Config, and then, in the dropdown menu, click on the two items checked (see below). You need them both because grey spots are regarded as non-workable, and they will disappear unless Show non-workable spots is checked. If you don't work a station, and tune off his frequency, his call sign will appear in the appropriate color to denote whether he's a new multiplier or simply a valid QSO; either way you know to go back and work him later, if he's still there.



By the way, even if you never plan to use packet spots, the Bandmap is a very useful window. As you S&P your way up and down the band, each station you've worked will be marked with a grey self-spot, so you can skip by them the next time even if you have no packet spots.

You may be wondering how to move quickly up and down the bandmap, hitting only the workable spots, or those that represent multipliers. This might be a good time to introduce another very useful section of the Manual. N1MM Logger makes extensive use of "hot-keys" to largely or entirely eliminate the use of the mouse during contest operations. There is a very useful section in the manual titled "[Key Assignments](#)" which explains each and every such key combination. For example, under "Active Radio/Bandmap Key Assignments" it lists:

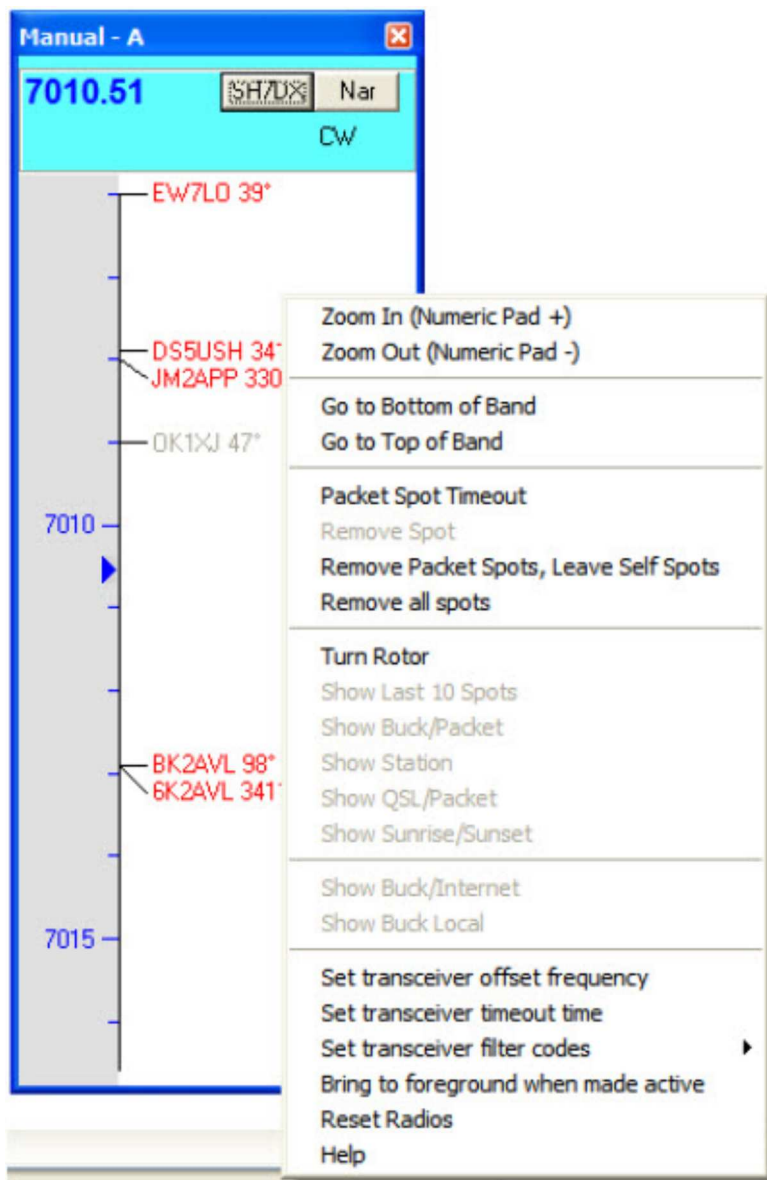
**Jump to Spots** *Note: If you are operating single mode, your mode won't change when jumping between spots.*

- **Ctrl+Down Arrow** - Get next spot higher in frequency.
- **Ctrl+Up Arrow** - Get next spot lower in frequency.
- **Alt+Ctrl+Down Arrow** - Get next spot higher in frequency that is a multiplier.
- **Alt+Ctrl+Up Arrow** - Get next spot lower in frequency that is a multiplier

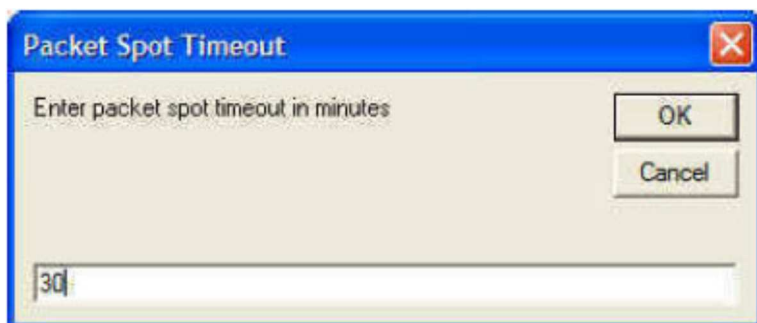
Try these and see - with a full bandmap and these keystrokes, it is easy to work 100+ search and pounce QSOs per hour, something that used to be regarded as impossible.

As we're finishing up this introduction to the Bandmap, it might be a good idea to offer another general hint when you're exploring the program. Be sure to right-click on each new window (other than the Entry Window), to see what options involving that window might be available to you. Each of these options is explained in the section of the manual dealing with that window.

If you do this with the Bandmap, you'll see this right-click menu:



Of the choices here, Packet Spot Timeout is perhaps the most useful. Click there and set the timeout interval in minutes - "çâ, -Å" both self-spots and spots from packet will disappear after however many minutes you choose.



The Reset Radios command is also useful in case, for some reason, you lose control of your radio. Click it, and the program resets the connection.



Again, if you go to the manual, you'll find much more exhaustive discussion of each menu option, but that's enough for us right now.

So really, that's all you need to operate contests with N1MM Logger controlling your radio - the Entry Window, the Check Window, the Log Window and the Bandmap. Of course, there are a zillion more capabilities you'll want to explore, beginning with the capability for sending stored messages, but I have to stop somewhere, at least for now.

## Interfacing for Phone, CW and PTT

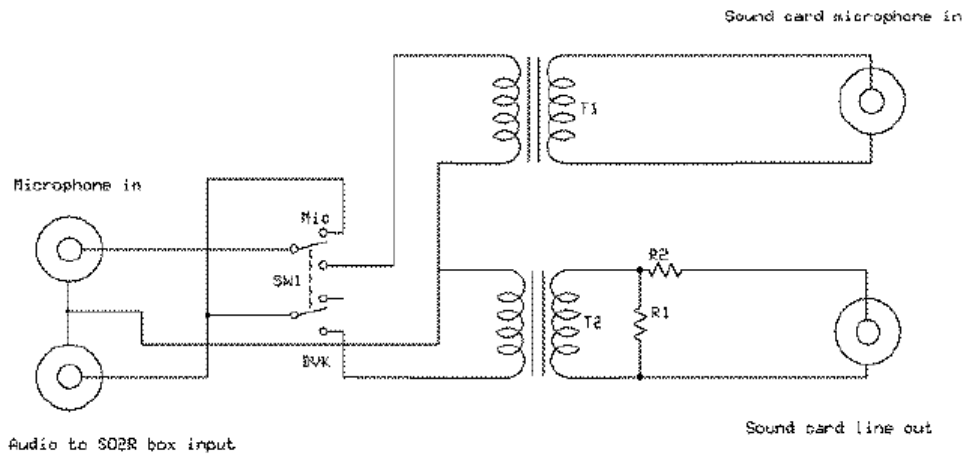
Of course, controlling your radio through a serial port isn't the only way to interface N1MM Logger and your radio - in fact, long before there were computer-controllable radios, the pioneering logging software authors developed several standards for CW and PTT interfacing, using either serial or LPT (printer) ports.

I'm going to start, though, with a discussion of phone interfacing, on the theory that this will be of most interest to new users. What I mean here is setting the program up so that you can store voice messages and play them back through your radio, to save your voice during phone contests.

### Phone Interfacing

There are two levels to this - the physical interface and the software setup. Physically, you will need to connect your microphone to the Microphone In jack on your sound card, and provide an interface between your sound card's Line Out jack and the microphone jack on your rig. This can be as simple as a 10:1 voltage divider (the Line Out signal level is much higher than your radio's microphone jack is designed for) and isolation transformers (to avoid feeding AC hum into the sensitive microphone jack on either your sound card or your rig). You can also use any of the commercial interfaces (RigBlasters, for example) designed for digital modes using AFSK.

Here's a simple schematic



SW1 - DPDT toggle switch

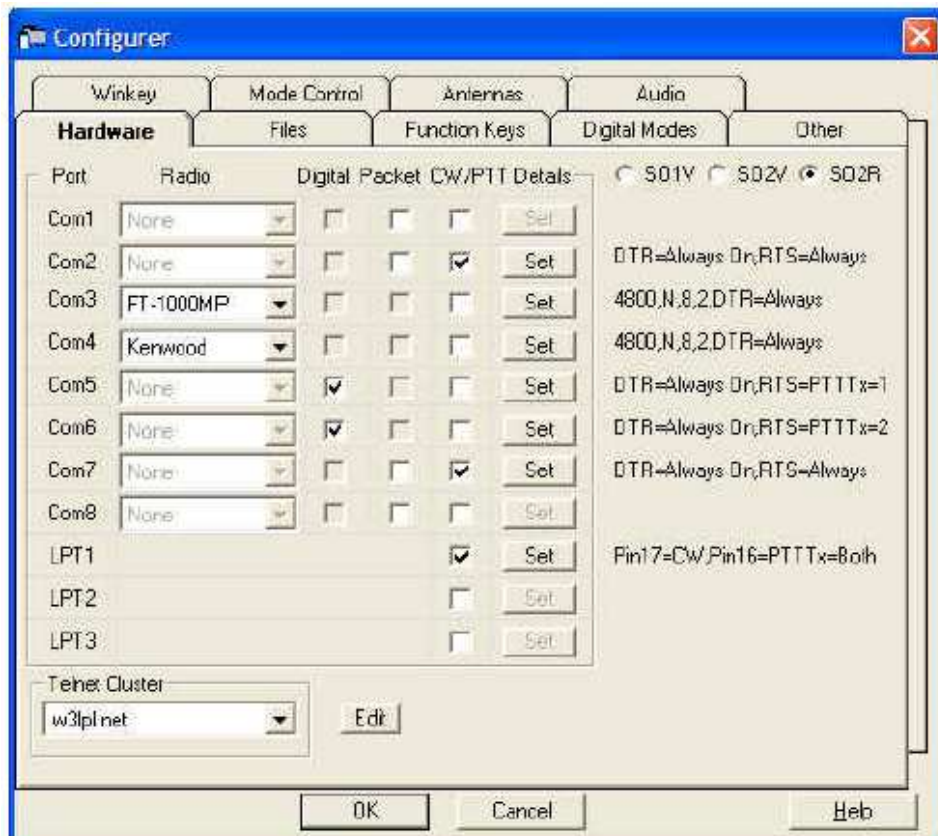
T1, T2 600:600 ohm audio isolation transformer

R1 100 ohms

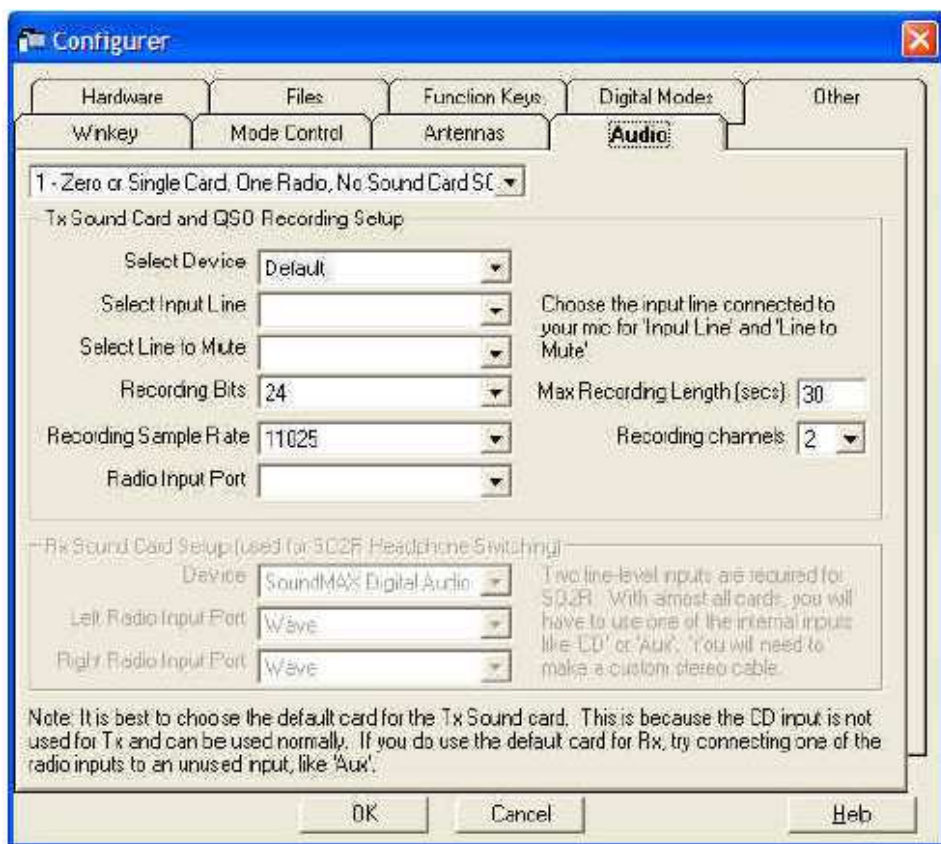
R2 4.7 K

Now, on to the software setup, which is where most people seem to have trouble. The following discussion is cribbed almost verbatim from audio trouble-shooting notes by Dave Robbins, K1TTT. If any mistakes have crept in, blame me, not him.

To begin with, make sure you close Windows Media Player, RealPlayer, Audacity, or any other sound playback/recording program you may have open. Start N1MM Logger and open the Configure|Ports, Other tab.

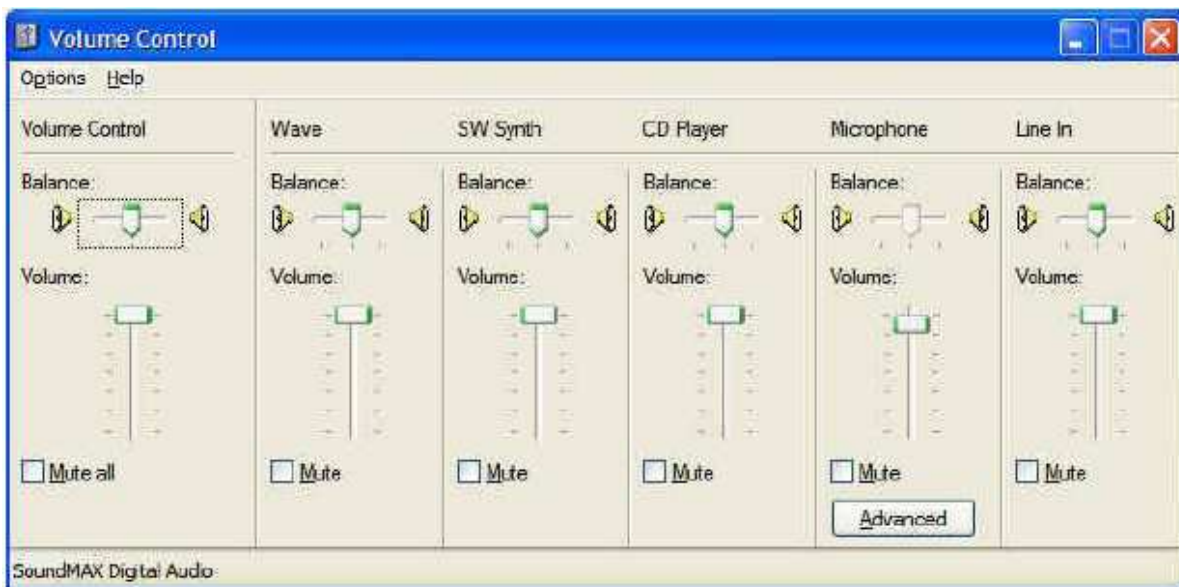


Now select the Audio tab. As shown here, select option 1 "zero or single sound card" from the drop-down list. Select "default" in the first "select device" list:



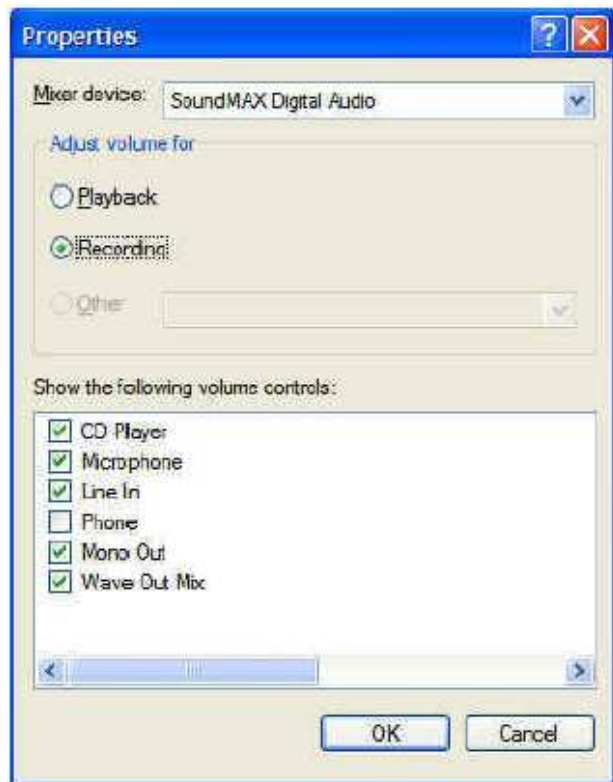
Now OK out to save that setting, and close N1MM Logger.

Plug your microphone directly into the microphone jack on your sound card. Plug your headset directly into its speaker output. Open the Windows Volume Control. It should come up with a set of sliders, like this:

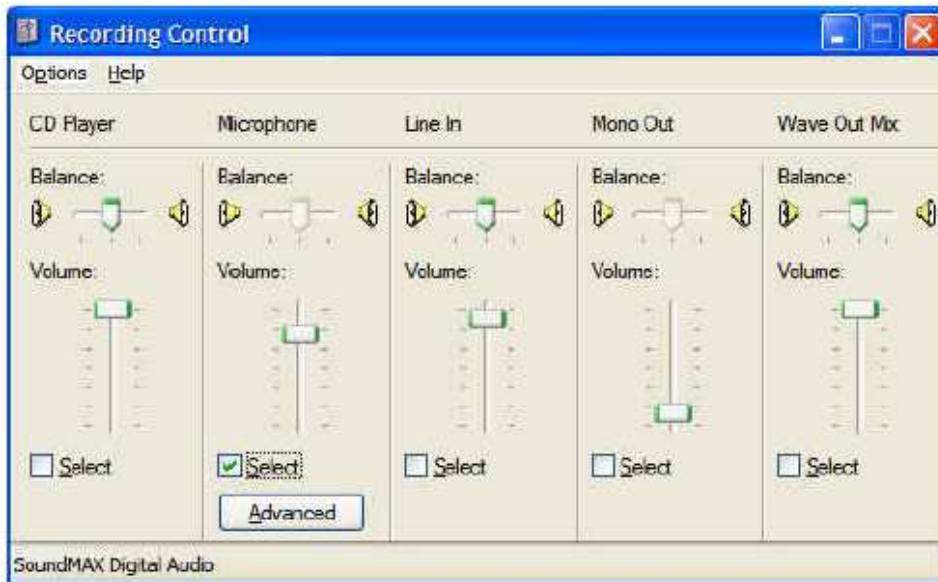


Set all the sliders to mid range, and un-mute everything. You may have to go into Options|Properties to check the box to let you see the microphone volume control and those for other sound sources.

In Options|Properties, now , click the 'Recording' radio button, and make sure the microphone is checked on the list of controls:

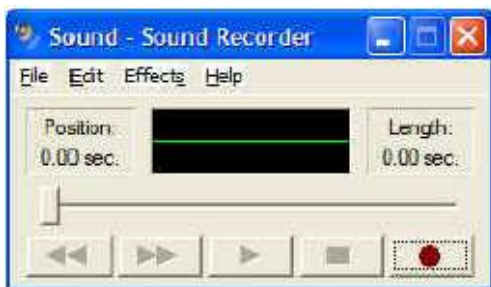


Now OK out. Make sure the Microphone slider is at mid-range and that there is a check in the Select box. If you are using a typical ham microphone, such as a Heil, and you have the "Advanced" button, click on it and select Mic Boost if that option is available, because it provides a 20 dB preamp.



Now, when you talk in the microphone, you should be able to hear yourself in the headset. If you can't, then something is wrong with your settings, hardware or drivers. Try playing existing .wav files using the Windows Control Panel's Sounds option. Recheck volume and mute settings, check that the microphone is plugged into the right jack, try a different microphone, try a different headset. Get your 8 year old kid to help. **DO NOT PASS THIS POINT UNTIL YOU CAN HEAR YOURSELF!**

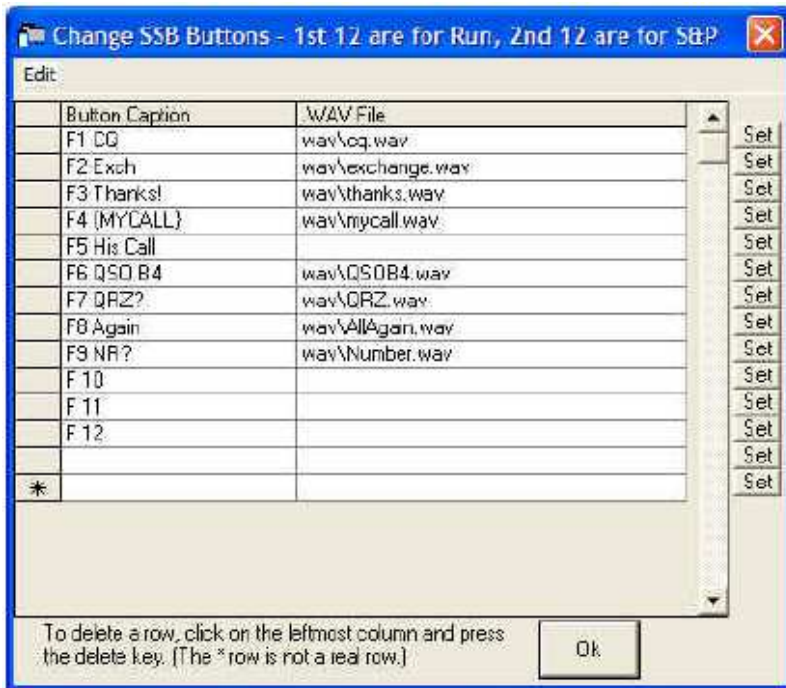
Now open Windows Sound Recorder, which is usually found in the Accessories category in your program list. **DO NOT** open Audacity, any of the audio tools that came with your sound card, or your other favorite tool. Some of them play with the mixer settings and we don't want that now that they are set.



Click the Record button in Windows Sound Recorder, and speak a few words into the microphone. You should see the green trace deflect in time with your voice. Now press Stop. Press the Play button and you should hear what you just said. If you don't there is something wrong with your hardware or drivers. Check recording control settings, adjust volume, make sure the microphone is selected as the recording source, and get that 8 year old back to help again! **DO NOT PASS THIS POINT UNTIL YOU CAN RECORD AND PLAY.** If Windows Sound Recorder doesn't work, then N1MM likely won't work and since N1MM is much more complicated it is harder to troubleshoot.

Now close the Windows Sound Recorder and start N1MM Logger. Put your radio in SSB mode, and make sure that the Entry Window's title bar specifies either USB or LSB (if you don't have a radio connected, type the appropriate mode in the callsign box and hit [Enter](#)).

Right-click on any of the message buttons in the entry window. That will bring up this table:



The filenames in the table are the default filenames that are put into the table when you first install MM. Depending on how long ago you first loaded MM, the ones above may not be the same ones you see.

The easiest way to visualize this is that rows 1-12 represent the 12 function keys in "Run" mode, while rows 13-24 represent the 12 function keys in S&P ("Search and Pounce") mode. We'll get into why there are two sets of function key definitions in a little while. But for the moment, let's concentrate on programming the Run F1 function key. If you click in the first box under Button Caption, you'll notice that the "pencil" icon moves to that row, and that the cursor will be in the box. Now you can edit the button caption to whatever you want it to be. Then hit **Tab**, and the cursor moves to the .WAV File column. In the example above, I'm assuming that you have a \WAV subdirectory in the N1MM program directory, and that you want to name your CQ file as I have.

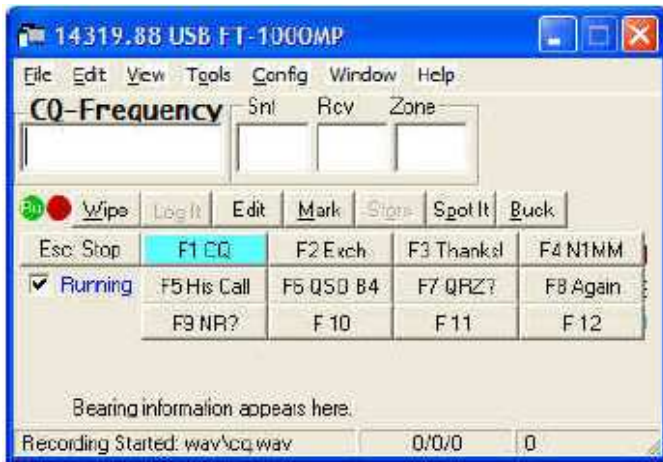
One last thing - if your SSB function keys have something in the 13th row (S&P F1), temporarily use the Edit function to delete that row, because it will just confuse things right now.

All right - now OK out, and the definition is saved.

#### **Notice**

Unless you have something in both boxes in each row, the cursor will not move on to the next row. You'll note that it looks like F5 violates that rule, but it really doesn't, because there is a single empty space in that row, which I put there to meet the requirement.

Now watch the bottom of the Entry Window and press Ctrl+Shift+F1. You should see:



If you speak into the microphone at this point, whatever you say will be recorded in the file CQ.WAV. Press Ctrl+Shift+F1 again to stop the recording, and look for this report in the same place:



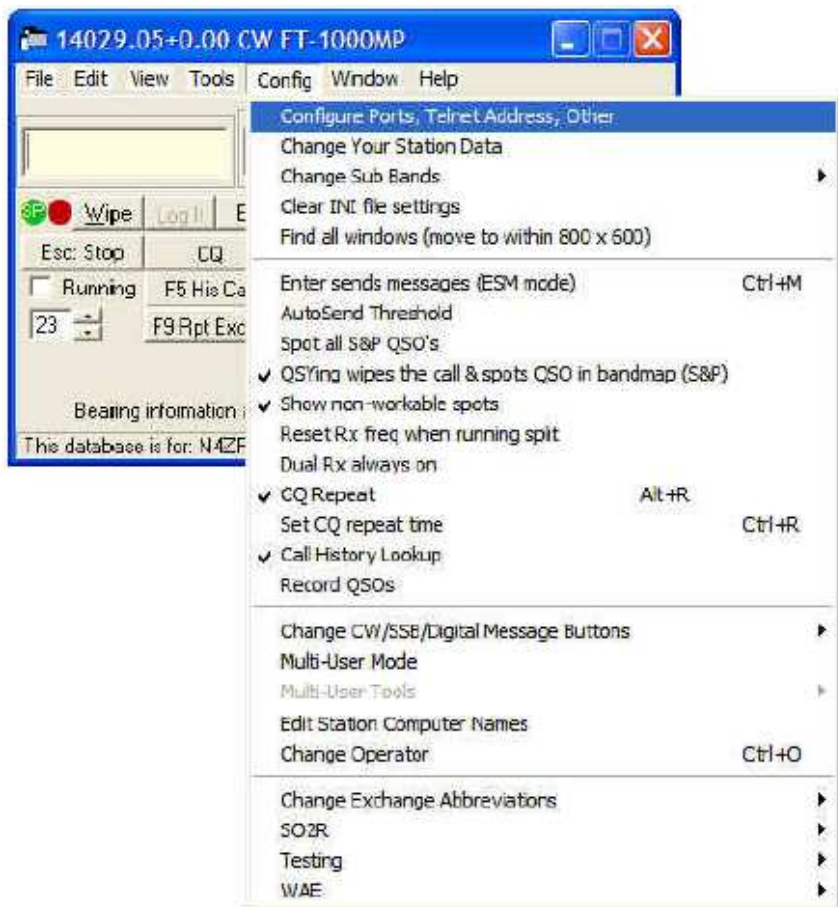
Now press F1. You should hear what you just recorded in the speaker. If you don't, look for an error message in the status bar. The most common problem affecting playback is that you recorded the file with a different program, using a compression or other parameters that are not supported by N1MM Logger. Another common one is to be looking for a filename that is different than the one that appears in the key definition table. For both these reasons, we suggest using the Ctrl+Shift+Fx process to record within N1MM Logger, at least until you get truly comfortable with audio files.

Now that you've got things working, you need to program at least the first few function keys. It's best to follow the order in the example above, at least for F1-F8, because a little later, when we talk about ESM (Enter Sends Messages) mode, the order is important.

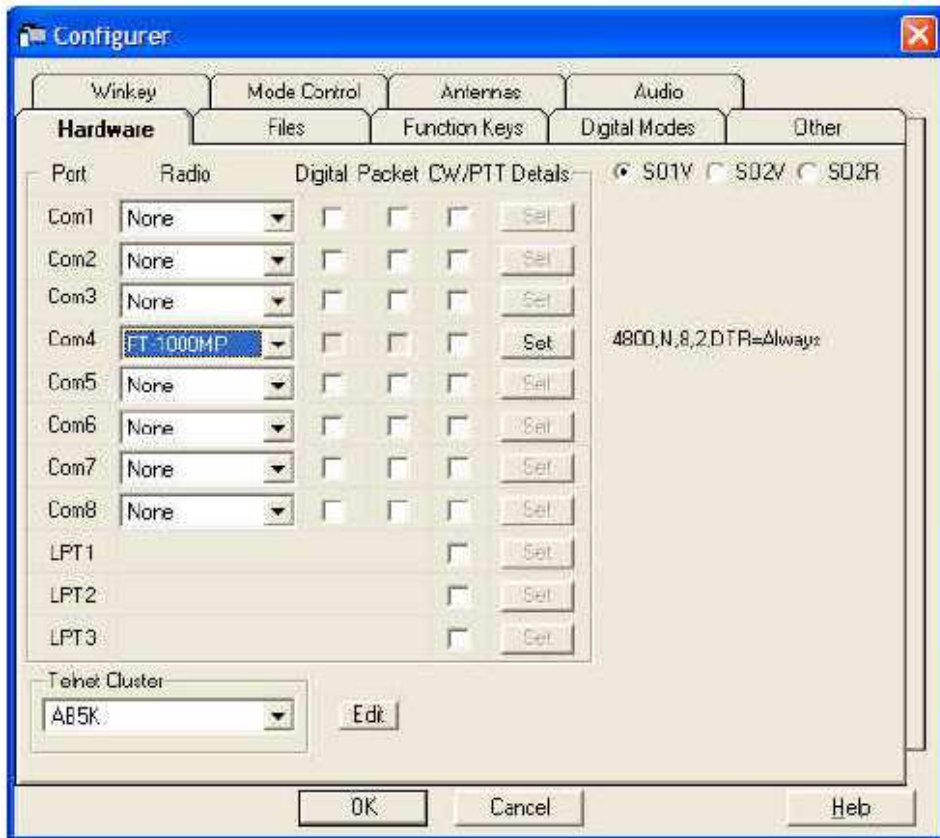
OK, so now you have everything you need to play "canned" audio messages on the air. If you're content to use VOX to switch your transmitter, and you're not interested in CW, then you can jump ahead at this point to Chapter 4 (Using Stored Messages). However, you may want to have N1MM Logger control your radio's push-to-talk (PTT function). One good reason might be to ease wear and tear on the relay in your amplifier by having it switch on before your transceiver starts sending it RF. For this we need a PTT interface.

## CW and PTT Interfacing

First, let's set it up in N1MM Logger. Begin by opening the Config menu to the Ports, other dialog:



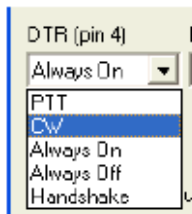




Your dialog will show COM ports 1-8 and LPT ports 1-3, regardless of which ports are actually (or virtually) there. For this example, let's choose COM1 as our CW/PTT port. Put a check in the CW/PTT box and you'll notice that the Set button is no longer greyed. Click on it, and open the dialog for that port.



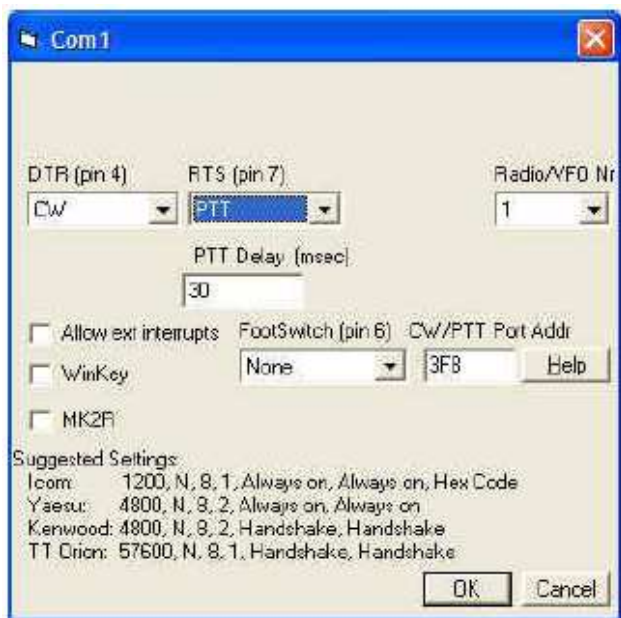
You can configure the DTR pin as either CW or PTT. Click the down arrow and you'll see the list of possibilities:



Highlight the one you want, depending on your interface. Now do the same with the RTS pin:



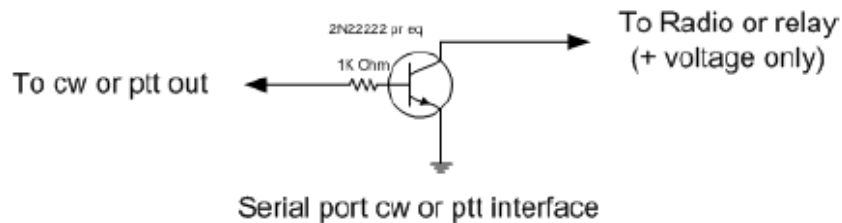
You'll note that the choices are different. This is because commercial interfaces generally do not use RTS for CW, while many default to RTS for PTT. If you are building your own . Just make sure you plug the correct one into the key jack.



Set the Radio/VFO Nr to 1. The PTT Delay setting is to protect the relays in an amplifier by making sure that the T/R relay is closed before the program starts sending CW. The default value of 30 Ms. is fine even if you don't have an amplifier.

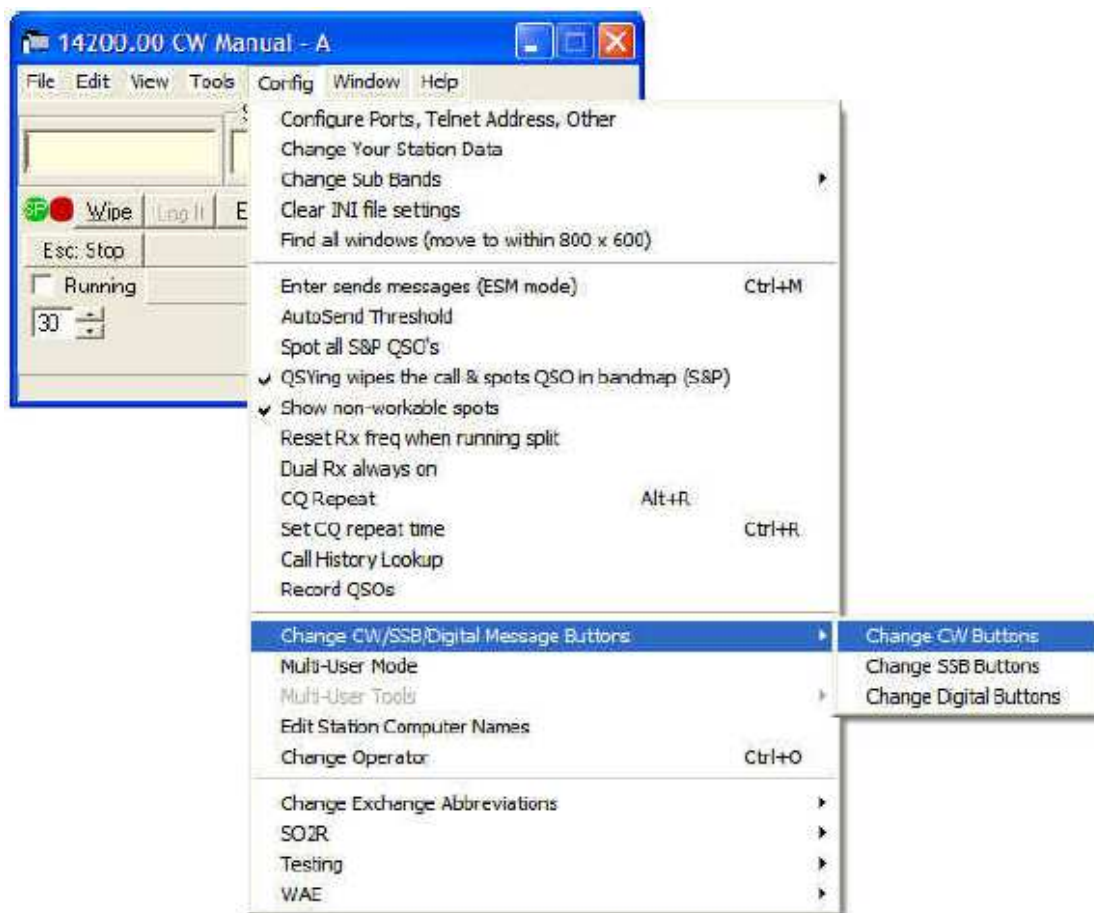
Unless you know that you have your COM1 at a non-standard memory address, assume that N1MM knows best and accept the default address it suggests. If it is a USB virtual port, this setting doesn't matter anyway.

OK, now to interface to the rig. The very simplest interface imaginable will work just fine for either the CW or PTT functions with any modern radio; again, there are many commercial options, but here's the Radio Shack parts solution:

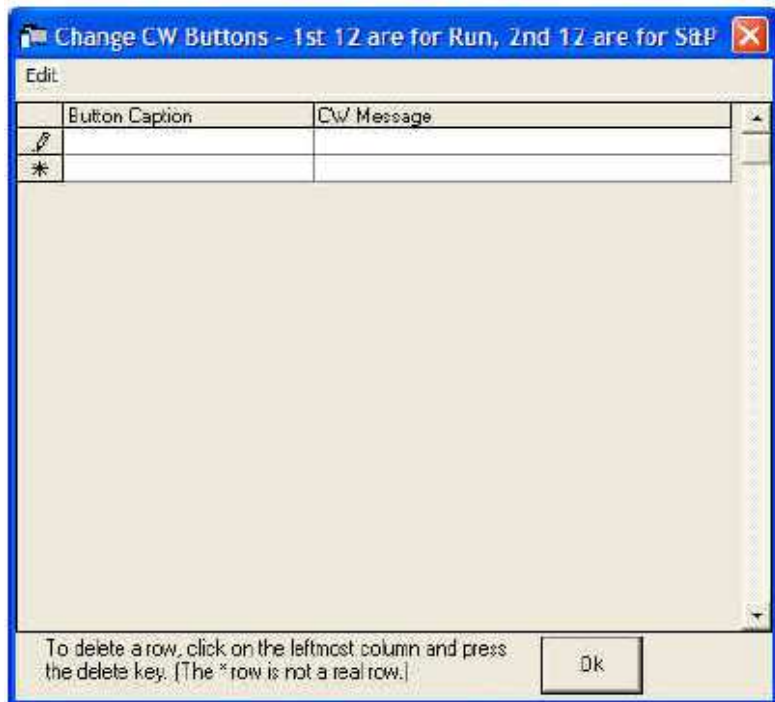


## CW Messages

From the Tools menu, select Change CW/SSB/Digital Message Buttons, and then Change CW Buttons.

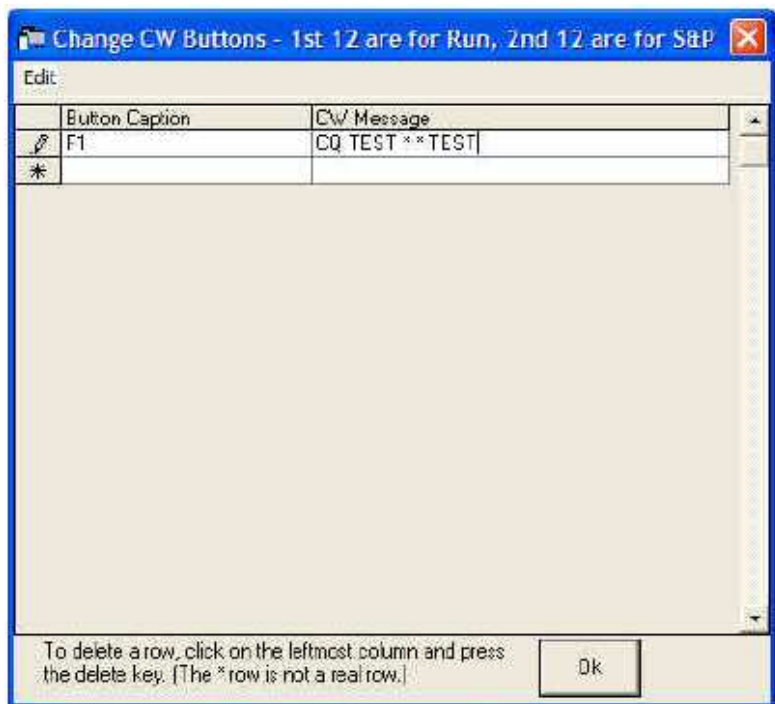


Now this dialog appears:



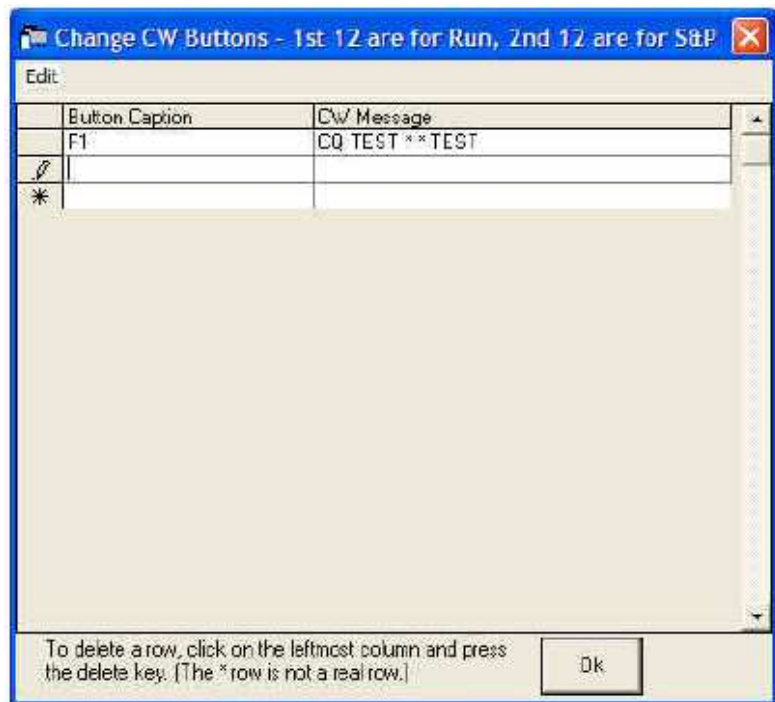
Again, depending on when you downloaded N1MM Logger, your table may have various messages already in it. No matter - just click on Edit and delete rows until you get all the way back to the empty table above.

As you discovered with voice messages, the database table editor is a little quirky, so let's walk through the process for F1. Click in the first box under "Button Caption", next to the cute little drawing of a pencil. Type a caption, for example F1, and hit **Tab**. Instead of jumping to the next box, the program highlights what you just entered, to give you a chance to change it. Hit **Tab** again and the cursor finally moves to the first box under "CW Message". Now type a message that you want to send frequently, such as a CQ, like this:

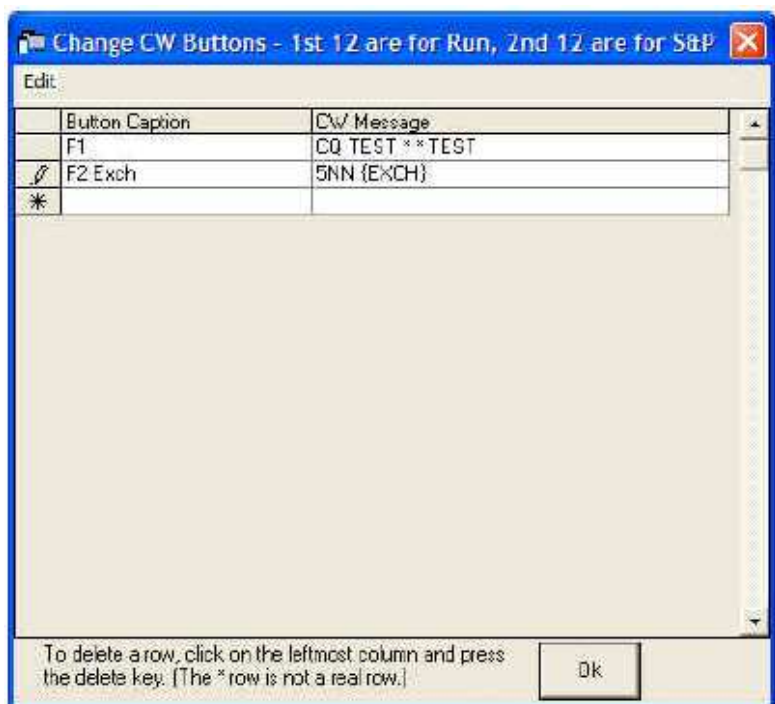


OK, what's that asterisk (\*)? This is the first and one of the most useful Macros. It denotes your callsign. There are two types of macros, text macros and action macros - text macros substitute a string of text for the macro, while action macros perform some program action. Both are often used in combination with regular text in a message, as shown here - when you press the function key or click the on-screen F1 button, the program will send CQ TEST N4ZR N4ZR TEST (substituting my call for the asterisk).

There's a table of the various sorts of Macros in the chapter by that name in the manual, but for now let's go on. Hit [Tab] twice again, and this happens:



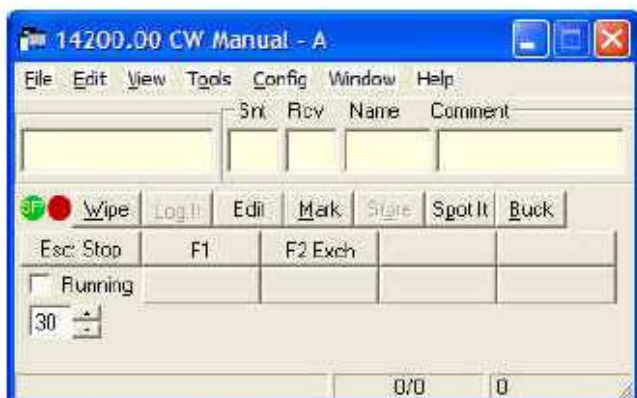
The "pencil" icon has moved to the second row, and your cursor is there. Conventionally, F2 is used for your contest exchange, so let's fill one in:



{EXCH} is a text macro that substitutes whatever you put in the Sent Exchange part of your contest setup. Say, for example, we were setting up for a contest where the exchange is signal report, your name and your state. When I set up the contest, I put PETE WV in the Sent Exchange. Now when I press or click F2, the program will send 5NN PETE WV.

A couple of fine points - you might think of putting the 5NN in your sent exchange - after all, everyone's 599, right? Well, don't, because it will screw up your Cabrillo log. Just resign yourself to putting 5NN (or 599, if you insist) anywhere you want it sent. Also, most macros are in the form of {WORD}, where "word" is the macro. The curly brackets are necessary so that the program knows it's time to substitute something or take some action.

Two messages will do for right now, so OK out, and get back to the Entry window.



From now on, if you want to change the content of any message buttons, there's a shortcut - just right-click in the area of the buttons, and the table we just left will reappear.

OK - you've hooked up your interface, so now you're ready to send some canned CW. As I said above, you can either hit the function key F1, or click on the F1 button. Either way, the program will switch your radio from Receive to Transmit (assuming you have PTT connected - you can also use VOX or break-in, of course) send the message, and then go back to Receive again.

There are two easy ways to adjust the speed of your CW - either click the up and down arrows next to the CW speed box (where it says "30" in the picture above), or press [Page Up] or [Page Down], to increase or decrease speed in 2 word per minute increments. If you hit the wrong key or button, no problem - hit the [Esc] key to stop sending immediately.



If you want to send CW manually, the easiest way is to parallel a keyer with the computer CW at the transceiver's key jack. Alternatively, hit [Ctrl + K], and a CW window appears:

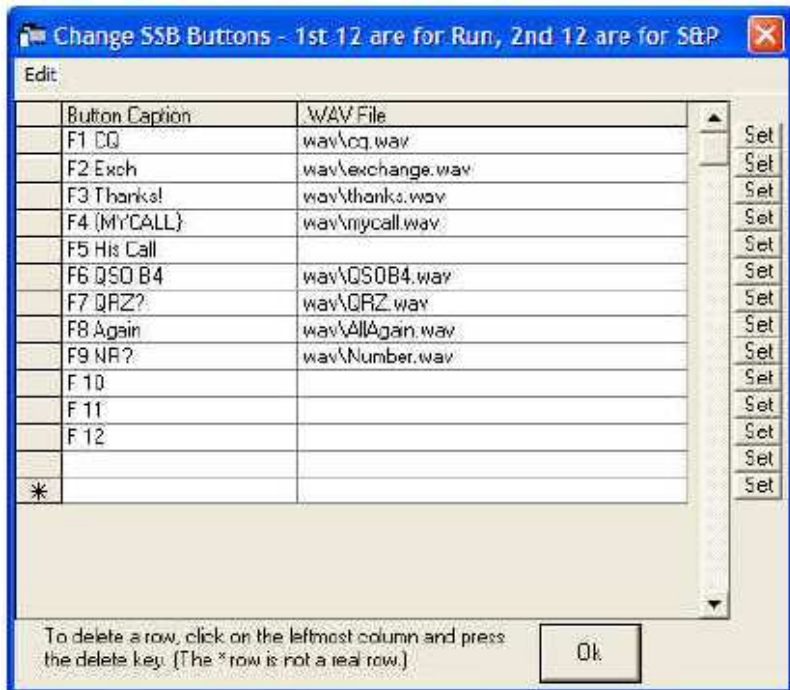
Type the CW you want, and hit [Enter](#) when you're done. As soon as you begin typing, the program begins sending; you can type ahead, and the program will finish sending the CW before the window closes.

## Using Stored Messages in Contests

Now the real fun begins. You have interfaced your radio to the program, so MM knows what band and mode you're using. You can send "canned" voice messages to your radio, as well as CW, and you can control its PTT.

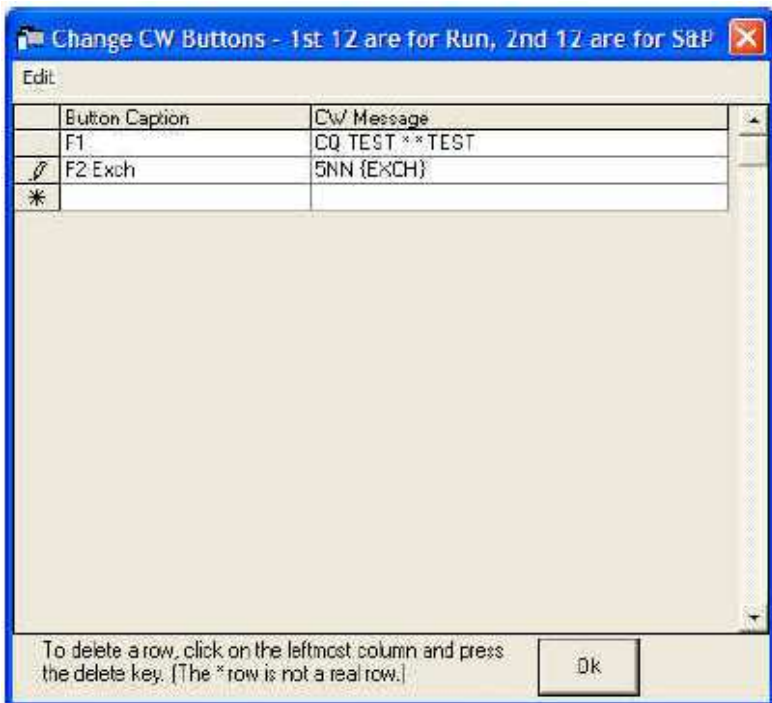
So now it's time to put all these bells and whistles to work. There are several ways to do this, depending on how much you want to automate the process. The details are the same for either phone or CW messages, so let's look at the possibilities.

First, let's reopen the voice message table, by right-clicking on the message buttons while in USB or LSB.



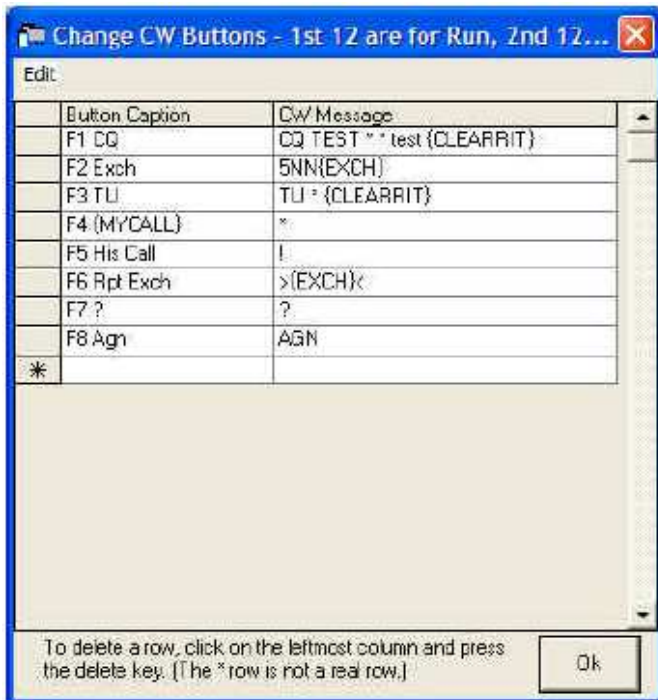
If you don't already have all of these messages, use the Ctrl+Shift+Fx process to record them, and then OK out.

Now open the CW message table.



You need to load CW messages corresponding to the phone list above For Function keys 1-8. Here's what it should look like when you finish.





There are 4 main ways you can use the stored messages, listed here in ascending order of speed and convenience.

**1. One key at a time** - press a function key when you want to send the associated message. Use the Space bar to move your cursor. When you have everything filled in, press **Enter**, and the QSO will be logged. Done this way, a typical Run (CQ) QSO would look like this:

1. F1 (CQ)
2. Station answers - copy call in callsign box
3. Say his callsign (phone) or press F5 to send it (CW)
4. Press F2 to send the exchange (either a stored voice message or CW)
5. Press <Space> to move the cursor to the exchange field
6. Type in the received exchange
7. Press F3 to send your acknowledgment
8. Press <Enter> to log the QSO

**2. Semi-CT Style** - Enter the callsign of the station calling you. Press the **Ins** key to send his call and your exchange (CW), or speak his call and then press **Ins**. Once you have copied his exchange, press F3 (TU) and <Enter> to Log. If you are calling other stations (Search and Pounce, or S&P), you would first press F4 to send your call, and when the station responds follow the sequence as above.

**3. Early N1MM style** - Enter the callsign of the station calling you. Press the **;** key to send his call and your exchange. Copy his exchange and press the **'** key (right next to it on US keyboards). The program sends the F3 (TU) message and logs the QSO. In S&P, you would hit F4 first, then **;**, and then **'**.

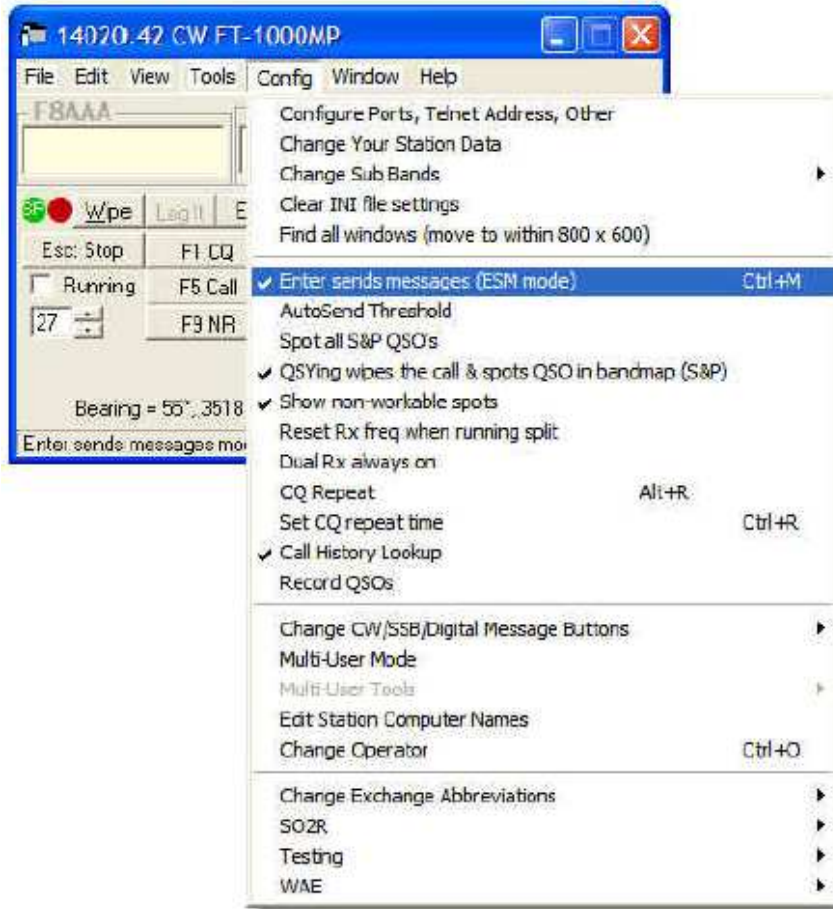
This saves some keystrokes, but there's an easier way. A decade ago, N6TR developed the idea of

making TR Log "modal." By that, he meant that the program would behave differently depending on whether you were in Run or S&P mode. Making this distinction let him massively simplify and shorten the sequence of keystrokes required to complete a QSO.

**4. Enter Sends Messages** - N1MM Logger has now evolved N6TR's invention into what is called Enter Sends Messages, or ESM for short.

### More on ESM (Enter Sends Messages)

The first step is to turn it on. Open the Config menu in the Entry Window, and select ESM



Now close the menu and enter any call in the entry window. We're assuming that you are doing S&P.



What's different? Take a look at the F4 button. The highlight means that if you press **Enter** at this point, the F4 message will be sent (which is what you want - your call). Press **<Enter>**, your call is sent, but the cursor remains in the callsign field, and F4 is still highlighted. If he doesn't answer the first time, just press **<Enter>** again. If he answers you, hit **<Space>**, and look!

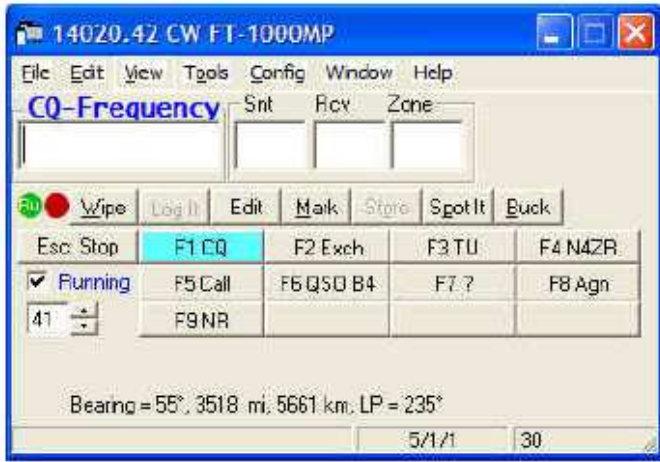


The cursor has moved to the Exchange box, and now F2 is highlighted. That means that the next time you hit **<Enter>**, the program sends F2 and logs the QSO.

So instead of an 8 step process to work an S&P QSO, you have either 3 or 4:

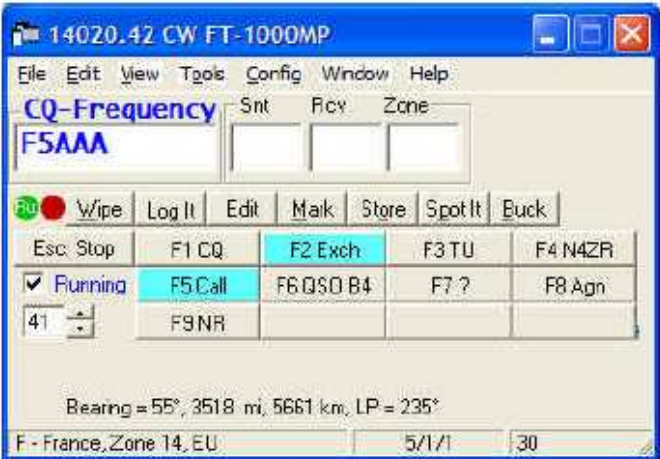
1. Enter the callsign
2. Press **<Enter>**
3. (optional) If he doesn't answer, press **<Enter>** when it's time to call him again; if he does, press **<Space>** and copy his exchange
4. Press **<Enter>** again to send your exchange to him and log the QSO.

But suppose you're Running (Calling CQ)? The first thing to do is tell the program. You do that by checking the box next to the word "Running", either with your mouse or by hitting **<Alt>+U**. Now your Entry Window looks a bit different:



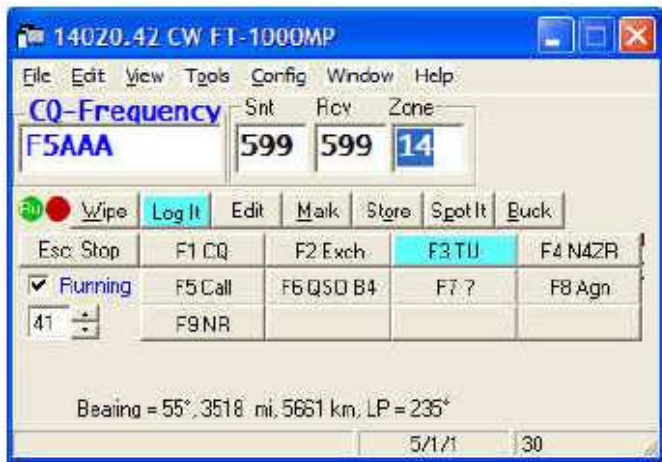
Note the highlight is now on F1, because the first thing in most Run QSOs is a CQ. Press <Enter> and the program will send F1.

Now someone answers. Type in his callsign and the window changes.



You're starting to get the hang of this - the highlights mean that when you hit <Enter> the program will send F5 followed by F2 (on CW - on phone you would speak the callsign and then press <Enter> to send your exchange).

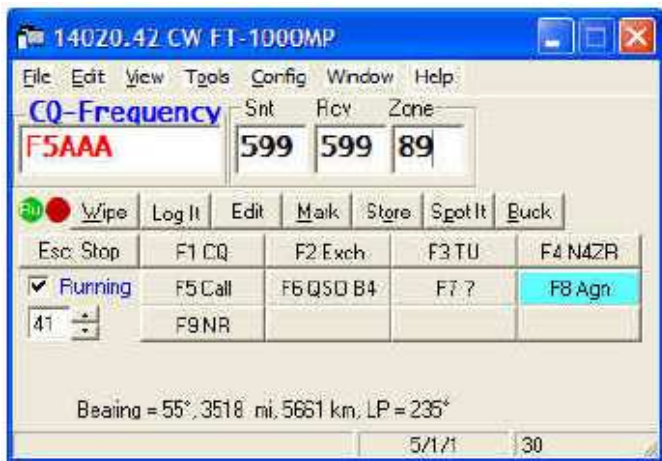
Once you have done that, the window changes again.



Now the highlights tell you that you have copied a legitimate exchange (in this case the program has supplied it from the callsign, and that the next <Enter> will send your F3 message and log the QSO.

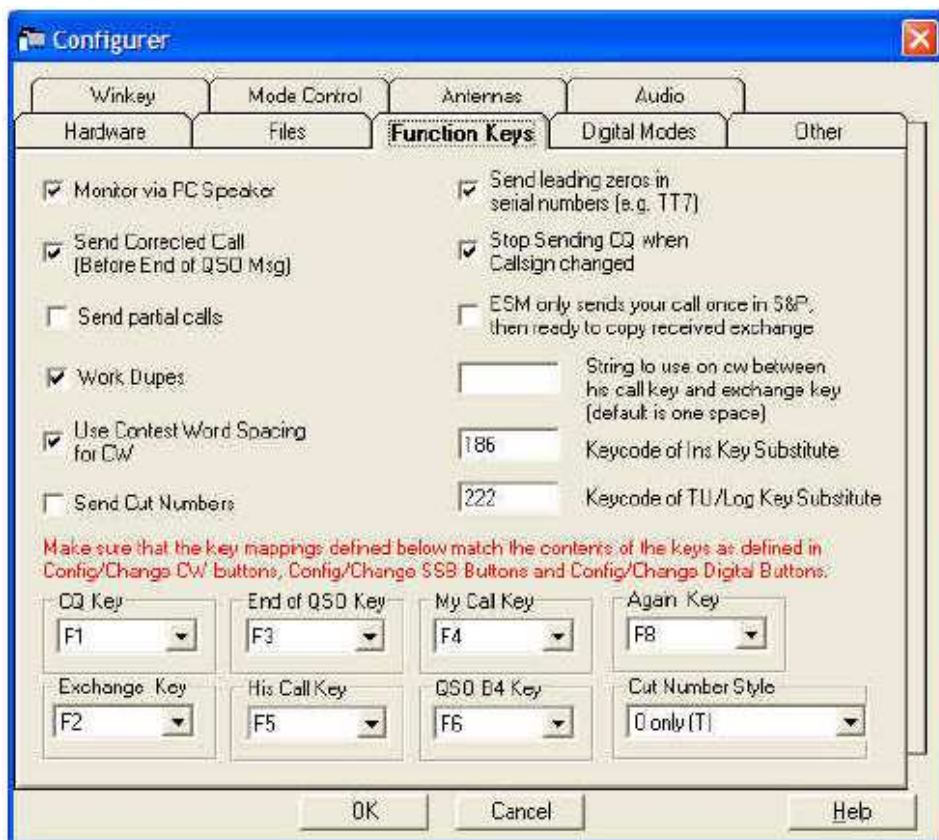
So, type a callsign, hit <Enter> 3 times, and you've logged a QSO. Pretty slick!

Now suppose you're like me and you fat-finger copying the exchange, so that you have nonsense in the Exchange box, like this. In that case, the program reminds you:



If you hit <Enter> with an incorrect exchange, the program will send the F8 message and request a repeat. Alternatively, if you see your mistake and correct it, the screen changes again to show the "F3 and Log It" highlights. Just press <Enter>, the program sends the F3 message, logs the QSO, and you're done.

Once you've used ESM, I predict you'll never go back to the old way again.



Two further refinements, and then this chapter is done. Open the Config menu again, and then open the "Configure Ports, Telnet Address, Other" sub-menu. Click on the Function Keys tab:

In the left-hand column, note that I have checked "Send Corrected Call." This neat feature, in Run mode, keeps track of whether you have changed the callsign in the callsign box. For example, say you only copied "DL6A" at first, and filled in the rest later. Eventually, you copy DL6ABC, and when you press <Enter> to send the F3 (TU message), on CW the program sends "DL6ABC TU ..." On phone, you'll need to supply the correction.

In the right-hand column, the third checkbox is clumsily titled "ESM only sends your call once in S&P, then ready to copy received exchange." In shorthand, we call this the "Big Gun switch." If you nearly always get stations you call the first time, you can save a keystroke by having the cursor advance automatically to the exchange box after the first time you call. If you often need to call again, don't check it. If you have checked it, and need to call a station more than once, you just press **F4**, regardless of where the cursor is.

### ⚠ Caution

Don't change the "key mappings" (below the red type) unless you absolutely know what you're doing - it can make a horrible hash out of ESM.

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### Overview and Installation

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- 

# **N1MM Logger**

**Free Contest Logging Software**



**Idea & overall design: Tom Wagner N1MM**



**Overall programming: Tom Wagner N1MM**

**Programming: Rick Ellison N2AMG**

**Terry Gerdes AB5K**

**Documentation/Help: Thomas Tinge PA1M**

**Testing and proposals: Members Yahoo groups Thanks!!!**

Copyright 1998-2006, Tom Wagner (N1MM), Rick Ellison (N2AMG), Thomas Tinge (PA1M), Terry Gerdes (AB5K)

CRC32 portion of this program Copyright (C) 2001 DI Management Services Pty Ltd.

DLPORTIO is copyright 1996, Scientific Software Tools, Inc.

## **Quick Tour (a must read!)**

or

(and no, Tom wasn't drinking when he wrote this, many years ago. It's been updated to the current state of the program, but the jokes are all his)

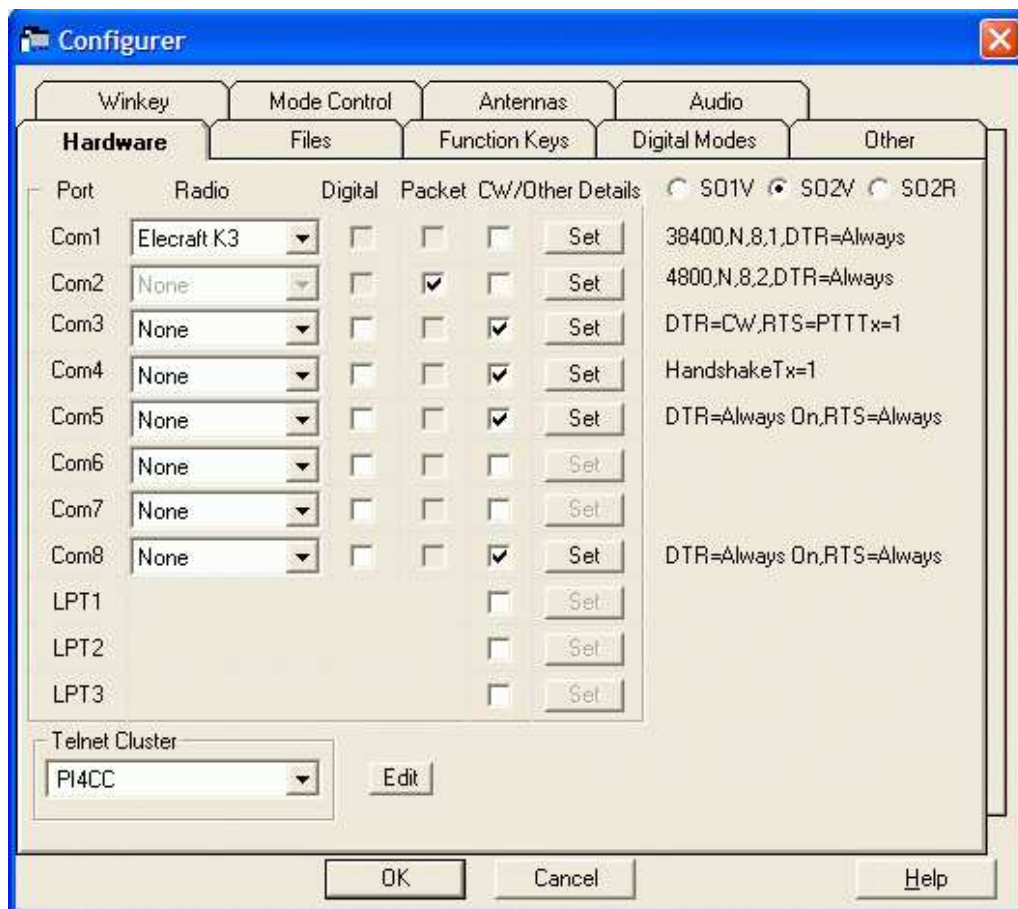
## **Ten Easy Steps to Successful Logging**

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### [Quick Tour \(a must read!\)](#)

- [Step 1. Setup](#)
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## Step 1. Setup



Get your radio, packet and telnet connections set up (Config > Configure Ports, Telnet address, other). You really won't be impressed without the radio connected. The program really shines when you have a spotting connection (packet or Telnet).

## Step 2. Adjust Window Positions

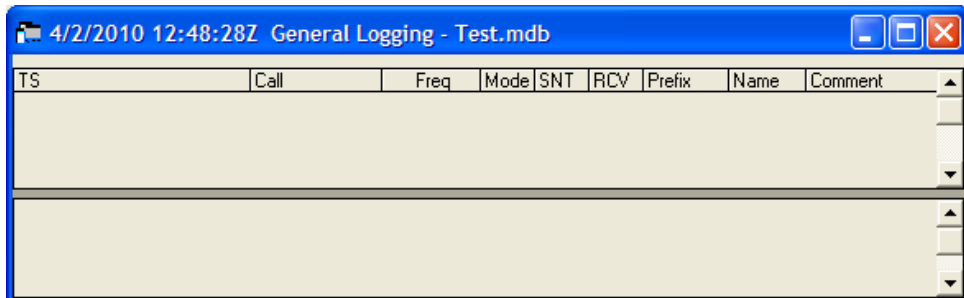
Adjust the window positions as desired by opening every window separately from the 'Window' menu.

## Step 3. Connect the Sound Card and the CW interface

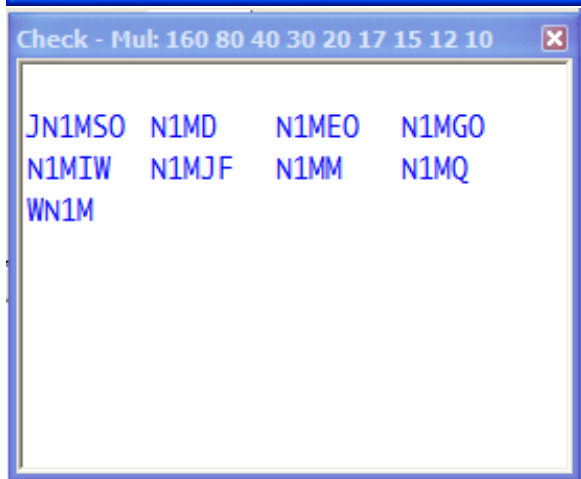
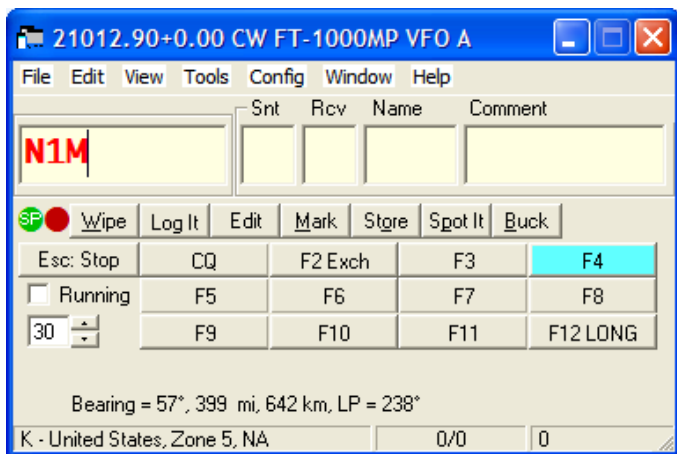
Connect your sound card to the radio so that you can play wave files or record contacts. Connect your CW interface to the parallel, serial or USB port for CW keying. See the [Interfacing section](#) for possibilities.

## Step 4. Entering a Call

OK, now we are ready to log. By default, you should be in the DX (General) log - look at the Log Window caption.



So you want to log a qso? Type in the callsign field of the Entry Window part or all of the call of the station you want to log. Let's say you type 'N1M'. Notice that the Check window shows calls with N1 in it, later N1M.... This will happen with any call or partial call that is 2 or more characters long.



Use the mouse and click on N1MM in the Check window. Notice that N1MM will be transferred to the Entry Window callsign field. Hit Space once. Defaults will be set for fields that can have defaults (in this case the RST fields) and the cursor will be placed in the next field to be filled in — the name field.

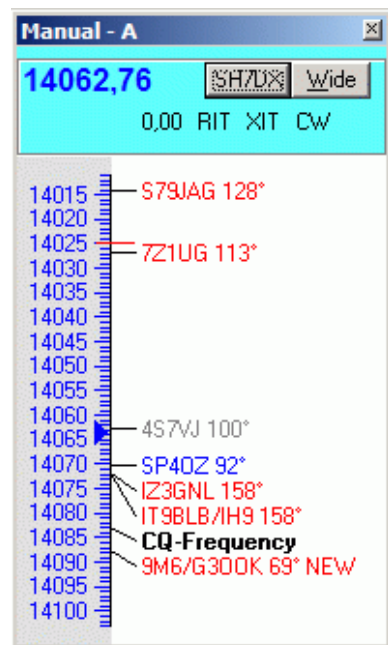
## Step 5. Using the Space Bar to Tab

Ok, that's cool, lets try it another way. Click on the Wipe button to clear the Entry Window fields. Your cursor will be positioned on the callsign field again. This time Type 'N1MM' and press \*\*SPACE\*\*. Notice that the RST fields are again filled automatically and you are positioned to the next field to be filled in. Enter 'Tom' and press SPACE. In this case, you will not tab to the next field, since space is a legitimate character in a name. This is atypical behavior. Most contest fields do not allow any spaces in them, so the space bar will jump from field to field. You'll like this, dammit! Really, I think you will like it - particularly in contests.

## Step 6. Using the Tab Key

So if SPACE tabs, what does Tab do? It tabs as well! But it doesn't tab like space. The Tab character (and Shift+Tab) behave like they do in most programs. They jump from field to field, without trying to be smart. So if you need to change the RST, you'll use the Tab key to get there.

## Step 7. Bandmaps, Spots and Other Cool Stuff



Ok now the really cool part. We need to get some spots onto the bandmaps. If you have set up a radio, and you have selected SO2V in the [Configurer](#), you should have two bandmaps, and they

should be displaying the frequencies of your A and B VFOs at the top. So how do we get spots on there? We need to connect to packet or Telnet, of course. If you have an Internet connection, try Telnet, if a packet connection, well I guess you'll try packet. To pick, click on the appropriate tab in the Packet/Telnet Window. To connect to packet, just type a command in the one-line text box at the top, like "C K1TTT" and press enter. Just do your usual stuff. Then type sh/dx/100 (we want a lot of spots) if it's a weekend, otherwise just type sh/dx/30 (Why the difference? The logger won't show old spots - the default is 60 minutes).

To use Telnet, you must choose a Telnet server. The easiest way to do this is to select the Telnet tab in the Packet/Telnet Window, then choose one from the drop-down list. Type your call in the input line at the top, or click the button with your call on it. Answer any questions the node asks you, and then, if it's a weekend, type sh/dx/100 (we want a lot of spots), otherwise just type sh/dx/30. (Why the difference? The logger won't show old spots - the default is 60 minutes).

## Step 8. Spots are Fun

Spots should start appearing. Don't be afraid, there is no leopard. (Get it, spots?) Enough dumb jokes. Anyway, that's what people always tell me. So, what can we do with the spots? Lots of stuff. First note that each spot (except US and VE spots and spots from your own country) has its beam heading next to it. (Well it has the beam heading from my house, too bad if it isn't the beam heading from your house. If you really want to fix that, go to the station dialog in Config/Change Your Station Data - you'll need to enter your latitude and longitude. If you don't know your latitude and longitude, tough - this isn't geography class, kid.)

Are we ever going to get to the good stuff? Sigh. OK. You have spots in your bandmaps. Try SINGLE clicking on one. Notice how the radio tunes to the frequency of the spot? Also notice that the call appears in the frame around the callsign textbox in the Entry Window. Now press that magic space bar again. The spot jumps into the call textbox! Let's try this another way. Click on the Wipe button (or press Ctrl+W). Now tune the radio to a frequency within 300 Hz of another spot. Notice that the call again appears in the frame, and again the space bar will enter the call into the call textbox.

Ok, try Wiping again (either way). Now double click on a spot. Notice that again, you jump to the frequency of the spot, but this time the call is entered in the callsign field and the default fields are filled in, and you are ready to copy the next empty field (in this case name).

Wipe just one more time. Let's try jumping around the spots without using the mouse. Your cursor should be in the callsign field. If it isn't put it there. Now press Ctrl+Up arrow or Ctrl+Down arrow. You should jump from spot to spot on the same band. Pick one of the spots where you can hear the station. Use the up and down arrow keys (no Ctrl this time) to tune the station in. Each press of the key will go jump 100 Hz on SSB and 20 Hz on CW (configurable). You're smiling, aren't you? There is a lot more. Go look here for more keyboard tricks: [Key Assignments](#) and [Key Assignments Short List](#)

## Step 9. Actually Logging Contacts

We need to shift attention to actually logging contacts. Enter a call in the call textbox, press Space and then type a name, well any name except 'Arthur' in the name textbox. (I'm sorry, I really cannot be responsible if you type Arthur.) You typed Arthur, and nothing happened, didn't you? Now you're angry. Here's a quarter.... Ok. Back on task. You have enough to log a contact now. Press Enter, and notice that the contact will appear in the Log Window.

Now the fun part. Enter the same callsign again and press Space. Looky, looky! The usual stuff happens, but two more things happen as well. The first contact shows up in the lower part of the Log Window, and the name from the first contact appears in the name field. If you were logging a contest, like ARRL DX, the power would be filled in from the first contact. If the first contact was on the same band as this contact, then the word "DUPE" in **BIG RED LETTERS** would appear. I was going to put the word "Dope", but then I thought that no one would want to use the program. Really, you should probably work the dope, I mean dupe, since you might not be in his log. It's actually easier to just work him than explain "You're a dupe, dope!"

Ok, press Enter and log the dupe. You don't agree with me about logging dupes? Then RIGHT-click on the Log Window entry for the dupe, and choose delete contact. No, I'm not going to tell you what to do with the dialog box that pops up. I trust you. I feel like we are already friends.

## Step 10. The Exciting Finale

Now for the exciting finale, if I called it the boring finale, you wouldn't read it now, would you? It is kind of boring, but I really couldn't trust you to get this far, now could I? This step is about all the wonderful things you can change about this program. If I tried to explain them all, you wouldn't read it, so here is just a little bit.

Look at the View menu in the Entry Window. Here you can look at your current log (or any past log that you open) in a lot of different ways, including a really flexible Statistics function. The Tools menu lets you rescore the contest, download various files from the Internet (like master.dta and .cty files, for example), and a lot of other useful things. The Config menu lets you change all the exciting Configuration options that we all know and love by now.

## Step 11. CW and WAV Recordings

"Hey wait," you say, "You said there were 10 easy steps - what's this number 11 business?" There is a very simple answer. I lied. I wanted to write only 10, but I forgot to tell you about the CW and SSB buttons. They are preset at the factory (ok, at my house), to be very useful to only me. Try them anyway. If you have a CW interface, the CW buttons will send pretty damn good CW, even when you are doing other things like moving windows around. You had better appreciate this, because it was very hard to code, and I am very proud of it.

The same buttons are used in SSB to send WAV files. While this seems much harder, it was actually quite easy, but it's ok if you are impressed. I don't care, so long as you are impressed. You don't need to hook up your radio to enjoy this wonderful feature, just hook some speakers to your sound card and listen to my melodious voice call CQ as you click on the CQ button. In a real contest, however, you'll want to hook up the output of the sound card to your microphone input through a Radio Shack audio transformer and resistor setup. The high impedance side (with a 100k

series resistor) goes to the microphone input, the low impedance side goes to the sound card speaker out. Of course you'll need to adjust the levels using the software that comes with your operating system or sound card. See the interface section for more info.

This thing will record QSOs as well, but I'll let you find that in the Manual.

I hope you have enjoyed this quick tour as much as I have enjoyed writing it. And for the second time, no, I was not drinking when I wrote this.

## 1. N1MM Logger Discussion Groups

These groups discuss features, bugs, and ideas for the N1MM Free Contest Logger.

- General group: Messages dealing with general program issues (including CW and SSB contest) will be posted to the [General Group](#)
- Digital group: Messages dealing solely with digital mode issues (including digital contests) will be posted to the [Digital Group](#)

In general messages should not be cross-posted, either by users or by the development team. This is important, both to get the benefit of the subdivision and to encourage users to subscribe to both. Users are asked please to separate digital and general/non-digital issues into individual messages and post them in the right places — on the receiving side, all e-mail software has tools to sort e-mail into folders by origin, so nothing should get lost.

The development team will continue to track both forums and respond on the one that seems appropriate.

So if your interest is primarily digital, for example, you may want to subscribe to the general group in one of the digest formats available. If it is primarily non-digital, then you might do the same thing, in reverse.

### Digital Operators ⊗

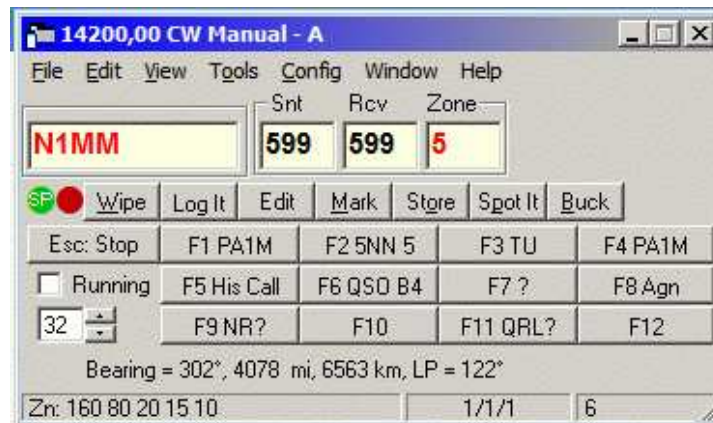
Digital operators are well advised to subscribe to the general Yahoo group and the digital Yahoo group, even if not interested in CW or SSB, because general things about the program that affect them (font changes in various windows, for example), are likely to be discussed there rather than in both lists.

	General program issues (including CW and SSB contests)	Digital program issues (including digital contests)
Post message	N1MMLogger@yahoogroups.com	N1MMLogger-Digital@yahoogroups.com
Subscribe	N1MMLogger-subscribe@yahoogroups.com	N1MMLogger-Digital-subscribe@yahoogroups.com
Unsubscribe	N1MMLogger-unsubscribe@yahoogroups.com	N1MMLogger-Digital-unsubscribe@yahoogroups.com

List owner	N1MMLogger-owner@yahoogroups.com	N1MMLogger-Digital-owner@yahoogroups.com
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Everybody is allowed to read the messages from the support groups. To send messages you have to join the group. Your first post must be approved by the moderator. This prevents spammers from using the list. Over 3000 users have already joined.

## N1MM Logger Features



## General

- All major and many minor HF Contests are supported
  - Including General DX logging, DXpedition, DXSatellite and VHF DX.
- SSB, CW and Digital support
- [Multi-user support](#)
- [Rover support](#) for QSO parties and other contests which support this.
- [VHF and up contesting](#)
  - Transverter support (SHF bands supported up to 10, 24, 47, 76, 142 and 241 GHz).
- Dxpediton mode (Stay in Run or S&P)

## Key features

- [ESM- Enter Send Message Mode](#) - just press the Enter key to make a qso.
- [Uses sound card for DVK](#) but also DVK interface for W9XT and other DVK interfaces.
- Automatic CW generation (LPT and via USB to serial converter).
- [Rotator control](#) (Using N1MM Rotor, LP-Rotor or ARSWIN).
- [Grayline program](#)



- Two VFO support when using one radio, with one VFO per Bandmap.
- [SO2R/SO2V](#) support including \$5 SO2R supporting SO2R with just sound cards.
- [Telnet and packet](#) support - spots from both automatically update the bandmaps.
- [Winkey](#) support (Serial CW keyer by K1EL).
- Automatic beam heading and sunrise/sunset calculations.
- [Contact recording](#) to wav files. Right-click on log entry to play back.
  - Record level indicator for recording QSOs.
- Spot all S&P calls locally (QSYing wipes the call and spots QSO in bandmap).

## Digital support

- All major and most smaller RTTY and Digital [contests](#)
- AFSK and FSK with use of soundcards and [terminal units](#) (DXP-38, PK-232, Kam, etc.)
- Interfaces with [MMTTY](#), [MMVARI](#), and Fldigi
- SO1V, SO2V and SO2R
- Up to 4 parallel RX decoding windows using either MMTTY or a TU, all interacting with the Entry Window
- Multiplier/Dupe color coding of calls on the fly in any RX window
- Ability to find calls in Master.dta file in long strings of text in the RX windows (e.g., in ASDFGHJKLN1MMAS#\$\$%WERT, N1MM would be highlighted)
- Multiple call [Grab window](#) that displays last 7 callsigns received in the RX window.
- Point and click capture of callsigns and exchanges to Entry Window
- Ability to complete entire QSO with mouse and never leave the RX window (With ESM turned on)
- Up to 24 additional macro buttons
- Ability to stack incoming calls and work them off the stack by using a TU/Now macro

## Windows

- [Entry Window](#), [Log](#), ((Packet/Telnet)), [Score Summary](#), [Info](#), [Available Mults and Qs](#) and the [Digital Interfaces](#)
- [Multiplier](#) window.
- [Call check](#) function , including N+1 matching
- Dual graphical [bandmaps](#) click to tune radio to the spot selected. The bandmap can be zoomed in or out depending on number of spots shown.
- [Available Window](#) keeps track of needed spots and mults on each band for easy band-change decisions. \*\*Color-coded buttons indicate on which bands the current contact is needed.
- The program retains the size and position of windows as specified by the user.
- Click on packet spot in Packet/Telnet window, Bandmap or Available window to tune to that frequency/mode.

## Advanced features

- [SO2R](#) including Dueling CQ and selectable advanced SO2R modes
- [Serial number server](#) for SO2R and multi-user modes - coordinates serial numbers between radios.
- S&P callsign stacking.
- Multi user support with automatic resync on reconnect.
- Rotator control
- Antenna mapping.

## Radio support

- [Radio interface to support radios](#) from Kenwood, many Yaesu (for example: FT-1000, FT-1000MP, FT-990, FT-920 and more), Icom, TenTec Orion and Elecraft.

## Hardware Support

- LPT port functionality to control antenna switches, radio selection, and PTT (95/98/ME/NT/2000/XP).
- Support for microHAM and OTRSP SO2R protocols.

## Import/Export features

- Cabrillo export support.
- ADIF import/export support.
- Transaction log, which keeps all QSOs to facilitate recovery of log.
- [Statistical reports](#).

Many more..

## PC Requirements

### Minimum Hardware Requirements

The logging program has been designed to work within the minimum configuration required by various versions of Windows - each of which differs with regard to the minimum processor model, CPU speed and RAM. You may encounter performance problems when running minimum configurations and operating CW or RTTY modes, when receiving a high volume of cluster spots, or when your PC is simultaneously running several other applications. It has not been and won't be a priority to make N1MM Logger run on clunkers.

The recommended minimum graphical resolution is 1024 by 768, with many hams running higher resolutions and dual screens. Although N1MM Logger will operate at 800 by 600, you will be unable to fit all of the windows on the screen.

Radio control, CW keying and PTT can be done through a free serial or parallel port, or through Winkey (highly recommended). For PTT with MMTTY an extra serial port is needed.

USB-to-**serial** converters and USB interface devices are supported through virtual serial ports provided by their associated driver software. SO2R "boxes" may be controlled through a hardware LPT port under 32-bit operating systems; alternatively, the MicroHam USB SO2R Control Protocol and the K1XM Open Two Radio Support Protocol are both supported, for use with devices that accommodate them. USB-to-**LPT** converters cannot be used for either SO2R control or CW/PTT functions.

For more information see the [Interfacing](#) section.

## Supported Operating Systems

- Windows NT
- Windows 2000
- Windows XP
- Windows Vista 32/64
- Windows 7 32/64

Linux and other Operating Systems will not be supported.

## Installing and Upgrading N1MM Logger

### In this Section...

---

#### [Installing and Upgrading N1MM Logger](#)

- [1. First-Time Installation Instructions](#)
  - [2. Using the Program the First Time](#)
  - [3. Subsequent Install Instructions / Upgrading to a New Program Version](#)
  - [4. Uninstalling the Program](#)
- 

### 1. First-Time Installation Instructions

 **Not your first time?**



These instructions apply both for first-time users and for users who are jumping from one base version to another. That is, if you previously installed Version 9.x.x (or earlier) and want now to update to Version 10.x.x, then you need to go through this process with the Version 10 Base Install **before** you install the latest and greatest. In particular, this is needed to update the files used for recording and playback of .wav files.

### Installing under Vista or Windows 7


By design, version 10's default installation location is C:\N1MM Logger. If you are installing the program under Windows Vista or Windows 7, and wish to place it in the Program Files directory, you will need to take some special steps. This is because these operating systems do not approve of writing to the Program Files directory, which is how N1MM Logger works. You have three choices:

- Run the Base Install, the N1MM Logger program itself and any subsequent upgrades the first time as Administrator. If you have not set up individual user accounts on your computer (if you do not have to log in as a particular user) then both operating systems default to running as Administrator. If you have individual user accounts, then you will need to right-click on the program icon, and select "Run as Administrator." After you have done this once for each upgrade, it is not required in normal operation.
- Log in to Windows as Administrator whenever you install or run N1MM Logger. If your PC has USER or OWNER Icons upon startup and NO ADMINISTRATOR Icon, you need to enable the ADMINISTRATOR account in order to run the N1MM Logger program.
  - Open the command prompt with Administrative privileges by opening the Start Menu, and typing cmd in the search box, and then press Ctrl+Shift+Enter or click the Start orb, All Programs, Accessories, right-click Command Prompt and select Run as administrator. Type the following in the command prompt and press Enter: net user administrator /active:yes . Restart your computer and login as Administrator. Note: You might want to set a password for the administrator's account for at least a little protection.
- Disable the operating system feature that normally prevents writing to the program folder. This is called User Access Control (UAC), and disabling it is not recommended.

### Installing on 64-bit systems


If you are installing on a 64-bit computer, **and** you are planning to use the machine's LPT port for CW or control functions, then you will need to replace the standard DLPortIO driver with a 64-bit equivalent. The following explanation was provided by W4TV, and is reproduced here intact except for very minor editorial changes. Thanks, Joe!

#### Making It Work ...

- 1) Download the binary distribution of InpOut32 [here](#): 
- 2) DO NOT allow the N1MM base installer to install DIPortIO (it will by default, unless you uncheck the box (see below). If DIPortIO has been installed, go into both Windows/System32 and Windows/SysWOW64 and delete any copy of DIPortIO.dll found there.
- 3) DO NOT use "InstallDriver.exe" from the "InpOutBinaries\_1500.zip" package.
- 4) Extract **only** Win32\inpout32.dll from the distribution package and copy it to your computer's Windows\SysWOW64 directory. Rename it as DIPortIO.dll
- 5) Reboot after copying the DLL to Windows\SysWOW64 (may not be necessary)

Download the Base Install [here](#). Run the Base Installer

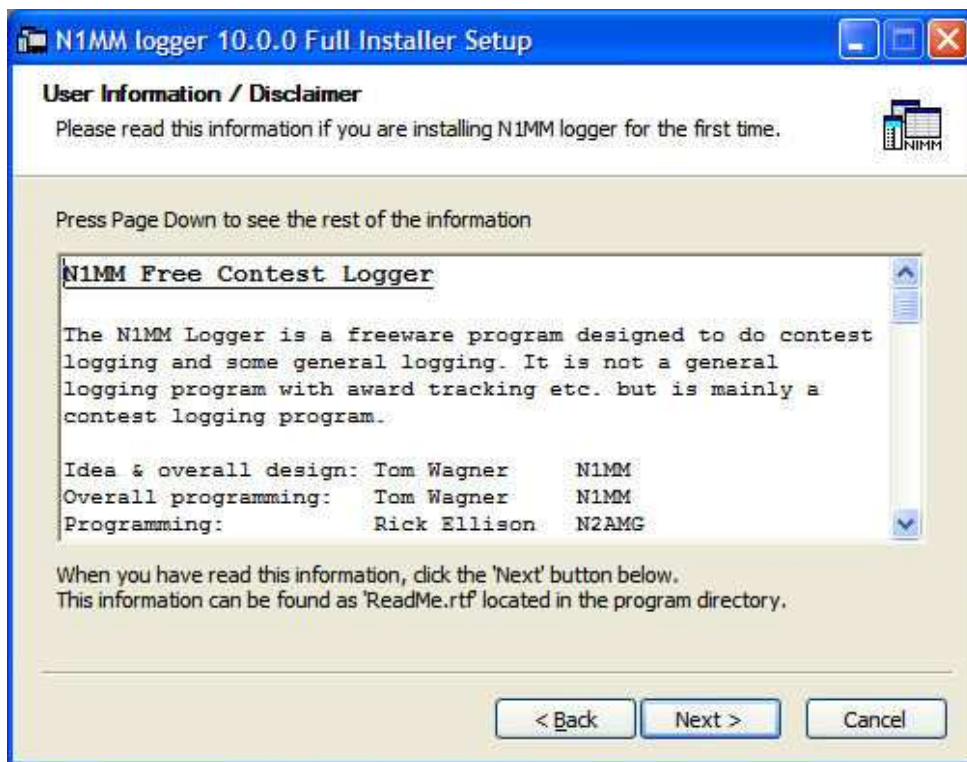


 Full = Base

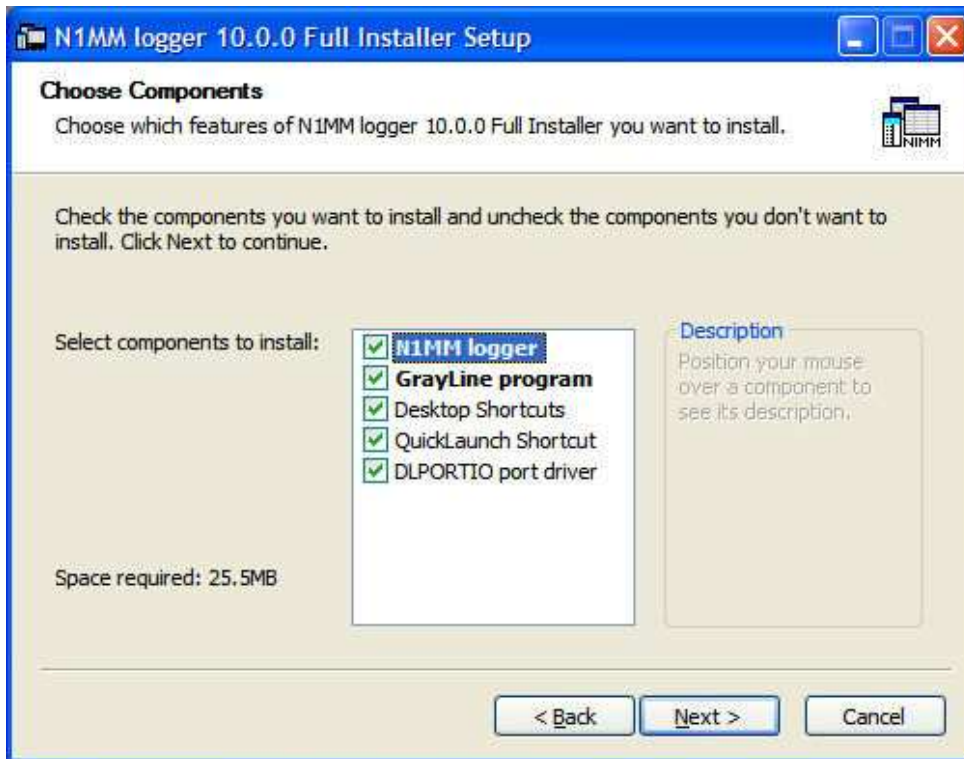


Wherever you see the terms Base Install or Base Installer and Full Install or Full Installer anywhere in this manual, they are referring to the same things. With Version 10.0.0, for the first time the Base Install will not run by itself, but rather must be immediately updated to a later incremental version (such as 10.2.5, for example). For that reason some felt it was no longer correct to call it a "Full" Install. That led to the term being changed in some places but not yet in others. Please bear with us!

Next, you will be asked to agree to a straightforward, freeware license.

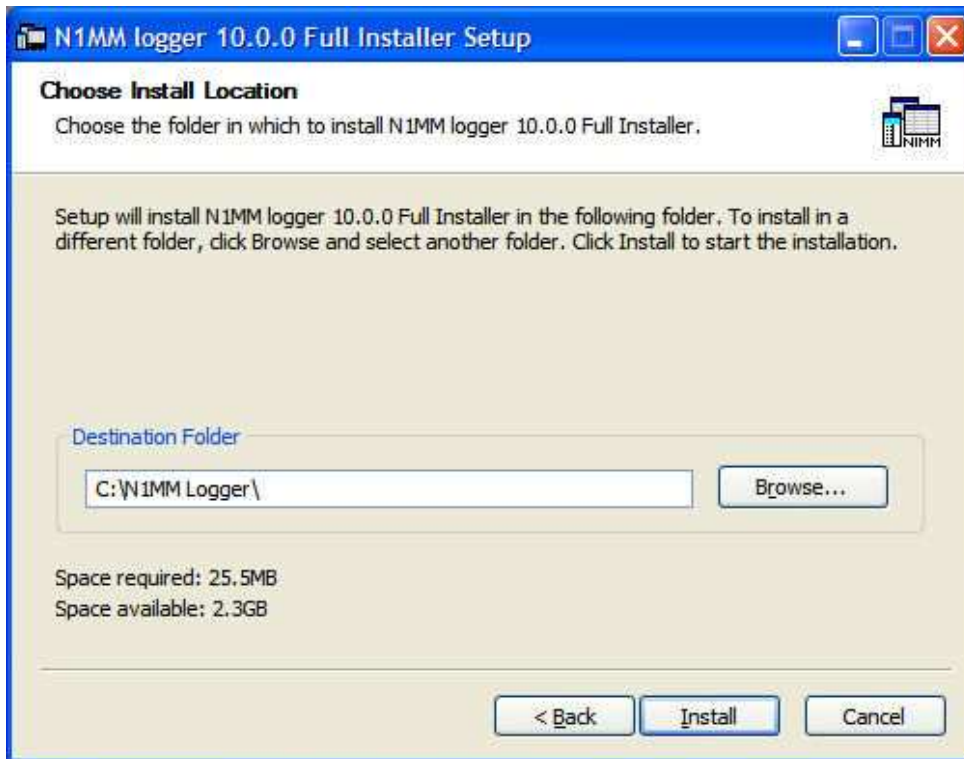


Next, you will be given a choice of files to install, which looks like this.



Unless you have a good reason not to, just go ahead and leave everything checked. If you plan to use parallel port(s) for CW, PTT, or SO2R control, and you are running a 32-bit operating system, be sure to install the DLPORTIO port driver. If you are running a 64-bit computer, refer back to the note above and **don't** install DLPORTIO

In the next screen, note that the default location for installation of the program is C:\N1MM Logger. This is new, and was done in order to work around operating system restrictions that caused problems for users with Vista or Windows 7. If you have previously installed N1MM Logger, for instance in C:\Program Files, the default location will not be used; instead, the last previous program directory will appear here.



When you click Install, the Full Installer will

- Install all needed files on your computer to run N1MM logger
- Update your system files where needed

You will find that certain parts of the Full Installer installation routine take quite a long time. The installation program has **not** failed, so just let it run to completion. Subsequent updates are orders of magnitude faster.



### **! Do Not Overwrite Newer System Files**

When running the Full Installer your computer may report that certain system files are already installed on your system and are newer than the ones you are trying to install. It asks if you want to replace a newer, existing file with an older file in the Full Installer. Select 'No'. You do not want to overwrite newer system files.



After the installation process is complete, if you have opted to install DLPORIO, you will be invited to install it as a separate process. just follow the on-screen instructions.

The first time you try to run the Full Install version of the program, you will be prompted to update to the latest version.

#### **Where is the program installed?**

For version 9 and before, the default installation location was in C:\Program Files\N1MM Logger. Because this caused inconvenience for users of Vista and Windows 7, beginning with Version 10, the default location is C:\N1MM Logger.

If you are making a first-time installation of the Version 10 Base Install, the installer will automatically choose this location. Thereafter, the update installer should point to the same place. However, some experienced users have chosen to continue to install to Program Files, and a few of them have reported that the update installer insists on pointing to C:\ regardless. As you can imagine, putting the Base Install in one place and updates in another can cause all sorts of problems. It's worth a double-check.



Click the button at the bottom of the window to go to the web page, and download the latest version you find there. Run the version installer, and follow its simple steps to get fully up to date. Each update will take literally 2 minutes to install.

If you are installing N1MM Logger on a computer that does not have internet access, you will need to download the latest version from a computer that has internet access. This procedure is described in the section "Subsequent Install Instructions / Upgrading to a New Program Version". After downloading the latest version, copy and install it on the non-internet computer.

## 2. Using the Program the First Time


- The first thing to do after starting the program is setting up the station information
  - This can be done in the 'Change Your Station data' dialog
  - The first time the program starts automatically with this dialog
  - This dialog can also be found under >Config >Change Your Station Data
- After that configure the radio and packet and/or telnet connection
  - Choose >Config >Configure ports, Telnet Address, Other
- The packet buttons and main window function buttons can be changed
  - See the Config menu
- Alt+H is help
- Space is the preferred Tab character (see Help)
- Read the [Quick Start Guide](#)
- Read the Manual, particularly the following key sections.
  - [Quick Tour](#)
  - [Setting up the Program](#)
  - [Entry Window](#)
  - [Key Assignments](#)
  - [Basic Functions](#)
  - [Key Assignments Short List](#)
    - This one should be printed and placed near the radio

## 3. Subsequent Install Instructions / Upgrading to a New Program Version

An e-mail will be send out periodically to announce new versions (updates) of the program to the Yahoo reflector members.

### File Naming Conventions

The Base Install for each year is named: N1MM-Fullinstaller.exe. The update files will be named: N1MM-newexe with a suffix that denotes the date. The annual release of the Full Installer will be given this name and replace the previous one.

- Download **only** the N1MM-newexeVx.x.xxx upgrade file (Example: N1MM-newexeV9.12.0.exe is the first update of December 2009). Use the link contained in the announcement e-mail to the Yahoo group, or open [this web page](#)  and select the update you want
  - This file contains the latest .exes and other necessary files
  - Run this file and let it copy all the program files into the N1MM Logger program directory, replacing any old versions.
  - When a new *cty.dat* file is added to the *program directory*, import it by selecting >Tools >Import country list from downloaded file
  - The version number Vx.x.x is also shown in the description of the file

- Only the most recent update file is necessary, not all updates in between...

### Update philosophy

Many of us are used to always being "one version behind" in our software use, in order to avoid bugs that may have been introduced in the latest version. But because N1MM Logger is updated so frequently (typically, at least 50 updates per year), the opposite is true. You are always encouraged to use the latest version — in general, bug reports and feature requests should always be made after checking to make sure the latest version does not already include the bug fix or feature that you want.

## 4. Uninstalling the Program

If you are thinking of uninstalling and reinstalling the program in order to fix a problem you have encountered, you should know that this is rarely the solution. Try looking at the [Troubleshooting](#) section before you do that.

However ... if you want to uninstall N1MM Logger entirely, including any registry entries, the best way is to navigate to the program directory and find the program cleverly titled **UninstallN1MM.exe**. Run the uninstaller and follow any prompts you see.

## Setting up the Program

### In this Section...

---

#### Setting up the Program

1. [Setup Station Information](#)
  2. [Setup Radio Control](#)
  3. [Setup Packet/Telnet](#)
  4. [Setup PTT-ing the Rig/Sending CW](#)
  5. [Setup WAV Files \(SSB\)](#)
  6. [Sending Messages in CW](#)
  7. [Setup 'Sent Exchange'](#)
  8. [Setup the Exchanges](#)
  9. [Setup Function Keys for \*Enter Sends Message\* \(ESM\) mode](#)
  10. [Command Line Parameters](#)
- 

When you want to use the program you need to know how to connect the radio(s), packet or Telnet etc. to the program. Also the Exchanges need to be set up for the contest. Below some information how this could be done. In addition to reading this chapter also read [Basic Functions](#), the [Key Assignments](#) and the [Quick Tour](#) for basic program information.

### The Configurer

You will read the term **The Configurer** throughout this document. *What is this beast?* The Configurer is the uber-configuration dialog reached by selecting >Config >Configure Ports, Telnet Address, Other

## 1. Setup Station Information

The Configurer information in **>Change Your Station Data** is self-explanatory. Make sure that you enter your call as the station call sign. Many of the fields in this dialog are used in creating contest entries, so do update them with their correct values. Like calculating beam headings, distances, sending a bug report via e-mail etc.

## 2. Setup Radio Control

The program really shines when a radio is connected so that is what we have to do.

- Check if the radio is supported by the program in the **Supported Radios** chapter.
- So it is supported
  - It is connected right (cable from radio to a serial port from the computer)
    - Sometimes a serial interface is needed, see the manual of the radio and the **Interfacing** chapter
  - Go to the Configurer and fill in the information under the **>Hardware** tab
  - Select the serial port the radio is connected to and choose the radio behind it
  - Select the 'Set' button and choose the right setting. (baudrate, databits etc)
    - These can be found in the manual of the radio
    - There is also some information in the **Supported Radios** chapter
  - Press OK , select VFO A and the frequency from the radio should appear in bandmap A

## 3. Setup Packet/Telnet

We need spots to fill the bandmap so the next thing to do is connect to a DX cluster. This can be done under Configurer >Hardware for telnet and packet. For Telnet an Internet connection is required. The Telnet cluster can also be selected under Configurer >Hardware.

- Go to Configurer **>Hardware**
- Select at the bottom a Telnet Cluster. AB5K is the default cluster and should work fine
- Close the Configurer, and open >Window >Packet/Telnet >Telnet in the Packet Window
  - Cluster commands can be given here, the information from the cluster is shown in the window
  - See the **Packet window** for commands, info etc
  - Connecting to a Telnet cluster is usually done by sending your callsign
  - When everything works fine, spots should appear in the bandmap

The hardware tab in the configurer is also the place to select the right parameters for setting up a packet TNC.

- The TNC should be connected to a serial port from the computer
  - The TNC could be checked with Hyperterminal to see if it responds fine
- Go to Configurer **>Hardware**
- Select the serial port the TNC is connected to and select the < Packet > box
- Press the < Set > button and choose the right settings (baudrate, databits etc) for this serial port
- Close the Configurer, and open >Window >Packet/Telnet >Telnet in the Packet Window
  - Cluster and TNC commands can be given here, the information from TNC and cluster is shown in the window
  - See the **Packet window** for commands, info, how to connect a cluster using a TNC with TAPR/TF or WA8DED software etc
  - When everything works fine, spots should appear in the bandmap

#### 4. Setup PTT-ing the Rig/Sending CW

Sending CW and PTT-ing the radio can be done three different ways.

- Using the Parallel port
  - Add an interface to the parallel port, this can be a simple one transistor circuit (for each pin one) but also a bought interface. More on this in the **Interfacing** chapter. Pin 16 is used for PTT and pin 17 for CW. These are fixed values and cannot be changed
  - Go to Configurer **>Hardware**
    - Select behind the LPT port to use the "CW/Other" selection box.
    - Select the 'Set' button and choose the right settings (CW-speed, PTT-delay and the CW/Other port address).
    - The CW/Other Port Address should be the same as used in you Windows configuration.
    - Select the correct Radio/VFO setting (1, 2 or Both)
    - Press < OK >
  - PTT and CW should work now.
- Using the Serial port
  - Add an interface to the serial port, this can be a simple one transistor circuit (for each pin one) but also a bought interface . More on this in the interfacing chapter. Mostly the RTS is used for PTT and DTR for CW
  - Go to the Configurer and select the hardware tab.
    - Select behind the serial port to use the "CW/Other" selection box.
    - Select the 'Set' button and choose the right settings (CW-speed, PTT-delay and the CW/Other port address).
    - Select the pin to use to PTT and CW.
    - The CW/Other Port Address should be the same as used in you Windows configuration.

- Select the correct Radio/VFO setting (1, 2 or Both)
- When Winkey is used also select this setting. The baudrate etc. for Winkey is fixed and set by the program.
- Press < OK >
- PTT and CW should work now
- Using a USB port
  - PTT via a USB port can not be done direct, a USB-to-serial converter is needed
  - Not every Serial-to-USB can change the status of the RTS (and DTR) pins . So check before you buy
  - When this device is setup in Windows select the serial port used by it
  - Follow the steps for a serial port to set up for PTT-ing

## 5. Setup WAV Files (SSB)

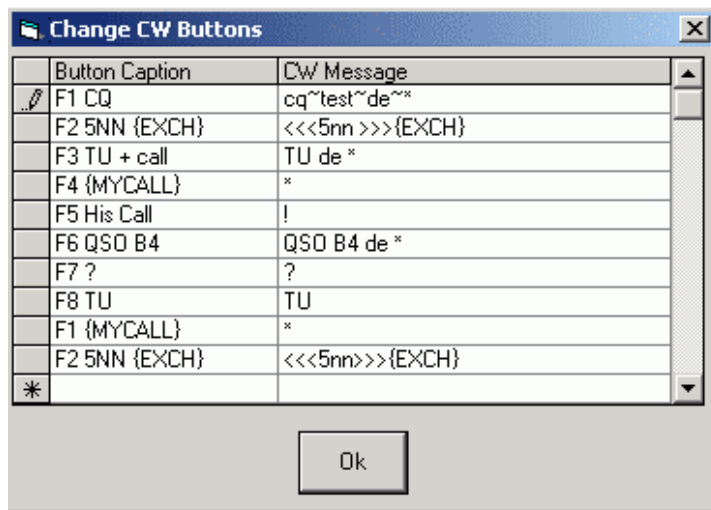
The sound (wav) files which have to be made have some standard texts, some are contest dependent. There are two kind of sound files used by the program.

- Files used by the function keys
- Sound files used to send the callsign or numbers (in number contests)
  - by sending single sound files for each letter and number
  - Or by sending the full callsign or numbers when found in the wav directory

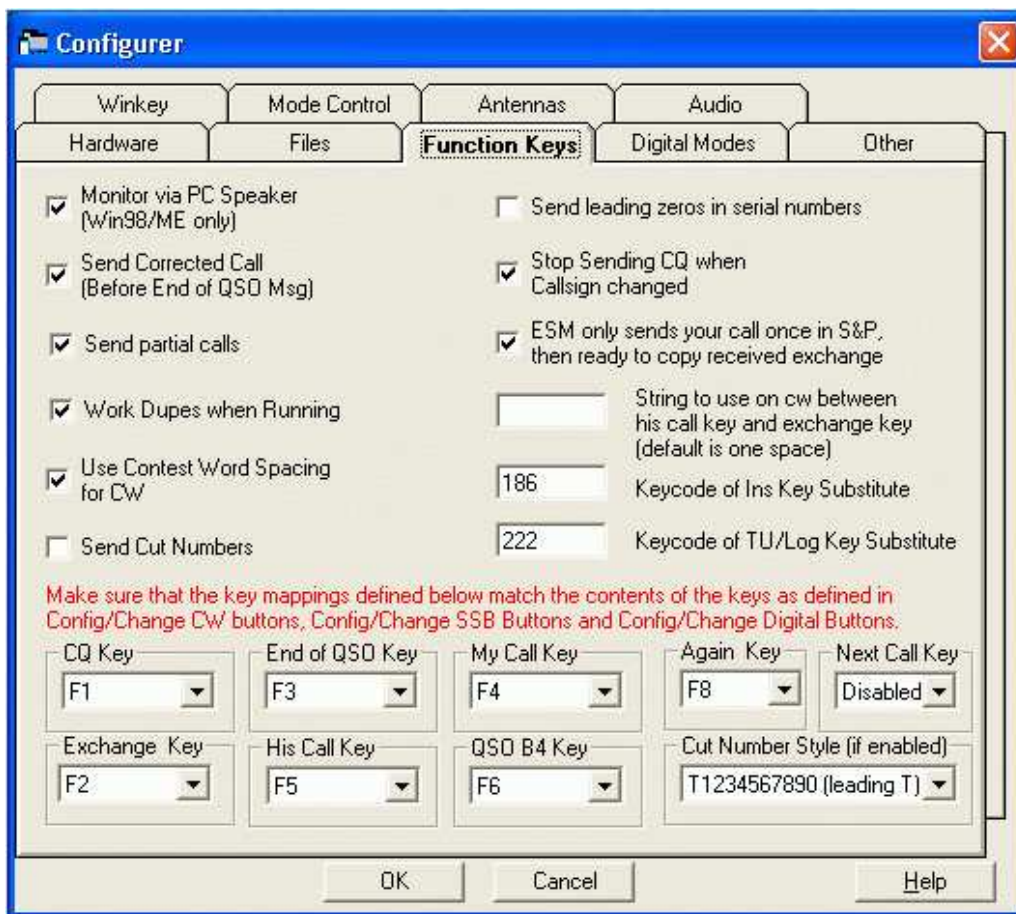
## 6. Sending Messages in CW

You need to do two things:

- Set the message properly in >Config >Change Packet/CW/SSB/Digital Message Buttons >Change CW Buttons. The first 12 rows are the run messages for F1 - F12. The second 12 rows are the S&P messages for F1 - F12. If you have less than 9 messages, the S&P messages will just repeat the Run messages



- Make sure that the Configurer >Function Keys has each button set to its correct meaning. For example, if F1 is your CQ key as set in the messages (#1 above), then make sure that the "CQ Key" box is set to F1



To send the serial number in any message, put the character # as part of the CW message in CW buttons above. There is a list of other characters which can be used to substitute. The macros and some examples can be found on the [Macros page](#)

## 7. Setup 'Sent Exchange'

What you put in the >File >Open Log in Database >Contest tab "Sent Exchange" field of the contest setup is what goes in the cabrillo log. It is also what will be sent if you use the {EXCH} macro (don't). For the sent exchange, simply program F2 by typing in exactly what you want sent (For example, 5NN 4 or whatever your zone is for CQWW CW) on the F-key setup window.

## 8. Setup the Exchanges

By Jamie, WW3S

- I'm assuming you want to set up for a RTTY contest.
- Go to the Configurer >Function Keys
  - If you plan to use Enter Sends Message swap F5 and F3
    - 'End of Qso Key' to F5
    - 'His call' to F3
  - Now go to >Config >Change Packet/CW/SSB/Digital Message Buttons >Change CW Buttons
    - The buttons/messages are displayed in order starting with F1
    - Change the F4 key to read &WW3S in the one column and WW3S in the other. The & just tells the button what caption to display
  - Now change the F2 to read 599-599 and your CQ zone.
  - Mine reads 599-599 PA PA 05 05 BK.

Starting to make sense? Whatever you change here is what will be sent.

- If you use *Enter Sends Message* (ESM) the corresponding F-key **also** needs to be set in Configurer >Function Keys tab
  - These keys need to match or ESM will not work!
- Set your F3 key for however you want your "End of qso" to be sent
  - Mine reads TU QRZ DE WW3S WW3S TEST
- F1 reads CQ CQWW TEST DE WW3S WW3S TEST.

These all get changed in change digital buttons. BTW, the same logic applies in CW contests

## 9. Setup Function Keys for *Enter Sends Message* (ESM) mode

Below is an example of a possible ESM setup from Jose, CT1AOZ.

Setup the Function Keys in Configurer >Function Keys tab

Default Function Keys				
F1	CQ key	F5	His Call Key	F9
F2	Exchange key	F6	QSO B4 Key	F10



F3	End of QSO Key	F7		F11
F4	My Call Key	F8	Again Key	F12

Enable all check box options except Monitor via PC speaker (but you may if you want to. NB only when using Windows 95, 98 or ME).

Now set the macros in >Config >Change Packet/CW/SSB/Digital Message Buttons >Change CW Buttons. The same settings are used for the SSB and the RTTY buttons.

	Running mode		S&P mode
Button Caption	CW message / .WAV file /Text to Send	Button Caption	CW message / .WAV file /Text to Send
F1 CQ	CQ CQ **	F1 QSY	PSE QSY QRL *
F2 Exch	<<< ENN >>>#	F2 Exch	<<< ENN >>>#
F3 TU	TU *	F3	TU *
F4 My	*	F4	My *
F5 His	!	F5 His	!
F6 QSOB4	! QSOB4 TU * QRZ	F6 QSOB4	! QSOB4 DE *
F7 His/TU	! TU	F7 Corr	! TU
F8 Again	! AGN PSE *	F8 Again	! AGN PSE *
F9		F9	
F10		F10	
F11		F11	
F12		F12	

Jose writes: Try this and I'm sure you will be happy with the performance of the program and the Enter Sends Message mode...

## 10. Command Line Parameters

The program has a command line parameter to select the used 'N1MM logger.ini' file.  
Example: "C:\Program Files\N1MM Logger\N1MM Logger.exe" SO2R.ini

## Basic Functions

### In this Section...

---

[Basic Functions](#)

1. Help
  2. Going Through the Entry Window Fields
  3. Resizing Windows
  4. Select New Contest
  5. Delete Contest
  6. Select Country file
  7. Select Master.dta file
  8. Changing Frequency
  9. Changing Band
  10. Changing Mode
  11. Changing Operator
  12. Setting CW Speed
  13. Split Operation
    - 13.1. Setting Spit Frequencies Manually
    - 13.2. Setting Split Frequencies Automatically by Packet Spots
    - 13.3. Resetting to non-split mode
    - 13.4. Split Operation Key Assignments
  14. Running Mode
  15. Search and Pounce Mode (S&P)
    - 15.1. How to check if you are in Running mode or in S&P mode?
  16. CQ Key
  17. Set up the Sent exchange message(s)
  18. Function Key Conventions
  19. Set Up N1MM to Record and Playback Voice Recordings (recording on the fly)
    - 19.1. Playing WAV Files
    - 19.2. Recording WAV Files
    - 19.3. Soundcard Control in Configurer
  20. Quick Edit
  21. Meaning of Colors
  22. Multipliers and QSOs
  23. Connecting to a Telnet Cluster
  24. How to Save the Log
  25. Function Key Macros
  26. Save and Restore Window Positions
  27. Editing Lookup Tables
  28. Backup and Restore
    - 28.1. Method 1: Full backup/restore on same computer - backup and restore the whole N1MM logger subdirectory
    - 28.2. Method 2: Partial backup/restore on same computer - make a partial backup and restore.
    - 28.3. Installing on a Different Computer
  29. Basic Functions for RTTY
- 

When using the program there are some standard routines like changing frequency, band and mode. Next to reading this chapter also read the **Key Assignments**, **Setting up the Program**, **Entry Window** and the **Quick Tour** to have basic program information. There are also some features which will be explained in this chapter like 'Running' mode, Search and Pounce' mode and

'Enter Sends message' mode etc. Operating tips and tricks can be found in the [Tips and Tricks](#) chapter.

## 1. Help

Almost every window has a Help function. To get to the help, right click on a window and select 'Help', or click on the Help button. The Entry window help can be accessed from the Help menu at the top, or by pressing Alt+H. Also note that the Key Assignments help can be accessed directly from the Help menu on the Entry Window. Note that you can print any help topic from the help system by clicking the Print button. Most of the help files displayed will be for window in which you select the help. This makes it easier to find the topic you are interested in.

Searching through the Help can be done most easily using the Find function using the PDF version of the Help file.

There is a very useful facility on the Help menu if your computer is connected to the Internet called 'Searching Help using Google', you can search the latest version of the manual on the website using Google. This will give by far the quickest results and will include the most recent changes to the Help/Manual.

## 2. Going Through the Entry Window Fields

**Space** is preferred, rather than the Tab key, for advancing through fields in the Entry window. Space avoids fields (like RST) that don't normally need to be changed and prefills other fields. Spacebar operation is described in detail in the [Key Assignments](#) portion of the help. Using the Tab and Shift+Tab keys moves the cursor to rarely used fields.

## 3. Resizing Windows

Logger's windows can be located where ever the user chooses and most can be made any size. The Bandmap has a minimum width. The new dimensions and positions of the windows are stored when the program is closed. Closing the Entry window will close the application. All QSOs are saved permanently to the hard drive as they are logged.

## 4. Select New Contest

To select a new contest go to the Contest selection dialog ( >File >Open Log in Database ). On the upper left of the screen a contest can be selected by clicking on it. Fill in the details for your specific situation. Which contests are supported can be found in the chapter [Supported Contests](#). Check the website for the latest rules and check the contest setup information in chapter [Contest Setup Instructions](#).

The preferred procedure is to start with a new database for each major contest where you expect very large logs or you're running on very slow PCs.

## 5. Delete Contest

Go to the Contest selection dialog ( >File >Open Log in Database ) and highlight the contest in the Contest pane. Then press < Delete >.

## 6. Select Country file

Selecting a new country file requires not only downloading a country file to your PC but also importing it into the current database. If a new database is selected you may have to import the latest country file in the new selected database again! The country file is stored per each database.

- Download the latest country file under >Tools >Download latest country file (wl\_cty.dat) (Internet)
  - Choose the file named **wl\_cty.dat** because it has extra country info
- Import this country file by selecting >Tools >Import country list from downloaded file
  - Until you perform the import, the new country file is not being used by N1MM

## 7. Select Master.dta file

Selecting a new master.dta file with many regular contest callsigns requires that you download the new file to your PC. No importing is needed but you have to select which master.dta file will be used for each contest.

- Download a master.dta file for the selected contest under >Tools >Download Latest Check Partial file (Master.DTA) (Internet)
  - N1MM Logger supports the CT-format master.dta file
- Select which master.dta file to use under >File >Open Log in Database >Associated Files tab
  - Press the < Change > button beside 'Master.DTA filename' to select the appropriate file

## 8. Changing Frequency

Changing frequency can be done in many ways. Here is a short list with some alternatives

- Just turn the dial or change band on your radio, the program will follow if connected
- Enter a frequency in the Entry window < Callsign > field. For example, 14200,5 will jump to 14.200,5 MHz. The mode will be changed when needed following the bandmap rules (depending on the Configurer >Mode Control >Settings tab)
- Enter an offset in the Entry window < Callsign > field. For example, if current frequency = 14200 Enter +3, frequency will jump to 14.203 MHz
- Enter an offset from the beginning of the MHz in the Entry window < Callsign > field. For Example: Current frequency = 14200 Enter 123 and the frequency will jump to 14.123 MHz
  - Placing a/ in front of the frequency or offset will set the second VFO (B). For example, /12200,5 /+3 /123
- Click on a spot in one of the bandmap windows

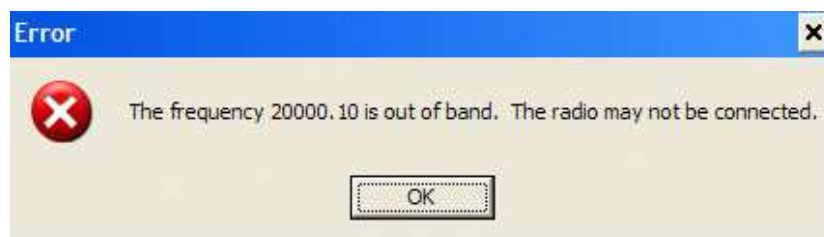
- Click on a spot in the Packet/Telnet window
- In the Log window, right click and select 'Jump to this frequency' to go to the logged QRG
- Click on one of the callsigns in the last multipliers below the 'Available Mult's and Qs' window
- Push one of the buttons in the 'Available Mult's and Qs' window to change band
- Enter an offset in the Entry window < Callsign > field to go 'split'. See the Split Operation section of this chapter
- Use one of the many keys below to change frequency, band or vfo/radio. Go look in the [Key Assignments](#) section to read what they all do!

Ctrl+Alt+Down Arrow	Ctrl+Shift+Page Down	Ctrl+Down Arrow	Ctrl+Alt+Q	Ctrl+Left	Alt+Q
Ctrl+Alt+Up Arrow	Ctrl+Shift+Page Up	Ctrl+Page Up	Page Up	Ctrl+Right	Alt+F8
Ctrl+Shift+Up Arrow	Ctrl+Shift+Down Arrow	Ctrl+Page Down	Page Dn	Alt+F10	Alt+F11
Ctrl+Shift+Alt+Up Arrow	Ctrl+Shift+Alt+Down Arrow	Ctrl+Up Arrow	Shift+Alt+Q	Alt+F11	Up Arrow

- Need any more?

When no radio is attached and PgUp/PgDn is pressed nothing will happen. I.e. if the frequency is inaccurate, don't allow the operator to move out of band by inadvertently pressing PgUp/PgDn.

When a frequency is chosen outside an amateur band a warning dialog will be shown when trying to enter information. This could happen making a typo when entering the frequency or when no radio is connected, so a kind of "radio is not working" message.



## 9. Changing Band

Below some of the possibilities how to change band.

- Change the band on your radio, the program will follow if connected
- Ctrl+PgUp - Go up one band. WARC bands are being skipped while logging for a contest
- Ctrl+PgDn - Go down one band. WARC bands are being skipped when logging a contest
- Enter a frequency in the Entry window 'callsign' field on another band. For example: 14200,5 will jump to 14.200,5 MHz
- Push one of the band buttons in the 'Available Mult's and Qs' window to change band
- Click on one of the callsigns in the last multipliers below the 'Available Mult's and Qs' window

- on another band
- Click on a spot in the Packet/Telnet window on another band

## 10. Changing Mode

- Change the mode on your radio, the program will follow if connected
- Change the mode in the top part of the Bandmaps windows by clicking on the mode 'field'
- Change the mode by typing CW, LSB, USB, RTTY, AM, FM, PSK or SSTV in the 'Entry window' callsign field
  - When a radio is connected it could become a problem to enter PSK, RTTY or SSTV because most transceivers do not have these modes as a selectable mode on the radio. Mostly LSB should be chosen on the radio. To have the program log the right mode you have to go to >Config >Config Ports, Telnet Address, Other >Mode Control tab. Under 'Mode recorded in log' check 'Always:' and also select PSK31 (for example). See also note below

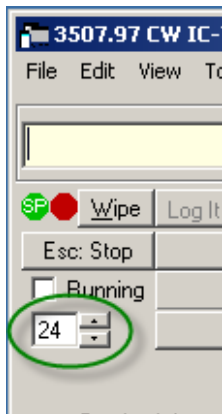
### Setting Mode Control

How the mode will be controlled on the radio and how contacts will be logged needs to be set in Configurer >Mode Control

## 11. Changing Operator

- **Ctrl+O** changes the callsign of the operator. If you are multi-user, you will be prompted for the operator at startup. The default is the callsign in the station information dialog. A callsign is required to be entered
- Entering "**OPON**" in the callsign field will also prompt for an operator callsign

## 12. Setting CW Speed



Setting CW speed can be done using the Entry window speed control (only shown when CW is selected) for each radio or VFO. Use PgUP and PgDn or click on the arrows beside the speed box to change CW speed.

### 13. Split Operation

Split operation is when you transmit on another frequency than you receive. This is being used when stations have huge pileups like some DXpedition's or the bandplan does not allow people making contact on the same frequency. An example is 40 meter SSB between Europe and the USA. In Europe the highest SSB frequency is 7.1 MHz while US stations may not go that low in frequency.

Split operation can be recognized in the bandmaps and in the Entry window. In the bandmaps the big blue marker will indicate your receive frequency. A red marker will indicate your transmit frequency. The frequency set will become the transmit frequency! Normally only one frequency is shown in the top portion of the bandmap, when working split the transmit frequency is added and shown just below the receive frequency. In the Entry window in big gray letters **Split** will be shown.

The entered split frequency is validated if it is within band limits before setting the VFO. If not a message is shown in the Entry Window statusbar and the split will not be set.

Clicking on the receive frequency in the top part of the bandmap will toggle split operation.

#### **Split in Running Mode**

When you are working split and you are in 'Running' mode moving around will not change 'Running' mode into 'Search and Pounce' mode

#### 13.1. Setting Spit Frequencies Manually

Set in the Split dialog with Alt+F7 or type directly into the Callsign textbox in the Entry Window entering it with Ctrl+Enter. Decimal points and commas are allowed in split frequencies in the callsign pane. Which one to use depends on the selected preferences in Windows. The split

frequency has to be entered or an offset from the current frequency for the active radio/vfo.

- Enter Split Frequency **or**
- Enter offset from band bottom (the full MHz) **or**
- Enter offset from current frequency as +5, +4, 3, 6, -2, -5 etc.
- For examples  
[+]

### 13.2. Setting Split Frequencies Automatically by Packet Spots

When a station is selected in the bandmap it can happen that the program puts the radio into split automatically. This station has been entered on the packet cluster including a split offset frequency which will be used by the program.

### 13.3. Resetting to non-split mode

Resetting to non-split mode is done by moving to another frequency or band. There are many ways to do this and some are mentioned below.

- Click on a spot/frequency in the Bandmap
- Click on a spot in the Packet/Telnet window
- Click on a band button in the Available Mult's & Q's
- Press Ctrl+PgUp or Ctrl+PgDn
- Click on the transmit frequency in the top part of the bandmap just below the receive frequency
- Click on the receive frequency in the top part of the bandmap

### 13.4. Split Operation Key Assignments

#### Split with Icom Radios

Icom radios can't report VFO B without being set to VFO B. The program polls VFO A, but not VFO B. You can only set VFO B from the computer. To set split, press Alt+F7 and enter +3 or 215 or 7215. You can also enter those from the call textbox by pressing Ctrl+Enter. Only turn Split on/off from the keyboard/program and not on the radio so it stays in sync with the program.

**Alt+F7** - Set split frequency or offset from current frequency for the active radio. When hitting Enter or click OK with nothing on the line split will be cleared. Press ESC or click Cancel to exit.



**Alt+S** - When your rig is in the split mode, Alt+S will reset the receive frequency back to your transmit frequency, but the split mode is preserved. Application: Many operators will run a pileup with the rig in split mode. With a radio which has VFO A/B they use the 2nd VFO as an RIT. This is done since many RIT knobs are small or hard to get at, while some find it more natural to use the main VFO to tune in a caller rather than use the RIT. By running split, you can use the main knob to tune in the caller, while your TX frequency doesn't change. The Alt+S acts like an RIT clear when you are running split. Operates on VFO-A only! With a Main/Sub radios like the Icom 756/7800 series you can not RX on SUB without receiving on both VFOs. In this case put RX on Main and TX on SUB for Alt+S to work.

"Reset RX freq when running split" is an associated feature to the Alt+S function (found in the CONFIG menu). When invoked, the program will automatically do an Alt+S as you log each QSO. This gives you an automated RIT clear after every QSO when you are running split. The exact logging sequence when you hit the Enter key is: move RX frequency to TX frequency, log QSO, and then send the TU message. For additional background, see the Alt+S feature

**Ctrl+S** - When not in split mode it will first put the radio in split mode after that Ctrl+S will toggle the RX frequency between the split RX frequency and the RX/TX frequency while maintaining split mode. Application: This was designed primarily to help SSB operators run on 40 or 80m, where split operation is widely used. For example, "CQ CQ de N1MM listening on this frequency (7183) and 7068". Use the Ctrl+S key to toggle between 7183 and 7068 to check for both USA or DX callers.

**Ctrl+Alt+S** - Toggle Split mode on the radio. 'Split' will be shown in the Entry window.

**Ctrl+Enter** - Entering a frequency or offset in the callsign field and entered with Ctrl+Enter will set a split frequency.

**Toggle split operation** - Click on the receive frequency in the top part of the bandmap and it will toggle split operation.

When in split please check out the @ macro (which will voice the receive frequency).

#### A Split Example

Don't click on spots in the packet window. Click on spots in the bandmap or available window. Then look at the bandmap or the Entrywindow title bar to see if you are going to transmit out-of-band. I presume we are talking about 40 or 80 meters. If you SINGLE-click on a spot, and don't see split indication, then wait for the station to announce their frequency. If they say "listening 214.5" type 214.5 in the callsign and press control enter. You are ready to call them. Good typists can do this and call them by the time they finish their CQ.

## 14. Running Mode

Running mode means that you are calling CQ and stations are coming back to you. The frequency you are on is 'fixed' and you are not searching for stations. The program marks this frequency with

the text **CQ-frequency** in the Bandmap window and the 'Running' indicator is marked on the 'Entry Window'. A part of this feature is that 'Running' mode has it's own set of Function keys. They will be automatically placed under the keys F1 to F12. There is also a set of function keys for Search and Pounce' mode, these function keys will swap to Shift+F1 until Shift+F12 so they are still available.

The "Running" switch is automatically marked when:

- The operator clicks on CQ-frequency in the Bandmap window
- The frequency of the radio is in tuning range of your CQ-frequency (on that band)
- Pressing Shift+Function key when in Search and Pounce mode (this can be changed on the Function Keys tab from the Configurer dialog)
- CQ-key (as set in Configurer) is pressed

When leaving the 'Running' frequency the indicator on the 'Entry Window' will be unmarked and the Function keys will be swapped for F1 to F12 in the 'Search and Pounce' keys.

When moving away from the 'Running' frequency the program will place you automatically in Search and Pounce mode. Going back to the 'Running' frequency will automatically select 'Running' mode (the 'Running' indicator is selected again). Clicking on 'CQ-frequency' in the bandmap will also place the program in 'Running' mode. An exception is when working split i.e. transmit on one VFO and receive on the other. Moving around will not change 'Running' mode into Search and Pounce mode.

There is only one CQ-Frequency per band. If swapping VFOs, it is possible to swap between 'Running' and Search & Pounce mode.

Often used keys in Running mode (CW)

- **Insert** or ; - Sends His Call key followed by the Exchange key
- ' - Sends TU message and enter in log
- **F4** - Sends my call

## 15. Search and Pounce Mode (S&P)

'Search and Pounce' mode (S&P) is the opposite of 'Running' mode. The program is always in one or in the other. S&P mode means searching for stations on the bands and not calling CQ. The frequency used is not 'fixed'. The 'Running' indicator is not marked on the 'Entry Window'. The function keys under F1 until F12 are the keys programmed for Search and Pounce' mode, the 'Running' mode function keys are swapped to Shift+F1 until Shift+F12 so they are still available.

### **Function Keys Change for Run vs S&P**

If "Running" is checked, the Run messages are shown on the Function Keys. Otherwise, the Search and Pounce messages are shown on the Function Keys.

When pressing Shift, the labels will change (when made different) and the text from the "Running"

keys become the text from the "Search & Pounce" keys and vice versa. SHIFT REVERSES THE MEANING OF THE ABOVE RULE.

When in Search and Pounce mode, to call CQ, the CQ-key as configured is used, usually F1. No need to press Shift+F1. Pressing F1 will send CQ and place the program in Run mode. From that point on F1 will call CQ (in Running mode). If you want to sent CQ without shifting to Run mode, use the S&P CQ macro to stay in S&P mode.

When entering a call in the S&P mode and the call is a dupe, changing frequency (QSY) will automatically enter the dupe callsign into the band map and clear the Entry Window..

 **Tip**

When a frequency is busy it can be marked with Mark (Alt+M). This could be used when the station on that frequency is not in the contest, may not be worked in the contest or seldom says his callsign to have the frequency marked in the bandmap. Press Alt+M, and move on. That frequency is busy, so you won't want to stop there again.

### 15.1. How to check if you are in Running mode or in S&P mode?

- \* Running checkbox checked/unchecked.
- \* Textboxes are white in running, yellow in S&P and blue in quickedit.
- \* The green ball shows "Ru" for running, "SP" for S&P.
- \* You can put different labels on the textboxes for Running & S&P.
- \* "CQ-Frequency" will show on the callframe if you are Running.
- \* "CQ-Frequency" appears next to the frequency arrow on the bandmap when going into Running mode.

Another possibility is to give F1 Running and F1 S&P a more meaningful name. So in the F1 title put the caption "F1 - RUN", and in the F1 for S&P (F13..) put the caption "F1 - S/P". This way the first macro location will tell which set of macros are enabled. Because F1 is always the CQ key (when defined) there is no need for CQ in the title to make that clear.

### 16. CQ Key

The program uses the CQ Key as defined in Configurer >Function Key tab. This means that when F1 is pushed it will send a CQ as defined in the CQ-key (most often F1). This happens both when in Run and in S&P mode. N.B. So when pressing F1 in S&P mode would give CQ and change to Run mode. When using F1 in S&P mode to call a station (so the content of the S&P F1 key holds your own callsign) and you want to stay in S&P then use the {S&P} macro to not change to Run mode and stay in S&P mode.

- \* In cases where users desire more than one CQ F-key, include the new {CQ} macro which identifies the F-key as an additional CQ F-key
- \* Use the {S&P} macro to stay in S&P mode

## 17. Set up the Sent exchange message(s)

Every contest has its own specific exchange. The sent exchange could be fixed (CQWW - zone), a serial number (001 etc.) a combination and sometimes very exotic.

What to set up in the 'Sent exchange' can be found in the manual in the chapter [Setup Contests](#). Sometimes some creativity is needed to get it all working and more than one solution is often possible. For some contest a special sent exchange macro has been added (like TIME2 for some digital contests).

Below an example how to set up a serial number exchange followed by a fixed exchange (in the same exchange). Example 599 023 40 (serial number 023 and zone 40).

There's more than one way to do this. In your exchange message (usually F2), you can use 599 {EXCH}, which will send what you have entered into the "Sent exchange" box (001 will be converted into a serial number and the rest will be sent literally), OR you can instead program F2 to include the individual elements of the exchange, e.g. 599 # # 04 (e.g. if you wanted to send the serial number twice and the zone only once).

Some things to watch for:

1. The {EXCH} macro does not include the 599, so you need to program that into your exchange message(s). The "Sent exchange" box is used to generate the Cabrillo file regardless of whether you use the {EXCH} macro. Therefore you can't put the 599 in the "Sent exchange" box because that will screw up your Cabrillo file. In stead of hard coding 599 in the exchange message(s) also the macro {SENTRST} or {SENTRSTCUT} could be used.
2. If you like to send a slightly different message when S&P'ing than when you are running, then you will need to program the Run F2 (2nd message in the list) and the S&P F2 (14th message in the list) with separate messages. For example, you might program the Run F2 with: {TX} 599 # # 04 {RX} and the S&P F2 with: {TX}{ENTER} ! TU 599 # # # 04 {RX}  
Note that in Run mode, the exchange is actually sent as F5 and F2 in succession; F5 normally contains the other station's call sign (!) and F2 normally contains just the exchange. In S&P mode, the exchange is sent only as F2, so if you want your S&P exchange to include the other station's call sign (some people do, some don't) you have to include a ! in the S&P message.
3. If you want to always send three-digit serial numbers, go to >Config >Configure Port, Telnet Address, Other >Function Keys and check the box "Send leading zeros in serial numbers (e.g. TT7)"

## 18. Function Key Conventions

There is a function key "convention" used by N1MM logger and most other logging programs. That is: F1=CQ, F2=exchange, F3=TU/QSL/QRZ, F4=your call and F5=his call. ESM is built around this convention.

If you are already using ESM on CW it probably is wise to stay with the same keystroke pattern when you are on SSB. For example:

ESM mode: S&P - CW or SSB	ESM mode: Run - CW or SSB
1. <enter> sends F4, your call	1. <enter> sends F1, "CQ"
2. <enter> sends F2, your exchange and logs the QSO	2. type call, <enter> sends F5(his call)+F2(exchange)
*NOTE* - for SSB, put a single blank space in the F5 message - speak the callsign instead - because of the blank, N1MM will skip F5 and send the F2 message	
3. type his exchange, <enter> sends F3 (QSL/QRZ/TU) and logs QSO	3. type his exchange, <enter> sends F3 (QSL/QRZ/TU) and logs QSO

"...This whole business of hitting F1 automatically (and unwantedly) putting you in Run mode seems extremely awkward..." - When you understand that F1 is almost universally the "CQ" key in contest logging programs, it becomes very logical. And by definition, when you are "CQing" you are "Running". In other words, if you don't want to be in the "Run" mode, don't call "CQ" (don't hit F1!) "...is it possible to have DIFFERENT macros in CW? There I do need "agn" and "hiscall" whereas in phone I don't..."

Macros are MODE-specific, not CONTEST-specific. So, yes, you must have different macros on CW and SSB. However, just because you might use 8 or 9 F-keys on CW doesn't mean you have to use 8 or 9 on SSB. Use only what you need for that particular mode (and contest).

73, Ted W4NZ

## 19. Set Up N1MM to Record and Playback Voice Recordings (recording on the fly)

The usual way is to route your microphone through the sound card to the radio. Most sound cards support this, as well as a selectable 20 dB pre-amp for Heil and similar mikes.

To set up the program to record and playback voice recordings do the step below:

1. Plug your microphone into the sound card mic input
2. Plug your headset into the sound card speaker output
3. Select default devices on the Configurer Audio setup Tab
4. Open the windows volume control on the playback controls, set mic audio so you can hear yourself talking through the sound card.
5. Change the windows volume control to select the recording controls.
  1. Select the microphone as the recording source.
6. In N1MM logger make sure you are set for SSB, and in Run mode, and have a file name in the F1 key definition
7. Do Ctrl+Shift+F1, immediately say something, like a short CQ, then immediately do Ctrl+Shift+F1 again. The bottom status line of the entry window should have said 'recording started' then 'recording saved'
8. Press F1 and the recording should play back in your headset
9. Adjust audio level on the volume control so when you record it has the same volume as the mic audio when you aren't recording

OK, now you are on your own. the program records and plays back through the sound card. Now you have to figure out how to get that audio to and from your radio via your rigblaster, some other adapter, and whatever plugs on your radio that you choose to use. but the program is set up and working at this point.

## 19.1. Playing WAV Files

The program can play wav files in SSB for giving CQ, sending default reports etc. For this to work wav files have to be made with the text to send. These wav files could be placed anywhere on your disk but easy would be to use the wav\ directory under the program directory. To call a wav file edit the SSB function keys as in the examples below. It is also possible to send a callsign by sending it's letters and numbers. NB. The full file path is needed before the wav file.

Use the SSB function keys to send wav files. For example:

- Play CQ: C:\Program Files\N1MM logger\wav\cq.wav
- Play default exchange: C:\Program Files\N1MM logger\wav\5905.wav
- Play the callsign entered in the callsign entry field will be send by the soundcard: !
  - This example uses the macro: ! (Send his call)
- Play the serial number to sent from Entry window by the soundcard: #
- Don't play call from station in callsign field: Use a single space (mostly used in F5)
- Possible are strings like: ##!C:\Program Files\N1MM logger\wav\{operator}\thanks.wav
  - With or without leading zeros specified
  - Only one wav file can be played per string and only at the end of the string

Some examples using the macro {OPERATOR}, let each operator have his own wav files. You can specify wav files like: wav\{OPERATOR}\cq.wav As you change operators in a multi operator contest, the wav files will change as well. You will have to name them consistently. Note that wav directory syntax indicates a subdirectory under the Install directory. You can also fully qualify, like: "C:\wavfiles\cq.wav". {OPERATOR} is a string substitution only implemented for SSB buttons.

- Play CQ with operators voice: C:\Program Files\N1MM logger\wav\{OPERATOR}\cq.wav
- Play call with operators voice: {OPERATOR}! (The wave file should be put it in the directory set in the Files tab for the letters directory in the Configurer)
- Play default exchange with operators voice: C:\Program Files\N1MM logger\wav\{OPERATOR}\5905.wav

It is possible to play more .wav files right after the other by separating the wav files with a comma. For example: C:\Program Files\N1MM logger\wav\{operator}\blank.wav,C:\Program Files\N1MM logger\wav\{operator}\number.wav#

More examples can be found in the [Macros](#) chapter under {OPERATOR} macro examples and in the [Sweepstakes contest](#) setup.

For those with problems with wav files playing from the Function keys... Make sure that under the

tab 'Contest' in the >File >Open Log in Database >Mode Category has been set to SSB (or Mixed) and not set to CW. Check out the Audio tab in the Configurer.

When in split please check out the @ macro (which will voice the receive frequency).

## 19.2. Recording WAV Files

The first thing to try is to plug the microphone (mic) directly into the sound card. Then open the sound playback control panel, make sure the mic channel is displayed and see if you can get the mic to come out the speakers. Once you do that then plug the mic into the rigblaster and the rigblaster into the mic input on the sound card and make sure it still comes out. Then go from the sound card to the rigblaster and make sure you can hear it in the speakers connected to the rigblaster, then go from the rigblaster to the mic on the radio. That all verifies the audio paths. Note that none of this uses the logger yet.

Now change the volume control to show the recording controls. Make sure the mic input is displayed and select it as the recording source. Open the windows 'sound recorder'. Yes, I know it is a dumb program, but its main advantage is that it is simple. Try to record using the sound recorder and then play it back, the trace should show if audio is getting into the recording.

Now you are ready to try the logger. Watch the status line on the bottom of the entry window when pressing Ctrl+Shift+Fx, make sure it says that recording is started and then that the file is saved. Pressing the same keys again (Ctrl+Shift+Fx) to stop recording. Note the confirmation start/saved messages on the status line at the bottom of the Call Entry window.

If the above steps verified the audio paths then the only thing left is to make sure the PTT keys the radio when you send the file. Note, that you can key manually or turn on the VOX just to make sure that the audio is getting to the rig even if the PTT doesn't work.

N1MM logger only supports standard PCM format files. Some editors use ADPCM instead and you have to convert them to standard PCM to have them played.

More info on recording in the chapter [Before the contest](#).

### Use N1MM Logger to Record Your WAV Files

Record with N1MM logger because it will put the file in the same place it expects to play them from, and it records only with the formats that it can also play back.

### Realtek HD Soundcards

If the soundcard is a Realtek HD, you won't be able to do on-the-fly recording with N1MM Logger. You'll need to use an external application, such as Windows Sound Recorder or Audacity.

## 19.3. Soundcard Control in Configurer

The soundcard has to be set up when playing wav files. This is done in >Config >Configure Port, Telnet Address, Other >Audio tab. Check out the settings for it in the **Configurer** chapter.

**Common Soundcard Problems**

The most common problem occurs when no sound is heard when playing wav files. Check for a non existing wav file and the correct path in the program. Always check the wav file in a media player so see if it can be heard from the speakers!

When play SSB wav files, the play volume can be adjusted by the Windows play control sliders.

**20. Quick Edit**

Do you ever log a contact with a mistake in the callsign? Want to bring it back, so you can change it? You can do it with "Edit last contact (Ctrl+Y)", but that dialog is complicated and not the right tool for the heat of a contest.

There is an alternative called "Quick Edit" (Ctrl+Q). Quick edit will return the last entered qso to the entry window to allow you to change it. Pressing enter will log the changes, ESC will abandon them. The Entry window text boxes change to blue to let you know you are in quick edit.

Was the mistake three QSOs ago? Then just press Ctrl+Q three times to get to it. The same rules about saving/abandoning apply here as well.

**Quick Edit 'Feature**

There is no check to ensure that the Quick Edit entered contents are valid like is done when a QSO is entered normally. So check thoroughly what you type.

**21. Meaning of Colors**

The meaning of the colors is where possible consistent across all windows. The table below will give the meaning per window.

Color	Entry Window			Available Mult's and Q's Window		Check Window	Bandmaps	
	Call	Dupe	Callframe	Buttons	Mults		Calls	Frequencies
Gray	Dupe	Dupe	Dupe	Dupe		Dupe	Non workable	
Black				CQ Freq.			CQ Freq.	CW
Blue	QSO		QSO	QSO	QSO	QSO	QSO	SSB
Red	Multiplier		Multiplier	Multiplier	Multiplier		Multiplier	Out of band
Green	> 1 Multiplier		> 1 Multiplier	> 1 Multiplier	> 1 Multiplier		> 1 Multiplier	
Magenta								RTTY

**22. Multipliers and QSOs**

The program shows at many place if a callsign is a multiplier, a qso or a dupe. Please study the table with the meaning of colors above.



- The windows
  - Entry Window
    - Callsign in callsign field : the color of the entered call will tell Qso, Dupe or Multiplier(s)
    - Callsign on the call-frame: the color of the entered call will tell Qso, Dupe or Multiplier(s)
  - Available Mults and Qs window - the button colors will tell Qso, Dupe or Multiplier(s)
  - Check window - the callsign colors will tell Qso or Dupe status
    - Mul: - multiplier on this band
    - Q: - qso on this band
      - Example: Mul: 15 20 Q: 160 80 40 10 - multiplier on 15 and 20 meter and a qso on the other bands
  - Bandmap - the callsign colors will tell Qso, Dupe or Multiplier(s)
- The colors
  - **Blue: QSO**
  - **Red: Single Multiplier** Example: CQWW - qso is either zone or country multiplier (one multiplier)
  - **Green: Double or better Multiplier** Example: CQWW - qso is a zone and a country multiplier (two multipliers)
  - **Gray: Dupe**

## 23. Connecting to a Telnet Cluster

- Select the tab: Telnet in the packet window.
- Select a telnet cluster from the list in the upper right corner
  - This list can be changed in Configurer at >Config >Configure Ports, Telnet Address, Other >Hardware tab, Select < Edit > next to Telnet Cluster
- Click the button marked with your callsign, on the far lower right, or type your callsign in the left field at the top of the telnet tab. Do not click the CONN button, that's solely for RF packet

## 24. How to Save the Log

Well, there isn't a 'save' function because it is not necessary. Every change you make to the database is stored 'on the fly', hence the absence of a 'save log' function. The ham.mdb file (default name) on your hard disk is the database where every contest is stored, along with lots of other information used by the program. Also there is no need to make a new file for each contest. Each new contest is stored in one and the same file. Just go to >File >New Log in Database and pick one out of the list, and you're all set to go. After a couple of years, there are dozens of contests in the database, for a total of a couple of thousand QSOs.

Now, you can make new databases, as many as you want. You can have separate databases for separate calls, separate contests etc. Most users however, only need 1 database. You can copy it to

backup etc. Just be sure what you're doing when messing with files...

## 25. Function Key Macros

You can't skip function key numbers. It is the position of the macro, not the number you identify it with.

The first 12 macros are RUN macros. If you then only fill in 7 S&P macros then 8 thru 12 will be the same macros as the ones you filled in for RUN. So in your example if you set up your {WIPE} macro for F11 in RUN and your S&P F11 was blank then the {WIPE} F11 key would work in both RUN and S&P.

If you want to fill in a blank macro enter the function key comma and a space. You have to put the space as you cannot create a blank macro.

If you want to go from S&P to RUN is a single keystroke then set the first S&P macro to CQ (without F1 in the description) and put the command QRL? in the macro (Pete's trick). CQ,QRL? So hitting F1 would send QRL? and put you in RUN and start your auto CQ if turned on.

## 26. Save and Restore Window Positions

Save and Restore window positions is under >Tools >Save Window Positions' and >Tools >Restore Window Positions

For example:

New operator PA1M: Hit Ctrl+O and enter: PA1M and after this he presses 'Save Window Positions' in the Tools menu. The window positions for PA1M are now saved.

Next operator comes in and does the same for his call.

PA1M is again the operator and wants his window positions back: PA1M does Ctrl+O and enters: PA1M and after that selects 'Restore Window Positions'. The window positions will immediately change to the saved positions. PA1M has his window positions back!

### Substituting Mode for Callsign

Instead of inserting your callsign, enter the mode - RTTY, CW, or SSB. This will save / restore window positions based on your preferences for each mode. This obviously won't work in a Multi-op environment but very usable in the single operator multi mode shack.

## 27. Editing Lookup Tables

Lookup tables are used widely throughout the program. Example tables are the function keys, telnet stations, exchange abbreviations etc. These tables can be updated by the user and mostly lines can be added at the bottom of the list or deleted where needed.

- To Delete a row, click on the row "handle" - the gray arrowhead - the 'pencil' will move to it and the row will be selected, press Delete
- To Insert/Add a row, click on the icon with the 'star', a new row will be added. A row can only be added if all columns are filled
  - The column values will automatically be assigned a space so directly adding a new row is possible
- To edit an entry select the field to update and enter the new information.

## 28. Backup and Restore

Information used by the program is partly stored in the database, partly in ini files and in some additional subdirectories. Examples are the WAV files (for the function keys) but also in the Letters directory. So when making a backup not only backup the MDB files but also some text files / or sub-directories. The best solution is to backup and restore the whole N1MM logger subdirectory. Backup/restore proposal 2 is a partial backup/restore.

### 28.1. Method 1: Full backup/restore on same computer - backup and restore the whole N1MM logger subdirectory

- Backup the whole N1MM logger subdirectory
- Restore the data is more or less the other way around. Restore the whole N1MM logger subdirectory

### 28.2. Method 2: Partial backup/restore on same computer - make a partial backup and restore.

Storing all these settings (exported text files, wav files etc) next to all databases (mdb files) on a diskette, CD/RW or USB-pen in case of a computer crash would not be a bad idea 😊

- Backup all database (\*.mdb) files
  - In the database files are all contests with QSOs but also the function keys content, Station information etc. Compress the database to get them small
  - N1MM Logger.ini
    - Windows Settings, radio settings, port settings, RTTY settings etc. i.e. everything in Configurer but also last contest used are stored in the N1MM Logger.ini file
  - Wav files
    - Which can be used by the program (SSB mode). They are in the WAV directory (for the function keys) and in the Letters directory (sending callsigns etc)
    - Recorded QSOs are stored in subdirectories under the N1MM logger program directory (and can become very big)

- o More?

\* Restoring on the same computer - Restoring the data is more or less the other way around.

- o Restore All database (\*.mdb) files

- + Restore the database file(s) back in the program directory (which is the default place but not necessary).

- o N1MM Logger.ini

- + Copy the saved file in the Program directory.

- o Wav files

- + Create the directories WAV and Letters directory and other directories needed.

- + Copy the wav files in them.

- o More?

### **ⓘ Backup and Restore is not a Copy Function**



Backup / Restore will not move the program to a new computer. You must always start with a Full Install on a new or different computer

## **28.3. Installing on a Different Computer**

With a new / different computer you first have to perform a Full Install to get all dll , ocx files etc. copied and registered. After that you may overwrite/add all \*.mdb files, settings etc. in the N1MM logger program directory by copying and importing settings. See the restore procedure above.

You have to watch out if the settings like serial ports, directory structure, screen resolution etc. are different on the second computer. This could/will give trouble.

Copy, zip, cd/rw etc.

Compressing the database files for backup/restore with a program like WinZip really helps, these databases (but also Word files, Excel files etc.) compress a lot, mostly down to 10-25 percent of it's original size. This means that a 4 MB database fits easily on a diskette.

The database can be also compressed with File/Copy and compact database. This is not a zip compression. It recovers space from deleted rows. Most database engines do not recover deleted rows until a reorganization is done. They just mark them deleted. This is not the same compression as mentioned above when using zip compression. When doing a compact database the database can still be used afterwards by the program. Using zip compression is only for backup/restore purposes.

It is wise to make a regular backup of the whole N1MM logger subdirectory including all subdirectories to a CD recordable. Copying it to another hard disk (in the same computer but better on another computer when you have a network) is also a good idea.

## **29. Basic Functions for RTTY**

Here are 4 RTTY Operating tips from Rick, N2AMG

1. **Use your mouse to grab everything** just click on the call sign and it will get passed on to the entry window and click on the exchange it will get sent to the exchange field. Or use the Insert key to grab a call from the grab window and send your call that saves time also
  
1. When you click on a callsign do you still need to press the space bar to advance things? You don't! Go to >Window >Digital Interface, then in the digital screen select >Setup >Settings >**Send space after callsign click**. Turn that setting on and you will be all set. Also select >Setup >'Rt click= Return NOT Menu'
  
1. Try turning on >Setup >**Rt click= Return NOT Menu**. What this does is makes the right click of the mouse button while the mouse pointer is in the RX window act like the ENTER key and will step thru the ESM keys without hitting the keyboard. Your hand never leaves the mouse for the whole Q
  
1. **Hover mode:** Let's you grab the callsign just by pointing your mouse on the callsign, no click... this way. It's faster then to click right to reply. Hover mode can be found in the Digital window >Setup >'Turn Hover Mode On/Off'

## Advanced Functions

### In this Section...

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#### Advanced Functions

1. Mobile/Rover Support
  - 1.1. How Mobile/Rover Works
2. Call History Lookup
  - 2.1. The Call History Text File
    - 2.1.1. Menu options
3. Spot Filtering
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6. Staying in Run Mode (great for Dxpeditions) or in S&P mode
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- 8.2. How to Prevent the Cursor from Moving to the Next Exchange Field
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  - 11. Call Stacking (same or different bands) - Multi-User Mode
  - 12. Serial Number Server
  - 13. Contest Reporting Application
  - 14. Starting a Contest with a Number Other Than 001
  - 15. Single Operator 2 Radios (SO2R)
  - 16. Footswitch Support
- 

In the 'Basic Functions' section the more standard routines like changing frequency, band and mode can be found. In this section the more advanced features are addressed. Not needed for everybody but nice when you think you need them

## 1. Mobile/Rover Support

N1MM logger supports Rover operation in at least the ARRL VHF contests and all QSO parties. For this to work the "Rover" category has be selected and the "RoverQTH" set. This gives a mobile/rover in a QSO party/VHF contest a quick, easy way of changing counties and re-programming F-key messages in one step. You will also have a complete, composite log. No cutting and pasting Cabrillo files anymore.

### 1.1. How Mobile/Rover Works

First, set File > Open Log in Database > Contest tab > Mode Category = "Rover"

Your initial or subsequent RoverQTH can be set

- in the Station Data window. This box will automatically update when you use any of the other methods of setting RoverQTH
- by right clicking on the county or grid in the Multiplier window
- by typing CTRL+H
- or by typing ROVERQTH in the Entry Window callsign box and hitting Enter. This pops up a window for you to input the county designator, typically 3 or 4 characters, and then hit Enter again. This sets or resets the current RoverQTH, which is displayed in the top border of the Entry window, beside the frequency display.

The {ROVERQTH} macro, when placed in your F-key messages will always send the current county designator or RoverQTH. If, for example, your F2 key is defined as "5NN{ROVERQTH}", then the "RoverQTH" column in the log window will reflect your current QTH for each QSO..

RoverQTH can be 10 characters long but most Cabrillo output is five or six characters long.

When a new ROVERQTH is set in the Entry window, the program checks with the list of accepted county designators for the current QSO party or contest. If for some reason an unlisted county designator is required, it can be entered in Config > Change Your Station Data

## 2. Call History Lookup

**Please note - this section is work in progress, and WILL be changing repeatedly in the coming weeks**

### **Big Improvements in Version 10.8.3**

Beginning with Version 10.8.3, the Call History Lookup function is much improved. This is a very good reason to update, if you haven't done so already. The following user instructions assume that you are running 10.8.3 or later.

As far as we can tell, the idea of storing information about a station from past contests, for recall during the current running, began with N6TR's *TRLog*, which used an extension of the Super check Partial **master.dta** file to capture and display a variety of information, such as name, Sweepstakes check, and ARRL section or state.

Since its early days, N1MM Logger has used Call History text files to store contest-specific information. To use Call History Lookup, you must load the text file into the current database and enable the Lookup (on the pull-down Config menu).

### **Only One Call History Table at a Time**

There can be only one call history table actually present in a given database at a time, and it remains active regardless of the contest unless replaced with another or unless you turn off the lookup function.

When a callsign is typed into the Entry window and the Space bar is pressed (or Enter, in the ESM case), the database table is searched and if the callsign is found, the associated call history is displayed. If the information is relevant to the current contest, it is pre-filled in the appropriate exchange field in the Entry window. Otherwise, it is displayed as text in the "beam heading" line of the Entry window. Here are two examples:



In VHF contests, the grid square from the Call History table is used to calculate the beam heading reported in the Bandmap.

## 2.1. The Call History Text File

The first few lines of the text file (shown below in bold type) are comments, denoted by the # character at the start of each line. None of these lines are required, but they are a helpful reminder when you are working with a text file. They are automatically added when exporting a Call History file.

**#Comment lines do not have to be removed for import.**

**#Field names and size: Call(15), Name(20), Loc1(6), Loc2(6), Sect(8), State(8), CK(#), Birthdate(date), Exch1(12), Misc(15), LastUpdateNote(Optional,40)**

**#Current contest: YOHFDX**

The next line gives the order in which fields in the text file are read into the database. Surrounding the word "Order" with two "!!" characters tells the program to treat it as an instruction, not as data



**!!Order!!, Call, Name, Loc1, Loc2, Sect, State, CK, BirthDate, Exch1, Misc, LastUpdateNote**

Finally, we get down to the data.

**N2YO,,,,,,,,,1900-01-01,364,,Log update no change**

As you can see, each comma denotes a field. Successive commas mean empty fields. In this case, we have the Call, a whole flock of empty fields, the default Birthdate (provided by the program, for technical reasons), and then Exch1, which is the number N2YO gave me in the contest.

As you can imagine, making sure you have the right number of commas between actual data in the text file can be a problem. Fortunately, the **!!Order!!** command offers a simple solution. For example, you create a text file that looks like this:

**!!Order!!, Call, Name, CK, Sect**

**N4ZR, Pete ,54 ,WV**

**N3OC, Brian, 67, MDC**

When you load it into the current database, the data will be put in their proper places in the Call History table, and when you operate in Sweepstakes, for example, with Call History Lookup enabled, the program will pre-fill the check and section in the Exchange field, and will display the name and all the other data in the Bearing line of the Exchange Window. This redundancy is deliberate, because if you set out to edit the Exchange and then realize that the pre-filled data were correct, they are there for ready reference.

What this change has done is to make it much easier to generate Call History text files for loading into N1MM. For example, you could generate a file that contains calls, names, checks and sections for everyone you worked last year in Sweepstakes, and by writing the correct **!!Order!!** line, like this:

**!!Order!!,Call,Name,CK, Sect**

you can make sure the information loads into the correct places in the database. The only thing you have to be careful about is to use the database field names exactly as shown above. For example, you must use **Sect**, not sect or sec or Sec, and **CK**, not Check.

#### 2.1.1. Menu options

- >Config >Call History Lookup
  - Check to enable Call History Lookup.
  
- >File >Import >Import Call History
  - Select the file to be imported. All information in the Call History table in the database is erased, and the imported information substituted.

- >Tools >Update Call History with Current Log
  - Update the Call History table with the QSOs from the current log. Callsigns and contact data will be added, when new, or updated when already in the Call History table. Note that nothing is erased from the table other than data associated with a callsign in the log, and then only when different.

For the 2 grid fields the behavior is a bit different. When both grid fields are filled and a new grid has been logged, the second grid (oldest) will be removed, and replaced by the contents of the first field. The new grid will be added to the first position. The same change in position will happen when only the first grid is filled and a new grid has to be added from the log. A 4 digit grid will be overwritten by a 6 digit grid when the first 4 characters are the same. [move to VHF section](#)

- >File >Export >Export Call History
  - Exports the information in the Call History table. It is very important, particularly if you have changed the Call History table, to re-export the data as a Call History text file. Otherwise, any changes will be lost. You are given the opportunity to rename the text file so that, for example, a 2008 SS file can be renamed 2009 SS, to indicate that it has been updated.

You **can** import any Call History file that you formerly used, without the need for the !!Order!! directive. When you export a Call History text file, the program fills in the commas that are necessary to fit the default order, as well as -1 for each empty CK and 1900-01-01 for each empty Birthdate. This is necessary to ensure compatibility with your old Call History files.

### 3. Spot Filtering

There are three levels of spot filtering available. The first of these is at the DX cluster node, using whatever filtering capabilities are built into the node. Because N1MM Logger stops processing telnet messages when CW is being sent, users who are connected to a very high volume node, such as the Reverse Beacon Network's Telnet node, may find it advantageous to block some of the less useful spots (for US users, you might not want spots from VK, for example).

The second level of spot filtering is accessible from the right-click menu of the Packet/Telnet window, and decides which spots received from the cluster node should be forwarded to the Bandmap and the Available window. If too many spots are forwarded, depending on how fast your computer is, you may encounter brief delays in execution of commands (such as sending of CW messages) while the program catches up,. See [the section on the Packet and Telnet window](#) for specifics.

The third level of filtering is set in the right-click menu of the [Available Mults and Qs window](#), and it only governs which spots are shown in that window's lower pane. For example, if you decide only to list CW spots, the bandmaps will continue to display all spots, and the top pane of the Available window will continue to display **overall** spot numbers for each band, but the lower pane's list of spots will contain only CW spots. You can quickly switch back and forth between showing all spots, just those on the current band, only CW or SSB or digital spots, or any other band/mode

combination.

#### 4. Transmit on same band with two radios

In some contests (like IARU contest) it is allowed to transmit on CW/SSB at the same time on the same band. To set this up make sure that Operator Category is set to Multi-Multi and Mode Category to Mixed. Both can call CQ at the same time without blocking each other. Also Config > Multi User Tools > Force Other Station to Stop Transmitting when I Transmit should not be checked!

Interlock method works fine with packet delays up to 400 ms. If two operators push F1 at the same time both stations will begin transmitting but in less than 100 ms they both will check if any other station transmits on the same band/mode and if this is the case station with higher number will stop transmitting and display a message to the operator "Another station is already sending". Obviously the higher the packet delay is, the longer both stations will be transmitting at the same time but in reality it is never longer than 100-200 ms (PTT delay should be subtracted). And this only happens when there are two or more stations on the same band/mode (Run and Mult stations) and two operators managed to hit F1 (or any other Fx button) at the same time.

#### 5. Big Gun versus Little Pistol switch

One of the settings in Configurer >Function Keys tab is '**ESM only sends your call once in S&P, then ready to copy received exchange**'. When selected and in Enter Sends Message mode, the cursor moves to the Exchange field when there is something in the Callsign field and Enter is pressed and does not keep the cursor in the callsign field. If you don't usually get a station on the first call then deselect this option.

##### 5.1. So you are a big station

- \* Stations normally come back to you on the first call
- \* In >Configurer >Function Keys tab, **check** 'ESM only sends your call once in S&P, then ready to copy received exchange'.

##### 5.2. So you are a little pistol

- \* You have to call mostly several times to get through to being answered
- \* In >Configurer >Function Keys tab, **uncheck** 'ESM only sends your call once in S&P, then ready to copy received exchange'.



**Big Gun Tip**



One little trick to use with the Big Gun switch on is to program my call in F8 instead of "again". This way, when you don't get the guy on the first call, hit Enter again to repeatedly send my call until he answers (and the cursor is always in the right place when he does answer). 73 de Ted W4NZ

## 6. Staying in Run Mode (great for Dxpeditions) or in S&P mode

During DXpeditions it could be very useful to stay in Run mode all the time and not jump inadvertently to S&P mode. Or stay in S&P mode if you choose. This behavior can be toggled using the Alt+F11 key. The following message will be given in the statusbar when DXpedition mode i.e. S&P mode is disabled "Run/S&P auto-toggle disabled" = Dxpedition mode. Back to normal show the message 'S&P and Run Mode enabled'.

## 7. Auto Send

Autosend ( Ctrl+Shift+M ) will start sending the callsign before you have finished copying a full callsign. i.e. starting after a certain number of characters has been typed AFTER the last number in the callsign. The minimum threshold is 1. Zero will turn off the feature. Only when in RUN mode.

The rules are:

1. Find the first letter in the call
2. Find the last number after the first letter
3. Find the Nth letter after step 2

For example: Threshold set to 2

- W4WYP would start sending at Y
- S57AD would start sending at D
- KH6/WA4WYP would start sending at Y (using the "/" rule as well)
- WA4WYP/4 would start at Y (/4 will not be looked at)

WYP, WWYP and WAWYP do not meet the criteria for autosend to begin. Prefixes like KH6/ are ignored and do not themselves trigger the autosend threshold.

## 8. Enter Sends Messages (ESM) Mode

Setting the option "Enter Sends Messages" in the Config dialog will enable a mode that allows you to make entire QSOs without using the function keys. ESM works for both running and S&P mode, but the messages are different for each mode. To set ESM, go to Config, and check Enter Sends Messages (ESM mode), or use the shortcut Ctrl+M.

## 8.1. Basic ESM Functionality

When running, pressing Enter with the callsign textbox empty will send CQ. If someone answers you, type in his callsign. Hit Enter again, and the program will send the exchange. After entering the other stations info, hitting Enter again will send the end of QSO message (TU/QRZ) and automatically log the contact. See the chart below for a detailed list of what is sent at various states of the QSO.

Here's a typical scenario where N1MM is calling CQ in the CQ WW CW Contest:

- Hit Enter - sends CQ N1MM
- PA1M calls in - type "PA1M"
- Hit Enter - sends "PA1M 5NN T5", note that PA1M's zone is filled in for you.
- PA1M sends "599 14" (zone matches what program filled in)
- Hit Enter - logs QSO & sends "TU de N1MM"

That's 3 keystrokes + typing PA1M's callsign. Slick!

On the other end, the S&P station (PA1M) can also use ESM. During the same QSO:

- You hear N1MM calling CQ - type "N1MM"
- Hit Enter - sends "PA1M", note that N1MM's zone is filled in for you
- N1MM sends "PA1M 5NN T5" (zone matches what program filled in)
- Hit Enter - sends "599 14"
- N1MM sends "TU de N1MM", completing the QSO and logging it

Once again, that's 3 keystrokes + typing N1MM's callsign. In some other contests, like CQ WPX, you will also have to type in the exchange, but in any contest ESM cuts the effort required to complete a QSO to a minimum.

Keeping track of which ESM "state" you are in can be confusing when things get hectic. To help you understand which state you are in, the function keys on the Entry Window will change color (aqua blue) to alert you which message will be sent next. The goal here is that it should always be obvious what will happen next.

There will be times when you get out of sync, or where you need to send something different than what the next Enter will send. Don't panic. Just press the correct function key(s) (F2, F4, etc as needed). If you finished out the QSO with the F-keys, just hit Alt+Enter, which will log the QSO without sending anything, and you are ready for the next QSO (and ESM is reset to the beginning state).

The cursor is kept in the callsign if you have entered a callsign that does:

- not have a prefix and at least one characters suffix
- prefix is a letter followed by a number
- prefix is a letter followed by a number, letter, number combo.

When ESM is on, the Space bar is used only when you need intelligent tabbing mostly between the callsign and the exchange field for instance to correct a call.

### Interrupting a CQ



If a CQ is being sent, typing a character in the callsign field while in ESM will stop sending a CQ message being transmitted (this can be set in >Configurer >Function Keys >ESM only sends your call once in S&P, then ready to copy received exchange

When the copy is solid, and no copying mistakes are made, ESM will just send the basic messages in the previous example. Depending on what information is in the Call window and Exchange window and what state the QSO is in, different messages can be sent. The chart below outlines the possible combinations of information in the Entry window, and what will be sent in each situation.

		<b>Running mode</b>	<b>S&amp;P mode</b>
<b>Callsign field</b>	<b>Exchange field</b>	<b>Enter sends</b>	<b>Enter sends</b>
Empty	Empty	CQ (F1)	My Call (F4)
New Call (1st time)	Empty or invalid	His Call + Exch (F5 + F2)	My Call (F4)
New Call (repeat)	Empty or invalid	Again? (F8)	My Call (F4)
New Call	Valid (before sending exchange)	His Call + Exch (F5 + F2)	Exchange (F2) + Log It
New Call	Valid (after sending exchange)	End QSO + Log (F3 + Log It)	Send Nothing + Log It
Duplicate Call	Empty or invalid	QSO B4 (F6)	nothing
Duplicate Call	Valid (before sending exchange)	QSO B4 (F6)	Exchange (F2) + Log It
Duplicate Call	Valid (after sending exchange)	End QSO + Log (F3 + Log It)	nothing
Dupe (1st time), Work Dupes unchecked	Empty or invalid	His Call + Exch (F5 + F2)	QSO B4 (F6)
Dupe (repeat), Work Dupes unchecked	Empty or invalid	Again? (F8)	QSO B4 (F6)
Dupe, Work Dupes checked	Valid (before sending exchange)	His Call + Exch (F5 + F2)	Exchange (F2) + Log It
Dupe, Work Dupes checked	Valid (after sending exchange)	End QSO + Log (F3 + Log It)	Send Nothing

### Again? (F8)



When in ESM and in S&P, If the cursor is not in the call textbox and the Exchange is not finished, the program will send " Again? (F8)"}

When a dupe callsign is in the callframe, the call is put in the call textbox and highlighted.

The actual messages sent by each of those function keys (e.g. CQ Key, Exchange Key, My Call Key, etc.) are set in the configuration dialog ('Config | Change Packet/CW/SSB Digital Message Buttons'). There are 24 messages that can be set: the first 12 messages are for Running mode, and the second 12 for S&P mode. Each mode (CW, SSB, Digital) can have a separate set of messages, which are saved by the program. If the program is sending the wrong message, check here first! In the middle of the contest, you can also change the messages for the current mode by right-clicking on (one of) the message buttons in the Entry window.

## 8.2. How to Prevent the Cursor from Moving to the Next Exchange Field

In ESM mode when running and trying to send a partial call entered in the callsign field, the cursor jumps to the report field before you can finish typing the call...

**Solution 1** - When you press Enter in ESM mode while running, the cursor will be placed highlighting the ?. If you type a letter, say "J", the ? will be changed, and you will have G4UJS in the callsign. Whenever you press the space bar, and the cursor is placed in the callsign, the ? will be highlighted, ready to be replaced without typing Del or Backspace.

### Entering ? as a Callsign

When you are Running with ESM enabled and while entering you place a ? in the callsign field the cursor will not move to the exchange field but stay in the callsign field highlighting the ?

## 8.3. How to Skip Sending the Callsign or Exchange Field (SSB)?

To avoid PTT when setting up ESM on SSB without sending a callsign or exchange put in SSB a single space or the path to Empty.wav as the wav file for the callsign and/or the exchange buttons. The program will not assert PTT and immediately simulate the space bar being pressed.

### Watch that Turquoise Button

The next button to be sent when pressing Enter shows in **turquoise**. If you don't like what ESM will send, you may choose another.

## 9. QSYing Wipes the Call & Spots QSO in Bandmap

If you set >Config >QSYing Wipes the Call & Spots QSO in Bandmap, it will spot stations in the bandmap which you haven't worked yet or don't want to work all. These stations are not spotted on packet/telnet but only locally. Any call greater or equal to 3 characters that you don't work but have entered in the callsign field will be automatically spotted in the bandmaps when you turn the VFO to another frequency. This way you can place stations on the bandmap which you can't work direct (big pileup?) so want to store them somewhere. Also useful when you want to add stations to the bandmap who you don't want to (or may not) work but like to have the callsign in the bandmap so when searching for stations you know who is on that frequency so you can turn on.

All bandmap features work on these 'spotted' stations so they are easy accessible if needed. Self spotted stations are easy recognized because they are shown in bold. This feature is also very useful in a M/S or M/M environment. Often there is a MULT station that is tuning the bands, but may not want to post the spot until the QSO has been worked by their own RUNNING station. (I do not wish to get into an ethics discussion, but this is done quite often) This feature allows the MULT station to build a band map full of calls for the RUNNING station to work when it gets a chance.

That means you can do the following:

- Tune to 21200.
- Enter VU2PTT.
- Tune off.
- VU2PTT is "spotted" at 21200, and the Entry Window is cleared.
- Tune to 21208.
- Enter G4UJS.
- Tune off.
- G4UJS is "spotted" at 21208, and the Entry Window is cleared.
- Repeat as long as desired.
- Go back and work all of them using Ctrl+Up and Ctrl+Dn to navigate.

#### Spot All S&P QSOs

There is also a >Config >Spot all S&P QSOs option. It has a number of rules, but will spot everything you WORK on packet, if it has not already been spotted on the same frequency.

## 10. Single Operator Call Stacking

Macros and keystrokes used for call stacking are {SOCALLSTACK}, {STACKANOTHER}, CTRL+ALT+G, {LOGTHENPOP}, and ALT+D. The first three are used to place calls onto the stack and the last two are used to take calls off the stack. The macros only operate in RUN mode and stacked callsigns appear in the Bandmap on your RUN frequency. SOCallstacking is functional in CW, phone, and digital modes and is compatible with manual key operation or ESM. It can also be used in SO1V, SO2V and SO2R modes and in multi-station environments.

### **{SOCALLSTACK}** or **{STACKANOTHER}** or **CTRL+ALT+G**

The operator can stack a full callsign or a partial callsign that may include a "?" and it will be highlighted when that callsign is removed from the stack. The operation of the {SOCALLSTACK} and {STACKANOTHER} macros differ slightly.

**{STACKANOTHER}** or the keystroke short cut, **CTRL+ALT+G**, simply pushes callsigns onto the stack and clears the Entry Window callsign box.

**{SOCALLSTACK}** functions as a single level stack macro. The first execution of {SOCALLSTACK}, stacks the first callsign and clears the Entry Window callsign line. When a second callsign is entered and {SOCALLSTACK} is executed again, the two callsigns are exchanged. If the callsign window is empty when {SOCALLSTACK} is executed, the callsign is removed from the stack and placed into the callsign Entry Window.



## **{LOGTHENPOP}, ALT+D**

The stacked callsigns can be removed from the stack with several methods. Logging the current call, unstacking the next callsign with {LOGTHENPOP} or manually removing the stacked callsign with the keystroke ALT+D. The ALT+D keystroke is useful if a callsign appears on the stack via a telnet spot. The next callsign on the stack is displayed on the callframe when the CQ-Literal is not present. Pressing Space will move a stacked call from the Callframe to the callsign box and remove it from Bandmap.

## **ESM Automation**

The Configurer, Function Key tab, Next Call Key is used to select the function key that contains the {LOGTHENPOP} macro along with the message string for ESM automation. If a Next Call Key has been specified, then when Enter is pressed to finish a QSO and there is another call sign on the callsign stack, the Next Call Key will be sent instead of the TU(F3) Key. The last option in the drop down menu for the Next Call Key allows the ESM SOCallstacking automation to be disabled.

## **SOCALLSTACK ESM Example**

Program F9 key to: {STACKANOTHER} or {SOCALLSTACK}

Program F10 key to: {LOGTHENPOP}TU NW {F5} {F2}

The appropriate SSB wave file can be inserted into the F10 message in place of the " TU NW" letters above.

For example: {LOGTHENPOP}C:\Program Files\N1MM logger\wav\{operator}\TnxNow.wav {F5} {F2}

Set >Config >Function Key tab >"Next Call Key" to F10

Select RUN mode and turn ESM on. For this example two stations are calling, N2IC and K3CT

Type K3CT, press F9, type N2IC and press Enter

Copy N2IC's report and press Enter. This will log N2IC, send the TU, unstack K3CT, and send the exchange

## **SOCALLSTACK Non-ESM Example**

Program the function keys as listed above.

Select RUN mode.

Type K3CT, press F9, type N2IC and press the exchange key programmed in Configurer, usually ";". This key is programmed to F5 & F2.

Copy N2IC's report and press F10. This will log N2IC, unstack K3CT, and send the exchange

If multiple callsigns are stacked, ESM will continue to unstack the callsigns. The same is true in non-ESM mode as F10 is pressed. Should a logging error occur such as a bad call, the sequence will be interrupted until the error is corrected. When no calls remain on the stack, the TU message is sent. If there are multiple callsigns on the stack, the order that they are removed or exchanged with {SOCALLSTACK} depends on the internal sorting order and not the order they were stacked.

## **10.1. Additional SOCALLSTACK Information**

It is important that the contest callsign is entered in the Config, Station Information window. That

way, the station callsign will not appear in the Bandmap via a telnet spot and the SOCALLSTACK code will not place the station callsign or the Busy literal (ALT+M) into the callsign box.

If a callsign appears on the callsign stack via a telnet spot that you want to remove, use the ALT+D keystroke to remove it without popping it off the stack.

SOCallstacking does overlap slightly with multi-operator call stacking. Multi-operator call stacking is the program feature that allows a second operator to listen to the run radio and send calls to the run operator's Entry Window.

## 10.2. Digital Call Stacking

To turn this off or on there is a menu selection in the Setup dropdown menu in the Digital Interface.

- With it turned off everything operates the way it is before Call Stacking was added.
- Only works in RUN Mode and only with a valid callsign.
- Single Click on Call in Digital RX window or Alt+G when grabbing a call
- If there is no callsign in the call box of Entry Window it will function just like it normally does by placing the callsign in the call box.
- If there is a call already in the call box then clicking on another call or hitting ALT+G to use the grab window will move the call that is currently there up to the bandmap and call frame of the entry window and place the currently clicked or grabbed call into the call box.

The usage here is if a two stations call you can then stack one call and work the other. Then instead of hitting enter if in ESM to send F3 or LOG. You would then hit the F-Key that contains : {TX}{ENTER}! {LOGTHENPOP} TU NW {F5}{F2}{RX}

Alt+Single Click on Call in Digital RX window or Ctrl+Alt+G when grabbing a call. This will take the clicked on callsign and place it directly to the stack in the bandmap. Any number of calls can be placed here for working one after another.

The usage is 3 or 4 stations call you at the same time do a single click or Alt+G on the first call to place it in Entry window. Then do and ALT+Click or Ctrl+Alt+G (to pull from grab window) to place the others on the stack. Then use the F-key that contains: {TX}{ENTER}! {LOGTHENPOP} TU NW {F5}{F2}{RX} to work them all in a row until the last call is off the stack then you would use F3 or hit enter in ESM to log the final one.

{LOGTHENPOP} will not function if CQ-Frequency is in the Call Frame.

Double Click on Call in Digital RX window: The function of the Double click does not change and will over ride whatever callsign is in the Entrywindow Call Box with the clicked on callsign.

Macro Substitution: {LOGTHENGRAB} This will log the current contact and Grab the top callsign that is in the grab window of the DI. Will only work in Run Mode Digital use of macro Substitution: {STACKANOTHER} This acts just as Ctrl+Alt+G for the grab window but allows it to be called by a macro. If you hit the F-key that contains {TX}{ENTER}! {LOGTHENPOP} TU NW {F5}{F2}{RX} while there are no calls stacked it will send your TU key.

### 10.3. How to Tell Visually Which Call Will be Put in Next

If "CQ Frequency" is on the call frame, then look at the Bandmap.

The {LOGTHENPOP} calls the {SOCALLSTACK} routine. {SOCALLSTACK} will remove the CQ-Literal ("CQ Frequency") and take the next callsign listed on the Bandmap's run frequency. There are cases where the CQ-Literal string will replace the callsign on the call frame. The stacked callsign isn't lost, look at the Bandmap.

The same is true when you are spotted. Your callsign will appear in the call frame but the routine will not pop it into the callsign box. If you find that it does, you don't have "your callsign" entered into Station Data window. When you use {LOGTHENPOP} or {SOCALLSTACK} they remove the station callsign and discard the callsign, then grab the next call on the stack.

If you have {SOCALLSTACK} programmed to an F-key, pressing it once at any time will exchange the current callsign with the next callsign on the stack. If there is no callsign on the stack, then it stacks the call and gives you an empty callsign window to enter one. Pressing the F-key again will reverse them again.

## 11. Call Stacking (same or different bands) - Multi-User Mode

A callsign can be stacked from one radio to another when in 'Multi-User Mode'. **It does not matter if the target station is on a different band or the same band.** A second operator can stack a call on your PC, and he could find stations and stack them for you to work.

- To indicate which station you want to stack for, right click on its "cue-ball" in the info window, and select the option "Target for call stacking"
- A maximum of one callsign can be stacked. If the stack is empty another one may be stacked
- After the target station pops the call into the entry window callsign area, the partner station needs to manually wipe his entry line before entering another call. It doesn't automatically clear

Stacking within same band but **not on the same frequency** - Use the bandmap by tuning off a station whose callsign you copied.

Additional functionality when on the **same CQ frequency** (within tuning tolerance) then you will see the other station keystrokes in your callframe and vice-versa.

## 12. Serial Number Server

N1MM logger supports a single sequence of serial numbers for SO2R, MS, M2 and MM.

The serial number is reserved in

- S&P mode when the cursor leaves the callsign field or the Exchange key (F2 default) is sent

- Either through spacing, tabbing, or hitting Enter in ESM or pressing the Exchange key
- This is needed so you can enter calls to check for dupes while not reserving a serial number
- RUN mode as soon as you enter a letter in the call-sign field
  - This because on SSB people frequently talk before they type, and they need to see the serial number displayed earlier. A serial number is not assigned in S&P mode until the space bar is pressed, so you can do dupe and check multipliers without committing a serial number to it, by entering it in the callsign field without pressing Enter or Space

In SO2R and SO2V, typing **Alt+W** (wipe) after a serial number has been reserved or wipe through QSY will "un-reserve" that number.

Because of the way the serial number server works, there are a few cautions:

- Serial numbers issued by the second radio may be out of time sequence with those issued by the main one. This occurs because certain program actions cause a serial number to be reserved for the use of a station, and if that station does not use that number until after the other station has made several QSOs, when the log is viewed in chronological order the serial number will appear to be out of order. I don't think there is anything to be done about this
- For similar reasons, depending on operator actions at one or the other station, such as shutting down the program while a number is reserved, there may be some gaps (numbers not issued) when reviewing the final log
- The most important aspects of serial numbering are that the serial sent to a station be correctly logged, and that there be no duplicate serial numbers sent; N1MM logger seems to meet both these criteria
- Sometimes it's possible a number will be skipped when given out but not used (example: QSO not made after all or deleted). Contest committees do accept this behavior!
- The maximum sent number to give is 32767. The maximum receive number is 99999

### What Do Sponsors Look For?

Most sponsors are more interested in serial number accuracy than in serial number time order. If you think about it, it is impossible to guarantee the order of serial numbers in a two radio situation. This assumes that you always log the time when the QSO is added to the log, which is the right time from a rules point of view. i.e. end of contact.

Addendum by Steve, N2IC&&&

Let me say a few words about the way serial numbers are "reserved" in N1MM Logger. For the sake of this discussion, I'll assume that ESM is being used.

When you enter a callsign in the Entry Window, and hit the Enter or Space key, a serial number is reserved and locked-in to that QSO. If it turns out that the QSO is not completed and logged, that serial number is "lost", and will be not used for a subsequent QSO.

This gets to be especially interesting with SO2R and SO2V. Let's say you are running on Radio 1, and search-and-pouncing on Radio 2. You enter a call on Radio 2, and hit the Enter key, reserving

a serial number on Radio 2. You get beaten out on Radio 2, and go back to running stations on Radio 1, advancing the serial number beyond the number reserved on Radio 2. A few minutes pass, and you finally work the station on Radio 2. Your log now appears to have non-sequential serial numbers. If you never work that station on Radio 2, the reserved serial number on Radio 2 is lost, and will not be used for any subsequent QSO.

I can't speak for all contest sponsors, but for Sweepstakes and CW/SSB WPX, this is not an issue. There is no problem for these log adjudicators if your serial numbers are out-of-sequence, or if there are missing serial numbers in your log. Your log will be correctly processed. In addition, the N1MM Logger Summary window reports the correct number of successfully completed QSO's.

In summary, stop fretting about out-of-sequence or missing serial numbers. The software is working as designed 😊

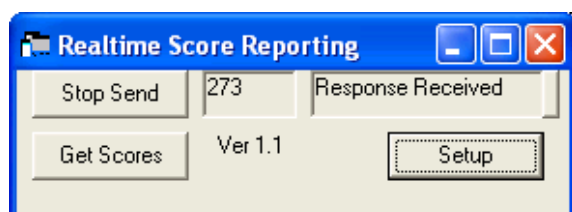
### 13. Contest Reporting Application

The Contest Reporting Application (Realtime score reporting) can be started by checking "Start Contest Reporting Application" on the Other tab of the configurer. With this application you can show your contest efforts in real time during a contest to the world. Next to this contest reporting application a website is needed where everyone can see the scores. This application does automatically upload your scores from the current selected contest to the configured website. These websites are published on the several reflectors.

#### ⓘ Stop Score Reporting

Note that this will keep reporting everything until you uncheck it. Doesn't matter if you are testing, or operating in a contest. It will be reported. So either close it or click "Stop Send" if you don't want that.

When the application has been started the dialog below will be shown.



In the middle a countdown counter in seconds will be shown which can be set in the Setup (see below). When the counter reaches 0 your score will be sent to the configured website. The status field next to it will give status information (like error messages). A small button to right of status field shows response from last upload and creates a file with sent and received data for debugging problems. Version information is shown in the middle of the dialog.

- Stop Send / Send Score - Stop the sending of scores to the configured website.
- Get Scores - Clicking this button will open the configured website in your browser so you can view your and other stations scores.

- Setup - will open the Setup dialog below.

Note that the score will be send to the website for the first time at program startup.

The setup dialog configures the realtime scoring application.

- **Score Post Time (min)** - Set the timer how often your score will be uploaded to the configured website. The possible times to set are: 2, 5, 10,15,30 and 60 minutes. Also a manual mode possibility can be selected. To send the score the 'Send Score' button has to be pressed.
  - **Score Posting URL** - The url of the website to post your scores to.
  - **Score Reading URL** - The url where the scores are displayed.
  - **Listening IP** - Shows the IP address on which N1MM logger is running. By default this is the same computer as where the real time scoring application is running on. This setting is set by N1MM logger.
  - **Listening Port** - Shows the port from which N1MM logger will send the information to the real time scoring program. This setting is set by N1MM logger.
- 
- **Defaults** - Fill the dialog with default values.
  - **Cancel** - Cancel the entered values and close the dialog.
  - **OK** - Save the values and close the dialog.

During major contests several real time score reporting web sites will be up and running. An example website from Gerry, W1VE below.

## Live Amateur Radio Contest Scores

a site by W1VE, Last Updated 19-Oct-2006 20:57 UTC

Display Filter and Options

Contest:  Mode:  Entry:  Power:

Bands:  Club:  DXCC:  CQ Z:

Grid:  IARU Z:  Local:  Refresh Display:

Display Option:   Hide Options/Sidebar

Current Filter: Yankee Clipper Contest Club,SSB,HIGH,K (16 score(s) posted from 18-Oct-2006 20:57 to 20-Oct-2006 20:57 UTC)

Contest	Who	Class	Rank	Call	Score	QSOs	Total Mults	Band	CQ Zone	IARU Zone	State/Prov/Other	Last Update
CQ-WW-SSB	W1VE	MM/HP	1	K1TTT	11,290,884	5452	759	ALL		5	MA	10-18-06 22:12
CQ-WW-SSB		MS/HP	1	N1MM	4,973,891	2579	689	ALL		5	CT	10-19-06 10:54

Who	Class	Rank	Call	Score	QSOs	Total Mults	160Qs	160Ms	80Qs	80Ms	40Qs	40Ms	20Qs	20Ms	15Qs	15Ms	10Qs	10Ms	Last Update
W1VE	MM/HP	1	K1TTT	11,290,884	5452	759	189	61	487	103	714	166	2046	186	1779	162	207	81	10-18-06 22:12
	MS/HP	1	N1MM	4,973,891	2579	689	21	17	88	65	163	103	585	171	755	163	967	167	10-19-06 10:54

By Gerry, W1VE:

Through the encouragement of many, I decided to take on the project of creating a usable web portal for realtime score reporting. The result is now ready. You can view the portal at: <http://live.getscores.org>

The scoring upload to the site is based on work by Bruce, WA7BMN, with his Contest XML schema, and scoring trials last year by Tom, N1MM and the N1MM logger.

The latest version of N1MM fully supports score posting. If any other contest software vendor supports the HTTP POST method of score reporting, it is immediately compatible with getscores.org. Additionally, getscores.org supports a SOAP-based Web Service API. The success of the site will depend on participation and the support of software vendors. There are links on the [live.getscores.org](http://live.getscores.org) site for FAQs.

The viewing site supports many filters, so that you can look at only what you want to look at. Filter by Class, Power, CQ Zone, IARU Zone, State/Prov and lots more. Your filter preferences are saved as a cookie by your browser for up to 7 days. The page automatically refreshes every 60 seconds with score information.

the website will support many contests as listed on the site.

The window is by Score with the highest score first within the operating class, Power Class and mode. The general idea here is not to look at everything: apply a filter and you'll get a more representative view of you are looking for.

A scoring period is a rolling window of 72 hours. If you post for a particular contest during the 72 hour period, any time you post an update, you will simply update your score for that contest. This way, if there are two supported contests over a weekend, you can submit to both. The unique key is the name of the contest and the callsign.

By the way, I want everyone to know that getscores.org is not an "N1MM" effort. In fact, I want to ensure it is not. I'm sure that Tom would agree. We must get as many of the contest authors to participate, otherwise, this type of site is useless. We need to see lots of scores, not just those from

the N1MM logger. That said, BIG KUDOS to K1TTT and N1MM for getting the posting software in great shape quickly, and to all of you users for testing — that's a great way to get the site in good shape for CQWW.

If you have any questions or suggestions about the site, please send them to me at the email addresses provided on the site, or via [gerry@w1ve.com](mailto:gerry@w1ve.com).

### **The ethics**

Tom, N1MM: I don't see any issue with reporting your score. You are not "spotting" yourself, there is not a frequency specified other than the bands you have operated on.

## **14. Starting a Contest with a Number Other Than 001**

Some contests which have more parts/sessions there is the need to start a next session with the next number given in the previous part. So how not to start with 001?

There are two workarounds:

1. Start second part as a separate contest and make the first QSO with number 001 and log it, then correct (Ctrl+Y) to proper sent number
2. Start second part as a separate contest, enter fake QSO, open QSO in EDIT window, change SENT number from 001 to last number you sent in the previous part of the contest, save changes, et voila, it's done. When a couple of real contacts have been entered, delete the fake QSO

## **15. Single Operator 2 Radios (SO2R)**

Single Operator 2 Radioa (SO2R) is an operating technique that when done properly, can add many extra QSOs and multipliers to your log. This is accomplished by increasing your efficiency during "dead" time, specifically when you are sending on one radio. Efficiency is increased by listening on a 2nd receiver while you are transmitting on the 1st radio. On the 2nd radio you are scanning the bands for needed QSOs and multipliers. If you find a new station to work on the 2nd radio, you leave it staged on the 2nd Entry Window until you get a free moment to work this station. Even adding a few QSOs an hour will greatly boost your score.

A complete chapter has been devoted to [SO2R](#).

## **16. Footswitch Support**

Footswitch support has been added for multiple distributed stations.

In IARU contest headquarter station is allowed to use multiple stations located within one IARU zone but the rule of one signal per band/mode still in effect. So there are often 2 (one running station and another looking for multiplier) or more stations on the same band and same mode and



they should keep only one TX signal on this band at any time. Now you can hook up a footswitch to the LPT port 15 (LPT port should be enabled even though the only purpose for it will be to have a footswitch, no any special check box to turn footswitch feature on/off). If the station is not in multi-multi operator category the footswitch will directly control PTT just like Alt+T. If it is a multi-multi station (connected to other stations on LAN or via the Internet in Multi User mode) it will be blocking TX of any other station from the group on the same band (and mode if mode category is "Mixed").

Yes, for now a quite exotic feature.

## Two Monitor Support

Original by Joe Natale, K1JN, with major revisions (so don't blame him)

### General Two Monitor Operation

Using two monitors is easy and once you have used two you won't want to go back to using one. The operating system (Windows XP or later) takes care of everything. Just think of the two monitors as one, whether side by side or top and bottom. You only need one mouse and keyboard. The mouse will move quite smoothly between the two screens. To jump from a program on one monitor to one on the other, just click a window of the program you want to use. All of the Windows setting and commands are available to both monitors and can be different for each.

### Two Monitor Setup

- Install hardware - Many new computers already have two video outputs on the video card. In that case adding an extra card with a video output is not needed
  - Shut down Windows
  - Open the case
  - Install a second video card (when needed)
  - Attach a monitor
    - Any card/monitor will do, they don't have to be same as the one already installed, I used a Windows 95 era ATI Rage video card and an old Gateway 2000 CrystalScan monitor
  - Close the case
- Software
  - Start the computer and reboot
  - Windows should find the new card and monitor and install the software
    - You will get a message on the 2nd monitor that says if you can read this, you can extend your desktop onto this monitor
  - You do that by right clicking on the desktop and click on properties. Click on the settings tab. There will be icons for two monitors. Click on the one numbered 2 and check the

- box that says extend my Windows desktop onto this monitor
- o Drag the monitor icons to set which is left and which is right
  - The second monitor is actually an extension of your desktop, it will have the same wallpaper and color scheme. If you move the mouse cursor off the right edge of the left monitor, it shows up on the right monitor. The screen saver runs on the main monitor, but not the 2nd one here

As far as the windows sticking, it varies by program. Luckily, in the case of N1MM Logger, they stick!

### Example Setup

The picture below is a setup example from K1JN during the CQ WPX CW contest. The left monitor is a 17" set to 1024 x 768 resolution, the right monitor is a 15" set to 800 x 600 resolution.



Left screen windows	Right screen windows
Both Bandmaps	Packet/telnet window
Log window	Info window
Entry window	Available mult's and Q's window
Check partial window	Score Summary window

## Contest Setup and Configuration

Table of Contents:

- 
- 1 [Station](#)
  - 2 [Configurer](#)
  - 3 [Start a New Contest Log or Open an Existing Contest Log](#)
- 

### Station Dialog

Select Config >Change Your Station Data

Your Station Dialog window will be similar to this one.

**Edit Station Information**

Tip: You need to fill out this form or the program will not perform properly... Also, make sure your computer date and time are set to the LOCAL date and time zone for your location.

Call: N1MM

Name: Tom Wagner

Address: 301 Box Mountain Drive

Address:

City: Vernon State: CT Zip: 06066

Country: USA

Grid Square: FN31ST CQ Zone: 5 ITU Zone: 8

License Class: Extra Latitude: 41,80318 Longitude: 72,454193

Station TX/RX: Tentec Orion Power: 1500

Antenna: C31XR Ant. height o.g.: 26 a.s.l.: 300

ARRL Section: CT Packet Node Call: K1TTT

Club: Yankee Clipper Contest Club

email address:

SMTP Server addr: x.x

Ok Help Cancel

The information in this dialog is self-explanatory. Be aware that in order for the logger to calculate accurate beam headings, you will need to put your longitude and latitude into the appropriate fields. Also make sure that you enter your call as the station call sign. Many of the fields in this dialog are used when creating contests or during contests, so have them updated with the correct values.

- **ARRL Section** entered and the State field are used in some contests and QSO parties to determine if you are in or outside a state or province
- **Latitude** and **Longitude** are used to calculate the distance and bearing to another station/country (for HF contests)
- For **VHF contests** (having VHF in the contest name) the **Grid Square** field (4 or 6 digit) in the Station dialog is used as your bearing and not the entered Latitude and Longitude
- Contents of the Latitude and Longitude fields update when the Grid Square field is changed and vice versa
- **Club** normally has to be spelled out completely, so not YCCC but Yankee Clipper Contest Club (the dialog above is just a bad example!) to have it accepted (and counted) by the contest committee
- **E-mail address** and **SMTP server address** are used for sending a bug report via e-mail. Your e-mail address and SMTP server address can be found in your e-mail program

Help - Show the help file for this window.

## Configurer Dialog

### In this Section...

---

#### Configurer Dialog

1. Configurer >Hardware tab
    - 1.1. Hardware setup
    - 1.2. Set button examples
    - 1.3. Other Information
    - 1.4. Windows NT/2000/XP (32 bit OS)
  2. Configurer >Telnet Cluster tab
  3. Configurer >Files Tab
    - 3.1. Files Field Descriptions
  4. Configurer >Function Keys Tab
    - 4.1. Function Keys Field Descriptions
    - 4.2. Remapping Function Keys
  5. Configurer >Digital Modes Tab
    - 5.1. Digital Modes Field Descriptions
  6. Configurer >Other Tab
    - 6.1. Other Tab Field descriptions
  7. Configurer >Winkey Tab
    - 7.1. Winkey Field Descriptions
    - 7.2. How to Set Up Winkey in N1MM Logger
  8. Configurer >Mode Control Tab
    - 8.1. Mode Control Field Descriptions
  9. Configurer >Antennas Tab
  10. Configurer >Audio Tab
- 

The Configurer is our name for the tabbed dialog that appears when you click Config on the Entry Window top menu, and then choose Configure Ports, Telnet Addresses, Other. The Configurer has many tabs with program settings influencing all aspects of the behavior of the program. Be careful in setting up items on the different tabs, to be sure that you understand that the option you are choosing is what you want.

All settings are remembered by the program in "N1MM Logger.ini". Function key definitions, telnet clusters, call history, and country information are not saved in the .ini file, but in the database that was in use when you loaded them. That means, for example, that function key definitions loaded or modified when you are using one database will only appear in that database. You will need to export them from that database and load them into another database before they would show up there. The "N1MM Logger.ini" file contains the name of the .mdb file you were last using, which the program will load when it is started, as well as the name of the current contest and other recently-opened contests.

If you have not unchecked "Hide extensions for known file types" in Windows Explorer Options, you will not see "N1MM Logger.ini". You will see "N1MM Logger" with a Type of "Configuration Settings". Also, do not be confused by the file "N1MM Logger.ini.**init**". This is used by the program during

installation. You should not modify this file, because if you ever have to delete your .ini file and start over (to resolve a configuration problem, for example), it provides the basis for starting a new one

### **Multiple ini files**

You can invoke an ini file whose name is different from N1MM Logger.ini by using the file name as a command-line argument when the program is started.

For example, suppose you wanted to be able to choose between two separate configurations, one for SO2R and one for SO1V, perhaps using different radios and with different settings. You could create two new copies of your N1MM Logger.ini file in the N1MM Logger program folder and rename them to, for example, SO2R.ini and SO1V.ini.

Create two desktop shortcuts for N1MM Logger by right-clicking in an unused area of the screen and selecting New > Shortcut. Use the Browse button to find your N1MM Logger program folder and click on the N1MM Logger.exe file. You will notice that the file name appears in the location box within quotation marks, e.g.

"C:\Program Files\N1MM logger\N1MM Logger.exe" . Click just to the right of this file name within the box after the closing " , press the space bar once and add the name of one of your new ini files, e.g. SO2R.ini

"C:\Program Files\N1MM logger\N1MM Logger.exe" SO2R.ini

Note that if the name of your new ini file contains a space, such as "RTTY SO2R.ini", you will need to enclose the file name in quotation marks as well, e.g. "C:\Program Files\N1MM logger\N1MM Logger.exe" "RTTY SO2R.ini"

Click Next, choose a name for the shortcut, e.g. N1MM Logger SO2R, and click Finish. Repeat this procedure for other specific shortcuts.

Each of these shortcuts will now start up the Logger using the ini file named in the shortcut. Any configuration changes you make will be stored in the named ini file, thus enabling you to save different configurations in the two files and to choose which configuration to use by starting the program from the appropriate desktop icon.

## 1. Configurer >Hardware tab

The Hardware tab is used to set up your radios, packet interfaces, telnet connections, CW/PTT /digital ports and the interfaces to other devices, such as SO2R controllers, multi-purpose interfaces, and keyers, if they require serial or parallel ports. Set the values appropriate to your station. If you do not have one of the items listed connected to a port, make sure the port selection is 'None' and the check boxes are not checked for that port.

### **Why only 8 COM ports?**



One of the first things people notice when they begin setting up N1MM Logger is that there are only COM ports 1-8 available. This is a limitation of some of the components used in the programming, and cannot be changed at this point without a prohibitive amount of effort.

In helping people who say "but my lower-numbered COM ports are all committed to other things", we have found that it often turns out that some of these ports, though seemingly in use, are in fact relics of the past. As an example, COM3 used to be the standard port for built-in modems, and even though those modems have largely gone the way of the dinosaur, many computers still show COM 3 as committed to that use.

If you are familiar with the use of Device Manager, you can always set up several hardware profiles, including one for ham radio that deletes the devices that are getting in your way (printers and so on). That way, you are only a reboot away from being ready to go for radio or being back in everyday mode.

Sometimes, though, ports will not seem to be committed, but when you try to create virtual serial ports (with a USB-to-serial adapter, for example) Windows will inexplicably skip some lower number ports. Ron Rossi, KK1L, has contributed the following note about how to track down and eliminate these phantoms. Be aware that it involves a little beyond the basic user-level skills, so ask for expert local help if you're not comfortable with what he suggests.

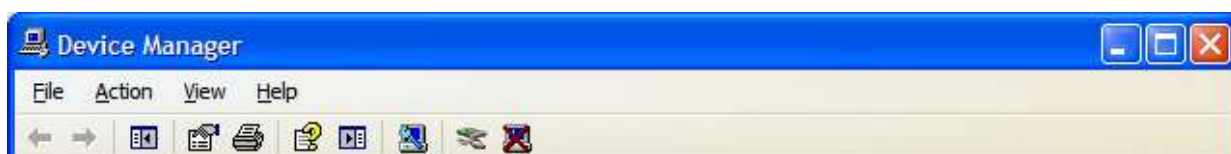
Often there are ports assigned which no longer have devices connected to them. These are called "phantom ports". These can be discovered and removed. It may then be possible to move ports around to accommodate the program.

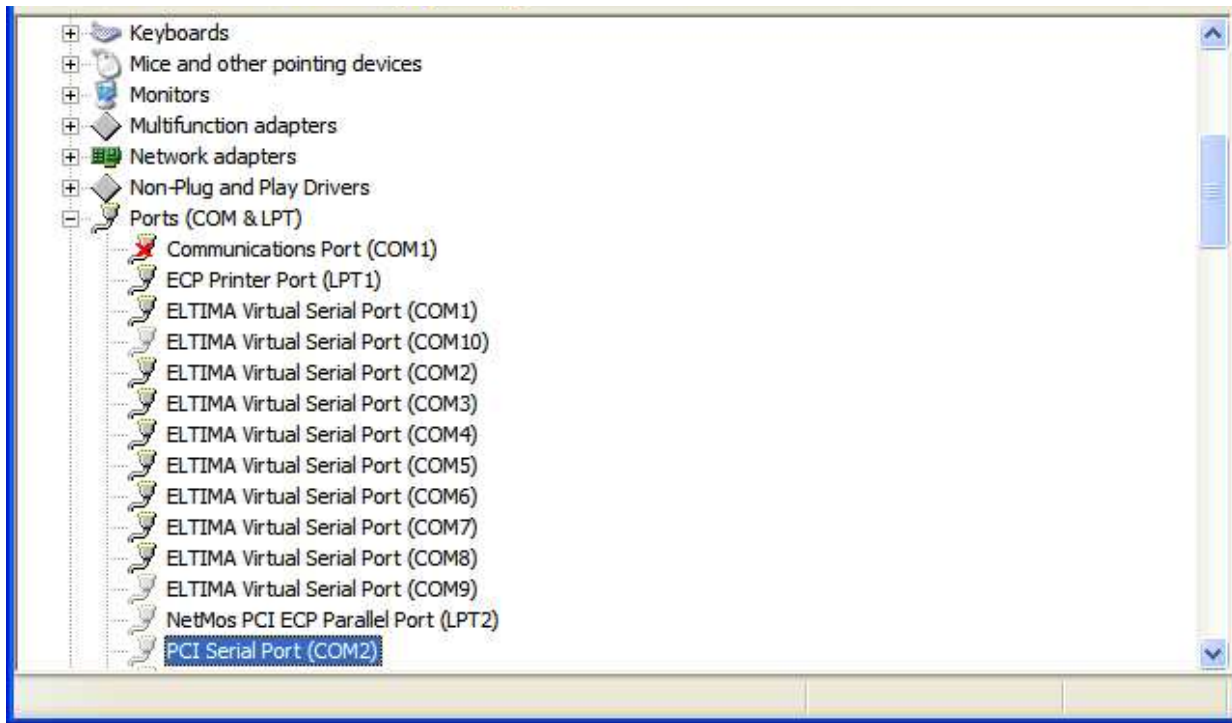
Here is how to have Device Manager show any "phantom" ports...

1. Click Start
2. Click Run
3. Type cmd.exe in the textbox and click OK
4. Type set devmgr\_show\_nonpresent\_devices=1 and hit ENTER
5. Type cd\windows\system32 and hit ENTER
6. Type start devmgmt.msc and hit ENTER
7. When the device manager opens, click the View menu
8. Click Show Hidden Devices
9. Click on the + sign next to the Ports to see the full list of Com ports being used
10. Highlight the port you wish to delete and then press delete

Accept when asked to do so and continue with any more that you wish to delete.

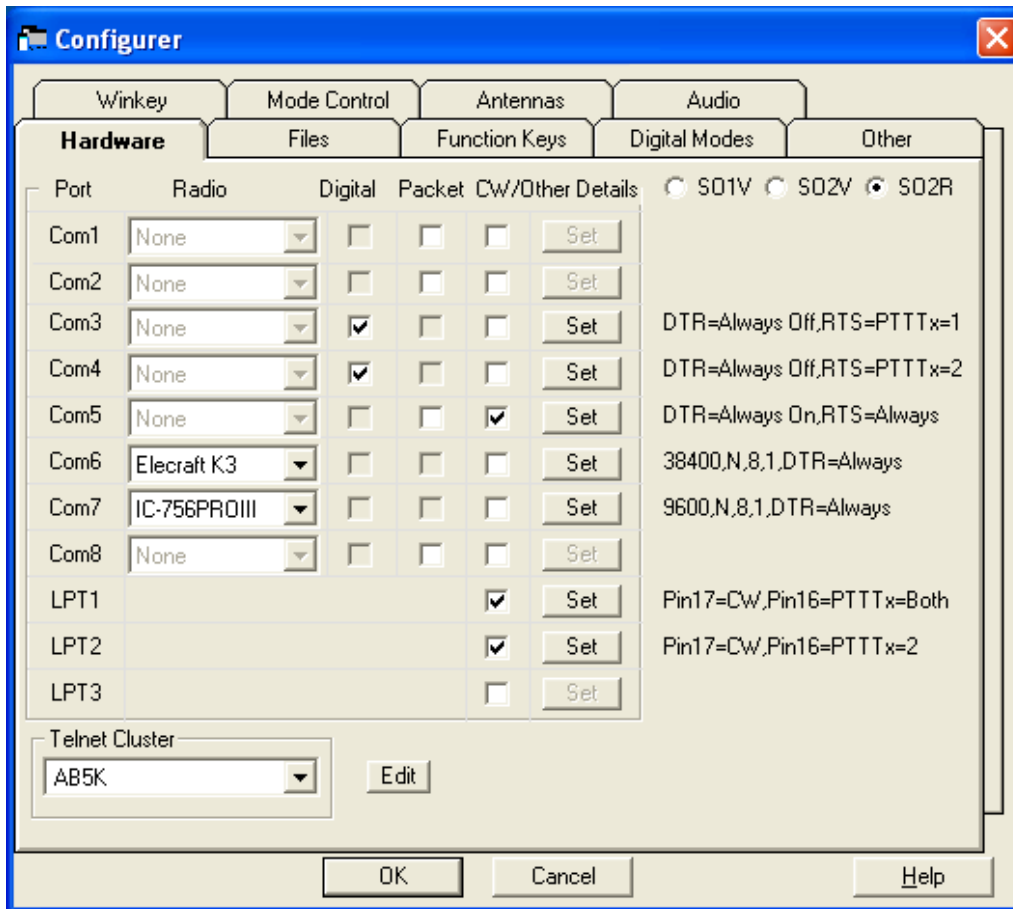
Here's what the Device Manager looks like before you delete the phantom ports:





If you want, you can right-click on any of the shaded ports and examine their properties. Each one will show up as a "device no longer connected to this computer."

### 1.1. Hardware setup



The program supports 8 serial ports (COM1 - COM8) and 3 parallel ports (LPT1 - LPT3). Set up each port depending on what equipment is connected and enter the appropriate information.

- **Radio** - The radio used and controlled by the program using radio control (CAT control). Select 'None' if no radio is connected to this port for this purpose
- **Digital** - Means this port is used for digital communication (MMTTY/MMVARI engine or TNC)
  - Use this to indicate the port that is used for a TU or TNC that is being used for RTTY
  - Use it also to indicate the port that will be used for PTT in digital modes
    - Exception: if you do PTT on the radio control port or from a Winkey, do not check the Digital box for that port
- **Packet** - This port is used for packet radio (TNC) if selected. Do not select if no TNC is connected for packet radio
- **CW/Other** - This port is used for CW, PTT, footswitch, DVK or an SO2R controller. This selection may be made in combination with a Radio, Digital or Packet selection provided the uses are compatible (e.g. Winkey and radio control cannot use the same serial port, because both use serial communications)
- **Details** - The Set button in this column can be used to open a window with a set of controls depending on what is selected in the preceding columns (Radio, Digital, Packet, CW/Other). To the right of the details column is a summary of the detailed settings. See below for details
- **SO1V** - Single Operator 1 VFO i.e. one radio and one VFO used
  - In SO1V mode, the backslash, Pause, Ctrl+Right-arrow, grave accent(`) and Ctrl+Alt+K keys are disabled to prevent opening the second Entry window. If the second Entry



window and/or Bandmap window were open, they will be closed when exiting the Configurer after selecting SO1V

- **SO2V** - Single Operator 2 VFO i.e. one radio and two/both VFO used
  - Permits using two separate entry windows, one for each VFO
- **SO2R** - Single Operator 2 Radio (2 radios used by one operator)
  - Permits using two separate entry windows, one for each radio

## 1.2. Set button examples

**Com7**

Speed: 9600 Parity: N DataBits: 8 Stop Bits: 1

DTR (pin 4): Always Off RTS (pin 7): Always Off Icom Code (hex): 6E Radio Nr: 2

Allow ext interrupts  Radio PTT via command

FootSwitch (pin 6): None

Suggested Icom Settings:  
 1200 - 19200, N, 8, 1, Always Off, Always Off, Icom Hex Code  
 DTR\_RTS should be Always On with a COM port powered interface.  
 Set the radio to the same speed or auto-baud.  
 Set the radio CI-V Transceive option to OFF.

OK Cancel

**Com5**

DTR (pin 4): Always On RTS (pin 7): Always Off Radio Nr: Both

PTT Delay (msec): 30

Allow ext interrupts  WinKey

Two Radio Protocol: None FootSwitch (pin 6): None CW/PTT Port Addr: 2F0

OK Cancel

**Com3**

DTR (pin 4): Always Off RTS (pin 7): PTT Radio Nr: 1

PTT Delay (msec): 30 Dig Wnd Nr: 1 (0=None)

Allow ext interrupts

FootSwitch (pin 6): None

OK Cancel

**LPT1**

Pin 17: CW Pin 16: PTT Radio Nr: Both

PTT Delay (msec): 30

Allow ext interrupts  DVK

FootSwitch (pin 15): Switch Radios CW/PTT Port Addr: 378

Note: When DVK is checked, Pin 16 PTT is disabled for the selected Radio(s).

OK Cancel

- **COM7 details** shown when Radio selected (serial port)
- **COM5 details** shown when CW/Other selected for Winkey (serial port)
- **COM3 details** shown when Digital selected (serial port)
- **LPT1 details** shown when CW/Other selected (parallel port)

There are many more possible combinations than the pictures above are showing.

- **Speed** - The speed of the serial port to radio/if-interface link (check the manual of your radio/TNC)
- **Parity** - The parity used (check the manual of your radio/TNC)
- **Data Bits** - The number of data bits used (check the manual of your radio/TNC)
- **Stop Bits** - The number of stop bits used (check the manual of your radio/TNC)
- **DTR** - The following selections can be made (pin 4 on DB9 connector):
  - **PTT** - used for keying the radio
  - **CW** - used for sending CW to the radio
  - **Always on** - DTR is always 'high'
  - **Always off** - DTR is always 'low'
  - **Handshake** - DTR is used for handshaking
- **RTS** - The following selections can be made (pin 7 on DB9 connector):
  - **PTT** - used for keying the radio
  - **Always on** - RTS is always 'high'
  - **Always off** - RTS is always 'low'
  - **Handshake** - RTS is used for handshaking

#### **Windows 98 Users**

If you are having trouble getting your radio working... Windows 98 used to enforce handshake if the port were set for it even if the application did not request it. Go into the Windows Control Panel, select the serial port, advanced settings and mark the port for XON/XOFF or "NONE" handshaking. That should allow receive data from the radio to pass without handshake lines connected and pulled high.

- **Icom Addr (hex)** - The address for the radio used, enter without the H i.e. 26 not 26H. (This field is only shown when Icom is the selected radio)
- **Radio Nr** - The radio controlled from this port
  - In **SO1V** (one radio, one VFO used) Radio Nr = 1
  - In **SO2V** (one radio, two VFOs) Radio Nr = 1
  - In **SO2R** select the radio (1 or 2) connected to or controlled by this port
    - If one LPT "CW/Other port" is set up as Radio=Both, and another LPT "CW/Other port" is set up as Radio=2, route band data for second radio to second port
    - When using CW/Other with an external SO2R controller the lowest numbered (first) LPT port must be assigned RADIO=BOTH (toggles pin 14)
      - I.e. When using LPT-2 and LPT-3 then LPT-2 must have Radio=Both
- **Dig Wnd Nr** - Set this to indicate which Digital Interface window uses this port for PTT and/or

- FSK keying (only shown when Digital is checked)
  - o If only one DI window is used, select 1
  - o If two DI windows are used, select the DI window number this port will be used for
  - o If the port is being used for FSK keying, you will also have to configure it in the MMTTY Setup window
- **PTT Delay (mSec)** - The time between keying the radio and starting to send CW, a wav file or transmit a digital mode (only shown when PTT or Winkey selected)
- **Radio PTT via command** - Select when using a software command via the control link to the radio to key PTT.

**! Use only one PTT Method at a Time**

Do not select PTT via DTR or RTS in addition to Radio PTT via Command. **Whether on the same port or another, doing so can result in conflicts that may cause PTT lockups or other malfunctions.** If these occur, a first troubleshooting step is to verify that you do not have more than one PTT method checked.

When checked, the radio will be set to transmit 40 milliseconds (default) before beginning the message, this is configurable using 'PTT delay (mSec)'

- **Allow ext. interrupts** - Allow external interrupts from this port (serial port - DSR pin 6; parallel port - pin 15), e.g. from a footswitch. An interrupt on this line will bring focus to the Entry window and stop a CQ in progress
- **Winkey** - Select when using a Winkey keyer. Speed, Parity, Data bits, Stop bits or Handshake settings do not have to be adjusted; they are fixed and set by the program. Settings for the keyer can be done on the Winkey tab in the Configurer. **If you select Winkey, DO NOT set DTR to CW.**
  - o Not possible if the port is used for radio control, digital or SO2R control (incompatible uses)
  - o Note: Only one Winkey is supported, but a single Winkey can key two radios
- **Two Radio Protocol** - Support for the MK2R or other SO2R controller from microHAM (using control protocol on COM port). USB-only SO2R (no LPT port required) with the MK2R/MK2R+. Protocol used may be either the MK2R proprietary protocol or OTRSP (Open Two Radio Switching Protocol)
  - o Disabled when selection for CW/Other is turned off or when a radio is selected
  - o OTRSP forces the port speed etc. to 9600,N,8,1
  - o More info in chapter Supported Hardware under **MK2R**
- **CW/Other Port Addr** - specify port address for serial and parallel ports
  - o Note: For real ports, the address here should be the same as used for this port in Windows
  - o For USB-to-serial adapters, the address here can be ignored
  - o When both RTS and DTR are set to PTT they will both be keyed for PTT with the set PTT delay
  - o Packet uses as handshaking RTS + XON/XOFF
  - o When using a self-powered interface set the handshaking to always on (DTR), always on (RTS) to supply power to the interface

## **LPT Port Numbers**

With N1MM, SO2R and LPT CW, the LOWEST number port must have the CW output for BOTH radios if it is used with a conventional LPT SO2R box (DXD, KK1L, N6BV, etc.) or microHAM MK2R/MK2R+ in LPT (Classic auto control) mode. The LPT with CW, PTT and the TX/RX/Split controls must be connected to the SO2R controller. If N1MM is configured for CW on TWO LPT ports (first port: Radio=1, second port Radio=2) then CW will be present only on the port representing the radio with transmit focus.

- **DVK** - DVK interface for MK2R, W9XT & other DVK's. Also recording is supported by the program
  - When DVK is selected, the Antenna selection via the LPT port is disabled
  - Note: The DVK pins and the antenna pins on the LPT port overlap
  - When using an external DVK, all of the Run and S&P SSB function keys should be set to empty.wav and not left blank
  - microHAM MK2R: if DVK is checked, N1MM Logger will use the DVK in Router instead of its own DVK support
- **FootSwitch mode** - Pin 6 on the serial ports and pin 15 on parallel ports. The combo box options are:
  - **None** - No footswitch
  - **ESM Enter** - Pressing Footswitch will cause the same action as pressing Enter key in ESM mode
  - **Typing Focus** - Pressing Footswitch will switch typing focus
  - **Switch Radios** - Pressing Footswitch will switch the radios (in SO2R)
  - **Normal** - Pressing the footswitch it will behave if it was connected to the PTT of the active transmitter and is automatically connected to the proper (active) radio. When the footswitch is released the focus will be set to main Entry window
  - **F1** - Pressing Footswitch will cause the same action as pressing functionkey F1
  - **F2** - Pressing Footswitch will cause the same action as pressing functionkey F2
  - **F3** - Pressing Footswitch will cause the same action as pressing functionkey F3
  - **F4** - Pressing Footswitch will cause the same action as pressing functionkey F4
  - **F11** - Pressing Footswitch will cause the same action as pressing functionkey F11
  - **F12** - Pressing Footswitch will cause the same action as pressing functionkey F12
  - **Band lockout** - Implemented mostly for multi user stations to block second signal on the same band/mode. It may be useful for single user as well. This mode should allow you to control PTT for both radios (in case of SO2R) in different modes (SSB/CW). The advantage of using it (compared to the foot switch directly connected to the radio) is - it stops AutoCQ and Dueling CQ's

It is possible to hook up a footswitch to a serial or parallel port. This should help users with only one or no serial ports (when a USB to serial adapter is used) to get the footswitch connected to the computer. A pull up resistor is needed between DSR input (pin 6 on both DB9 and DB25) and +12 VDC and for the parallel port, between pin 15 and +12 VDC. Multiple footswitches (one per parallel or serial port) can be used where different settings may be used for each one.

### 1.3. Other Information

It is possible to have the PTT on the same serial port as the radio with interfaces that support this (e.g. with a keying circuit connected between RTS and the radio's PTT input).

If the type of CW/Other port chosen is LPT1, LPT2 or LPT3, additional information will be present on the parallel port. See [Radio Interfacing](#) for more detailed info.

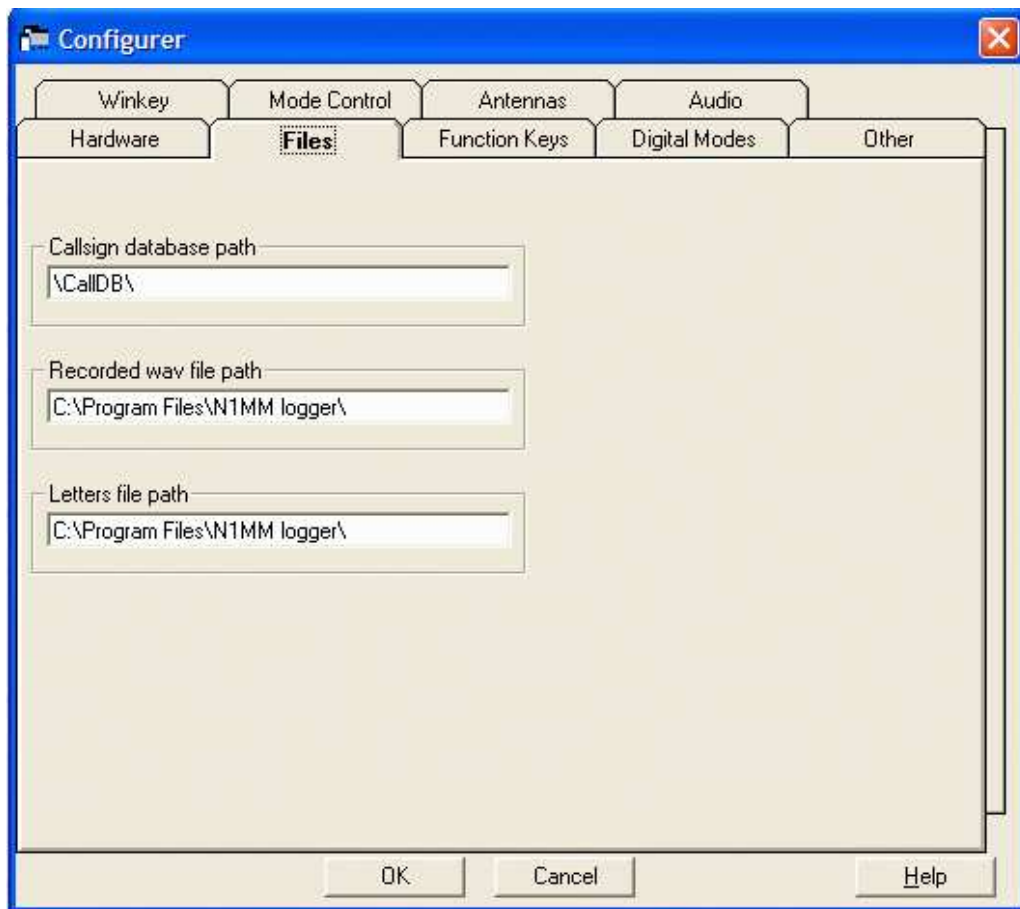
### 1.4. Windows NT/2000/XP (32 bit OS)

Under 32 bit Windows operating systems, using the parallel and the serial ports requires a special dll which will be installed using the program: Port95nt.exe. A link to this file can be found in the [Installation](#) chapter.

## 2. Configurer >Telnet Cluster tab

- **Telnet Cluster** - The default telnet cluster to connect in the Telnet Window
  - **Ctrl+D** - delete a row in the table or use right click menu
- **Edit button** - Change Telnet Cluster List
  - **File**
    - **Import...** - Import a text file with Packet/Telnet cluster nodes into the program
    - **Export...** - Export the the Packet/Telnet cluster nodes to a text file

## 3. Configurer >Files Tab

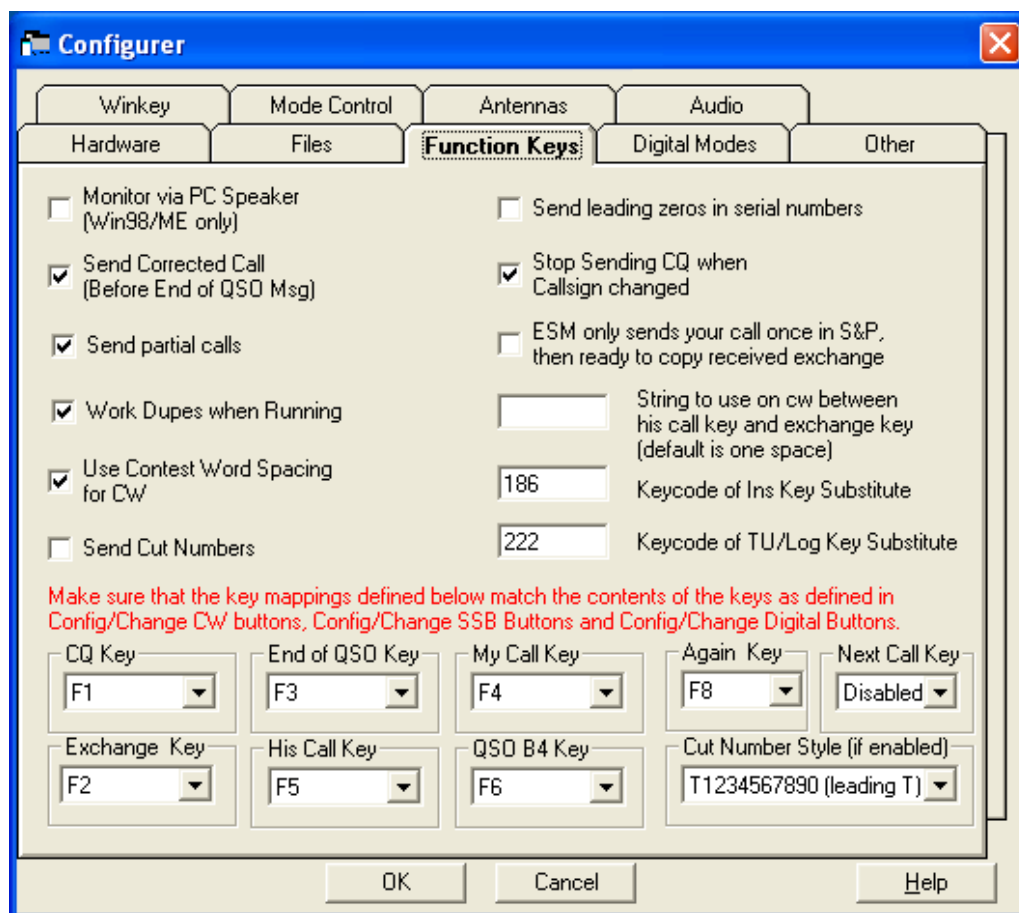


The files Tab is used to set the path to the Buckmaster callsign database if present, and to wav files used for SSB message macros.

### 3.1. Files Field Descriptions

- **Callsign database path** - Used to identify the directory of the Buckmaster callsign database to be used by the logging program. Be sure to include a trailing '\' in the directory name. Make sure that the path to the CD is set correctly. You can set the path to the Buckmaster database here and type in the full path to the Buckmaster database on your CD. For example: If your CD-ROM is mapped to the 'E' drive, the full path is: E:\HAM0\
  - Don't forget the back-slash '\' at the end of the path! Also, make sure to copy the HAMCAL32.DLL from the CD to the program directory where N1MM Logger is installed. On older CDs, this file is located in the \API\WINDOWS directory. It may be located elsewhere on newer CDs
- **Recorded wav file path** - The full path where the recorded wav files should be placed on your harddisk. In this path the directory with the contest name will be created
- **Letters file path** - The full path to the letters directory. Example: C:\program Files\N1MM Logger\wav\{operator}\ This provides the ability to have a separate letters file for each operator. The decimal point (.) should be specified as Point.wav

## 4. Configurer >Function Keys Tab



Function keys for each message are set here.

### 4.1. Function Keys Field Descriptions

- **Monitor via PC speaker (Win98/ME only)** - The CW sent by the program plays via the PC speaker (only for Windows 95, 98, ME, disabled for NT/2000/XP machines)
- **Send Corrected Call (Before End of QSO Msg)** - Send Corrected Call (Before End of QSO Message) - If the callsign is corrected after answering a call, then the corrected call will be sent before the End of QSO message (as configured by the End of QSO Key). E.g. 'PA1M TU DE N1MM' instead of 'TU DE N1MM'
- **Send Partial Calls** - Only CW. When sending a partial corrected call only the corrected part will be send (prefix or suffix). If not checked the whole call will be sent
- **Work Dupes when Running** - Work dupes is for ESM in Run mode and don't send the QSO B4 Key. All it does is determine what is sent when a dupe calls you AND YOU PRESS ENTER. Normally you do want to work dupes. See the chapter [Off topic](#) for a discussion
- **Use Contest Word Spacing for CW** - The box is defaulted ON for "Use Contest Spacing for

CW". This setting changes the spacing between words in your CW, where "N1MM 599 5" is 3 words. Default is 6 bits for "contest spacing". When box is not checked, 7 bits between words is used, which is "normal spacing"

- **Send Cut Numbers** - Ctl+G is cut number mode toggle. This is a toggle function and the new status is shown on the bottom left of the entry window. The cut number style can be set at the bottom of this dialog. The characters that can be entered into a serial number field are: A, N, T, O, E, S, U, W, G, and D. Some contests do not use a serial number field due to length or because the exchange can contain characters. In these contests the conversion from letters to numbers will not function
- **Send leading zeros in serial numbers** - Send leading zeros to make into 3 digit number. In CW: Select leading T with the Cut Number Style selector. RTTY: In RTTY zeros will be added, so 1 will become 001
- **Stop Sending CQ when Callsign changed** - Typing a character in the callsign field will stop a (repeated) CQ
- **ESM only sends your call once in S&P, then ready to copy received exchange** - This is many times called the "Big Gun versus Little Pistol switch" . When selected and in Enter Sends Message mode the cursor moves to the Exchange field when there is something in the Callsign field and Enter is pressed (so it does not keep the cursor in the callsign field). If you don't usually get a station on the first call then deselect this option
- **String to use on CW between his call key and exchange key (default is one space)** - Just as it says. Example ' ur '
- **Keycode of Ins Key Substitute** - Enter the number for the Ins Key substitute as mapped below in this configurer dialog. Defaults to 186, the ; character. The program can automatically enter the keycode in this field . Place the cursor in the keycode field and press the key you want to substitute, it will put the correct keycode in. 186 is an extended key code. Not all keyboards map keys the same way. Note that you can't use a Shift, Ctrl, Alt etc. key. I would not advise using a key like Numeric + that is already in use. It may or may not work. In this case Numeric +, does NOT work
- **Keycode of TU/Log Key Substitute** - Enter the number for the TU/Log Key substitute as mapped below in this configurer dialog. Defaults to 222, the ' character. The program can automatically enter the keycode in this field . Place the cursor in the keycode field and press the key you want to substitute, it will put the correct keycode in. 222 is an extended key code. Not all keyboards map keys the same way. Note that you can't use a Shift, Ctrl, Alt etc. key. I would not advise using a key like Numeric + that is already in use. It may or may not work. This particular case (Numeric +) does NOT work
- **Cut Number Style** - the following cut number styles can be chosen:
  - T1234567890 (leading T) - leading 0 will be replaced with a T. So 007 will become TT7 and 030 will become T30
  - O1234567890 (leading O) - leading 0 will be replaced with a O. So 007 will become OO7 and 030 will become O30
  - T123456789T (all T) - all zeros will be replaced with a T. So 007 will become TT7 and 030 will become T3T
  - O123456789O (all O) - all zeros will be replaced with a O. So 007 will become OO7 and 030 will become O3O
  - T12345678NT (TN) - all zeros will be replaced with a T, all nines with a N. So 097 will become TN7 and 090 will become TNT
  - T12345678NT (ON) - all zeros will be replaced with a O, all nines with an O. So 097 will



become ON7 and 090 will become ONO

- TA2345678NT (TAN) - all zeros will be replaced with a T, all nines with a N, all ones with an A So 091 will become TNA and 190 will become ANT
- TA234E678NT (TAEN) - all zeros will be replaced with a T, all nines with a N, all ones with an A, all fives with an E So 091 will become TNA and 1590 will become AENT
- TAU34E67DNT - the zero, one, two, five, eight, nine s will be replaced with a T, A, U, E, D, N or T

## 4.2. Remapping Function Keys

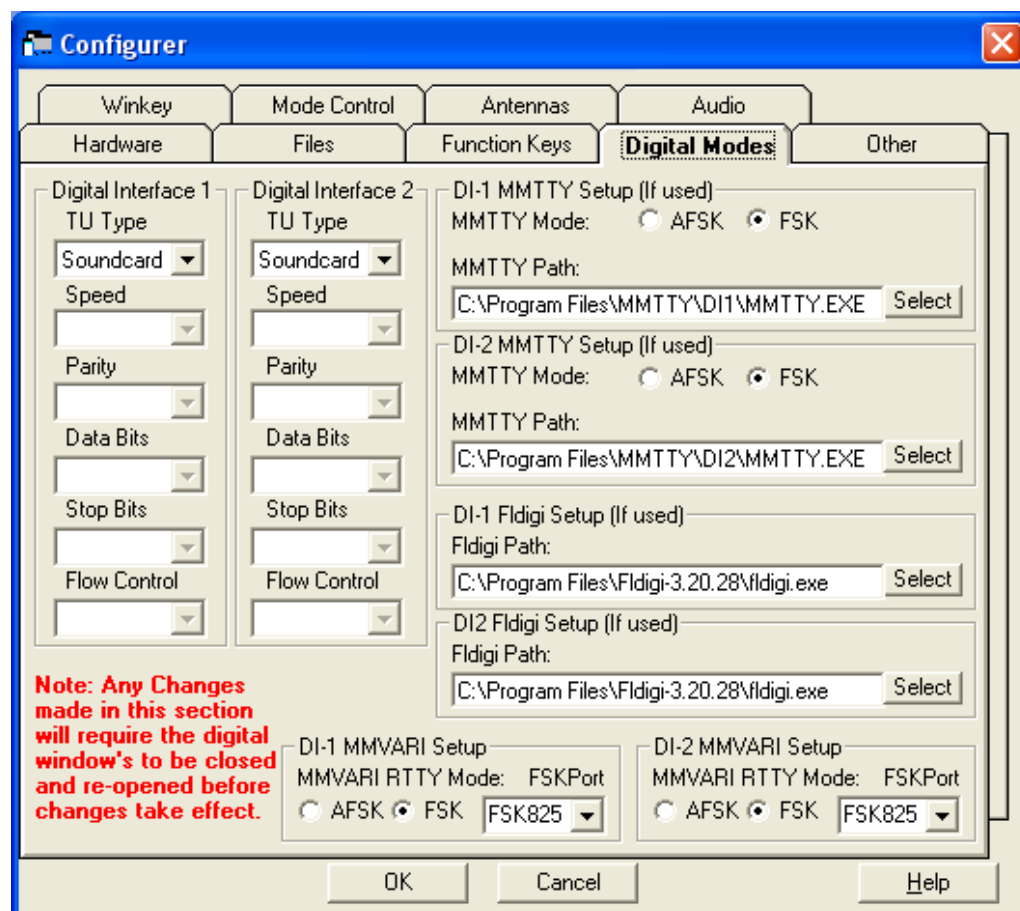
Select which function keys to send messages. Each type of message has a combo box for you to set the appropriate function key. If the program is sending the wrong message check here first. The only restriction is that a key must mean the same thing in Running and in S&P. Function keys do not have to be unique for a selected message. There is little reason to do so although if you want it can be done. For the following messages a function key can be selected

- CQ Key - defaults to F1
- Exchange Key - defaults to F2
- End of QSO Key - defaults to F3
- His Call Key - defaults to F5
- My Call Key - defaults to F4
- QSO B4 Key - defaults to F6
- Again Key - defaults to F8 (can be disabled)
- Next Call Key - defaults to Disabled

ESM Mode	Work dupes when running	Mode	QSO B4 Key	Again Key	Action	Result action
On	don't work dupes	Run	Disabled	F-key	DUPE callsign entered	Send AGN message when Enter pressed
On	don't work dupes	Run	Disabled	Disabled	DUPE callsign entered	Send the EXCH when Enter is pressed, station will be worked and logged with Enter, Enter
On	don't work dupes	S&P	Disabled	F-key	DUPE callsign entered	Pressing Enter does nothing, no blue buttons in the Entry window
On	don't work dupes	S&P	Disabled	Disabled	DUPE callsign entered	Pressing Enter does nothing, no blue buttons in the Entry window

On	work dupes	Run	-	Disabled	DUPE callsign entered. Mistake with received QSO data	Send EXCH when Enter is pressed
On	don't work dupes	Run	-	Disabled	Mistake with received QSO data	Send EXCH when Enter is pressed
On	-	S&P	-	Disabled	Mistake with received QSO data	Send EXCH when Enter is pressed. After the user corrects the entry, it will log and not send anything

### 5. Configurer > Digital Modes Tab



The Digital modes tab is used to set up the interfacing to external Controllers (TNCs), or for PTT control using MMTTY/MMVARI for sound card digital modes.

In SO1V mode, there is only one Digital Interface window, DI-1. In SO2V and SO2R modes, there are two Digital Interface windows, DI-1 and DI-2. Each DI window is associated with one of the two Entry windows. Each DI window is opened from the Window > Digital Interface menu item in the

corresponding Entry window. The Digital Modes tab in the Configurer is used to configure both Digital Interface windows.

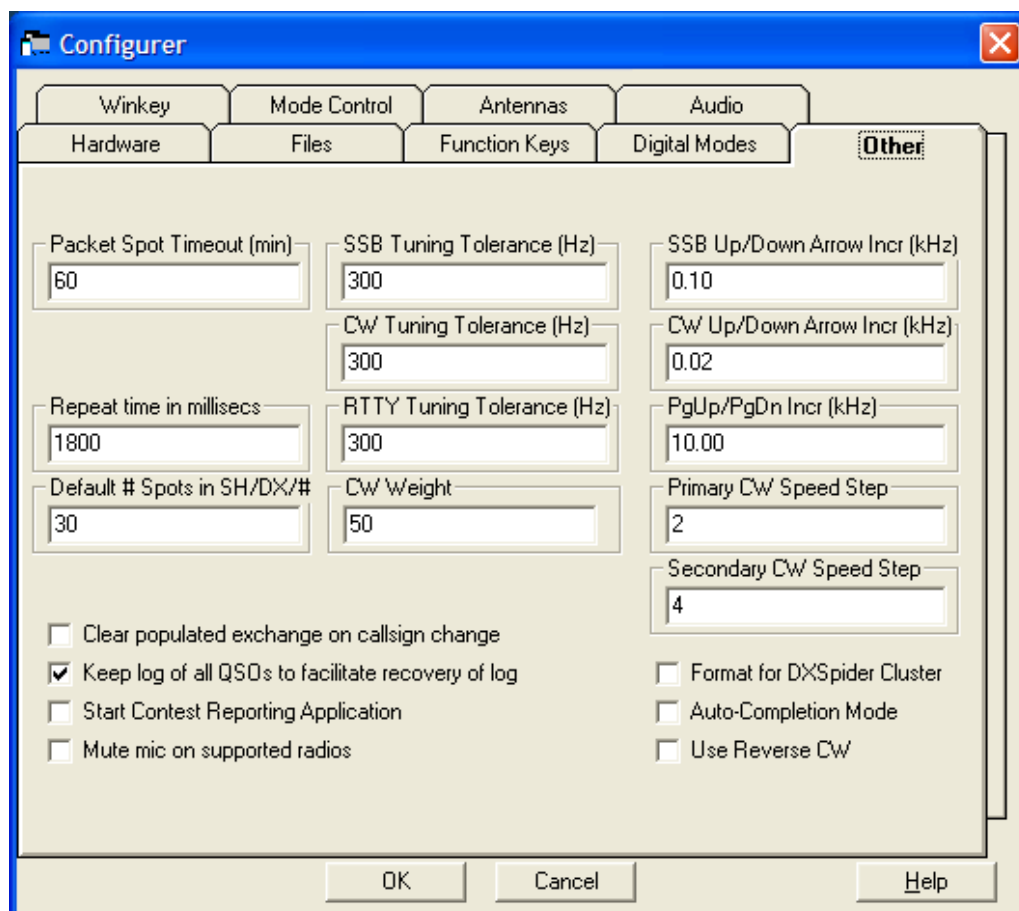
## 5.1. Digital Modes Field Descriptions

- **Digital Interface 1 / 2**
  - **TU type**
    - None
    - Other: like the KAM, PK232, PTC and any other external TNC
    - Soundcard: when using MMTTY or MMVARI soundcard software
  - **Port, Speed, Parity, Data Bits, Stop Bits, Flow Control** - Have to be set if 'CW/Other' has been chosen as well
- **DI-1 MMTTY Mode | DI-2 MMTTY mode**
  - When using MMTTY, select whether AFSK or FSK is being used
  - If AFSK is selected the serial port (if any) with a check in the Digital check box and with Dig Wnd Nr corresponding to the DI window number will get passed to MMTTY when the DI window is opened, so that MMTTY can use it for PTT control.
  - If FSK is selected the serial port will not get passed to MMTTY. The serial port for FSK has to be set in the MMTTY Setup. This is necessary in order to allow for the possibility of using EXTFSK in MMTTY. More information in the [MMTTY support](#) chapter
- **DI-1 MMTTY Path | DI-2 MMTTY Path**
  - The path to the MMTTY engine goes here including the file name of the program
  - It's not necessary that MMTTY be in the same directory as N1MM logger
  - Via the 'Select' buttons the path and file name can be selected
  - It is possible to select two instances of MMTTY in two separate folders. You must do this if you want the MMTTY settings in the two instances to be different (e.g. left vs. right channel, different sound cards, etc.)
- **DI-1 Fldigi Path | DI-2 Fldigi Path**
  - The path to the Fldigi engine goes here including the file name of the program
  - Via the 'Select' buttons the path and file name can be selected
- **DI-1 MMVARI RTTY Mode | DI-2 MMVARI RTTY Mode**
  - When using MMVARI for RTTY, select whether AFSK or FSK is being used
  - If AFSK is selected the serial port (if any) with a check in the Digital check box and with Dig Wnd Nr corresponding to the DI window number will get passed to MMVARI when the DI window is opened, so that MMVARI can use it for PTT control
  - If FSK is selected, the port to be used for PTT control is defined in a separate setup window
- **DI-1 MMVARI FSKPort | DI-2 MMVARI FSKPort**
  - Choose **FSK8250** if you are using a true serial port or a device that can simulate a serial port and handle 5-bit codes at 45.45 baud (this does **not** include most USB-to-serial adapters, but it does include some commercial interfaces designed to support FSK RTTY)
    - When MMVARI is opened for FSK RTTY, a small window labelled FSK8250/16550

1.03 will open, or appear on the Windows Task bar. In this window you select the COM port number and the signal line to be used for PTT (RTS or DTR). FSK keying will be done on the TxD line. If this is a USB device that simulates a serial port, check **Limiting speed**. You can use the \_ box at the top right to minimize this window after completing the setup

- Choose **EXTFSK** if you are using a regular USB-to-serial adapter
  - When MMVARI is opened for FSK RTTY, a small window labelled EXTFSK 1.05a will open, or appear on the Windows Task bar. In this window you select the COM port number and the signal lines to be used for FSK keying (normally TxD) and PTT (RTS or DTR). You can use the \_ box at the top right to minimize this window after completing the setup

## 6. Configurer >Other Tab



The Other tab is used to set up default values and select special modes and functions.

### 6.1. Other Tab Field descriptions

- **Packet Spot Time (min)** - Indicates how long (in minutes) spots are kept in the bandmaps.

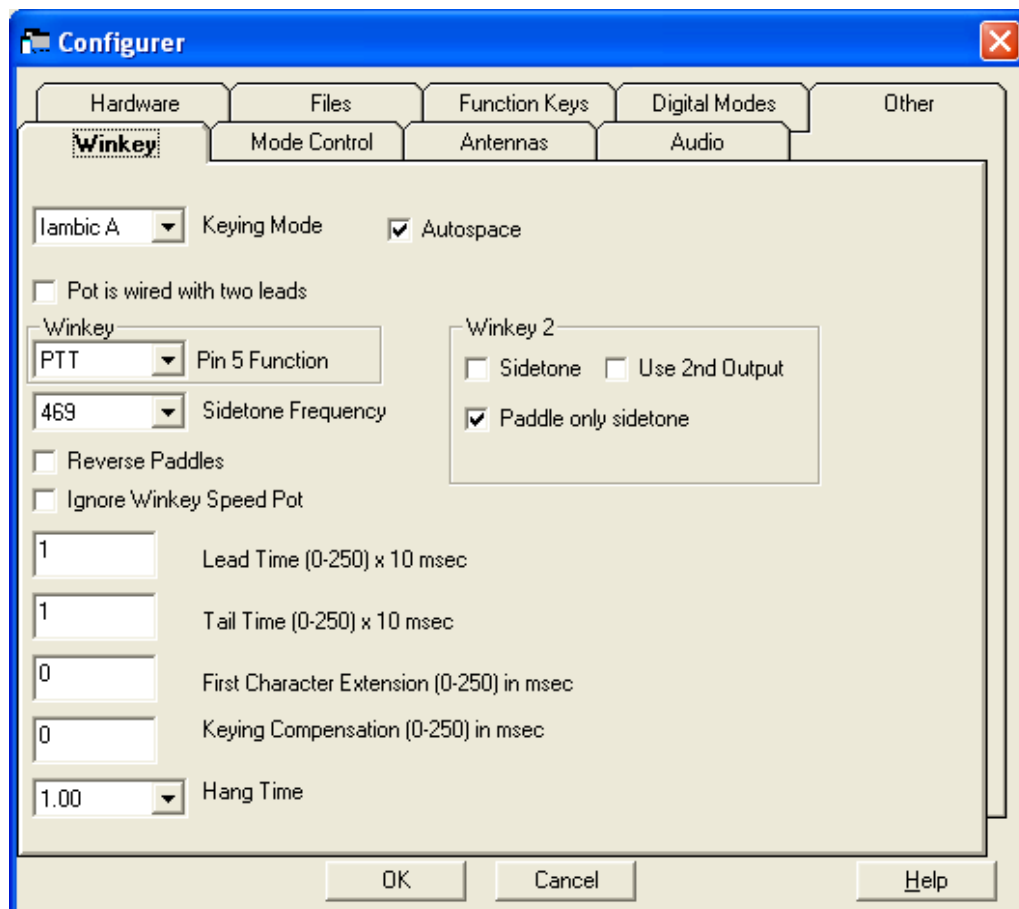
The default is 60 minutes, any integer may be specified

- **Repeat time in millisecs** - Specify the repeat interval (CW or SoundBlaster) in the Entry window (Auto-CQ). The default value is 1.8 seconds. Enter a value in seconds or milliseconds. The maximum value is 32767. This is the same as Ctrl+R or 'Config | Set CQ repeat time' in the Entry Window
- **Default # Spots in SH/DX/#** - The number of returned spots by the SH/DX command in the bandmap window. The default value is 30 spots. The number of returned spots for the SH/DX command in the Packet / Telnet window is not affected by this value and has to be changed in the Entry window under 'Config menu | Edit Packet/Telnet Buttons'
- **SSB Tuning Tolerance (Hz)** - SSB mode: Clicking on or next to a station in the bandmap window will put the call on the callsign frame (if the callsign field is empty) of the Entry window. This value gives the maximum frequency distance to the call on the bandmap when it will be put on the callsign frame. The value has to be between 0 and 20000 (20 kHz). The default value is 300
- **CW Tuning Tolerance (Hz)** - CW mode: Clicking on or next to a station in the bandmap window will put the call in the callsign frame (if the callsign field is empty) of the Entry window. This value gives the maximum frequency distance to the call on the bandmap when it will be put on the callsign frame. The value has to be between 0 and 20000 (20 kHz). The default value is 300
- **RTTY Tuning Tolerance (Hz)** - RTTY mode: Clicking on or next to a station in the bandmap window will put the call on the callsign frame (if the callsign field is empty) of the Entry window. This value gives the maximum frequency distance to the call on the bandmap when it will be put on the callsign frame. The value has to be between 0 and 20000 (20 kHz). The default value is 300
- **CW Weight** - Adjusts the CW weight (between 30-70% limits). The default value is 50. This weight command not only works for serial or lpt CW but also for Winkey
- **SSB Up/Down Arrow Incr (kHz)** - This value gives the frequency jump amount in SSB by the up/down arrow keys. NB. Never make it smaller than the smallest step your radio can make in SSB. Older Icom rigs are known to have a smallest step of 100 Hz which is quite big. When the step is made smaller than the minimum step size the Up/Down Arrows don't seem to work. Also controls the amount of each frequency change when tuning the RIT on radios that support doing so from the computer.
- **CW Up/Down Arrow Incr (kHz)** - This value gives the frequency jump amount in CW and digital modes by the up/down arrow keys. NB. Never make it smaller than the smallest step your radio can make in CW. Most rigs have a smallest step in the order of 10 Hz. When the step is made smaller than the minimum step size the Up/Down Arrows don't seem to work. Also controls the amount of each frequency change when tuning the RIT on radios that support doing so from the computer.
- **PgUp/PgDn Incr (kHz)** - This value gives the frequency jump amount for the {PGUP} {PGDN} macros (Note: the PgUp and PgDn keys are not used for this; the {PGUP} and {PGDN} macros must be used in function key macros. These macro names are holdovers from early versions of the program)
- **Primary CW speed Step** - The primary speed step is used with **PgUp/PgDn** button or the speed adjust in the Entry Window
- **Secondary CW speed Step** -The secondary speed step is used when **Shift+PgUp/PgDn** is pressed. **Alt+PgUp/PgDn** adjusts the CW speed of the inactive radio/VFO in SO2R/SO2V mode

- **Clear populated exchange on callsign change** - When selected (default is Off), if the callsign in the Entry window is changed by the operator, this option clears the contents of exchange fields in the Entry window that were populated (filled in) from a CallHistory file, from previous QSOs in the contest, or from a Telnet spot. Does not affect exchange data that have been manually filled in.
- **Keep log of all QSOs to facilitate recovery of log** - This is the transaction back-up log file. This journaling back-up text file has all QSOs from the contest in it. So if the database for some reason would become corrupt it is possible to import this file in a new database and go on with the contest
  - When this option is selected the transaction log is created for each contest you log to
  - The file is closed after each transaction and reopened to force the data to be written to disk
  - To keep things simple and foolproof, you are not allowed to change the name of the transaction log
    - The name is used to make sure you are loading it properly, and to prevent mixing logs of two contests
    - Example name: 'ham.mdb - CQWWCW - 2005-09-19.TRN' i.e.: Used database name - contest name - date log created
  - When importing you MUST import the transaction log into an NEW (empty) database
    - Why? To prevent a user recovering from a database problem making the problem worse. This will prevent any issues from duplicate contacts and a number of other problems
    - Use 'File, Import, Recover QSOs from a Transaction Log' to import the transaction log file
  - As you load the transaction log, a new transaction log is automatically made with the transactions in the first log. Thus you should never have to merge logs. You always use the last one
- **Start Contest Reporting Application** - Start the contest reporting application. With this application you can show your contest efforts in real time during a contest to the world. Next to this application a website is needed where everyone can see the score. This application does automatically upload scores from the current selected contest to the configured website
- **Mute mic on supported radios** - Mute the microphone during transmit. Normally used to enter audio via an other radio input then the microphone. Default is to not mute
  - Tentec Orion: If "Mute" is checked, it causes the Orion's mic input to be muted and the Aux input to un-mute during voice keyer events
  - Supported radios are: Tentec Orion and Elecraft K3
- **Format for DXSpider Cluster** - This will send the right SH/DX message for DXSpider clusters from the button in the top of the bandmaps (Example: SH/DX/30 on 20). Also SH/QRZ will be sent instead of SH/BUCK. Only select this when connecting a DXSpider cluster. Connect the cluster and send: SH/VER A DX-spider cluster will say something like: DX Spider Cluster. The 'normal' setting is not selecting this option
- **Auto-Completion Mode** - Auto-completion of callsigns. It works like Internet Explorer's address bar. If you type in a partial callsign, the program will attempt to match it with a call that you have already logged or is uniquely identified in the check window. If it matches, the rest of the call will be added to the callsign textbox and highlighted. You can then either accept the call as displayed, or keep typing. If you keep typing, the highlighted portion will be replaced by what you type

- **Use Reverse CW** - When selecting CW send a command to the radio to use Reverse CW

## 7. Configurer >Winkey Tab



The Winkey tab is used to control functions of the **K1EL Winkey keyer** chip. Winkey is designed by K1EL and G3WGV. **It is only active when the Winkey box has been checked on a serial port, and that port (whether real or virtual), has been connected either to a stand-alone keyer or to a device that embeds the Winkey chip, such as various MicroHAM products and RigExpert. Consult your unit's manual along with the Winkey chip manual for more information on these settings.**

Winkey is fed ASCII characters from N1MM Logger (via COM or USB Ports), and converts the ASCII to timed CW. For more info see the [links page](#) and the [Supported Hardware](#) page. The pot speed range is from a minimum of 10 wpm to a maximum of 55 wpm. Winkey can also be used to control PTT. Winkey PTT can be used on modes other than CW. Note: This only works for Winkey versions 10, and 21 and greater.

### 7.1. Winkey Field Descriptions

- **Keying Mode** - Select the keying mode. Choices are: lambic A, lambic B, Ultimatic and Semi-Automatic. The default is lambic-B
- **Autospace** - Select when the autospace feature should be used. When using the paddles to send, if a pause of longer than one 'dit' time is detected, THREE dit times of pause will be inserted before the next character. See the manual for more information
- **Pot is wired with two leads** - Select when the potentiometer on the board is wired only with two instead of three wires. Under normal operation, leave unchecked. Unless you've built the keyer yourself, or your keyer vendor recommends this, leave unchecked
- **Pin 5 Function** - Select the function of pin 5. Unless your keyer's manual tells you otherwise, the default of PTT is likely what you want here. Other choices include PTT, Sidetone, 2nd CW (second output) or None. The Winkey manual is also a good reference. The choices are:
  - PTT (default)
  - Sidetone
  - 2nd CW (second output)
  - None
- **Sidetone Frequency** - Select the sidetone frequency. The default sidetone frequency is 469 Hz
- **Reverse Paddles** - Reverse the left and right paddle
- **Ignore Winkey Speed Pot** - Ignore the setting of the Winkey potentiometer
- **Lead Time** - Set the lead time value in 10ms Increments (up to 2.55 seconds). This value reflects the amount of time that the Winkey PTT will be asserted BEFORE keying commences
  - If when sending CW you are missing the first dot or dash, or if paddle-sent CW doesn't seem responsive (again, missing the first character) set this to at least 10 mSec
  - NOTE that this field denotes 10 mSec intervals — '1' in this box means 10 mSec
  - IF Pin 5 function is set to PTT, set this value to at least 1 (10 mSec)
- **Tail Time** - Sets the tail time in 10 mSec Increments (up to 2.55 SECONDS). This value reflects the amount of time that the Winkey PTT line will be held after keying stops. Tail Time = 1 results in a tail time of one dit time (v2.2; 10 msec in earlier versions of Winkey), Tail Time = 2 adds 10 msec to that, Tail Time = 3 adds another 10 msec, and so on. If Tail Time is set to zero, then Hang Time is used instead
- **First Character Extension** - Sets the extension time in 10 mSec steps (up to 2.55 seconds). Normally ONLY used with older, slower-keying rigs at speeds above 25 wpm, this setting will add time to the first element sent to help with the lack of T/R speed of those rigs. This value is usually set by experimentation. See the Winkey manual for more information on setting this value
- **Keying Compensation** - Normally only used with high speed (>30 wpm) QSK operation. Adds time (in 1 mSec increments) to both dashes and dots to adjust for rig switching delays (however slight). See the Winkey manual for more information
- **Hang Time** - Provides a CW-Speed dependent means of holding PTT after CW sending is finished. Hang Time can be used to set a CW-speed dependent delay of 1, 1.33, 1.67 or 2 letterspaces (not dit spaces). Tail Time must be set to zero to use Hang Time
- **Winkey 2**
  - **Sidetone** - Gives a sidetone when sending CW (when using paddle and computer input)
  - **Paddle only sidetone** - Gives a sidetone only when sending by paddle



- **Use 2nd output** - Use the second output from the Winkey 2

#### **Setting CW Speed in Winkey**

The CW sending speed can be changed to any value by typing over the provided field in the Main Entry window. Using the scroll bars on the CW speed entry field, or using the speed control connected to the Winkey chip changes the speed in 2 wpm steps.

Setting the speed using the speed control pot changes BOTH the paddle speed and the N1MM sending speed. Setting the speed using the entry window changes both the paddle sending speed and N1MM sending speed but ONLY UNTIL the next time the speed pot is adjusted, i.e. the absolute position of the speed pot then overrides any changes made in the entry window.

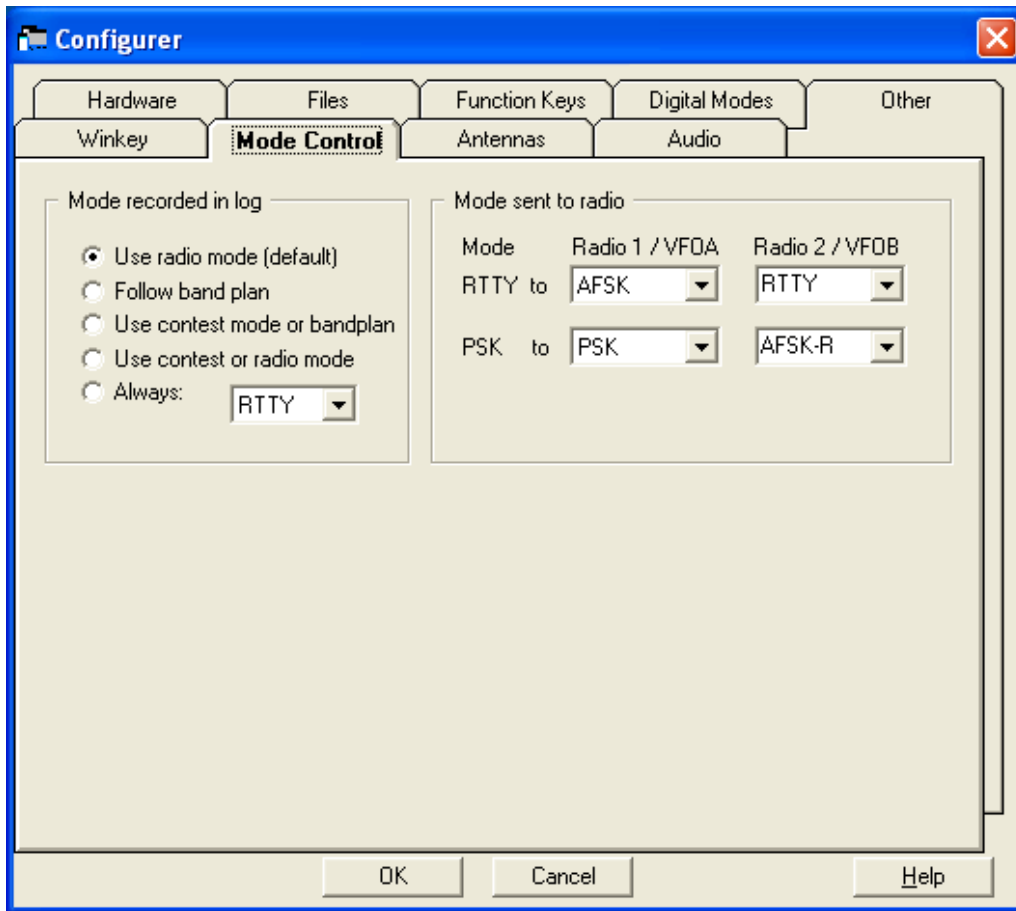
#### **Setting CW Weight in Winkey**

CW weight for Winkey can be set up on the Other tab using the same 30-70% limits.

## **7.2. How to Set Up Winkey in N1MM Logger**

Identify the port to control it. Check " CW/Other" on that port. Click Set. Check Winkey. Now go to 'Config|Configure ports, CW/Other', and on the Winkey tab, make the relevant choices. The only subtlety is that if you are using Winkey's PTT you need to set a lead-time value of other than zero, and a tail time or hang time value as desired (e.g. sufficient to make Winkey hold in between characters of hand-sent CW). That's it.

## **8. Configurer >Mode Control Tab**



The mode control tab determines **how the mode will be controlled on the connected radio**, whether the program sets the mode when changing frequency or not, and **what mode it changes it to**. This dialog also gives you control over how contacts will be logged.

### 8.1. Mode Control Field Descriptions

- **Mode recorded in log** - Set how to determine the mode that will be entered in the log
  - **Use radio mode (default)** - use the mode received from the radio
    - In digital modes, the mode in the log will be RTTY if using the MMTTY engine or a TNC
    - When using the MMVARI engine, the mode will be as selected in the MMVARI window
  - **Follow band plan** - use the mode the internal bandplan gives for this frequency
  - **Use contest mode or bandplan** - if the contest is a single mode, use that mode. If mixed, use the bandplan (as above)
  - **Use contest or radio mode** - if the contest is a single mode, use that mode. If mixed, use the mode from the radio (as above)
  - **Always:** - always log the mode selected here (CW, SSB, RTTY, PSK31, PSK63, PSK125)
- **Mode sent to radio** - Select how to determine the mode sent to the radio

- This applies only for digital modes. See the note below for details

### **Digital Mode Selection**

Every radio seems to have a different range of choices and names for digital modes. Some radios have no modes specialized for digital modes, some have only one digital mode for FSK RTTY (for sound-card digital modes, you use USB or LSB), some add to this a separate mode intended for sound-card digital modes like AFSK RTTY and PSK31, and some radios have three separate digital modes for FSK RTTY, AFSK RTTY, and other sound-card digital modes like PSK31. There may also be two versions of each of these, one "normal" and one "reverse" (opposite sideband). Every manufacturer uses different names for these specialized modes.

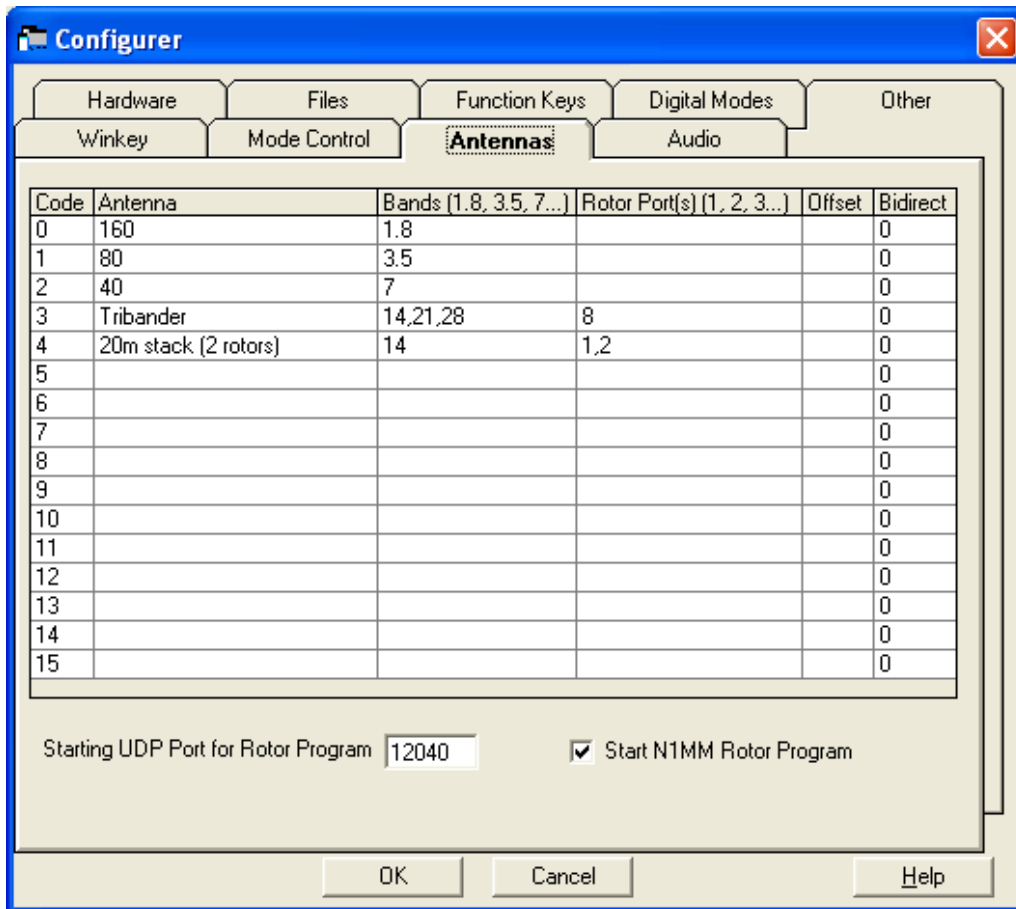
For simplicity, N1MM Logger has its own radio-independent terminology. The Logger uses RTTY for the radio mode normally used for FSK RTTY (which is usually but not always called FSK or RTTY on the radio). If the radio has a mode that is designated for AFSK RTTY, the Logger calls it AFSK. AFSK-R is the "reverse" of this AFSK mode, i.e. on the upper sideband instead of LSB. If there is a mode intended for sound card data modes that is different from the AFSK-R mode, it will be called PSK in the Logger. Not all radios have all of these modes, so not all choices will necessarily be available, depending on what radio(s) is/are configured.

The translation between the mode name used on the radio and the mode name used in N1MM Logger is described at [Click here to see the table](#)

For RTTY, if you are using FSK, you should normally select RTTY. If you are using AFSK, you should normally select AFSK or LSB/USB, depending on whether your radio offers a specialized AFSK mode or not.

For PSK, the choice would normally be one of: PSK (if available), AFSK-R (on some radios), or USB.

## **9. Configurer >Antennas Tab**



The Antennas tab gives control over which antenna should be automatically selected when selecting a new band. The parallel port is being used to give the needed code to an external Top-Ten type device box. The code to send to the box is setup in this dialog. To replicate the default Top-Ten behavior see the example setup in the [Interfacing](#) chapter.

When you press Alt+F9, you will toggle through all the antennas FOR THAT BAND. If there is only one, then no toggling will occur. When you change bands, the antenna switch will be changed to the antenna with the lowest code for that band. The selected antenna will show in the status pane. Commas are not allowed as separator if that's the decimal separator (in Windows).

- **Code** - The code which will be presented on the LPT port
  - Each code represents ONE ANTENNA not a band
  - Code is binary code on the parallel port using the pins 9, 8, 7 and 2
- **Antenna** - Free text to describe the antenna, give a meaningful name here
- **Bands** - The bands on which this antenna should be used
  - Use bands in MHz e.g. 1.8, 3.5, 7 etc.
  - Bands should be separated by a comma for multi band antennas
  - An antenna may be used on any number of bands
- **Rotor Port(s)** - setup the serial port used with N1MM rotor
  - Has to be set up to the ports used in N1MM Rotor
  - More than one port can be selected (separate using comma). Great when turning a stack with more rotators
- **Offset** - This offset is added to the rotor position to determine the antenna position. This is

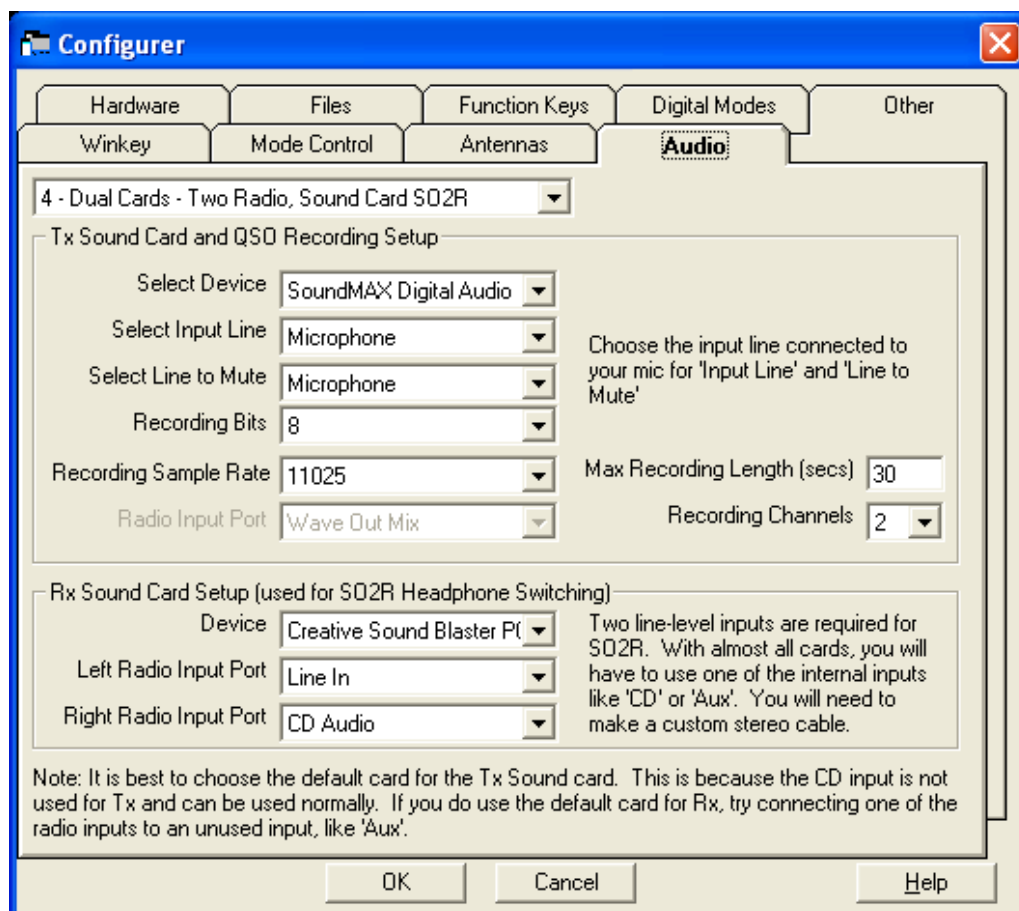
useful for antennas that are mounted at 90 degrees for pattern interference reasons, or for antennas that have simply turned some in the wind over the winter. The offset can also be entered for the selected rotor in the rotor program

- **Bidirect** - Set to 1 if the antenna can be set bidirectional (0 = not bidirectional, 1 = bidirectional) (e.g. Steppir)
- **Start UDP port for Rotor Program** - Set the UDP which is used in communication between the Rotor program and N1MM logger. Defaults to UDP port 12040 and has to be set up the same in both programs to work
- **Start Rotor Program** - Start rotor program automatically by N1MM Logger main program. You will need to stop it manually

### LPT Port Conflict

When DVK is selected on the used LPT port, the antenna selection on the pins is not working because the DVK pins and the antenna pins do overlap.

## 10. Configurer >Audio Tab



For the Two Sound Card SO2R (\$5 SO2R) check the [SO2R](#) chapter.

Select at the top of the page the configuration to use. (example picture how to connect can be found in the **SO2R** chapter.)

### 1 - Single Card - One radio, No Sound Card SO2R

- One radio and one sound card to play wav files and record new messages and mute the microphone when playing wav files
- Only the top part of the dialog above (Tx Sound Card and QSO recording) has to be set up. Bottom part is deselected

### 2 - Single Card - Two radio, No Sound Card SO2R

- Not SO2R but two radios and one sound card to play wav files and record both radios
- Only the top part of the dialog above (Tx Sound Card and QSO recording) has to be set up. Bottom part is deselected

### 3 - Single Card - Two radio, Sound Card SO2R, CW Only

- SO2R with one sound card for CW only
- The drawback here is that no switching of the headphones is done
- You will have to wire a cable to the cd or aux input of a sound card in order to make use of this feature
- You'll need to define your radios as SO2R in the Hardware tab
- Both the top and bottom part of the dialog above (Tx Sound Card and QSO recording + Rx Sound Card) have to be set up
  - The TX Radio Input Port in the top part of the dialog is deselected

### 4 - Dual Cards - Two radio, Sound Card SO2R

- Full SO2R with audio switching where two soundcards are needed
- Switching of the headphones is done
- You will have to wire a cable to the cd or aux input of a sound card in order to make use of this feature
- You'll need to define your radios as SO2R in the Hardware tab
- Both the top and bottom part of the dialog above (Tx Sound Card and QSO recording + Rx Sound Card) have to be set up
  - The TX Radio Input Port in the top part of the dialog is deselected

#### **Not All Sound Cards are Created Equal**

The Configurer lets you pick parameters that your sound card may not support... usually 16 bit, 11025 Hz/sec is safe for all cards.

- **Tx Sound Card and QSO Recording Setup** - It is best to choose the default card for the Tx

Sound card. This is because the CD input is not used for Tx and can be used normally. If you do use the default card for Rx, try connecting one of the radio inputs to an unused input like 'Aux'

- **Select Device** - Select the soundcard to use for sending Wav files (DVK) and recording QSOs
- **Select Input Line** - Select the Input line for recording. If your microphone is connected to the soundcard this will be the 'Mic input'
- **Select Line to Mute** - Select the line to mute when playing wav files. This is also mostly the Mic input
- **Recording Bits** - Select 8, 16 or 24 bit recording. NB Your soundcard should support this or an Error 4 will appear when starting to record
  - Select 8 bits or 16 bits and it will probably always work and make the smallest files (and good enough quality recordings)
- **Recording Sample Rate** - Select the sample rate to record. The lower the rate the smaller the files but less quality recording
  - Selecting 11025 is a good starting point
- **Radio Input Port** - Select the Radio Input Port which receives the audio from the radio. Mostly Line In. Only when configuration 1 or 2 selected, otherwise grayed out
- **Max Recording Length (secs)** - This is the maximum recording length of a wav file, when the recording is longer the first part will be discarded so always the last 30 seconds (in this example) will be recorded
- **Recording channels** - Select the number of channels to record, 1 or 2

The output for Wave files from the computer to the radio/radios is always the 'Speaker Out' from the soundcard.

- **Rx Sound Card Setup (used for SO2R Headphone Switching)** - Two line-level inputs are required for SO2R. With almost all cards, you will have to use one of the internal inputs like 'CD' or 'Aux'. You will need to make a custom stereo cable. This part can only be selected with configuration 3 or 4, otherwise grayed out
  - **Device** - Select the (second) soundcard to use
  - **Left Radio Input Port** - Select the Left Radio Input Port which receives the audio from the radio. Mostly Line In, CD or Aux
    - Must be different from Right Radio Input Port
  - **Right Radio Input Port** - Select the Right Radio Input Port which receives the audio from the radio. Mostly Line In, CD or Aux
    - Must be different from Left Radio Input Port

## Start a New Contest Log or Open an Existing Contest Log

### In this Section...

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[Start a New Contest Log or Open an Existing Contest Log](#)

1. Start a new contest log
2. Open an Existing Contest Log
3. Contest Specific Information
  - 3.1. Contest Tab
  - 3.2. Tab: Associated Files

## Databases versus Logs ✖

Before starting your first contest, you should understand how N1MM Logger stores contests and contacts. The two key terms are Databases and Logs. As an analogy, think of your PC's hard disk as a large room containing computer stuff. Into this room, N1MM Logger places File Cabinets (Databases) and within those File cabinets, N1MM Logger adds individual Folders (Logs). For each contest that you operate, you will add a new Log to hold the contacts for that contest. Your large room with computer stuff can hold as many File Cabinets (Databases) and as many Folders (Logs) as you want - until, of course, your hard drive is full.

Continuing our File Cabinet and Folder analogy, there are many methods by which you can arrange your file cabinets (Databases). Here are three examples:

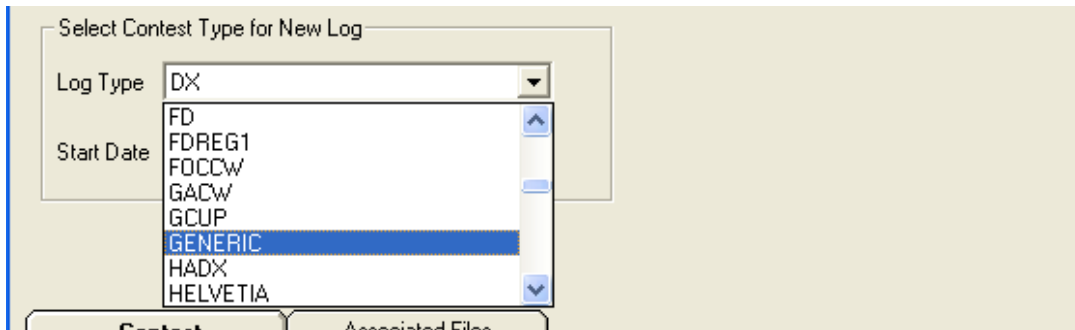
1. DATABASE PER CONTEST TYPE - Some hams prefer to create a Database for each major contest type. Your \N1MM Logger directory would contain databases (>File >New Database) named CQ WW.MDB, ARRL DX.MDB, ARRL 160.MDB and CQ WPX.MDB. When setting up each contest, you >File >Open the Database corresponding to the contest to be operated, then >File >New Log (folder) for that particular contest. So, one of these databases would contain CW, Phone, and RTTY logs from 2007, 2008, and 2009... for that particular contest. You might want to add a database like MISCELLANEOUS.MDB for the smaller contests or contests that you only plan to operate a couple of times.

2. DATABASE PER CALENDAR YEAR - Some hams create a new Database each year. At the beginning of each year, you would >File >New Database a database named K8UT 2008.MDB, K8UT 2009.MDB or K8UT 2010.MDB. In each database would be the Logs (folders) for every contest you operate during that year. When setting up each contest, you would >File >Open Database for the correct year, then >File >New Log (folder) for that particular contest. So, this database would contain all contests (CQ WW, ARRL DX, CQ WPX...) worked during that year.

3. DATABASE PER EACH CONTEST - Some hams create a new Database each time they operate a contest. Your \N1MM Logger directory would contain lots of databases - one for each contest that you operate. When setting up each contest, you would >File >New Database, and then within that database you would >File >New Log. Although some hams may find this the easiest method to understand, managing all of those files after many years may become a problem.

These aren't your only Database/Log options, but perhaps one of them matches the way your brain works. How about organizing your logs by mode: CW.MDB, PHONE.MDB, DIGITAL.MDB? N1MM Logger can do any of these - choose the method that provides the easiest way for you to create new logs before the contest and find your old logs after the contest.



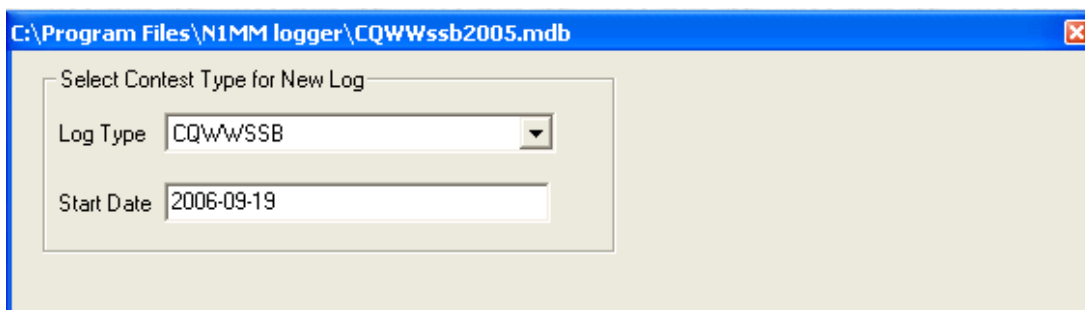


**Sent Exchange**

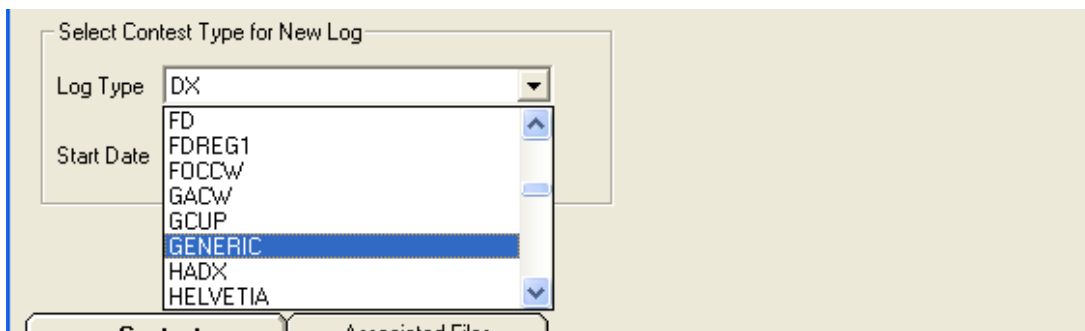
**Do not** enter the signal report as part of the exchange on this setup page.

### 1. Start a new contest log

To start a new contest select >File >New Log in Database.



- Initially, you'll see the name of the contest last used by the program. Click the downward-pointing arrow to the right of the current contest name (called the "handle") to drop down the list of all supported contests.



You can search alphabetically by pressing the first letter of a contest's short name, and then scrolling to find the right one.

A list of supported contests can be found in the [Supported Contests](#) chapter. Check the contest website for the latest rules and check the contest setup information in the [Contest Setup Instructions](#) chapter.

## 2. Open an Existing Contest Log

To open an existing contest log in the currently selected database. Select >File >Open Log in Database

- In the top part of the dialog the currently available contest logs can be selected by clicking on the down arrow to the right of the textbox. Note that the textbox is captioned "Select Existing Log"
- Contest specific changes can be made in the **Contest** and **Associated Files** tabs. More information in the paragraph below



To **delete a contest**, click on the contest in the contest pane, as shown above, so it is selected. Then press Delete.

For example, the CQWWSSB in the picture above is selected and can be deleted by pressing the Delete key.

## 3. Contest Specific Information

**Contest** | Associated Files

Operator Category: SINGLE-OP (1 Contacts)

Band Category: ALL

Power Category: HIGH

Mode Category: RTTY

Overlay Category: N/A

Sent Exchange: 001 (Omit RST. E.g. CQWW: 05 SS: A 56 EMA)

Operators: PA1M

Soapbox Comments: [Empty text area]

Buttons: Import Section List, Show Rules (Internet access required), Update Ops from Log, OK, Help, Cancel

Default entry category information will be used on new contests to that of the currently open contest.

### 3.1. Contest Tab

- **Operator Category:** Make a choice for your situation. Choices are:
  - SINGLE-OP
  - SINGLE-OP-ASSISTED
  - MULTI-ONE
    - In CQWW contests, a prompt is issued asking whether this station is a Run or a Mult station
  - MULTI-TWO
    - An identifier is needed for Station 1 and Station 2 that must be specified when setting up initially. Each time the program is loaded or contest changed the program asks to set Station 1 or 2
  - MULTI-MULTI
  - SCHOOL-CLUB
  - CHECKLOG
  - SINGLE-OP-PORTABLE
  - ROVER
    - when going Rover or Mobile and use different QTHs select this for additional functionality
  - MULTI-UNLIMITED
  - MULTI-LIMITED
- **Band Category:** Make a choice for your situation. Choices are:
  - ALL
  - 160M
  - 80M
  - 40M
  - 20M
  - 15M
  - 10M
  - LIMITED
  - CHECKLOG
- **Power Category:** Make a choice for your situation. Choices are:
  - HIGH
  - LOW
  - QRP
  - MEDIUM
- **Mode Category:** Make a choice for your situation. Choices are:
  - CW
  - SSB
  - RTTY
  - PSK
  - MIXED - the [Available Mults and Qs window](#) will show one column each for CW and SSB. The number of band/mode buttons may be limited by the contest rules. For instance, in a mixed mode contest that has mults once per band and a dupe type of Each Band (mode independent), there is no need to display more than one column of mode buttons.

- MIXED+DIG = CW & SSB & Digital (defined by the contest) Could be RTTY & PSK or RTTY
- DIGITAL = no CW & SSB, just RTTY & PSK, or RTTY (defined by the contest)

- **Overlay Category:** Used in relatively few contests. Choices are:

- N/A (default)
- ROOKIE
- BAND-LIMITED
- TB-WIRES (tri-bander and wires)
- OVER-50
- HQ
- NOVICE-TECH
- EXPERT - The EXPERT overlay category in contests where it exists must be selected for the 5 minute band change counter to be inactive for SINGLE-OP stations

In CQ WPX CW and CQ WPX SSB, category overlay may be any combination of ROOKIE, BAND-LIMITED, TB-WIRES. In STEW-PERRY, category overlay may be OVER-50. In IARU-HF, category overlay may be HQ. In PACC category overlay may be NOVICE-TECH.

- **Sent Exchange:** Contest-dependent, mostly a number, zone, state etc
  - without the RS(T)\_\_\_

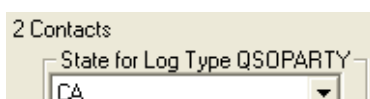
**! No RST in the Exchange**

Do not put a signal report in the sent exchange. It will cause incorrect Cabrillo output. Typically, the program will warn you if you make this mistake.

- **Operators:** Enter here all the operators' callsigns. Clicking the button 'Update Ops from Log' will do this for you (most useful after the contest..).
  - **Update Ops from Log** - Clicking this button will transfer all operators from the contest log to the operators field.
- **Soapbox comments:** Your comments on the contest, results, propagation etc. This text is cleared when selecting a new contest.

- **Section Lists**

- Selection list: **State for Log Type QSOPARTY**





\*\*\* These selection buttons are only shown when the contest has a selection list (like QSO parties).

- In the example above the QSO party for the state CA (California) has been selected which has 2 contacts/qso's in it.
- Button: **Import Section List**: Importing the contest section file for the selected contest.
  - This section list is used to determine multipliers (States, Provinces etc.) for the contest which will be shown in the Multiplier window.
  - The name of the list is hardcoded and will be shown while importing the file. Example name: IOTA.SEC
- Button: **Edit Section List**: Edit the contest section table for the selected contest.
  - This is used to edit the section table in the current database. It does NOT edit the section text file. If you want to export your section file after editing, use the File menu accessed from the upper left corner of the Edit Section List dialog.
- Button: **Show Rules (Internet access required)**: Goes to the contest sponsor's website where the rules can be found. A frequent source of problems is when some contest sponsors change the relevant page within the website or even the whole website every year, which will make the link fail. Please contact us to update this entry when this happens.

### 3.2. Tab: Associated Files

C:\Program Files\N1MM Logger\junk.mdb

Select Contest Type for New Log

Log Type: HADX

Start Date: 2010-09-04

Contest: Associated Files

Master.DTA Filename: Master.DTA [Change]

CW Function Key Filename: [Change] [Clear]

SSB Function Key Filename: [Change] [Clear]

Digital Function Key Filename: [Change] [Clear]

Call History Filename: [Change] [Clear]

OK Help Cancel

- **Master.DTA Filename:** Shows the selected master.dta file for this specific contest-specific (not contest instance-specific)
  - For example, all QSO Parties will use the same master.dta filename
  - Defaults to master.dta
    - Use the **Change** button if you wish to select a file other than the basic master.dta for use in this contest.

### **Update Your CTY.DAT File Before Each Contest**

In addition to these files, be sure always to load the most recent CTY.DAT file before entering a contest. This is a 2-step process. Download the most recent country file from the Internet using >Tools >Download latest country file (wl\_cty.dat) (Internet). Then import it into the current database using >Tools >Import country list from downloaded file. The program will warn you if you open a database whose CTY table is less recent than the wl\_cty.dat file in your N1MM Logger program directory.

For each of the following Associated Files, the Change and Clear buttons have the same function - the Change button allows you to select or change the file to be used, wherever you have stored it. The Clear button lets you clear the filename if you don't wish to load one.

- **SSB Function Key Filename** - Select the SSB function keys to use with this contest.
- **CW Function Key Filename** - Select the CW function keys to use with this contest.
- **Digital Function Key Filename** - Select the Digital Interface function keys to use with this contest from the Entry Window (not the extra keys that can be set up in the Digital Interface).
- **Call History Filename** - Select a call history file to be loaded for use with this contest. This is entirely optional. See the manual [section on Call history Lookup](#) for details. If you want to use a Call History file, don't forget to turn on Call History Lookup on the Config menu.

## Windows

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- 

## Entry Window

### In this Section...

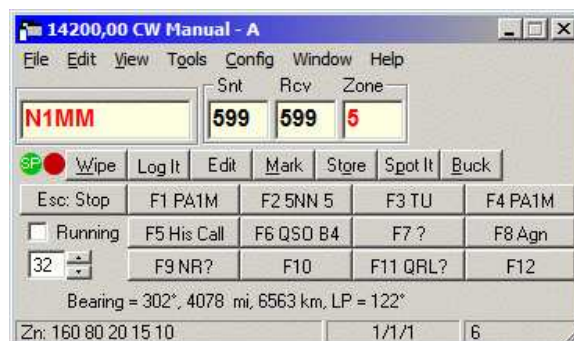
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#### [Entry Window](#)

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12. Edit Menu Selections
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  - 15.13. Dual Rx always on
  - 15.14. CQ Repeat - Alt+R
  - 15.15. Set CQ repeat time - Ctrl+R
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  - 15.17. Record QSOs
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  - 15.19. Multi-User Mode
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  - 15.21. SO2R
  - 15.22. WAE - Special commands for the WAE DX contest only
16. Window Menu Selections
17. Help Menu Selections

Your entry window will be similar to this one.



There are two ways to move from field to field.

- Tab or Shift+Tab will move through the fields one by one in the standard sequence.
- The Spacebar will jump from field to field in the Entry Window, filling in defaults where appropriate and skipping those fields that are unlikely to change.



 **Tip**

Because it generally reduces the number of keystrokes required to log a contact, the Spacebar is the preferred way of navigating the fields of the Entry Window.

## 1. Button Assignments

(hotkeys in parentheses)

- **Wipe (Alt+W)**- Wipe Out Entry Fields. Clear information about the current contact (alternatively, Ctrl+W).
- **Log It (Enter)** - Write this contact to the database. Disabled when in Quick Edit mode.
- **Edit** - Pops up the full Edit window to edit the last contact. Use Ctrl+Q (Quick Edit) as a convenient alternative.
- **Mark (Alt+M)** - Mark the current frequency in the Bandmap as being in use. Used when you don't want to take time to enter the call of the station using the frequency.
- **Store (Alt+O)** - Spots the callsign you have entered in the callsign field on the Bandmap, where it will be shown in bold because it is self spotted. The Config menu option "QSYing wipes the call and spots QSO in Bandmap" is an easier way to do this, whether you have worked a station or not.
- **Spot it (Alt+P)** - Spot the contact on the current Packet/Telnet connection.
- **Buck** - Display information on the current call using the Buckmaster callsign database. Note: hamcal32.dll must be in the start-up and the callsign database must also be set up properly in the Files Tab from the Configurer. If hamcall32.dll is not found it will use www.qrz.com to find the call.
- **F1 through F12** - Send the associated CW/Digital text or .wav file. Right click on the buttons to change labels and actions (or go into the menu). Running mode has 12 function keys and also S&P mode has 12 function keys. When Running the S&P keys can be found under Shift+Function key. See below for more info about the files send and the status of the Running indicator.
- **Shift+F1 through Shift+F12** - Send the associated CW/Digital text or .wav file from the opposite mode. So when the program is in Run mode pressing Shift will show the labels (and send the associated info) from S&P mode and vice versa. Each mode has 12 function keys. When Running the S&P keys can be found under Shift+Functionkey.
- **Esc** - Stop sending. Also stops playback of recorded contacts.
- **Running Alt+U** - Toggles "Running' box". When running is checked, the behavior of Enter Sends Messages mode changes appropriately. Additionally contacts are logged as being part of a run.
- **CW speed** - The CW speed in wpm can be set using the textbox with speed & up/down buttons (only visible when CW mode is selected). Also Page Up and Page Down can be used to change the CW speed. The CW speed is limited to 98 wpm...

## 2. Callsign/Exchange Editing Features

- **Space Bar** - moves cursor to the position the last position the cursor was in prior to leaving the Callsign or Exchange fields.
- **Tab** - Move to the next field.
- **Shift+Tab** - move to the previous field.
- **Home** - moves cursor to beginning of the field it's in.
- **End** - moves cursor to end of the field it's in.
- **Question mark (?)** - Sends a ?, and will cause the ? to be highlighted when you reenter the field. E.g. N?MM will send what is typed, but automatically highlight the ? so you can replace it. A double ?, as in DL?K?A will highlight all text in between and including the ? marks. The first keystroke entered will replace all three characters.
- **Left/Right Arrow** - moves cursor to left or right one position within the field it's in.
- **Backspace** - delete character to the left.
- **Delete** - delete character to the right.
- **Shift+Home** - will highlight from the cursor insertion point to the home (beginning) of the textbox.
- **Shift+End** - will highlight from the cursor insertion point to the end of the textbox.
- **Shift+arrow key** - will highlight as you press the keys. When you type the first character, it will delete the highlighted character.

### Note

Check out the chapter [Key Assignments](#) for all available key assignments by the program.

## 3. Other Info

**Running Alt+U** - Mark this contact as being part of a run (versus S&P).

"Running" is automatically checked:

- When you click on **CQ-frequency** in the Bandmap window
- When you are in tuning range of your **CQ-frequency** (on that band)
- When you pressing F1(= default CQ-key) (and no S&P macro has been added to Search and Pounce F1 key.
- When clicking on the green dot when it shows SP (Search & Pounce)

## 4. Status Bar Information

- **Left pane** - Information
  - After entering a callsign - Country, Zone, Continent
  - Otherwise - Messages (like error messages, results from commands etc.)
- **Middle pane** - QSOs /multipliers (/zone) depending on the selected contest
- **Right pane** - Current score

## 5. Callsign Colors

There are two places where a callsign can be shown in the Entry Window , in the Callsign field and in the Call-frame.

<b>Red</b>	<b>Single Multiplier</b> Example: CQWW - qso is either zone or country multiplier (one multipliers)
<b>Green</b>	<b>Double or better Multiplier</b> Example: CQWW - qso is a zone and a country multiplier (two multipliers)
<b>Blue</b>	New contact
<b>Gray</b>	<b>Dupe</b> contact or an <b>unworkable station in a non-workable country</b> . This means that you don't need this station because he is a dupe or you are not even 'allowed' to work him in this contest according the contest rules.

## 6. The Red and Green dots (LEDs)

On the Entry Window below the left end of the Callsign textbox you will see either a green or a red dot (LED), or both. The LEDs are visual aids that help you keep track of what is happening on each VFO/radio when operating SO2V or SO2R. This is part of N1MM's continuing philosophy of letting the operator easily know what's happening at any given time.

**Green dot/LED** - This VFO/radio has Entry focus in SO2V or SO2R modes - also known elsewhere in this manual as RX (Receive) focus or Keyboard focus. This means that any information entered by keyboard goes in that window, including function keys. Depending on your SO2R switching setup, it **may** also denote which radio you are hearing in your headphones.

- Inside the green dot (or in that location if the green dot is in the other Entry Window) you will see either Ru or SP (Run/S&P). **Ru** means the Entry Window (and the VFO or radio that it controls) is in Running mode, and **SP** means it is in Search&Pounce mode.
  - Clicking on the green LED toggles between running mode (Ru) and S&P mode (SP)
- Entry focus can also be toggled between the VFOs/radios by
  - using a mouse to click on a free space in one of the two Entry Windows
  - pressing the \ key (backslash)
- To move both Transmit and Entry focus

- press Ctrl+Left-Arrow / Ctrl+Right-Arrow to move both foci to the left or right VFO/radio
- press the Pause key - if the green and red LEDs are in different Entry Windows, the first press will bring them together in the window that has the Entry focus. Subsequent presses will toggle both LEDs between the two Entry Windows.

**Red dot/LED** - This VFO/radio has Transmit (TX) focus

- Transmit (TX) focus can be changed between the VFOs/radios by pressing the Alt+F10 key or by pressing the Pause key (see above)
- To move both Transmit and Entry focus, pressing Ctrl+Left-Arrow / Ctrl+Right-Arrow will move both foci to the left or right VFO/radio, or use the Pause key, as explained above.
- When transmitting the TX focus can not be changed
- When the VFO/radio has TX focus, the LED is dark red. When that VFO/radio is transmitting, the LED changes to bright red
- Inside the red dot the **R** (Repeat) designator is shown when Repeat mode (for CQ-ing) is active
- Inside the red dot the **D** (Dueling CQ) designator is shown when Dueling CQ is active

#### Important note

When using function keys to transmit either CW or stored voice messages, the message will be sent on the radio or VFO that has the Entry focus, **not** the one that has the Transmit focus. When you press the function key, the red LED denoting Transmit focus first switches to the Entry window that has the Entry (Keyboard) focus, and then the message is transmitted. On the other hand, when using either manual CW or phone, messages will be sent on the radio or VFO that has the red LED, so if you grab the microphone or paddle, that's what you'll get. After a while, it becomes second nature - we promise!

## 7. The Entry Windows

The program has two Entry windows. **When using both bandmaps/both VFOs, both Entry windows are needed to make QSOs on both VFOs!**

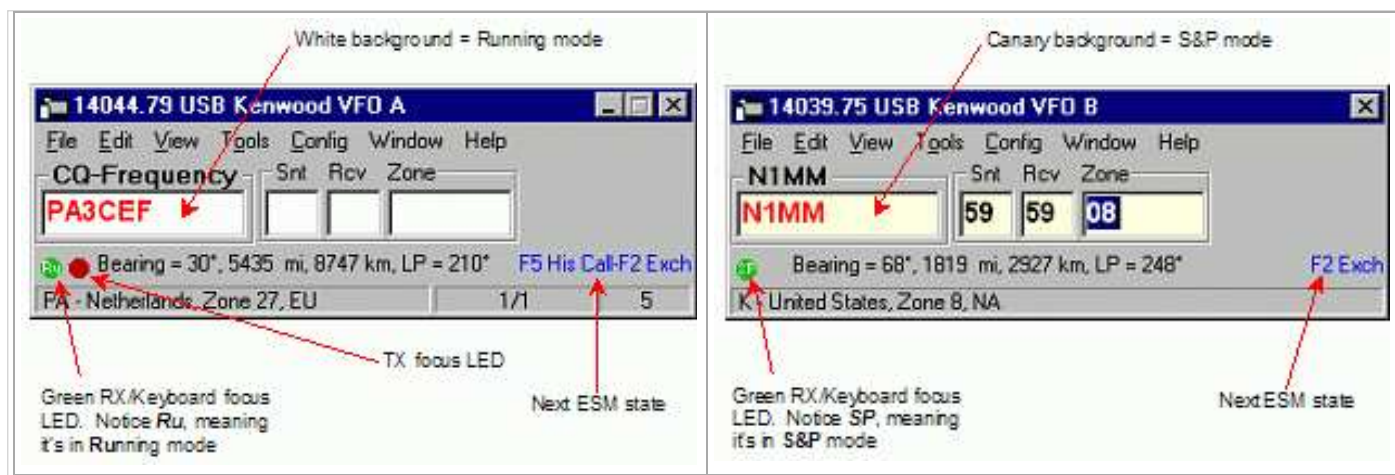
The **standard Entry window**, which is always open, is being used to transmit on **VFO-A** (SO2V) or the **left radio** (SO2R).

The **second Entry window** is being used to transmit on **VFO-B** (SO2V) or the **right radio** (SO2R). The second Entry window can be opened by entering a backslash \ in the first Entry window.

If two Entry windows take up too much space, position the second Entry window over the first Entry window. "\ " will toggle you from one to the other (typing focus) or use Ctrl+right/left to move transmit and typing focus. The Entry window can be resized if the two needed Entry windows take to much screen space.

Most SO2R operators get the most efficiency while CQ-ing on 1 radio, and S&Ping on the other. The Entry Window examples below reflect a typical setup: The left VFO-A is now assigned to

running, and the right VFO (B) is assigned to S&P.



All of the features that are available to the single radio operator also work in SO2R/SO2V. For example, when tuning the band with the S&P VFO, spots that are in the bandmap are automatically inserted into each call frame (above callsign entry window) when you tune across the frequency of the spot. Hitting the space bar will pull the callsign from the call frame into the QSO field. Then if a station calls you on the run radio, toggling back and forth between Entry Windows with the \ key or Ctrl Left/Right arrows will keep the information in each Entry Window until the respective stations are logged, wiped clean via Alt+W or Ctrl+W, or you QSY and the callsign is entered into the bandmap (if "QSYing wipes the call && spots QSO in bandmap" is selected). Most people who are comfortable with Logger tend to use the reduced size Entry Windows in the examples above. All of the vital information an operator needs is displayed in the smaller window.

The second Entry window will be opened when a call is clicked in the second bandmap and it is not open.

More SO2R info can be found in the [SO2R](#) chapter.

#### Tip

In SO2V (one radio - two VFOs = 'normal' operation) QSOs made on VFO-A have to be entered in the standard (first) Entry window. Making a QSO on VFO-B (so transmitting on VFO-B) has to be done by using the second (VFO) Entry window. So when using both bandmaps, both Entry windows are needed to make QSOs on both VFOs. When a call from VFO-B is entered in the first Entry window you will transmit on the wrong VFO. Select the correct Entry window!

## 8. Other Features

- When a callsign is entered info about the country (bearing, distance etc.) is shown just above the status bar. Additional information from the call history lookup file may also be displayed (e.g. name, state, section, grid square, etc.). When calculating the bearing, if call history

lookup is off the coordinates of the state that is the closest to the middle of the call-area is used. If call history lookup is on, the section or state from the call history is used. For VHF contests (having VHF in the contest name) the Grid Square field in the Station dialog is used as your bearing and not the entered Latitude and Longitude. If a beacons file is used, the grid square from the beacons file will be shown just above the status bar when the beacon call sign is entered.

- When a callsign is entered and the station is a **dupe** moving to another frequency will automatically clear the callsign field (and place the station on the bandmap)
- If in the callsign typed there is a **question mark** (you didn't get the complete call the first time), the cursor highlights the ?, so that when you type, it will replace it. When in Enter Sends Message (ESM) mode a ? in the callsign field Enter doesn't move focus to the Exchange field but highlights the **question mark**. A callsign with a question mark in it can not be logged!
- Clicking on the Exchange pane will have the same effect as pressing Space when the cursor is in the callsign field.
- When both bandmaps are closed the frequency and mode are shown on the Entry window title bar before the contest name.
- When tuning the band and a station on the bandmap is within tuning range, this call will be placed on the Entry window callsign frame. When the callsign field is empty, pressing the space bar will copy the callsign from the Entry window callsign frame to the callsign field. Also clicking on the callsign in the callsign frame will place the this callsign into the callsign field, replacing anything that was previously there. The tuning range can be set in the configurer (Other tab).
- **Set Frequency in callsign field** - The frequency from the first VFO (A) can be set by entering a frequency or offset into the callsign field. Decimal points and comma's are allowed in (split) frequencies in the callsign pane. Placing a / in front of the frequency or offset will set the second VFO (B). Also Split frequencies can be set here, see the chapter [Basic Functions](#) for frequency change and split frequency examples.
- **Set Mode in callsign field** - The mode can be set by typing CW, USB, LSB, SSB, RTTY, AM, FM, PSK or SSTV into the callsign field. If the contest mode is mixed or a digital mode, typing RTTY or PSK in the entry field will open the Digital Interface window and open the serial ports for which the Digital check box has been checked in the Configurer. If the contest mode is not mixed or digital, typing RTTY or PSK will result in an error message; if you really want to open the DI window in this situation, for example to use Fldigi as a CW decoder, use the Windows > Digital Interface menu item. When the DI window is open and a non-digital mode is entered in the callsign field, the Digital port(s) is/are closed so it/they can be used for CW, PTT, etc.
- **Ctrl+P** - Spot the station entered in the callsign field as a spot to the active cluster connection, either packet or telnet. You will be prompted for a comment. If no station is entered in the callsign field, the last logged station this session will be spotted. Macros are accepted in the comment sent.
- **Ctrl+O** - Change the callsign of the operator. If you are multi-user, you will be prompted for the operator at the first call logged. The default is the callsign in the station information dialog. Entering "OPON" in the callsign field will also prompt for an operator callsign.
- **Auto-call completion** - As you are typing a callsign in the callsign field, if a unique match to your log or to the check window call occurs, the remaining characters in the call are added to what you have already typed. They will be highlighted, so that if you continue to type, you will replace the characters automatically added.

- **Auto-CQ** - Alt+R toggles the CQ button to send CQ once or repeat. The on/off on the status bar signals whether the next CQ will go into repeat mode. The only way to stop the repeat (mid stream), and to get completely out of it, is to hit Escape.
  - **Ctrl+R** sets the period of repeat in seconds or milliseconds.
  - **Alt+R** turns repeat mode on or off.
    - If repeat mode is on, CQ will always repeat
      - CQ needs to be the first two letters of the text sent by the function key for CW or anywhere in the name of the wav file name for SSB or text for all Digital modes.
      - CQ needs to be the first two letters of the caption of the function key for CW and SSB or anywhere in the caption of the function key for Digital modes.
    - If repeat mode is off, CQ will not repeat.
    - A 'R' will be shown in the red status 'led' when repeat mode is on.
  - The repeat timer for CW and SSB is for the interval from when you stop sending CQ until CQ resumes.
    - When using an External DVK there is no stop sending indication and CQ will not repeat.
  - When using a radio with internal voice message memories, the repeat timer can be used together with a CAT macro in the "CQ" function key. Note: The repeat timer in this case starts when the radio command is sent to the radio. Users that use this function to trigger radio voice keyers must assign the radio command to abort the message to a separate function key.
- **Ctrl+Shift+Fx** - Record SSB message for the assigned function key. Pressing Ctrl+Shift+Fx again stops the recording. Fx can be F1 to F12.
- **Ctrl+Alt+Fx** - Record external DVK memory 1 to 4. Fx can be F1 to F4. An external DVK has to be connected and configured on a LPT port.
  - When using an external DVK, all of the Run and S&P SSB function keys should be set to empty.wav and not left blank.
- **Enter sends messages** - the so called 'Enter mode' or 'ESM' mode. An entire normal contact (CQ & S&P) can be handled with the Enter key. More information is given in the chapter [Basic Functions](#)
- **Automatically Spot all S&P QSOs** - Spot the contact automatically when you log it (only when in S&P mode).
- **"Quick Edit" (Ctrl+Q/Ctrl+A)** - Quickly edit the QSOs worked before in the log.
  - **Ctrl+Q** - moves back one QSO
  - **Ctrl+A** - moves forward one QSO.
  - **Enter** - logs the changes made and brings you back in normal logging mode.
  - **Escape** - discards the changes made and brings you back in normal logging mode.
  - If the text boxes in the Entry window are colored blue, you are in Quick Edit mode, also "QuickEdit" will be shown in as the callframe caption when re-editing QSOs. Quick Edit starts editing with the highlighted contact and you can move forward or back from there.
  - *There is no check if the entered contents is valid as is done when the QSO is entered normally. So check thoroughly what you type.*
- The program will display a warning if it suspects that the computer time is wrong (by checking local time & time zone).
- **Call Stacking** - This command is used for callsign stacking and only available in 'Multi-User Mode'. It is described in the [Advanced Functions](#) section.

- **Using both VFOs when 'Running'** - When using the main VFO to transmit and the other to receive (split mode) after each logged QSO the RX frequency will be made equal to the TX (main VFO) frequency. It's there to let you use the main frequency control as an RIT. It resets after every RUNNING QSO.
- **Automatic antenna selection** can be used. Antennas have to be set on the Antenna tab from the Configurer dialog and can be controlled using an external box on the parallel port. When you press Alt+F9, you will toggle through all the antennas FOR THAT BAND. If there is only one, then no toggling will occur. When you change bands, the antenna switch will be changed to the antenna with the lowest code for that band. The selected antenna will show in the status pane.
- Alt+' (Alt+single quote) toggle between the wide and narrow filter for the selected mode (SSB, CW and Digital modes). This hot key will work whether you have changed your filter codes or not. Filter codes can be set in the the bandmap right click menu.
- **Pause** - swap radios and match keyboard to radio.
- **Update timestamp qso** - Updating the timestamp from a qso can be done from within the Entry window using the callsign field. Entries starting with "T" and four numeric digits will update the current row time in the log.
- A warning message will be shown if user tunes away before logging a qso in the Entry window with a correct entered exchange.
- **Exchange field validation:**

CQ Zone	only allow numbers, tab, space, backspace
Section	only allow letters/numbers
Exchange	only allow letters/numbers
Grid	only allow letters/numbers
Power	only allow letters/numbers

- **K1TTT's call checking function** has been implemented. When a callsign is entered it is checked against a pattern file to see if the callsign entered is a possible callsign. A warning will be given in the Check window when this is not true. The checking is done using a set of rules in the file CALLSIGN.PAT. Note that the call checking function only works for HF (no WARC) and only for CW and SSB. More information in the chapter [Call Checking](#).
- When a **SH/DX** command is entered in the callsign field it is passed to the packet window for processing.
- **Show windows when radio frequency changed** - This function will bring the program on top when the radio frequency is changed.
  - This only happens when there is another program on top of N1MM logger like your Internet browser, e-mail client etc.
  - A radio is attached (to get the frequency change from).
  - When N1MM logger is minimized nothing will happen.
  - This function is standard behavior and is always enabled.



- **TOUR** command. A very few contests allow for multiple sessions in which you can work the same station in every session for QSO credit. You can enter TOUR into the Entry window in place of a call sign to reset dupe checking at any time before or during the contest. This command has 2 parameters that are entered into the Sent RST field, separated by a forward slash "/". The first parameter is the time when the current session begins (GMT) and the second parameter is the duration of the session. The format for both parameters is hhmm. For example, 1200/30 means the session starts at 1200Z and has a duration of 30 minutes. The minimum value for the duration parameter is 10 (10 minutes). If the TOUR command is entered without any parameters, the current values of the start time and duration will be displayed. The default values are 0000/00.
  - At the beginning of each session the start time and duration will be displayed in the status field at the bottom of the Entry Window. After the first QSO has been logged during the new session you should see the Multiplier window reset and dupes will be reset for this new session as well.
  - Most of the contests supported by the Logger do not need this command but some (mostly Russian and Ukrainian) have it built into the contest module and do not require it entered manually.
  - If you are planning on using TOUR command with other contests, keep in mind that settings for it will be lost when the logger is restarted. If the Snt (sent RST) field is not displayed in the Entry window, you will not be able to use this command.

## 9. Function Keys

### 9.1. General

The program has 24 possible programmed messages assigned to the function keys. There are two sets of messages, Run messages and Search and Pounce messages. The first twelve messages you enter are presumed to be Run messages F1 to F12, the second twelve, Search and Pounce messages F1 to F12.

The function keys can be redefined by right-clicking on the function key/message button array in the Entry window

The function keys can be stacked. This means you can press several function keys behind each other which will all be sent in full in the selected order. For example, you could press F4 to re-send your call (if you think the other station did not get it right) and immediately press F2 to send the exchange. The program will send the two messages seamlessly.

When hovering with the mouse over a function key button the text to sent is shown.

### 9.2. Running mode and S&P mode

If "Running" is checked, you will see the Run messages, if not, you'll see the Search and Pounce messages on the function keys. SHIFT REVERSES THE MEANING OF THE ABOVE RULE. When you press Shift, the labels will change (if you made them different) and the text from the "Running" keys become the text from the "Search & Pounce" keys and vice versa.

Running mode is determined by whether you are on a CQ-Frequency or when the 'Running' indicator is marked. There is one CQ-Frequency per band. Swapping VFOs may possible swap between Running mode and Search & Pounce mode. Running mode is based on the TX frequency.

Moving away from the frequency on which you were in Running mode will place you automatically in Search and Pounce mode. Going back to the Running frequency will put you back in Running mode (the 'Running' indicator is marked again), clicking on the 'CQ-frequency' in the bandmap also will place the program in Running mode again. An exception is when you are working split i.e. transmit on one VFO and receive on the other. Moving around will not change Running mode into Search and Pounce mode.

Default Function keys					
<b>F1</b>	CQ Key	<b>F5</b>	His Call Key	<b>F9</b>	---
<b>F2</b>	Exchange key	<b>F6</b>	QSO B4 Key	<b>F10</b>	---
<b>F3</b>	End of QSO Key	<b>F7</b>	-	<b>F11</b>	-
<b>F4</b>	My Call Key	<b>F8</b>	Again Key	<b>F12</b>	---

The above mentioned function key assignments are the defaults. The function keys can be remapped in the 'Configurer' dialog.

Just put 24 messages (for CW/Digital) or 24 wave files for SSB in order. They will map to F1-F12 (first 12 are for Run mode) and Shift+F1-F12 (second 12 are for S&P mode). Keys not programmed in S&P mode take the value of that key from Running mode (if programmed). This means that when the F5 key in S&P mode isn't programmed, the F5 key from Running mode will be shown (and used) by that function key in S&P mode. If you want you can come close to CT compatibility.

### **Therefore the text sent by and shown on the function keys depend on the Running mode indicator!**

More info about Running and S&P mode can be found in the {{Basic Functions}} chapter.

Note that when in Search and Pounce mode, to call CQ, the CQ-key as configured is used i.e. mostly F1. No need to press Shift+F1. That will place the program in Run mode and will press F1; from that point on F1 will call CQ (in Running mode). If you sent CQ, don't you want to be in Run mode? If not use the {S&P} macro to stay in S&P mode.

There may not be any 'holes' in the function key lines with skipped function keys. ALL preceding function keys must at least have a line in the table Example: You'd like to have a different S&P F3 key than the Run F3 key. First you have to add the 12 Run lines in the table, after that the S&P lines for F1 + F2 +F3 which you liked to change for S&P. So at least 15 lines in total have to be in the function key table (12 run + 3 S&P).

The text F1 (etc.) in the left column is only text and has no intelligence/meaning for the program. You could remove it and change it to any text you like, which will show on the Function key in the Entry window. The order of lines determines what the key will do. Examples: line 5 is Run F5 , line 11 is Run F11, line 17 is S&P F5 (17-12=5) etc.

**Alt + F11** - Run box behavior: The behavior of the running indicator (run box) can be manipulated using the Alt+F11 toggle. Normally when you are on your CQ-frequency you will be in Run mode. Changing frequency will toggle the run box into S&P mode. With Alt+F11 this behavior can be changed and the program will stay in the Run mode or S&P mode regardless to which frequency the VFO is tuned. A message is given in the Entry window status bar what the new value is. When on a DXpedition this behavior can be very useful.

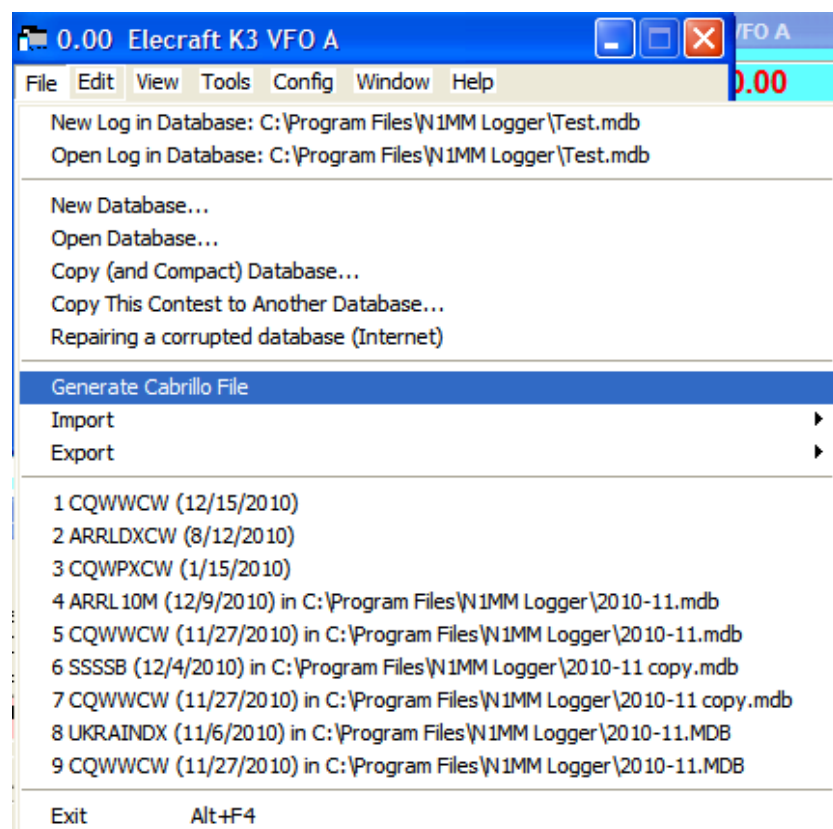
## 10. Other Keys

Key	Send function key(s)	Action(s)
<b>Insert</b>	His Call and Exchange Keys	Send His Call followed by the Exchange
;	His Call and Exchange Keys	Send His Call Followed by the Exchange
<b>Alt+Enter</b>	N/A	Sends the End of QSO message and logs the contact
.	End of QSO Key	Sends the End of QSO message and logs the contact
<b>Ctrl+Alt+Enter</b>	N/A	Logs a normally invalid QSO (invalid exchange, etc.). Prompts for a comment. When no comment is entered Forced QSO is added to the comment field. The receive frequency is reset to the transmit frequency. Use View>Notes to correct later

Background: The ; and . keys were added to make touch typing much easier for those who use the **Insert** and **+** keys for working and logging QSOs. It is impossible to touch type and easily hit these very often used keys. If you have ever operated at a multi-multi event with many different keyboard layouts (QWERTZ, QWERTY, German, Dutch etc.) you will have noticed that each keyboard layout

has these keys in different places. Using keys like ; and ' helps standardize often used keystrokes. the keys to use can be set in the Configurer under the Function keys tab.

## 11. File Menu Selections



### Note

A database is a single Access 2000 database file. It has an extension of .mdb. In each database are held zero or more general or contest logs. For the time being, only one contest or general log within a database may be viewed or edited at a time.

- **New log in database** - Create a new contest log within the current database. More info ((Open/New Contest Dialog|here))
- **Open log in database** - Open an existing log within the current database. More info ((Open/New Contest Dialog|here))
- **New Database** - Create a new log database. Change the proposed name (new.mdb) into a meaningful name for the use or contents of this new database. From now on this database will be opened by default at startup of the program. Use Open Database to select another Database which will become the default database to open. Many contests can be stored within one database. Always use a separate database for testing new versions of the program and make regular backups of the N1MM logger directory with all it's contents but with at least the database files ( \*.mdb) with 'real' contest QSOs.

- **Open Database** - Open an existing log database. A selection can be made from databases already created. Many contests can be stored within one database.

### **Warning**

All setup information like station info, telnet clusters, function key information etc. is stored in the current database. When creating a new database this information is copied to the new one. Changes are always stored in the current open database. So when opening an old database all the stored information has to be checked if still valid and changed where needed. This can be facilitated by using the export and import functions for packet/telnet buttons and function keys. Just export the files, change databases, and re-import them.

- **Copy (and Compact) Database** - Copy the database to a new database file, and compress the data at the same time. Change the proposed name (new.mdb) into a meaningful name. This function can be used to reduce the size of the database after importing a new CTY.DAT file or after deleting contests. The original database is not changed, nor does the program start using the new database, unless Open Database is subsequently used to open the new database.

Note: Copying a database also compresses it. If you have deleted contests from your database, you may want to copy it to reduce the space it takes up. Deleted contests and contacts are definitely gone after this action!

- **Copy This Contest to Another Database** - Copy the key/button information and QSOs from the current contest to another database. The database should exist, if not create it first with 'New database'.
- **Repairing a corrupted database (Internet)** - This is a link to the Microsoft Web site on how to fix a corrupted Access databases. A program to fix can be downloaded there (Jetcomp.exe). This file can also be download from the N1MM website under the menu item 'Other files'.
- **Generate Cabrillo File** - New with Version 10.12.3, replacing Export - Cabrillo File. One fewer step to producing the Cabrillo format text file that most contests now require of entrants submitting electronic logs.

Once created, the Cabrillo file can be edited using Notepad or any text editor. Make sure that the Station information ('Config > Change Your Station Data') and overall contest information (File > Open Log in Database ) is correct before creating this file. Be sure to enter the correct Sent Exchange, or else your Cabrillo file will be wrong. For Multi-op stations select the correct Operator Category in the contest setup window. This generates the correct numbers for each station; in Multi-single, the station number field (the last digit in each line) identifies the Mult and Run station.

It is a good idea to rescore the contest before submitting and check to be sure that the header of the Cabrillo file is correct before submitting the log. Some contest organizers use non-standard operator categories (i.e. not in the official Cabrillo specification); in these contests you will have to edit the category by hand to make it agree with the organizer's requirements.

### **Digital Mode Designators**

Note: The Cabrillo standard only supports one mode designator for digital modes: RY. In some digital or mixed-mode contests, PSK and RTTY may be considered separate modes, and the contest organizers may specify additional non-standard designators such as PK. The Logger's Cabrillo mode export string for PSK is "PK" unless the contest considers RTTY and PSK to be a single digital mode. When this occurs the mode export string is "RY". Because the use of these mode designators is non-standard, you should always check with the organizer's file specification and if necessary, edit the Cabrillo file to meet the organizer's requirements.

## • Import

- **Import ADIF from file...** - Load the data from an ADIF file into the current database. ADIF is being used to import into and export from many contest and logging programs. It is not possible to import a contest if the contest ID doesn't match the current contest. So the exported and imported contest have to be the same. If not look in the FAQ section what to do.
- **Import Call History...** - Some contests use exchanges which are very often the same the next contest you work a station. This table in the log database can be used by some of the contests to show information in one of the exchange fields or fill a macro when a callsign is entered. This information can be Name (RTTY friends file), Grid square, age, etc. For more information see the [Before the Contest](#) chapter and for vhf the [VHF and Up Contesting](#) chapter (VHFREG1 is a VHF contest which uses this table to fill the grid square). When importing a new file with information the contents of the CallHist table will be deleted first. So export first if you want to keep the content!
- **Import State and Province abbreviations...** - Import the state and province abbreviations used in many contest modules (QSO parties). Only needed to import when changes have been made to the file StatesAndProvinces.sec or internal in the program (CallAreas). When a state or province does not show up correctly in Logger this menu item is a good try to resolve the problem. Do a rescore after executing this menu item when QSOs have already been logged.
- **Import Packet/Telnet Buttons from file...** - Import the contents of the Packet/Telnet buttons file (\*.mc). This way a separate set of Packet/Telnet Buttons can be created for different Packet/Telnet nodes which may have different commands.
- **Import Telnet Clusters...** - Import the contents of a telnet cluster file (\*.txt) into the program. This way you can import a small file with telnet clusters suited for your location/situation. The 2 items in the file (name and Telnet cluster address) are separated by a comma. A port number may be added using a : after the telnet cluster address where needed (the default is 7300). Example:  
GB7UJS,gb7ujs.shacknet.nu:7373 or K1TTT.NET,K1TTT.NET
- **\_\_Import Function Keys** - Import the contents of a saved function keys file (\*.mc). This file can be edited with a text editor like Notepad before importing. Note that for each mode, only one set of function key definitions can be loaded in a database at one time. However, the Associated Files tab of the Define Contest dialog provides the ability to associate a definition file with each contest, so that it will be loaded automatically when that contest is started.
  - **SSB Function Keys...** - import SSB function keys.
  - **CW Function Keys...** - import CW function keys.

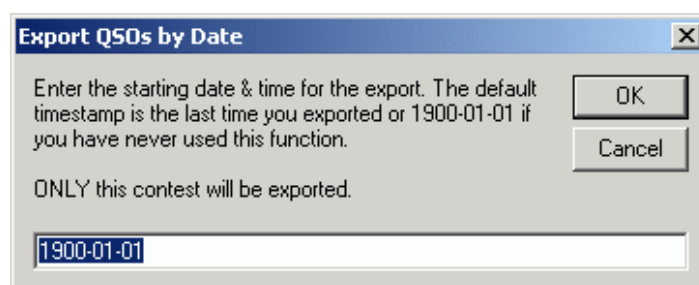
- **Digital Function Keys...** - import the Digital Interface function keys (not the extra keys from the Digital Interface).
- **Recover QSOs from a Transaction Log...** - Import the created transaction log file. This file is created when on the 'Other' tab in the Configurer the option 'Keep log of all QSOs to facilitate recovery of log' has been selected. More info in the [Configurer](#) chapter.

- **Export**

#### **Filename Tip**

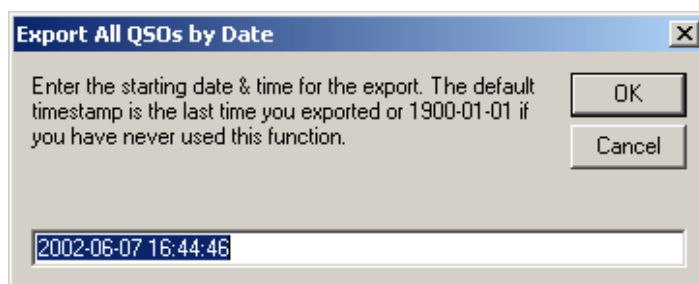
When the "Save File" window prompts for a filename the default is [callsign.txt](#). If your contest call sign was N1MM/P, put something like "N1MM\_P.txt" The / and many other characters are a no go in the Windows OS.

- **Export ADIF to file**
  - **Export ADIF to file...** - Create an ADIF file. This file can be used to import into a logging program or contest program (like this one). Deleted QSOs are not exported, select the 'DELETEDQS' contest to export these.
  - **Export ADIF to file by date...** - Create an ADIF file from the selected contest from the date set. The first time the default date from which QSOs will be exported is 1900-01-01 (yyyy-mm-dd). The second time the default date and time will be shown by the program and will be the moment you last exported with this option. The date/time can be changed if necessary, i.e. when opening another (older) database. This function is especially useful when you liked to export the generated ADIF file into a (general) logging program to do award tracking etc. Deleted QSOs are not exported, select the 'DELETEDQS' contest to export these.



- **Export ADIF to file by date from ALL contests...** - Create an ADIF file from all QSOs in all contests when the current contest is DX. Otherwise, it exports only from the contest you are logging in. The first time the default date from which QSOs will be exported is 1900-01-01 (yyyy-mm-dd). The second time the default date and time will be shown by the program and will be the moment you last exported with this option. The date/time can be changed if necessary, i.e. when opening another (older) database. This function is especially useful when you want to export the generated ADIF file into a (general) logging program to do award tracking etc. Deleted QSOs are not exported, select the

'DELETEDQS' contest to export these.



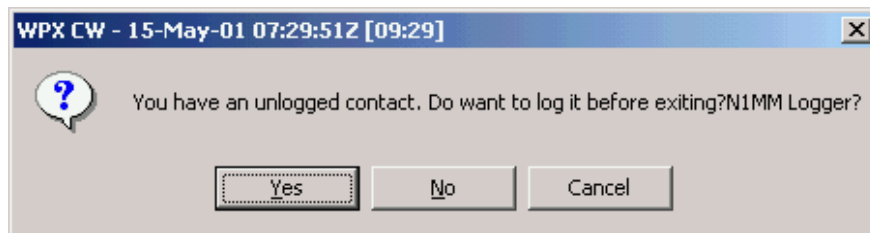
- **Export ADIF to file by Multi-User Station Number** - Create an ADIF file from all QSOs from one station in a Multi User environment when you are currently logging DX. Otherwise, it exports only from the contest you are logging in. A station number has to be given after which a filename can be given for the ADIF file to generate.

Note: When using ADIF export and the contest name contains "RTTY" or "JARTS" the export mode is set to "RTTY" even when the log file shows otherwise (i.e. LSB).

- **Export to File (Generic)**
  - **Export to File (Generic), order by QSO Time (normal)...** - Creates a generic file named [callsign.txt](#) from the contest log ordered by time (and not by band). In some cases this is the file needed by the contest manager. This file can also be used to import into a spreadsheet or database program or your logging program if it can't import ADIF format. The exported file can be edited with a text editor like Notepad.
  - **Export to File (Generic), order by Band...** - Creates a generic file named [callsign.txt](#) from the contest log ordered by band, per band ordered by time. In some cases this is the file needed by the contest manager (like in VHF and up contests).
- **Export EDI to file by band...** - Create an EDI (REG1TEST) file which is a regular file format used for VHF contests in Europe. A separate file will be created for each band with QSOs made on it.
- **Print Score Summary to File...** - Print a summary sheet to a file with the default name [Callsign.SUM](#) Example: N1MM.SUM The number of contacts printed on the Summary sheet is without dupe contacts. The exported file can be edited with a text editor like Notepad.
- **Export Call History...** - Exports the information in the Call History database table. This table can only be filled or revised by using Import Call History. Do your editing on the Call History text file before import.
- **Export Packet/Telnet Buttons to file...** - Export the contents of the Packet/Telnet buttons to file (\*.mc). Exported Packet/Telnet buttons can be imported using the menu item 'File | Import Packet/Telnet Buttons from file...'. The exported file can be edited with a text editor like Notepad.



- **Export Telnet Clusters...** - Export the telnet clusters (\*.txt) in the program. This way you can export the current entries and update it for your own location/situation. Exported Telnet clusters can be imported using the menu item 'File | Import Telnet Clusters...'. The default name for the exported file will be 'Clusters.txt'.
- **Export Function Keys to file** - Export the contents of the function keys to file (\*.mc). Exported function key settings can be imported using the menu item 'File | Import Function Keys to file...'. This way for every contest a separate set of function keys could be created. The exported file can be edited with a text editor like Notepad.
  - **SSB Function Keys...** - Export the SSB function keys.
  - **CW Function Keys...** - Export the CW function keys.
  - **Digital Function Keys...** - Export the Digital Interface function keys (not the extra keys from the Digital Interface).
- *Recently used contests/databases* - The most recently used contest/databases will be shown here with a maximum of nine.
  
- **Exit Alt+F4** - Quit the program. If two Entry windows are open the program will not exit. If unlogged contacts are in the Entry window you will be prompted with the dialog below.



(

## 12. Edit Menu Selections

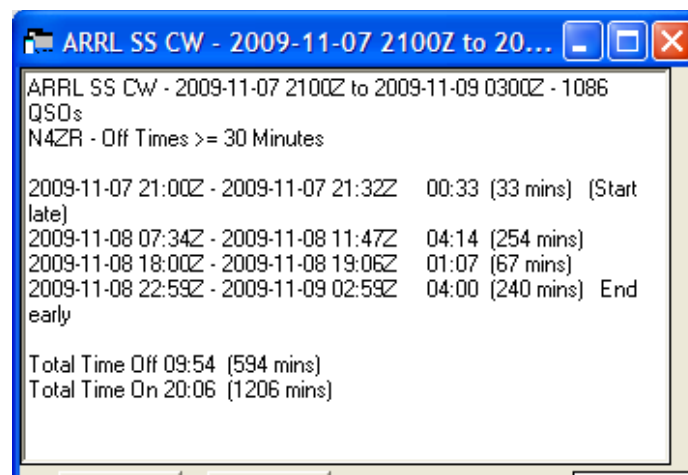
- **Wipe Out Entry Fields Ctrl+W** - Clear information from the current contact (equal to Alt+W).
  
- **Edit Last Contact Ctrl+Y** - Open a dialog to allow all fields for the last contact to be modified.
- **Add a Note to Last/Current Contact Ctrl+N** - Add a note to your the current contact in the Entry window or the last QSO logged when no callsign is shown in the Entry window.
- **Edit Current Contact** - Open a dialog to allow all fields for the current contact to be modified. Double clicking in the Log window on a contact will open the same dialog.
- **Quick Edit Previous Contacts (Back) Ctrl+Q** - Quickly edit the QSOs worked before in the log. Ctrl+Q moves back one QSO, Ctrl+A moves forward one QSO. If the text boxes in the Entry window are colored blue, you are in Quick Edit mode. To exit, press enter to save

changes or Escape to abandon changes.

- **Quick Edit Previous Contacts (Forward) Ctrl+A**- Quickly edit the QSOs worked before in the log. Ctrl+Q moves back one QSO, Ctrl+A moves forward one QSO. If the text boxes in the Entry window are colored blue, you are in Quick Edit mode. To exit, press enter to save changes or Escape to abandon changes.
- **Increase Received NR by 1 Ctrl+U** - Increase the number in the exchange field by 1. You will find this useful during serial number contests when you are in a pileup and you need to keep incrementing the DX station's serial number because you can't get him in the log...
- **Find/Find Again Ctrl+F** - Find the callsign entered in the callsign field in the log. Pressing Ctrl+F again will find the next instance.

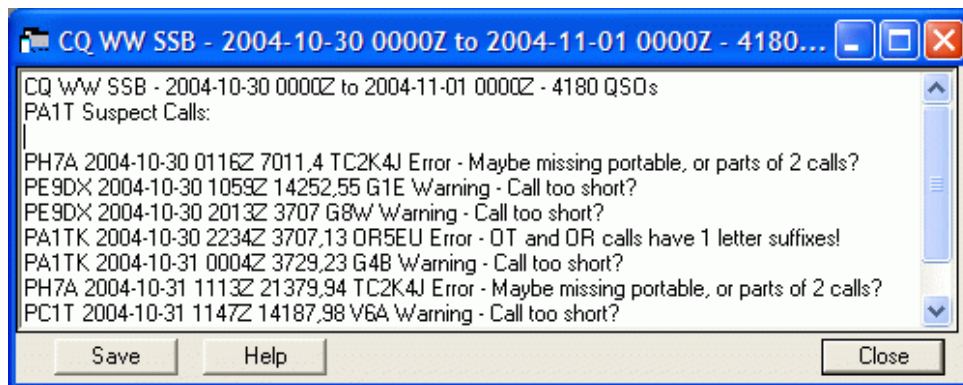
### 13. View Menu Selections

- **Max Rates** - View 1 minute, 10 minutes and 60 minutes highest rates for the contest. The content shown can be saved as a text file by clicking on the Save button or by right clicking to the clipboard using the menu item: Copy text to Clipboard.
- **Off Times** - Show off times. Shown is the start and end of the period and the minutes off time, if the operator is known it will be shown. Also the total off time is given in minutes and days/hours/minutes. If a contest does not have an off period it is set at 30 minutes. The content shown can be saved as a text file by clicking the Save button or by right clicking to the clipboard using the menu item: Copy text to Clipboard. Off times uses time of first (last) logged QSO as the start (end) of on time. Any time between start (end) of contest and first (last) logged QSO is counted as off time. A warning will be displayed for pre-contest QSOs that cause the report to be incorrect.

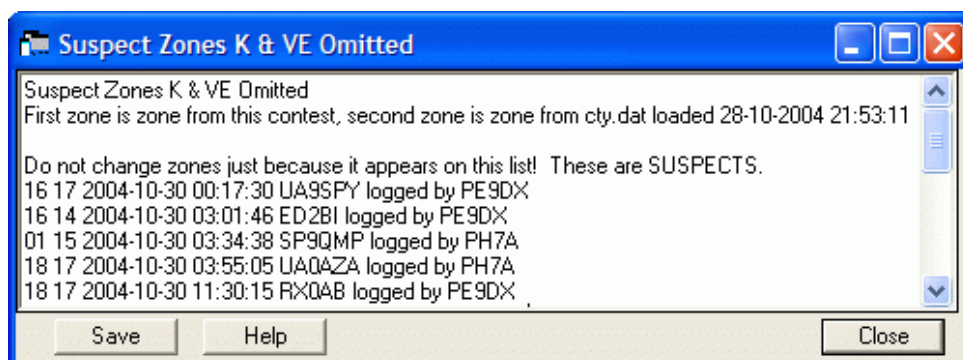




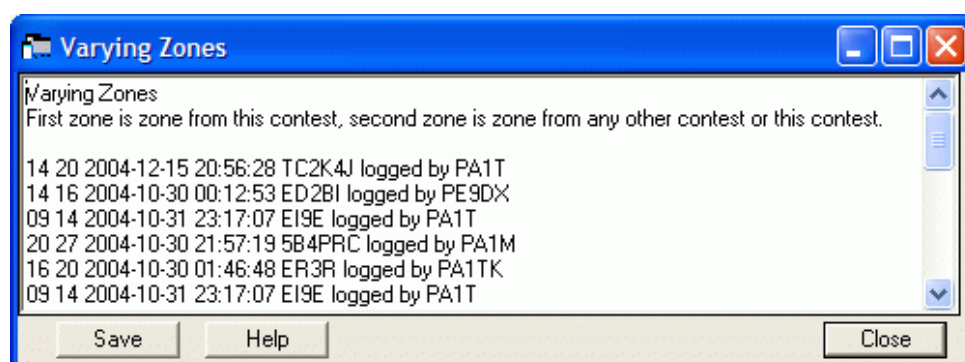
- **Runs** - Shows all runs. These are the periods between band changes and includes off times. The content shown can be saved as a text file by clicking the Save button or by right clicking to the clipboard using the menu item: Copy text to Clipboard.
- **Suspect Calls** - Show suspect calls using the K1TTT's call checking function. A window will open with the results. The content shown can be saved as a text file by clicking the Save button or by right clicking to the clipboard using the menu item: Copy text to Clipboard.



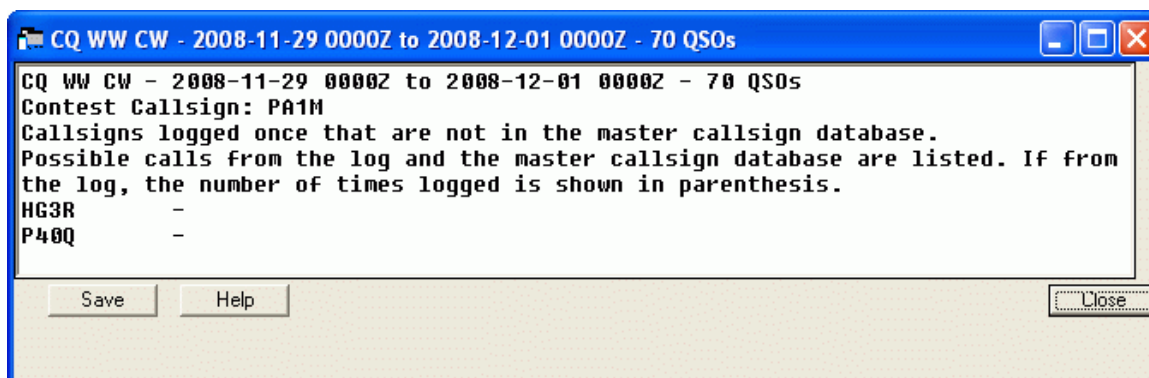
- **Suspect Zones** - Show suspect zones. Zones in the USA and Canada are omitted. The first zone is the zone from this contest, the second zone is the zone from the cty.dat file loaded. A window will open with the results. The content shown can be saved as a text file by clicking the Save button or by right clicking to the clipboard using the menu item: Copy text to Clipboard.



- **Varying Zones** - Show varying zones. The first zone is the zone from this contest, the second zone is the zone from any other contest in this database or this contest. A window will open with the results. The content shown can be saved as a text file by clicking the Save button.



- **Passed QSOs** -The number of passed qsos per operator. Showing band, number of passed qsos and multipliers.
- **Cross Check Exchanges** - Will create a report of inconsistent exchanges, Grid Squares not in the call history and distances  $\geq 700$  km in VHF contests. Great to find typos after the contest.
- **Unique calls not in Master.dta** - Will create a report of unique calls which are not found in the master.dta file in the N1MM logger program directory.



- **Notes** - Open a window and display all contacts with notes. Great feature to check operator notes when checking the log after the contest. The content shown can be saved as a text file by clicking the Save button or by right-clicking to the clipboard using the menu item: Copy text to Clipboard.
- **Statistics** - Show statistics for the selected contest. Many choices available. See chapter 'Statistics' for more detail. When, possibly during a contest, you check the statistics and a station comes back, just start typing. The statistics window will go to the background and every typed characters will go to the Entry Window. A Print to File output can be import in the

Import Goals in the Info Window.

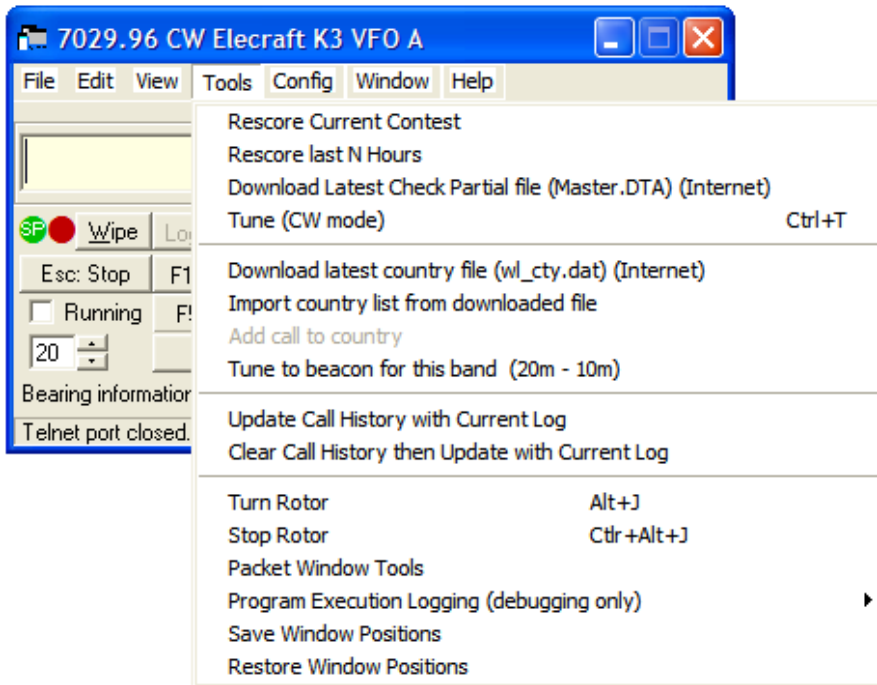
 **Note**



All 'Show' items below can only be used when valid callsign information is entered in the callsign field or the callsign frame.

- **Show Last 10 Spots** - Show the last 10 spots for the call in the callsign field. If the callsign field is empty the callsign on the callsign field frame will be used, if any. A Packet or Telnet session with a DX cluster should be present because a query will be send to that cluster.
- **Show Buck/Packet** - Show the Buckmaster information for the call in the callsign field. If the callsign field is empty the callsign on the callsign field frame will be used, if any. A Packet or Telnet session with a DX cluster should be present because a query will be send to that cluster.
- **Show Station** - Show the station information for the call in the callsign field. If the callsign field is empty the callsign on the callsign field frame will be used, if any. A Packet or Telnet session with a DX cluster should be present because a query will be send to that cluster.
- **Show QSL/Packet** - Show the QSL information for the call in the callsign field. If the callsign field is empty the callsign on the callsign field frame will be used, if any. A Packet or Telnet session with a DX cluster should be present because a query will be send to that cluster.
- **Show Sunrise/Sunset** - Show the Sunrise/Sunset information for the call in the callsign field. If the callsign field is empty the callsign on the callsign field frame will be used, if any. The information shown is also available in the Info Window. A Packet or Telnet session with a DX cluster should be present because a query will be send to that cluster.
- **SH/DX Current Call or Spot** - Shows DX information from the current call in the callsign field or spot. If the callsign field is empty the callsign on the callsign field frame will be used, if any. A Packet or Telnet session with a DX cluster should be present because a query will be send to that cluster.
  
- **Show QRZ (Internet)** - Show the information that QRZ.com has for this call using your browser. An Internet connection should be present.
- **Show Google (Internet)** - Show the information that Google.com has for this call using your browser. An Internet connection should be present.
- **Show Buck (Local)** - Show the Buckmaster database information for this call. This requires installation of Buckmaster database software and Buckmaster database on the local computer.
  
- **Set Font** - Change the font of the Entry window text boxes and callframe text. The callframe text is the same type but not size as the textboxes. If Arial is the choosen font,the callframe remains however MS Sans Serif. A nice slashed font is Monaco.

## 14. Tools Menu Selections



- **Rescore Current Contest** - Rescore the current contest. This is required before submitting a log if CTY.DAT has been changed (if applicable) or if contacts have been modified or deleted during the contest. It may be run at any time but is rather slow.
- **Rescore last N Hours** - Rescore the last N hours for the current contest. It may be run at any time but is rather slow.
- **Download Latest Check Partial file (Master.DTA)(Internet)** - This item will open your web browser to the web page where to download the latest version of the check partial file. Select the file to download and copy the file in the program directory(NB. N1MM logger supports the CT format master.dta file). Select the file to use in the tab 'Associated Files' under 'File | Open Log in Database' dialog. The calls in these database master files appear in the Check window after entering at least two letters of the callsign field.
- **Tune (CW mode) Ctrl+T** - Switches the radio into CW mode and using the CW keying interface, key the transmitter. The PTT line will also activate and the radio has to be in semi- or full-break-in mode (voX) to transmit. To stop the tuning signal, press the Esc key or Ctrl+T again. After the tuning signal ends and PTT is released, the radio will return to the original mode.
- **Download latest country file (wl\_cty.dat)(Internet)** - This item will open your web browser to the web page where to download the latest wl\_cty.dat file. After downloading the new country file it has to be imported in the program by selecting 'Tools>Import country list from downloaded file' which is the next menu item.
- **Import country list from downloaded file**- Load a new copy of the country file into the log database. Mostly this file is called wl\_cty.dat but may have any name. Just select the right file when importing and select *Open*". *To check which file you are using go into 'Help - About*

*N1MM logger Vx.x.xx* and look at the bottom line which tells you the current country file (mostly *cty.dat* or *wl\_cty.dat*), check the date and time if it matches the file. Duplicate entries are ignored during the import so the first instance will be added.

 **Note**



Always load the most current *WL\_CTY.DAT* file before entering a contest from the Internet.

- **Add call to country** - Specify a country for the callsign in the callsign field in the Entry Window. If no callsign entered this menu item will be grayed out. This is a quick way during the heat of a contest to add a country. Added callsigns to countries are valid until you do a new 'Import country list from downloaded file'. Making changes permanent means changing the imported country file (*wl\_cty.dat*) and importing the changed country file. This feature is for getting stations accepted by the program from countries when otherwise rejected by the program due to a faulty country file. When using the right country the program will accept the station and calculate the right (well at least a more accurate) score (points and multipliers).
- **Tune to beacon for this band** - This will change mode to CW/CW-R and tune to the NCDXF beacons on bands 10, 15 and 20 meters and displays the station transmitting and the power steps in the status bar of the focus window. Also the Short Path and Long Path bearings are shown. See: <http://www.ncdxf.org/Beacon/BeaconSchedule.html>
- **Update Call History with Current Log** - Update the call history file selected with the qsos from the current log file. Contacts will be added when new or updated when already in the call history file. For the 2 grid fields the behavior is a bit different. When both grid fields are filled and a new third grid has been logged, the second grid (oldest) will be removed, and replaced by the contents of the first field. The new grid will be added to the first position. The same change in position will happen when only the first grid is filled and a new grid has to be added from the log. A 4 digit grid will be overwritten by a 6 digit grid when the first 4 characters are the same.
- **Turn Rotor Alt+J** - Turn rotor to bearing for the callsign in the Entry window or to the callsign in the callframe (when callsign field is empty).
  - The statusbar will show the bearing it will turn to. Example: Turning Rotor to 123°
  - **Alt+L** will turn the beam to the proper bearing for long path
- **Stop Rotor Ctrl+Alt+J** - Stop turning the rotator.
- **Packet Window Tools** - Opens the menu for the Packet Window, from the Entry window, so you don't need to look at the Packet Window
- **Program Execution Logging (debugging only)**
  - Trace facility. Exports to a selectable file (\*.trc). Tracing has been added to all program areas. If you experience problems (like a serious delay) please turn on tracing for the window/dialog giving (performance) problems. Send the recorded trace file to the programmers so they can figure out the problem/delay is in the program.
    - **Disable**
    - **All**
    - **.... one entry per program window/dialog** (Available window, Bandmap window etc.)
- **Save Window Positions** - Save the current window positions to the .ini file.
  - NB. window positions are automatically being saved when the program is closed.

- Window positions are saved per operator. Use Ctrl+O to select Operator and press 'Save Window Positions'.
- **Restore Window Positions** - Restore from the .ini file the most recent saved window positions. The screen will update immediately
  - Window positions are restored per operator (when saved first by the operator). Use Ctrl+O to select Operator and press 'Restore Window Positions'. The windows will change to their new positions immediately. This enables easy reconfiguration of the screen when changing operators at a multi-op.

**Note**

More info about rotator control can be found in the chapter {{Supported Hardware}} under 'Rotator control'

## 15. Config Menu Selections

### 15.1. Configure Ports, Telnet Address, Other - Also called [Configurer](#).

This a very important dialog which can change the program's behavior. This menu opens the configuration dialog to modify setup options.

### 15.2. Change Your Station Data

Modify overall Station information - name, call, address, state, latitude, longitude, etc. The callsign entered here is very important for most contests, It determines what country you are in, which may in turn affect the required exchange, scoring, which stations may be worked for contest credit, etc.

### 15.3. Change Sub Bands

These are the band edges which are used when you invoke the use of a bandplan in the [Configurer](#) dialog's Mode Control tab. The Sub Bands are disabled in the default setting, which is Follow Radio Mode, because this option often causes operator confusion if it is set by mistake.

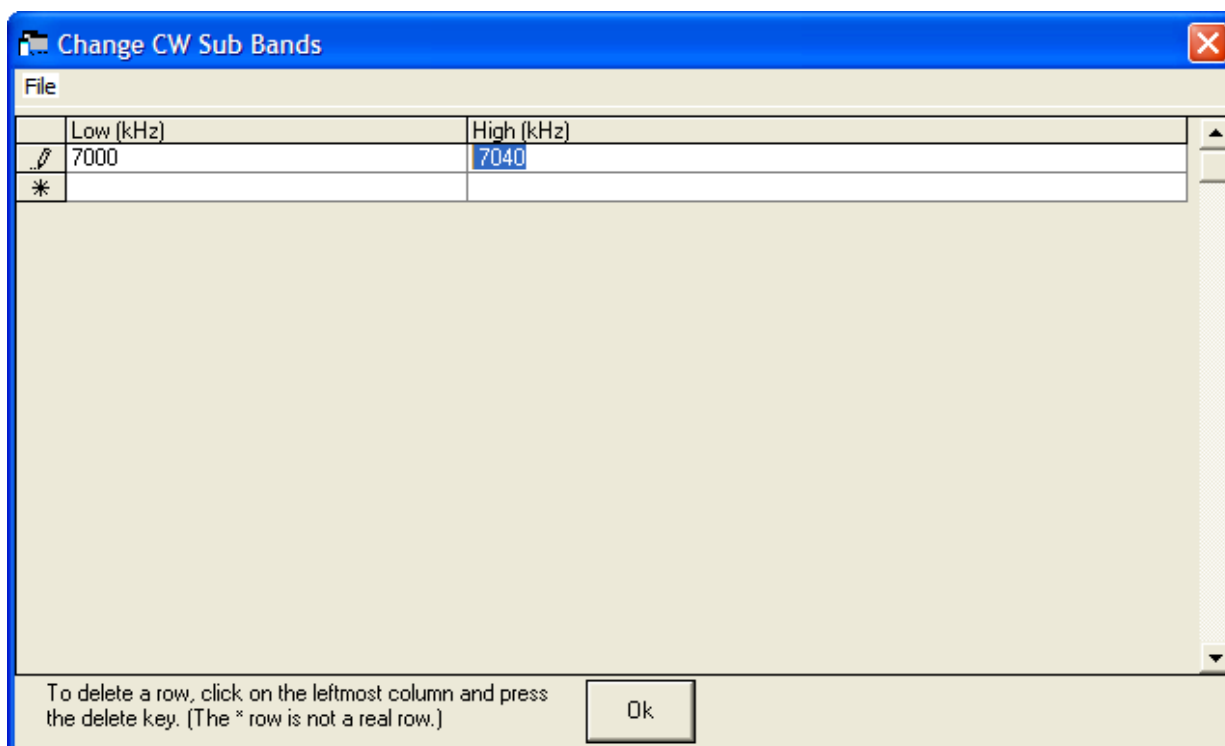
You may want to set up a bandplan as an aid to the operator. For example, in Europe, you might want to set the lower band edge on 40 SSB at 7040 to help you conform to the IARU Region 1 bandplan. In that case, you need to add the frequencies (in kHz) that are used for the specific



mode to the bandplan for that mode.

If you click or tune to an area designated for a given mode on the bandmap and you are following a bandplan, then the program and attached radio will change modes appropriately. It is assumed that digital segments are the smallest, SSB, next, and CW the largest, and that they may overlap. For that reason, the program checks the digital sub-band list first, then SSB and finally CW.

- **CW Sub Bands** - See example below. The band 7000 to 7040 is set as CW in Europe by the IARU bandplan. The frequencies above 7040 are automatically set to SSB if no digital sub bands are set.
- **SSB Sub Bands** - the sub bands for SSB , if nothing is set this is the default mode.
- **Digital Sub Bands** - the sub bands for the digital modes



#### 15.4. Clear INI file settings

Option to clear out the 'N1MM logger.ini' file. Could be used when having Configurer troubles. Radio, port etc. settings will be lost when using this item.

#### 15.5. Find all windows (move to within 800 \*600)

Option to force all windows onto primary 800 x 600 screen. Great when coming from a higher resolution screen or a two monitor setup and windows are 'missing on the screen'.

## 15.6. Enter Sends Messages (ESM mode)

Ctrl+M - A mode of operation first introduced by N6TR in TRLog, and much improved in N1MM Logger. The program anticipates the needed sequence of messages to complete a QSO in either Run or Search & Pounce mode, and sends each one in turn by simply hitting Enter. See [ESM](#) for further details.

## 15.7. AutoSend Threshold - Ctrl+Shift+M

Start sending the callsign after a certain number of characters typed AFTER the last number in the callsign. The minimum threshold is 1. 0 will turn off the feature. Only when in RUN mode, not in S&P. More info in the chapter Advanced Functions.

## 15.8. Spot all S&P QSOs

Spot the contact when you log it. This feature is turned off EVERY time you exit the program. This is to prevent accidental spotting of test QSOs or casual rag chew QSOs.

If this option is checked, a contact is automatically spotted when:

- You complete the QSO in S&P mode **and**
- the spot is not already on your bandmap

## 15.9. QSYing wipes the call & spots QSO in bandmap

Very useful for S&P. If you enter a station's call in the entry window, and then tune off for any reason (he doesn't answer your call, or...) the call is shown bold in the bandmap. The setting of this feature remains as it was across program restarts.

Example: Tune to 21200, Enter VU2PTT, Tune off, VU2PTT is "spotted" on your bandmap at 21200. Repeat as long as desired. Go back and work all of them using Ctrl+Up and Ctrl+Dn to navigate.

## 15.10. Do not run on CQ-frequency

When selected and you QSY back to an old Run frequency, the mode stays in S&P. F1 and Alt+Q continue to switch to Run mode. This is most useful in Sprint-like contests, where you QSY frequently and want to avoid unexpected switches to Run mode

## 15.11. Show non-workable spots

This allows non-workable spots and logged contacts to be hidden. . If you hide spots, you will likely never utilize the program to its full advantage, especially S&P. If you don't know why I am saying this, then don't hide spots.

### 15.12. Reset Rx freq when running split

When using the main VFO to transmit and the other to receive (split mode) after each logged QSO the RX frequency will be made equal to the TX (main VFO) frequency. It resets after every RUNNING QSO. Using a radio with VFOs A and B, this feature is there to let you use the main frequency control as an RIT. With Main/Sub radios like the Icom 756/7800 series you can not RX on SUB without receiving on both VFOs. In this case put RX on Main and TX on SUB for Alt+S to work.

### 15.13. Dual Rx always on

Yaesu FT-1000 series, Icom IC-756 series, IC-781 ,IC-775 and IC-7800, Elecraft K3 with subRX only: Selects the mode for Dual Receive toggle (Alt+F12).

- When selected -
  - Yaesu FT-1000 series: The sub receiver will be left on (blinking green RX led)
  - Icom IC-756 series, IC-781 ,IC-775 and IC-7800 only: Dual watch is not turned off when you switch from SUB to Main with **Ctrl+Left Arrow** or **PAUSE**
  - Elecraft K3: The sub receiver will be left on
  - Not selected - The sub receiver will be switched off (RX led off)

### 15.14. CQ Repeat - Alt+R

Toggle for repeat CQing.go into repeat mode. With Winkey, beginning to enter a call-sign in the Entry Window terminates the CQ, but the program remains in CQ repeat mode. The function is automatically turned off when no longer on the CQ-frequency and the mode changed to S&P mode.

### 15.15. Set CQ repeat time - Ctrl+R

Specify the repeat interval (CW or SSB with sound card) in seconds. The default value is 1.8 seconds.

### 15.16. Call History Lookup

When selected, a callsign entered in the entry Window is checked against a Call History file. For

further details see [Call history Lookup](#)

## 15.17. Record QSOs

Record current contacts when in CW or SSB; disabled for other modes. The path set in 'Configurer', tab: Files is being used. More info can be found in the chapter [Tips and Tricks](#).

## 15.18. Change Packet/CW/SSB/Digital Message Buttons - Alt+K

Change the contents of the Packet/CW/SSB/Digital message buttons (Elsewhere called Function Key definitions). The maximum length of text in each Packet, CW, SSB and RTTY button is 255 characters. Alt+K will access the relevant list of definitions, depending on the mode you are in, or you can right-click in the button area to get there . The first 12 rows are for Run mode definitions (F1-F12), and the second 12 are for S&P mode. (also F1-F12). The row-to-key association is fixed — that is, the third row in the table is Run F3, and the 14th is S&P F2. Empty rows must have something in them - it can be a single space, for example.

If you wish, you can supply a single set of definitions (12 rows), and the program will use it for both Run and S&P mode. Alternatively, you can supply S&P F1 and F2, for example, and leave the remainder empty - the program will substitute only the first two S&P definitions when in S&P mode

Also note that if you use a "&" character in a button caption, such as "S&P Exchange", you need to double it (S&&P) to avoid problems with a reserved Windows function.

- **Change CW Buttons** - Change the contents of the CW buttons.
- **Change SSB Buttons** - Change the contents of the SSB buttons (.wav files). Please use the file chooser buttons to the right of each row.
- **Change Digital Buttons** - Change the contents of the Digital buttons.

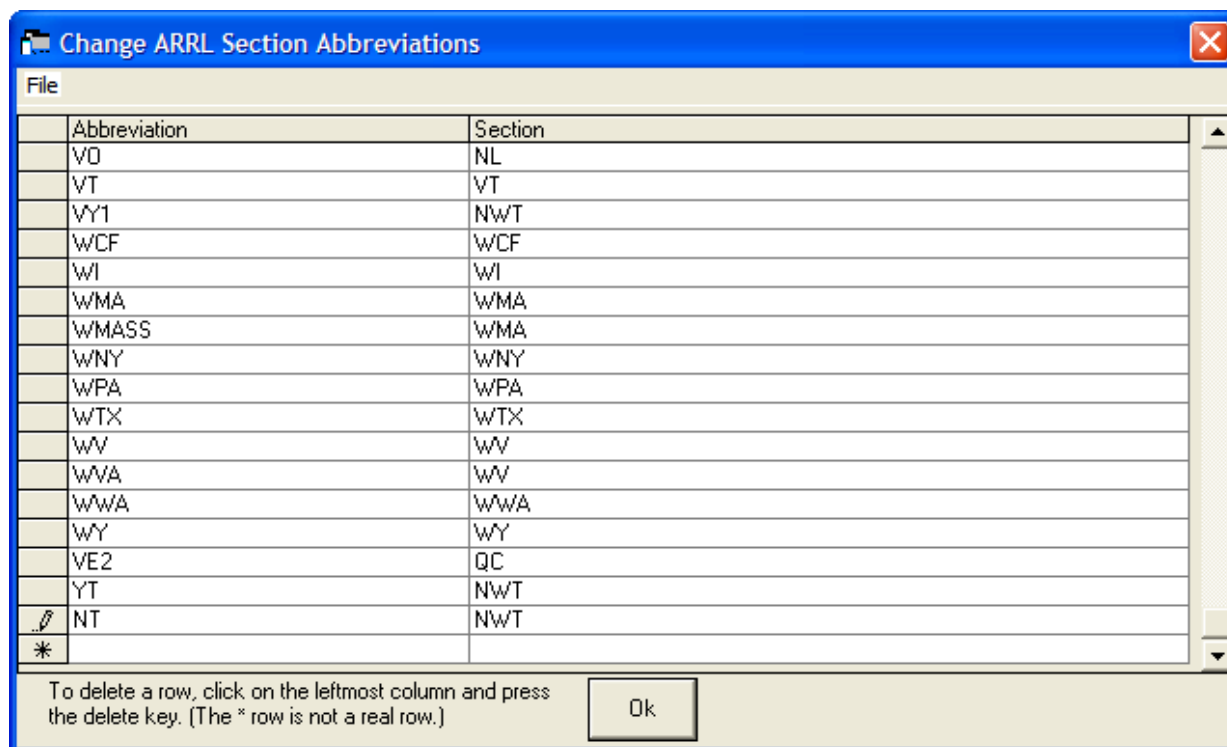
## 15.19. Multi-User Mode

Start the networked mode of N1MM logger (Multiple computers connected to each other).

- **Multi-User Tools** - Menu with Multi User stations tools. For more detailed info see [the chapter on Multi-User Support](#).
- **Edit Station Computer Names** - Associate the computer numbers (starting with 0 for the master station) with their IP-addresses for use in Multi-User mode..
- **Change Operator - Ctrl+O** - Change the callsign of the operator. If you are multi-user, you will be prompted for the operator at startup. The default is the callsign in the station information dialog. Entering "OPON" in the callsign field will also prompt for an operator callsign.

## 15.20. Change Exchange Abbreviations

N1MM Logger recognizes a number of alternative forms for the standard abbreviations used in Cabrillo logs to denote multipliers. The tables accessed from these relate the alternative and standard forms. Here is an example:



This table is edited the same way as the function key definitions tables, but since it is unlikely that you would ever need more than one table, any changes are saved in the database and cannot be exported. If you use multiple databases, you will need to make the same changes in each. Note that the right column is the official abbreviations. normally, you should not edit this column unless the contest sponsor changes its official abbreviations. The left column, on the other hand, can be changed at will, so long as each left column entry is associated with a right-column official abbreviation. The the example, for example, YT NT and VY1 are both equated to the official abbreviation NWT.

- **Change ARRL Section Abbreviations** - Change table of ARRL Section abbreviations.
- **Change QSO Party Abbreviations** - Change the table of county abbreviations for a given QSO Party. you must have previously selected a particular QSO Party in the contest Setup dialog. Again, be extremely cautious in changing the right-hand column unless you are sure that the QSO party sponsor has made a change.

## 15.21. SO2R

More info about Single Operator Two Radio operation of the program can be found in the chapter [SO2R](#)

- **Dueling CQ's - Ctrl+B** - SO2R feature that alternates sending CQ on each radio in turn, listening on one while transmitting on the other. Supported for both CW and SSB.
  - Changing either radio in frequency more than 200 Hz will terminate Dueling CQ.
- **Set Dueling CQ Repeat Time** - Adjusts time after CQ ends on one radio before it starts on the other. In seconds.
- **Advanced SO2R - Ctrl+Shift+I** - toggle 'Advanced SO2R' mode. See [Advanced SO2R](#)
- **Advanced SO2R Delay Time - Ctrl+Shift+N** - Adjustable delay for Advanced SO2R.
- **Focus on Other Radio - Ctrl+Shift+K** - FocusOther, See [FocusOther](#)
- **FocusOther Always Swap** - Focus always switches to the other radio when one radio is transmitting, and always switches back to the original radio when transmission is completed.
- **Toggle CTRLFx Macro - Ctrl+Shift+L** - When enabled and present in one of the function key definitions, the {CTRLFx} macro executes Fx (Function key definition x) on the opposite radio. An example is TU{CTRLF1} in Radio 2's F3 slot, which sends TU and then sends the other radio's F1, used to get quickly back to the Run radio and call CQ after finishing an S&P QSO on Radio 2.
- **TX Lockout (Digital)** - Select a lockout option. Also MIXED mode category is supported i.e. blocks second TRX on the same band and mode. This doesn't prevent RX overload. For digital modes only.
  - **Multi-TX** - This is the default setting. Start CQ on radio A, next a CQ on radio B, both are active. (no lockout)
  - **First one wins** - Start CQ on radio A, pause, Start CQ on radio B. The radio B CQ is ignored since radio A is already active, so if you press a F-key for the second radio while radio1 is transmitting, the radio B F-key is ignored.
  - **Last one wins** - Start CQ on radio A (CQ starts), pause, Start CQ on radio B. The CQ on radio A will aborted and the CQ on radio B will start so if you press a F-key for the second radio while radio A is transmitting, the radio A transmission is interrupted and radio B transmits.
- **Toggle SO2R Mode (Soundcard) - Ctrl+I** - Used only with [soundcard-based SO2R also called "\\$5 SO2R"](#)

## 15.22. WAE - Special commands for the WAE DX contest only

- **Toggle WAE QTC mode - Ctrl+Z** - Toggle the WAE QTC mode between QSO and sending/receiving QTCs. See [Contest Setup Instructions](#) .
- **WAE Received QTC Confirmation** - Enter the WAE confirmation string or .WAV file

## 16. Window Menu Selections

- **Available Mult's and Q's** - Display the Available Mult's and Q's window. More info in the [Available Mults and Qs Window](#) chapter
- **Bandmap Ctrl+B** - Display the Bandmap window. In SO2R/SO2V each Entry window has its own Bandmap window. More info in the [Bandmap Window](#) chapter
- **Check** - Display the Check window. More info in the [Check Partial Window](#) chapter
- **CW Key Ctrl+K** - Display the CW Key window. Pressing Ctrl+K again or Enter will close the window but will continue sending the message. Pressing Escape will stop sending the message. The windows is multiline (for pasting in text) and can be resized. The font type and size is the same as used in the Entry Window



- **Digital Interface** - Displays the Digital (RTTY/MMTTY/PSK) Interface window. In SO2R/SO2V each Entry window has its own Digital Interface window (DI1 and DI2 respectively). More info in the [Digital modes](#) chapters
- **Entry Window** - Display the Entry Window
- **Gray Line** - Open the optional to install Gray line program (only for Windows NT, 2000, XP or newer). More info in the [Gray Line](#) chapter
- **Info** - Display the Info window. More info in the [Info Window](#) chapter
- **Log Ctrl+L** - Display the Log window (toggles between open and minimized). More info in the [Log Window](#) chapter
- **Multipliers by Band** - Display the multipliers by band window. More info in the [Multipliers by Band Dialog](#) chapter
- **Packet** - Display the Packet/Telnet window. More info in the [Packet Window](#) chapter
- **Score Reporting** - Start the realtime score reporting application. More info in the [Advanced Functions](#) chapter under Contest Reporting Application
- **Score Summary** - Display the score summary window. More info in the [Score Summary Dialog](#) chapter
- **Visible Dupesheet** - Display the Visible Dupesheet window. More info in the [Visible Dupesheet](#) chapter

**Ctrl+Tab** toggles between the Entry window and Packet windows. If other windows are added that have text boxes, then they will be accessed in a round-robin basis via **Ctrl+Tab**.

## 17. Help Menu Selections

- **Help Alt+H** - Show this help file. Note that pressing Alt+H in any window will show the help specific to that window. You have to download the help file separately from the N1MM homepage and copy the file into the directory that contains the Logger program. The Windows Help file and Manual are maintained separately from the program and follow it as close as

possible. So when checking for a new program version also check if a new version of the Help/Manual is present. The revision number and revision date are shown on the first page of the Help/Manual.

- **Search Help using Google (Internet)** - Search help using Google on the Internet.
  - **Key Assignments Help** - Show this Key Assignments chapter of the help file.
  - **Manual** - Show the PDF version of the help file, this version can easily be printed. You have to download the manual separately from the N1MM homepage and copy the file into the directory that contains the Logger program. At that point, clicking on Help->Manual should launch the Adobe Acrobat Reader and display the Manual.
- 
- **Contest rules for this contest (Internet)** - Go to the web site from the contest sponsor on the Internet where the rules can be found.
  - **ARRL Contest Calendar Page(Internet)** - Go to ARRL contest calendar site on the Internet.
- 
- **N1MM Logger Home Page(Internet)** - Go to the N1MM logger Home page.
  - **Download Help (English version) (Internet)** - Download the Help file from the N1MM logger Home page.
  - **Yahoo Discussion Group (Internet)** - Go to the Yahoo Discussion Group page on the Internet.
  - **Report Bugs/Request Features/Request Support(Internet)** - Go to the N1MM logger web site to report bugs or request features.
  - **Email Problem Report(Internet)** - Send a problem report by E-mail to Tom, N1MM. The Report gives detailed info about the problem and some program (configuration information) and computer information (speed, processor etc.). To send a report some questions must be answered.
    - Long description of the problem
    - Enter your smtp server name. (Only first time)
      - Just check your e-mail program and look for the name of the outgoing e-mail server that you use. Use that name for the smtp server name. Example: smtp.freeler.nl
- 
- **View Revision History (Internet)** - Shows the revision history from the program on the Internet.
  - **View Revision History (last downloaded)** - Shows the last downloaded revision history on the harddisk. This avoids the need for an Internet connection.
  - **View Error Log** - View the latest 'Errorlog.txt' file generated by the program. The program creates and updates the contents of this file when the program generates an error. This could be used to help pinpointing a problem in the program.
- 
- **Report Score to 3830 (Internet)** - Go to the 3830 score reporting site on the Internet.



- **About N1MM logger Vx.x.xxx** - Show the About Dialog. See Tom, N1MM's tower with a Cushcraft X9 at the top!

## Log

Your Log window will be similar to this one.

TS	Call	Freq	SNT	RCV	Mult	ZN	Mult	Points	Operator
27-10-2002 23:50:2	RV3FF	3767.84	59	59	Nee	16	Nee	1	PA9KT
27-10-2002 23:52:2	S51S	3767.84	59	59	Nee	15	Nee	1	PA9KT
27-10-2002 23:57:3	RV0AR	3767.84	59	59	Nee	17	Nee	3	PA9KT
27-10-2002 23:57:5	K2PLF	3767.84	59	59	Nee	5	Nee	3	PA9KT
27-10-2002 23:58:2	RD4M	3767.84	59	59	Nee	16	Nee	1	PA9KT
27-10-2002 23:59:1	RW6AH	3767.84	59	59	Nee	16	Nee	1	PA9KT
27-10-2002 23:59:4	DL2LAR	3767.84	59	59	Nee	14	Nee	1	PA9KT
-----									
26-10-2002 02:27:0	PA7MM	1858.95	59	59	Nee	14	Nee	0	PA3CEF
27-10-2002 23:05:2	PA7MM	3690.82	59	59	Nee	14	Nee	0	PA9KT
26-10-2002 11:21:1	PA7MM	21261.38	59	59	Nee	14	Nee	0	PA3CEE
26-10-2002 08:29:1	PA7MM	28537.82	59	59	Ja	14	Nee	0	PA5W/X

- The **top** grid is the log
- The **bottom** grid shows the contacts in yellow that match the partial or full call entered in the Entry window. It is sorted by band, call, date & time.
- The separator bar is set at a percentage of window size. When shrinking the window, both sections get smaller. After resizing the window, decide how much space to allocate to dupes by setting the separator bar.
- The upper pane gives date and time (in UTC) and the selected contest.
- When a Multi operator mode (Multi-One, Multi-Two, Multi-Multi) is selected:
  - The operator name is shown in the log window
  - The radio number is shown in the log window
  - Group edits are not allowed while in multi-user mode.
  - Editing a qso is only allowed from the station who did make the qso, not from other stations.
  - A column will be added to the log window with Run1Run2

*The relative sizes of the grids can be adjusted by clicking and dragging the gray bar between the grids. The adjusted window size and the column width are saved by the program.*

In a serial number contest the serial numbers in the log window will be displayed without any leading zeros even when zeros are entered before the number (like 001). When printing the leading zeros will be added again and printed.

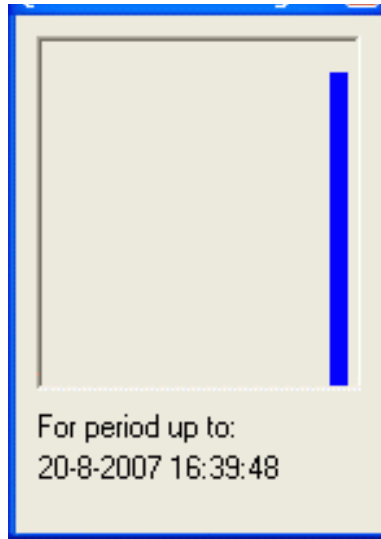
## Keyboard Assignments

- **Enter** - Edit the contact which is selected.
- **Delete (Ctrl+D)** - Delete the contact which is selected.

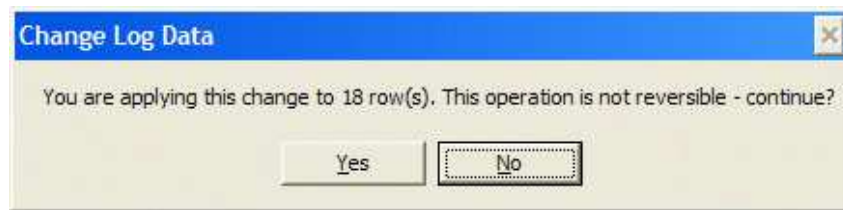
## Mouse Assignments

- **Left mouse button click**
  - **Single click on column title** - Change log sort order using the selected column. Second click on a column will sort descending.
  - **Double click on a contact** - Quick Edit the contact.
- **Right mouse button click**
  - **Right-click on a contact** - Displays a menu:
    - **Quick Edit Contact** - Quickly edit the current contact using the Entry window fields. Ctrl+Q moves back one qso, Ctrl+A moves forward one qso. If the textboxes background in the Entry window are colored blue, you are in Quick Edit mode. To exit, press enter to save changes or Escape to abandon changes. Quick Edit starts editing with the highlighted contact and you can move forward or back from there. Enter logs the changes made and Escape discards the changes bringing you back in normal logging mode.
    - **Edit Contact** - Edit the contact.
    - **Delete Contact (Ctrl+D)** - Remove the contact from the log.
    - **Play Contact** - This selection will be gray, if there is no .WAV recording file for this contact. If it is not gray, the selection can be chosen and the contact audio will play on your default sound player. (Make sure you don't have the sound card hooked up at that moment to your microphone!)
    - **Jump to this frequency** - Jump to the frequency logged with this contact
    - **Graph Q rates up to this entry** - For a historical display of rates from an existing log with QSOs in it, the procedure is to decide the point at which you want to examine your rate in the preceding 30 or 60 minutes. Highlight that point in the log window, and then right-click. Look for the option "Graph Q rates up to this entry" and click OK. That will open a new window, on which you can right-click for the same options as in the real-time window.

QSO Rate from Log 



- Menu items:
  - The period
    - 30 minutes / 60 minutes
  - The number of bars to show
    - 6, 10, 15, 20
  - Raw QSO count
  - Hourly rate (Q's/hr)
  - 10 min moving avg
  - 20 min moving avg
  - 30 min moving avg
- www.qrz.com - Ask information about this station using www.qrz.com (name, address etc.). An Internet session should be available.
- Change All Contact Timestamps by a Fixed Amount -this will fix a log where all QSOs are off by a common amount of time
  - Put mouse over log window and right click
  - Select 'Change All Contest Timestamps by a Fixed Amount'
  - Dialog box will open, and enter offset time (+ or -) in minutes
  - The date will automatically adjust if the offset rolls a QSO into a different day. The time is entered in minutes, and can be a negative time to go backwards. (You might need a calculator to determine the offset in minutes if your date was off by many days, months, or years)
  - NOTE: While you can easily adjust for a mistake by doing another offset, it is advisable that you backup your log before making any changes.
- Change Operator - Change operator callsign for this contact (Multi-user). The default is the station callsign. When selecting several rows, the change will be applied to all rows. This operation is not reversible. See example picture.



- Change Mode - Change the mode for this contact. When selecting several rows, the change will be applied to all rows. This operation is not reversible. See example picture above.
- Change Rx Tx Frequency (and band) - Change the RX and TX frequency for this contact. When selecting several rows, the change will be applied to all rows. This operation is not reversible. See example picture above.
- Change Station Number - Change the station number for this contact (Multi-user). The Master station always has number 0. When selecting several rows, the change will be applied to all rows. This operation is not reversible. See example picture above.
- Find all contacts with a station - Search a call (station) in the logged contacts from this contest.
- Set Start Interpolation Time Row - Set the start row and time from where the time interpolation has to begin. An example how to use can be found in the chapter 'After the contest'.
- Set Stop Interpolation Time Row - Set the stop row and time from where the time interpolation has to stop. This menu item is only highlighted when a start time has been entered. An example how to use can be found in the chapter 'After the contest'.
- Rescore from this point on - Rescore the contest starting with this logged contact till the end of the log.
- Delete custom column widths - Delete the custom column widths and go back to the default column widths as set per contest (by the programmer).
- Show Mode - Select or deselect showing the mode behind all other columns in the log window.
- Show Date - Select or deselect showing the date in front of the time (first column log window).
- Select All - Select all QSOs in the log (for copy and paste actions)
- Copy
  - Copy Generic Print String - Copy generic print string to clipboard
  - Copy ADIF String - Copy ADIF string to clipboard
- Set Font - Set the font for the Log window, a selection window will appear.
- Help - Show the help file for this window.

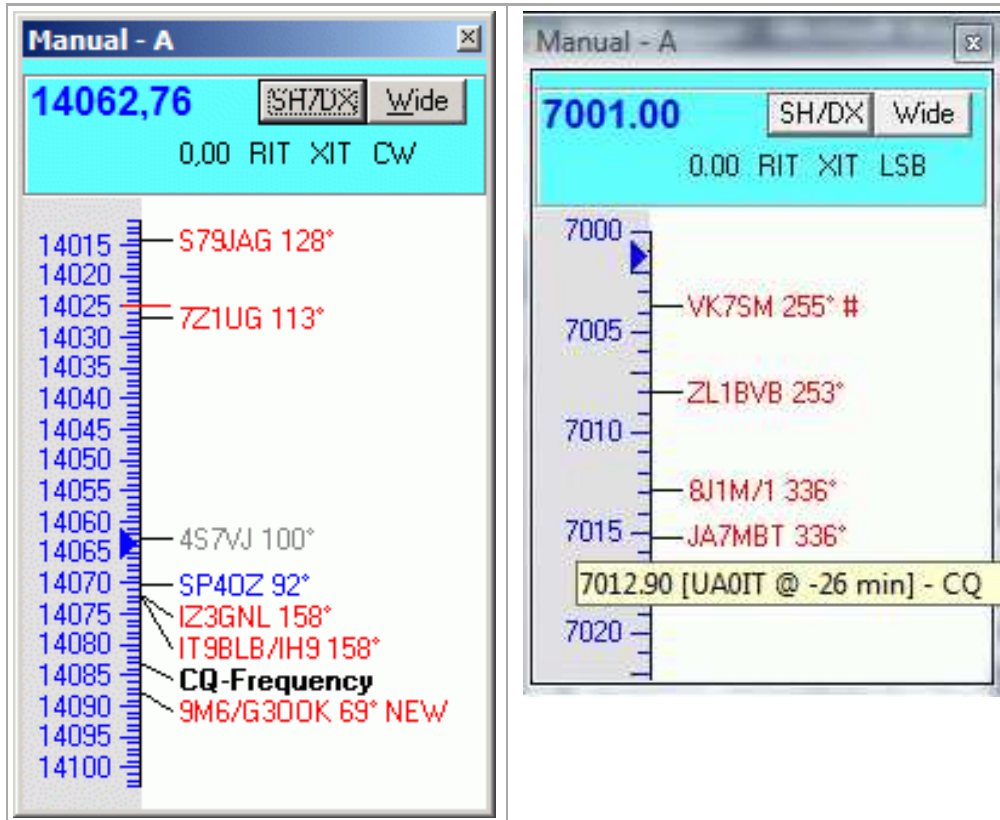
## Bandmap

### In this Section...

## Bandmap

1. One radio scenario
2. Two radio scenario
3. Other
4. Colors of the incoming spots:
5. Keyboard Assignments
6. Button Assignments
7. Mouse Assignments
8. Example bandmap usage

Your Bandmap window will be similar to these.



The Bandmap Window represents a VFO or a radio. There are three scenarios: one radio with 1 VFO displayed (SO1V); one radio with 2 VFOs displayed (SO2V); or two radios with one VFO shown for each radio (SO2R). The bandmap is made zoomable to the complete band size.

### 1. One radio scenario

With one radio in SO1V mode, only one bandmap can be displayed. With one radio in SO2V mode, two bandmaps may be displayed, one for each Entry window. Each bandmap holds one VFO. Typically, VFO-A will be on the left and VFO-B will be on the right. If you want to change VFOs, just use the mouse to click on one of the spots in the bandmap or use the Ctrl+left & Ctrl+right arrow

keys to change VFOs. The radio information box at the top of the bandmap will change colors as you change VFOs. The selected Bandmap or Entry window will have a blue top.

## 2. Two radio scenario

With two radios the operation is exactly the same, except that each bandmap represents one of the radios. It is best if one orients the bandmaps in the same position as the radios, left-right or top-bottom. This will make operation more intuitive.

## 3. Other

- It is well worth your time to quickly review the Mouse Assignments below in order to become familiar with the functions that the Bandmap provides.
- Also important! The usefulness of the Bandmap is greatly enhanced by reading the Key Assignments
- The text CQ-Frequency will be shown on the bandmap when running stations. It is automatically marked when you press the CQ-button (mostly the F1-key).

When a spot is less than three minutes old NEW will be placed behind the call and bearing in the bandmap. When the station works split the receive frequency (QSX frequency) will be shown behind the bearing after the spot is three minutes old, there is not enough room to give both NEW and the QSX frequency. Splits are shown as 3 digits on HF. The bearing to a station is shown only for stations outside your own country with exceptions for USA and Canada. When calculating the bearing the section or state from the callhistory is being used otherwise the coordinates of the state that is the closest to the middle of the callarea is used.

- On the title bar of the bandmap you can see what type of radio is connected. It will show Manual - A when no radio is connected or as an example Kenwood VFO A when a Kenwood radio is connected. It will show a B for the other bandmap/VFO.
- Normally only one frequency is shown in the top portion of the bandmap. This is the receive and transmit frequency. When working split the transmit frequency is added and shown just below the receive frequency in a smaller font.
- Busted spots (calls with "BUST" in the comment) are not shown on the bandmaps (when coming in via packet/telnet).
- When both bandmaps are closed the frequency and mode is shown on the title bar of the Entry window before the contest name.
- During busy contests the default zoom is too dense. Use the right-click menu to zoom or use the numeric pad +/- keys.
- New calls will show up first in the bandmap, ahead of old calls on the same frequency.
- A zone only multiplier will be shown in red (except "non-workables"). The exception means that in CQWW, your own country will show as gray, even if it is a multiplier.
- Country of unknown callsign (like TX5A in 2006) will be made equal to the prefix to force it to be a new country.
  - Better a broken callsign than missing a multiplier.. If it is a broken callsign the user can

delete the spot.

- A sunrise/sunset indicator (☀/🌇) is shown for spots from stations where applicable.
- CW Skimmer spots are marked with "#" in spotter's callsign as skimmer spot in the bandmaps (see picture at right above). If spotter's callsign contains your (Station dialog) callsign, then the spots are marked with a "!".

#### 4. Colors of the incoming spots:

- **Blue:** QSO
- **Red: Single Multiplier** Example: CQWW - QSO is either zone or country multiplier (one multiplier)
- **Green: Double or better Multiplier** Example: CQWW - QSO is a zone and a country multiplier (two multipliers)
- **Gray:** Dupe
- **Bold** - This is a self spotted call ('Stored' or by using the feature 'QSYing wipes the call & spots QSO in bandmap') and is not coming from the cluster.

#### 5. Keyboard Assignments

- **Mouse wheel** - Zoom in or out the bandmap which has KEYBOARD focus.
- **Numeric keypad + key** - Zoom In to show less spots from the bandmap which has KEYBOARD focus.
- **Numeric keypad - key** - Zoom out to show more spots from the bandmap which has KEYBOARD focus.
- **Shift - Numeric keypad + key** - Zoom In to show less spots from the bandmap which does NOT have KEYBOARD focus.
- **Shift - Numeric keypad - key** - Zoom out to show more spots from the bandmap which does NOT have KEYBOARD focus.

#### Jump to Spots on active radio/VFO

- **Ctrl+Down Arrow** - Jump to next spot higher in frequency.
- **Ctrl+Up Arrow** - Jump to next spot lower in frequency.
- **Ctrl+Alt+Down Arrow** - Jump to next spot higher in frequency that is a multiplier.
- **Ctrl+Alt+Up Arrow** - Jump to next spot lower in frequency that is a multiplier.

#### Jump to Spots on non active radio/VFO

- Ctrl+Shift+Down Arrow - Jump to next spot higher in frequency on the inactive radio/VFO. This will skip over CQ-Frequency when radios/VFOs are on the same band. Proper keystroke operation is radio dependent. Disabled for SO1V.
- Ctrl+Shift+Up Arrow - Jump to next spot lower in frequency on the inactive radio/VFO. This will skip over CQ-Frequency when radios/VFOs are on the same band. Proper keystroke operation is radio dependent. Disabled for SO1V.
- Shift+Ctrl+Alt+Down Arrow - Jump to next spot higher in frequency on the inactive radio/VFO that is a multiplier. If you are operating single mode, your mode won't change when jumping between spots. Disabled for SO1V.
- Shift+Ctrl+Alt+Up Arrow - Jump to next spot lower in frequency on the inactive radio/VFO that is a multiplier. If you are operating single mode, your mode won't change when jumping between spots. Disabled for SO1V.
- Shift+Alt+Q - Jumps to your last CQ frequency on the inactive VFO/radio. Disabled for SO1V.

## 6. Button Assignments

- Narrow/Wide - Toggle the radio filters from Wide to Narrow, or vice versa. The label indicates the current state. The label is not shown for some radios (like FT-817) and manual radios.
- CW/USB/LSB/RTTY/PSK/AFSK/AM/FM - Click this label to toggle from USB/LSB (band sensitive) via RTTY to CW/PSK/AFSK/AM/FM (radio dependent).
- RIT Offset (-0.08) - Click this label to clear the RIT offset.
- RIT - Click this label to toggle the RIT on and off.
- XIT - Click this label to toggle the XIT on and off.

## 7. Mouse Assignments

### Left-click menu

- Click on frequency - Jump with the active VFO/radio to that frequency.
- Shift+Click on frequency (SO2R only) in Inactive Bandmap - Program the non active radio without changing window focus. Allows you to be active and sending on one radio and change the frequency on the non active radio without changing Entry window focus.
- Shift+Click on bandmap callsign (SO2R only) in Inactive Bandmap - Same as Shift+Click on Frequency with the addition that the callsign is placed on the non active radio's callsign frame.
- Click on call - Jump to that frequency and place the call on the Entry window callsign frame. When the callsign field is empty, giving space will copy the callsign from the Entry window callsign frame to the callsign field. Also clicking on the callsign in the callsign frame will place the call into the callsign field, replacing anything that was previously there.
- Double-Click call - Jump to that frequency, place call into Entry window callsign field, replacing anything that was previously there. Spots with 'Busy' in the call will be ignored

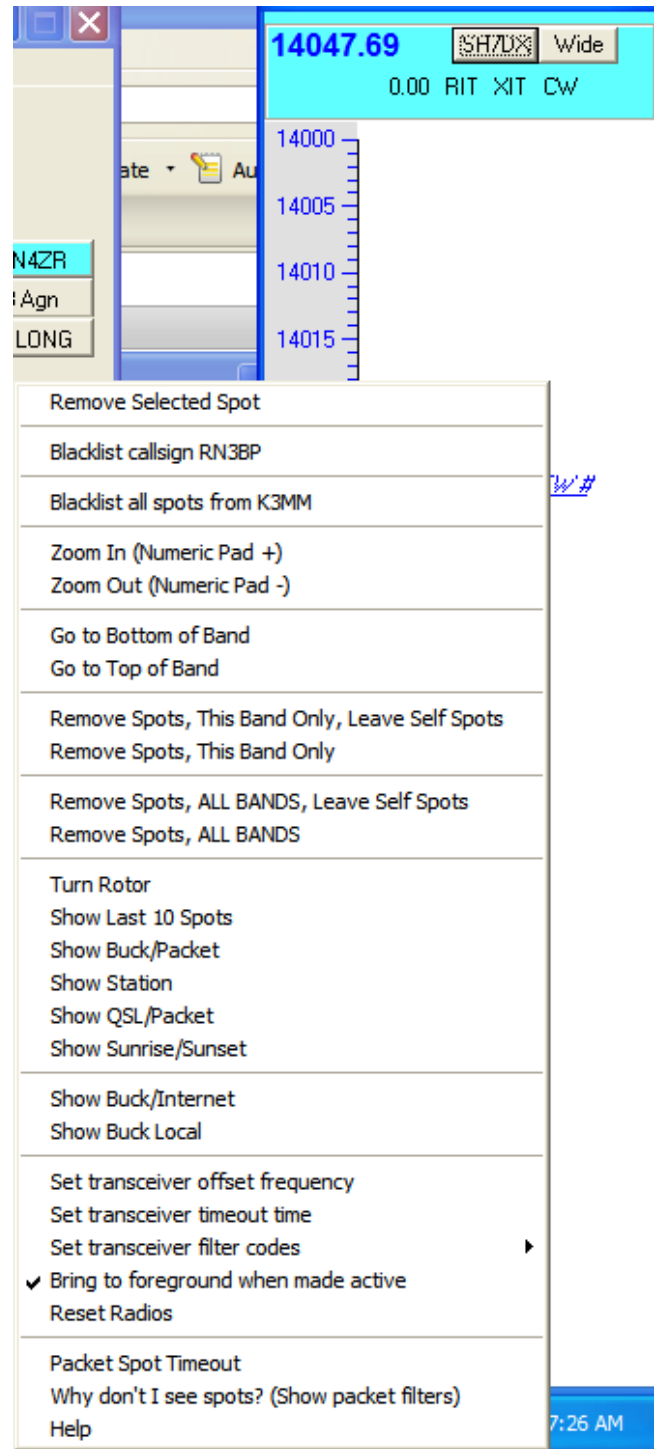
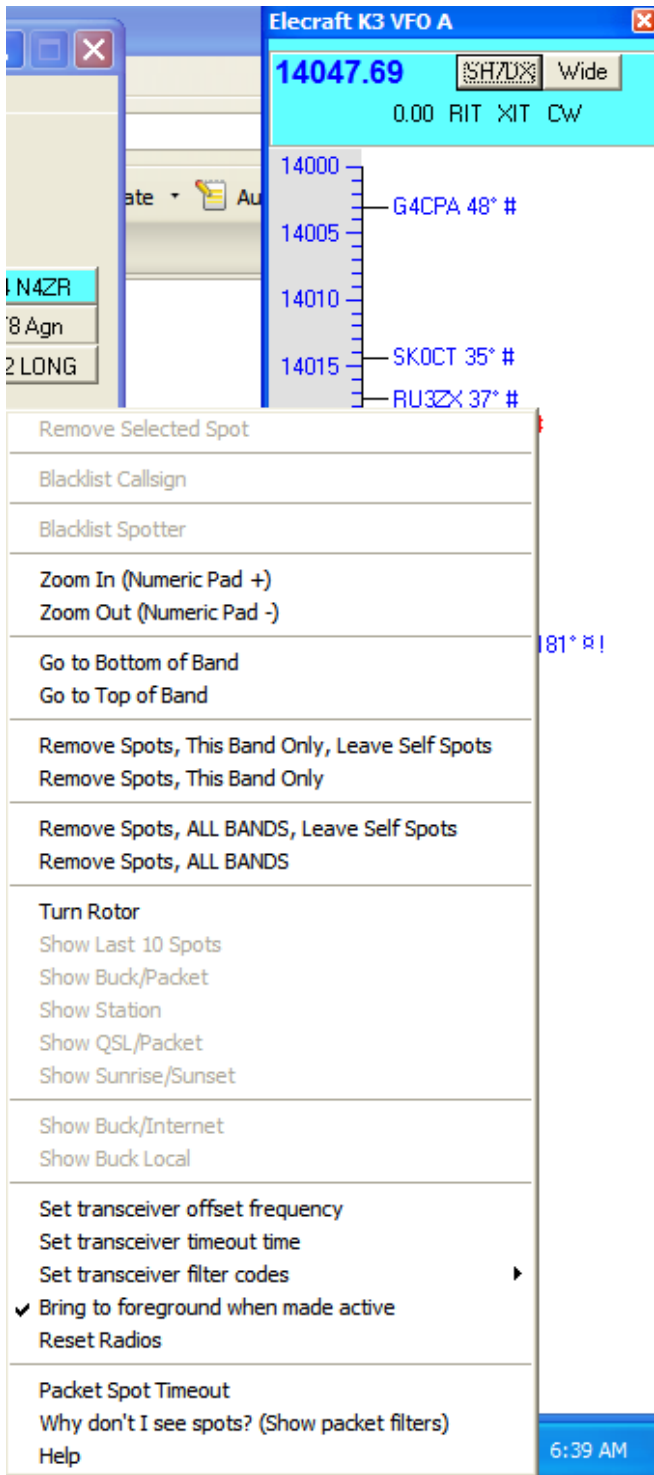


(placed in the bandmap when using Alt+M).

- Click dial ticks - Jump to that frequency.
- Click frequency label - Jump to that frequency.
- Right Click call - Display the right-click menu for the selected call (see Right-Click menu below).
  - The selected call will be shown italic and underlined when right-clicking on it
- Right Click anywhere else - Display the right-click menu with some options grayed out which are call related.

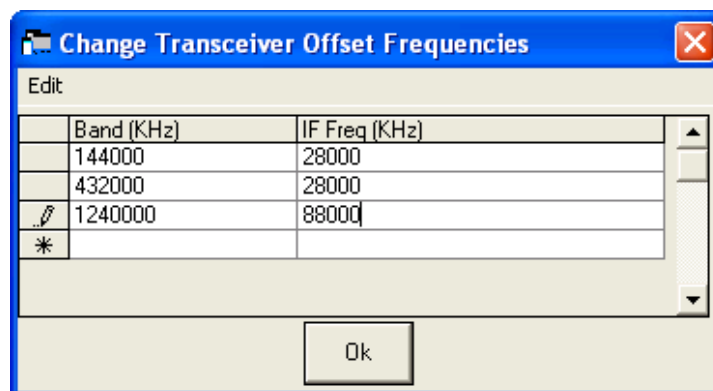
## Right-click Menu Options

If you right click in the Bandmap Window the right-click menu will appear. In the left-hand illustration, the menu is shown as it appears when you click on the window, not on a particular spot. The right-hand illustration shows how the menu looks if you right-click on a specific spot.



- Remove Selected Spot - equivalent to Alt+D with the spot callsign in the call-frame.
- Blacklist callsign - if you click on this option, then subsequent spots of that station will not be displayed on the Bandmap or in the Available window. Used to get rid of busted spots that recur often, such as LW3LPL. To edit the list of blacklisted spots, or to remove a call from the list, use the Right-click menu in the [Packet/Telnet window](#).
- Blacklist all spots from spotter - designed in particular for use when an RBN station is feeding spots that are badly off-frequency (due to I/Q image problems) or otherwise defective. Could also be used for the occasional harasser on traditional DX clusters. Again, the blacklist can be edited from the Packet/Telnet window.
- Zoom In (Numeric Pad + or Ctrl+Scroll wheel if using a mouse.) - Show a wider frequency

- range on the Bandmap that has entry/RX focus.
- Zoom Out (Numeric Pad - or Ctrl+Scroll wheel) - Show a narrower frequency range on the Bandmap that has entry/RX focus.
  - Go to Bottom of Band - Go to the bottom of this SSB/CW subband.
  - Go to Top of Band - Go to the top of this SSB/CW subband.
  - Remove Spots, This Band Only, Leave Self Spots
  - Remove Spots, This Band Only
  - Remove Spots, ALL BANDS, Leave Self Spots
  - Remove Spots, ALL BANDS
  - Show Last 10 Spots - click this option (which is gray unless a callsign has been clicked on) and the cluster will be asked for the last 10 spots **of that station**. These are displayed in the Packet/Telnet window.
  - Show Buck/Packet - requests address information from the DX cluster
  - Show Station - sends the SH/STA [callsign] command to the DX cluster
  - Show QSL/Packet - sends the SH/QSL [callsign] command to the DX cluster
  - Show Sunrise/Sunset - sends the SH/SUN [callsign] command to the DX cluster
  - Show Buck/Internet - opens QRZ.COM in your default browser for manual entry of the callsign.
  - Show Buck Local - opens a call-sign database installed on the same computer as N1MM Logger!
  - Set transceiver offset frequency - This is for transverter supporting transverters. The transverter offset is saved when the program closes and read again when opened. Remember to enter the frequency of the transceiver and not that of the transverter when going into split mode (Alt+F7). Information how to fill in this table (which frequencies to enter and how to calculate the IF frequency) can be found in the chapter 'VHF and Up contesting'.

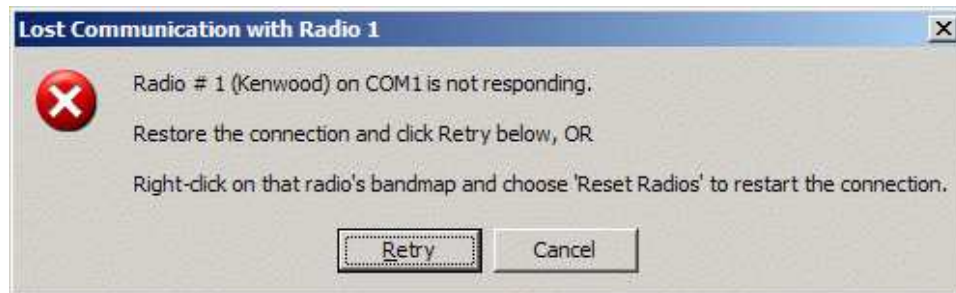


- Set transceiver timeout time - Timeout value for each radio (default is 10 seconds). Entering a value of zero will disable the timeout. Entering a negative number will set the time out value to 10 seconds. Entering a number that is too large for the program variable will set the timeout to the program maximum. The positive minimum is 5 seconds.
- Set transceiver filter codes - You will be prompted for the wide or narrow string to set the

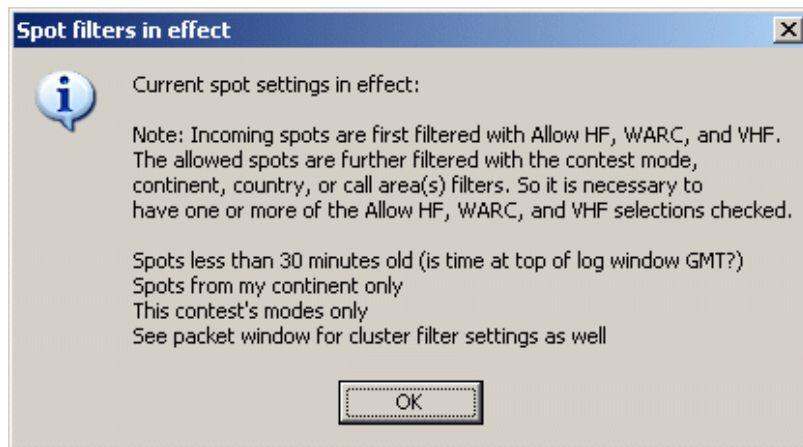
filters. For Kenwood, it's pretty easy. You just look up in your manual the string you want and enter it. For other radios, like FT-1000MP, its harder. You must enter a series of space-delimited codes in DECIMAL. Therefore, when an FT-1000MP filter code of 0 0 0 0 8C is required, you must enter 0 0 0 0 140 (8C hex).

To reset to the default values in the program enter a space and press the OK button. It is possible to use {CR} in the filter codes which will be replaced with the return character. These selection are disabled when manual radio is selected (i.e. no radio selected).

- o CW Wide
- o CW Narrow
- o SSB Wide
- o SSB Narrow
- o Digi Wide
- o Digi Narrow
- Bring to foreground when made active - This brings the active bandmap to the foreground. When not having enough real estate on the monitor screen it is possible to place both bandmaps on top of each other. The active bandmap will be shown hiding the non-active bandmap.
- Reset Radios - Allow manual reset all attached radios. When contact with a radio is lost the dialog below will appear. Select 'Retry' to restore the connection with all attached radios or Right-Click on the bandmap and choose "Reset Radios" to restart the connection.



- Packet Spot Timeout - Indicates how long (in minutes) spots are kept in the Bandmaps. The default is 60 minutes, any integer may be specified. For use with the Reverse Beacon Network (RBN), a very short timeout (10-15 minutes) is recommended to avoid overloading the program with the spot volume.
- Why don't I see spots? (Show packet filters) - Click and a window will open showing the current spot settings in effect.



- Help - Show the help file for this window.

Note icon

When a command is sent to the packet window, it is sent to whichever connection is active.

Note icon

When the connected cluster is a DXSpider cluster, select on Tab: Other in the Configurer 'Format for DX Spider cluster'.

### Hovering with the mouse over a spot

Hovering with the mouse over a spot in the Bandmap gives the following info about the spotted station:

- Exact frequency sent by spotter.
- Callsign of spotter.
- The time in minutes since the station was placed on the DX cluster network.
- Comments sent with the spot.
- The 'standard' country prefix from the spotted station

### Hovering with the mouse over RX arrow

Hovering with the mouse over the RX arrow shows the frequency.

## 8. Example bandmap usage

by Tom, N1MM

In Search & Pounce (S&P) the callframe will show you each spotted station as you come within "tuning tolerance" (user settable) of that station. I'm terrible at remembering whether I worked a station and on what frequency. With worked stations in the bandmap, the program will tell you that they are not workable again. You can tune by them more quickly. The same feature is useful in contests with unworkable stations.

In a contest like CQ WPX, with (basically) no value multipliers, here is how I use the bandmap. Whenever I can't get a run going I start S&P on a band with a lot of unworked stations (use the available window). I use Ctrl+Up and Ctrl+Down arrow to go to the next station. If that station is at the beginning of a QSO, I move to the next one. If the QSO is near the end, I wait and work the station. Then I move on. If I reach the top of the band, I start coming back down the band, working the ones I missed on the way up. If there is no station at a frequency, that's my new running frequency!

In contests with valuable multipliers, you should use Ctrl+Alt up/down to get the multipliers first, then go back and get the QSOs.

If the rate drops fairly low, sweep the band using your VFO. That is where the old calls in the bandmap come in useful. If you copy a call, but it seems like it is going to take a long time to work him, tune to the next guy. If you have "QSYing wipes the call & spots QSO in bandmap" turned on, the call will be spotted in bold, so you can Ctrl+Up/Ctrl+Down to him later. Remember: if a call is in the callframe, space will load it into the call textbox.

If all this seems very unfamiliar, you haven't read the Key Assignments help (and/or the Key Assignments Shortlist).

Reading that single item is your single best time investment in using this program.

### **Spots and the time shown**

When you hover with the mouse over a spot in the bandmap, it will show the relative age of a spot in minutes. The time shown here depends on the spot format. There are two formats for spots. One is for current spots, one is for SH/DX spots. Some clusters allow to show old spots in the current spot format. The program handles the two types of spots differently.

- Current spots go into the bandmap with the computer's local (converted to UTC) time. This is to remove variations in cluster times and order the spots into the time they were received.
- Old spots are logged with the originating cluster's time with the provision that it cannot be later than the current local (UTC) time.

With AR-Cluster you can display old spots with SH/DX or SH/FDX. It is recommended to use SH/DX, as it will be recognized as an old spot. Other cluster software may have similar capabilities.

### **Red lines indicating US license frequencies**

On the bandmap there are red lines to indicate extra, advanced and general portions of each band. Since US hams can operate only in their section and the sections of lower class licenses, it is in your interest to operate some in the higher portions of each band. Otherwise there are some US hams you will not ever be able to work.

The lines can be found on:

- SSB: 3775, 3850, 7225, 14175, 14225, 21225 and 21300.
- CW: 3525, 7025, 14025 and 21025.
- No lines on 160 and 10 meters.

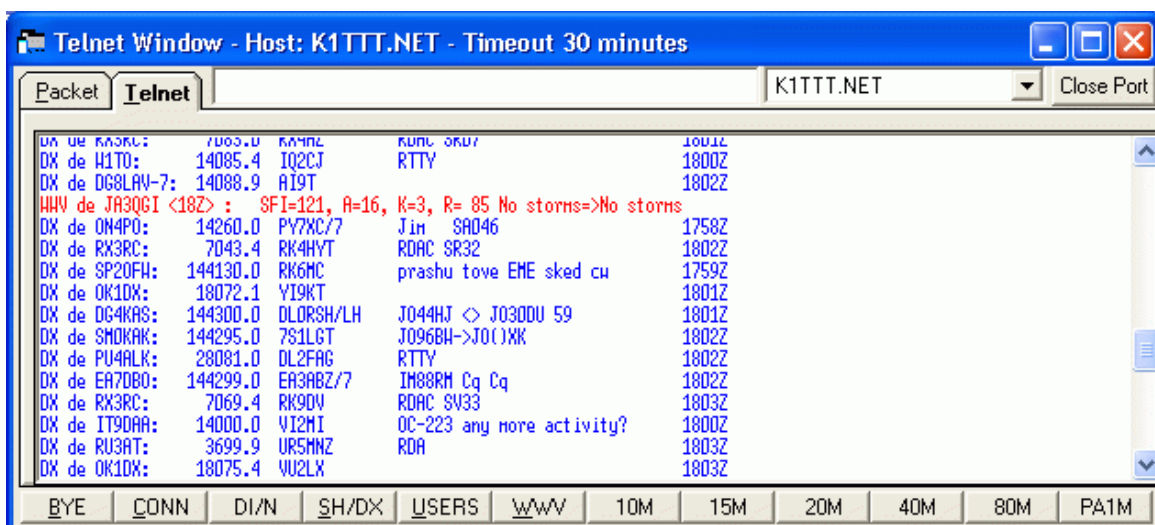
## Packet and Telnet

### In this Section...

#### Packet and Telnet

1. Colors used
2. Initial Button Assignments
3. Keyboard Assignments
4. Mouse Assignments
5. Right Click Menu
  - 5.1. Packet Filters
6. Special keys:
7. Macro keys
8. How to add/edit/delete a Telnet cluster
9. How to setup and connect a Telnet cluster
10. How to setup and connect to a Packet cluster using a TNC
11. Auto connecting to a cluster
12. Spotting stations
13. Multi-User setup
14. Computers on a LAN
15. Packet via the soundcard
16. Supported Packet clusters:
17. CW Skimmer and the Reverse Beacon Network (RBN)

Your Packet/Telnet window will be similar to this one, with Packet and Telnet tabs. The former is used only when connecting to an RF packet cluster node. Unless specifically differentiated, references in this manual to packet also apply to Telnet. For example, "Packet Filters" and "Packet Spot Timeout" also apply to Telnet.



The button values can be changed by right clicking on them or going into the menu: 'Config > Change Packet/CW/SSB/Digital Message Buttons > Change Packet/Telnet Buttons'. Connect and other messages are shown in the bottom pane from the Entry window. Status info for Telnet is given in the Telnet window title. Focus is set to the Entry window when one of the 12 buttons is clicked.

All incoming DX spots are placed on the bandmaps. Also the spots requested with commands like SH/DX etc. Split information given in the spot comment will be recognized. When such a spot is selected the transceiver will go into split mode (if applicable). The program recognizes: UP, U, DOWN, DN, D and the word QSX. Examples: QSX 3.838, QSX 4, UP 5, DOWN 2, U 5, D4, U4, DN4, UP4, DOWN4, QSX7144 etc.

Where possible mode, state/section, grid etc. are extracted from comments on incoming spots. Grid square from spot comment is used to calculate bearing reported in Bandmap, Available window, Info window and Entry window.

When telnet is selected a Telnet DX-cluster can be chosen from the top of this window. By clicking the 'Close Port' button the current connection will be closed. A telnet cluster can be updated in the configurer dialog (Tab: Hardware).

Packet/Telnet has a nine minute stay-alive function which sends a CR every nine minutes (not configurable). The timer is restarted when you send a message to the cluster.

## 1. Colors used

- Blue - 'Normal' incoming spots
- Red - (Talk) Messages
- Magenta - WWV messages
- Black - All other messages like cluster welcome messages, SH/DX responses, messages sent to the cluster, prompts etc.

## 2. Initial Button Assignments

Below are the default button assignments for the Packet/Telnet buttons. A maximum of 12 buttons are available for packet and Telnet. Adding more lines in the edit window will not lead to more buttons (12 is a fixed value). The contents and texts shown on the buttons can be changed to anything you like.

Button text	Command	Description	Packet	Telnet
BYE	BYE	Log off cluster	OK	OK



<b>CONN</b>	<b>C PE1M-7</b>	Connect to the (non telnet) packet cluster. Example: C PE1M-7 You have to set your cluster's call under 'Tools >Change Packet Buttons'.	Connect	-
<b>DI/N</b>	<b>DI/N</b>	Show new messages (CLX needs the full: directory/new)	OK	OK
<b>SH/DX</b>	<b>SH/DX/30</b>	Show last DX spots	OK	OK
<b>USERS</b>	<b>SH/U</b>	Show cluster users	OK	OK
<b>WWV</b>	<b>SH/WWV</b>	Show WWV spots	OK	OK
<b>10M</b>	<b>SH/DX/30 10</b>	Show last 10M spots	OK	OK
<b>15M</b>	<b>SH/DX/30 15</b>	Show last 15M spots	OK	OK
<b>20M</b>	<b>SH/DX/30 20</b>	Show last 20M spots	OK	OK
<b>40M</b>	<b>SH/DX/30 40</b>	Show last 40M spots	OK	OK
<b>80M</b>	<b>SH/DX/30 80</b>	Show last 80M spots	OK	OK
<b>PA1M</b>	<b>{MYCALL}</b>	Connect to the Telnet DX cluster by sending your call to the Telnet cluster. Most Telnet clusters expect your callsign as the first text received. The callsign used with the macro {MYCALL} is taken from the station information dialog	-	Connect

- Close Port - Close the current Telnet connection.

### 3. Keyboard Assignments

- Ctrl+C - Sends Ctrl+C to the TNC which is used by TAPR TNC's.
- Ctrl+Z - Sends Ctrl+Z to the TNC which is used by TAPR TNC's.
- Shift+Escape - Places an Escape character on the command line which is send to the TNC after pressing Enter. The Escape character is being used by WA8DED/ TF firmware TNC's.

The Packet/Telnet window must be active and the cursor must be on the command line.

N.B. The Escape key (without the Shift key) makes the Entry Window active.

### 4. Mouse Assignments

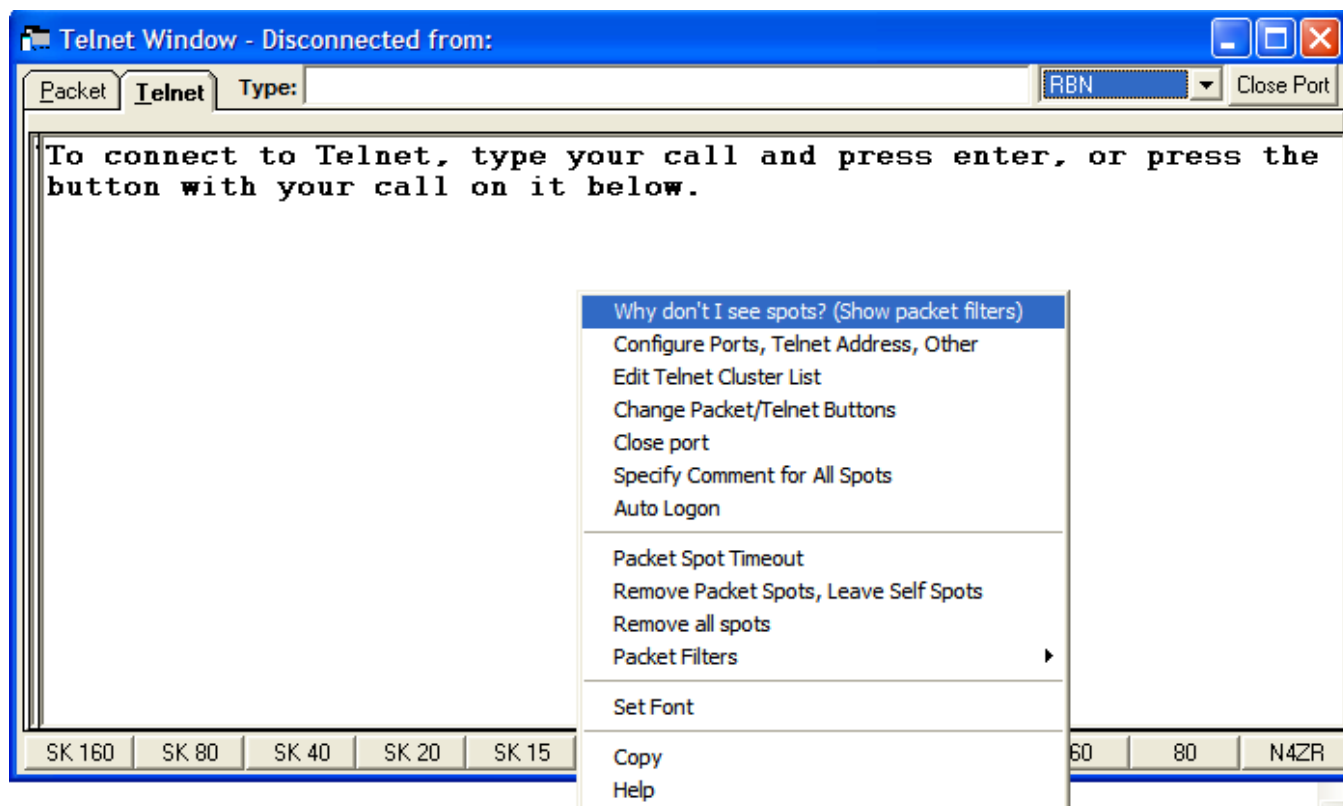
- Left mouse button
  - Single click - Tune the active radio to the frequency of the spot.
  - Shift+click - Tune the inactive radio to the frequency of the spot.
  - Double click - The spot under the cursor will be placed in the callsign field in the Entry window and gets focus.
  - Ctrl+Single click - Tune the non-active radio to the frequency of the spot and make it active.

### Split operation

If you click on a spot that has a QSX (listening) frequency given, your radio is under program control, and your radio can accept split commands, then the required QSX will be set.

- Right mouse button - Displays a menu - see below

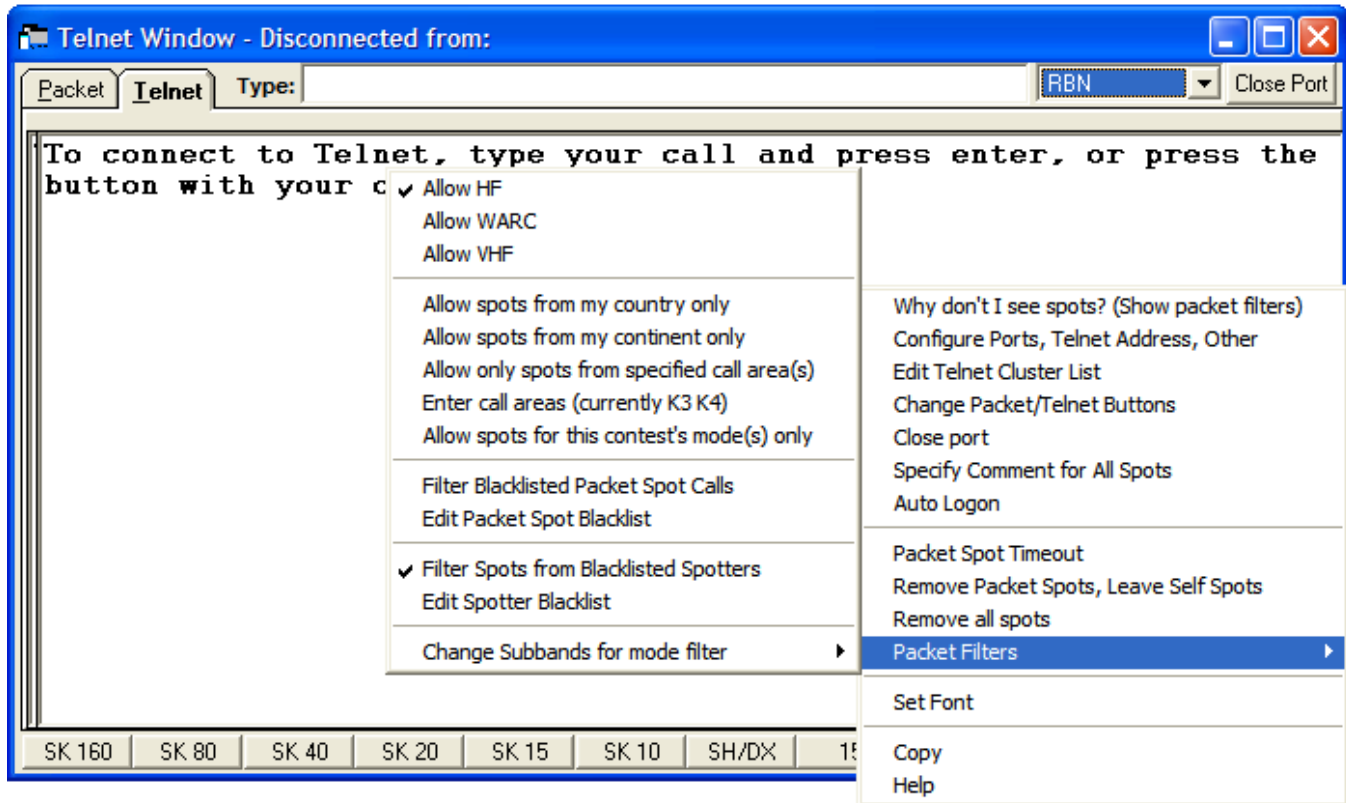
## 5. Right Click Menu



- Why don't I see spots? (Show packet filters) - A window will open showing the current spot settings in effect.
- Configure Ports, Telnet Address, Other - Displays the 'Configurer' dialog.
- Edit Telnet Cluster List - Displays the 'Change Packet Cluster List' dialog. Here you can

- add, edit or delete telnet cluster sites.
- Change Packet/Telnet Buttons - Change the label and contents of the packet/telnet buttons. Note that the use of '&' in the Button Caption will cause the following lettered key to become a "Alt+Hotkey."
- Close Port - Close the packet or Telnet connection (depends on the selected Tab)
- Specify Comment for All Spots - Enter the text you want appended to every spot. Lasts for the session only. Exit clears it. Example: PACC
- Auto logon - Automatically connect to a cluster when the program starts. When running Telnet, auto logon will send the right-most button (which by default contains the {MYCALL} macro). When running packet, auto logon will press the second button: "C call". When running both, only the one that was in focus the last time before closing the program will be re-started.
- Packet Spot Timeout - Indicates how long (in minutes) spots are kept in the Bandmaps. The default is 60 minutes, but any integer may be specified.
- Remove Packet Spots, Leave Self Spots - Remove all spots coming in via packet or Telnet but leave all self spots in the Bandmap.
- Remove all spots - Remove all spots from the Bandmaps. This means that also all information on the Available Mults and Q's window is cleared.

## 5.1. Packet Filters



- Allow HF - When selected all spots on the HF bands ( < 30 MHz) are passed to the Bandmaps. See note below.

- Allow WARC - When selected all spots are passed to the Bandmaps from the WARC bands. See also note below.
- Allow VHF - When selected all spots on the VHF bands (> 30 MHz) are passed to the Bandmaps. See note below.
- Allow spots from my country only - When selected only spots originated from your own country will be shown in the Bandmaps and Available window. See note below.
- Allow spots from my continent only - When selected only spots originated from your own continent will be shown in the Bandmaps and Available window. See note below.
- Allow only spots from specified call areas - When selected only spots originated from specified call areas will be shown in the Bandmaps and Available window. See note below. The spots can be specified at the next menu item. A call area is the country prefix + the first number in the call. Example: Call: WB1KK Call area: K1 (K + 1)
  - Enter call areas) - Call area filter for the menu item above. Enter list of call areas to pass separated by spaces. Example: K1 K2 K3 K4 and select the OK button. To clear the list enter only a space and press the OK button.
- Allow spots for this contest's mode(s) only - Only allow spots where the mode is equal to the mode set in the contest setup.
  - When the mode is mixed the selection will be anything "not digi".
- Filter Blacklisted Packet Spot Calls - Used to block spots of specific calls from being added to the bandmap. Could be used to filter out persistent busted spots.
- Edit Packet Spot Blacklist - Just what it sounds like, for adding to or deleting from the list of blacklisted spot callsigns
- Filter Spots from Blacklisted Spotters - For use any time you do not want to receive spots from a particular spotter. For example, if an RBN station's receiver were to be severely off calibration, you could opt to block spots from that station rather than chase phantoms all weekend.
- Edit Spotter Blacklist - Again, just what it sounds like. Add or delete spotters whose spots you wish to be blocked.
- Change Subbands for mode filter - These are the definable band edges. The frequencies added (in kHz) are used for the specific mode. Note that no band edges are defined for Digital. What you will want to do for digital is add say 7060 7090 for band edges. That range will show as magenta in the Bandmap. If you click in that area and you are following the band plan, then the mode will change appropriately. Make sure you have the desired mode control defined in the config dialog ('Config | Configure Ports, Telnet Address, Others | Tab: Mode Control | Follow band plan (default)'). The bandplan is computed as follows: Is it Digital? If not, is it CW? If not then is it SSB.

Note: The default US bandplan is used by the program. Non-US stations have to make changes to that bandplan. An example is 40 meters for Europe where the CW part of the band is mostly much smaller.

- Change CW Bands - The band 7000 to 7035 is set as CW (Europe), the frequencies above are automatically set to SSB if no digital sub bands are set.
- Change SSB Bands - The sub bands for SSB, if nothing is set this is the default mode.
- Change Digital Bands - The sub bands for the digital modes
- Set Font - Change the font of the Packet/Telnet text boxes. Fixed fonts (like Fixedsys, Courier, Anadale Mono which has slashed zeros etc.) are recommended, so that columns will line up.

- Copy - Mark a part of the Packet/Telnet window with the left button, then right-click and choose copy. The selection will disappear before you choose copy, but that doesn't matter. You can then paste the selected area into Word or Notepad or whatever you like.
- Help - Show the help file for this window.

Note: Allow spots and Allow HF/VHF/WARC filter settings.

These settings have nothing to do with what shows in the Packet/Telnet window. They are not commands to the DX cluster, instead telling the program whether to use the spots in the Bandmaps and the Available window.

Clear spots will take all the spots that appear in those two windows and delete them. It does nothing to the Packet/Telnet window. The spots shown in the Packet/Telnet window itself will not be filtered; you would have to do that at the cluster node. Learn your cluster's filtering commands. This is the best way to accomplish what you want.

## 6. Special keys:

- Ctrl+key - Holding the Ctrl key while clicking in the packet window will jump the non-active radio to that frequency and make it active

## 7. Macro keys

Macro key substitution is supported by the buttons in the Packet window and also in the comments send with a spot (using Shift+F9).

The macros which can be used and some examples can be found on the macros page.

In the substitutions you can include things like {CTRL-M}. There is also a {WAIT} macro that waits 5 seconds and macros for {GRIDSQUARE}, {MODE}, {ZONE} and {QTH}.

So if you needed to press CTRL+M, then wait for a prompt, then C PE1M-7 then enter your callsign, you could change the button to send:

```
{CTRL-M}{WAIT}C PE1M-7{WAIT}PA1M
```

Enter is sent automatically after each command. This may cause a problem with some systems.

## 8. How to add/edit/delete a Telnet cluster

There are three places where you can get to the 'Change Telnet Cluster List' dialog. Select one of them.

- Right click in the "Packet /Telnet window" and select 'Edit Telnet Cluster List' or

- Select 'Config | Change Telnet Cluster List or
- Select 'Config | Configure Ports, Telnet Address, Others | Hardware tab' and click on the 'Edit' button.

The 'Change Telnet Cluster List' dialog will appear. You can go to the bottom of the list and add what you want. Look at the already entered Telnet clusters to see what to enter. To delete a row, click on the row "handle" - the gray arrowhead - and press the 'Delete' button on your keyboard. To edit an entry select the field to update and enter the new information.

## 9. How to setup and connect a Telnet cluster

1. Add the Telnet address to 'Config | Change Telnet Cluster List'.  
NB. Use gb7ujs.shacknet.nu as a model for how to specify a port other than 23.
2. Click on the Telnet tab in the Packet/Telnet window.
3. Choose the address to use from the drop-down box left from the button "Close Port".
4. To connect, click on the F12 button with your callsign in it.  
\*This presumes that the cluster you are using is looking for your callsign as the first thing to be sent (which it usually is).
5. Now you should be connected to the cluster.

## 10. How to setup and connect to a Packet cluster using a TNC

1. Click on the Packet tab in the Packet/Telnet window.
2. Set up the connect string for your local packet cluster under the F2 (Conn) button.
3. Click on the F2 button (Conn).
4. Now you should be connected to the cluster.  
\*In general, setting up the connect string and the possible use of intermediate relay nodes to reach the cluster causes most problems..

## 11. Auto connecting to a cluster

- Set up your packet or Telnet to the cluster, to connect as explained above
- Right click in the Packet/Telnet window text area and select Auto Logon in the menu:
- From now on the program will connect to the selected cluster automatically when the program starts
- Auto Logon works only at program startup.
  - Button 1 or button 12 is sent to the cluster, depending on whether you are using packet or Telnet.
- There is a "stay-alive" timer that sends a CR every 9 minutes.
- If the connection drops spontaneously, you will have to re-connect manually.

## 12. Spotting stations

Spotting stations has to be done from the Entry window. The station entered in the callsign field will be spotted. If the callsign field is empty the last qso made will be spotted.

- Alt+P spots stations.
- Ctrl+P spots with a comment.
- Spot all S&P QSOs under 'Config'.

The frequency from the spotted station is rounded to one decimal place by the program.

## 13. Multi-User setup

When running in Multi-user mode (more computers connected in a network) only the Master station has to be connected to the DX-cluster. The master station will send all information from the cluster to all connected computers and also send info received from the connected computers running N1MM logger to the DX-cluster.

## 14. Computers on a LAN

It is possible to connect to Telnet hosts when the Internet connection is on a LAN via proxy server or router. First try to access the Telnet cluster via the Telnet program in Windows, if this works it should also work from within N1MM logger. It does not matter if the proxy is in software or hardware. Port 23 (=telnet) should be open.

## 15. Packet via the soundcard

Many hams use AGWPE for packet using the soundcard. N1MM logger is not able to direct use this package but there are ways using additional software to get N1MM logger and AGWPE work together. Basically you telnet from inside N1MM to either of these applications. They are in turn linked to AGWPE. Links to these programs can be found in the links section.

- TelMgr by LU7DID
- Telnet interface by IZ4AFW

## 16. Supported Packet clusters:

- AR-Cluster by AB5K
- Clusse by OH7LZB (not fully supported, only incoming spots)
  - To make Clusse more compatible give the command SET/PCMODE YES (typed in uppercase).
  - Only incoming spots will be decoded by N1MM logger (not the response to the List command)
  - The List command (SH/DX) has a different format and will not be decoded.
- CLX by DJ0ZY and DL6RAI
- DX-spider by G1TLH
  - DX-spider uses a different SH/DX format, check in 'Configurer / Other' the setting 'Format for DX-spider support'. This will send the right SH/DX message from the button in the top of the bandmaps.
- DXnet by F5MZN (Unknown if fully supported but it probably is)
- PacketCluster by AK1A
- Wincluster Lite by KH2D
- More?

## 17. CW Skimmer and the Reverse Beacon Network (RBN)

CW Skimmer version 1.1 and up has a built in Telnet server which allows N1MM Logger to receive spots from it. Add an entry to your Telnet list with the address: 127.0.0.1:7300 if you are running Skimmer on the same machine as N1MM Logger. If running on a different PC on the same network, use that machine's internal IP address in the same format.

The Reverse Beacon Network's Telnet server (telnet.reversebeacon.net:7000) makes all of the RBN's Telnet spots available to the program. Because of the huge volume of spots on a major contest weekend - at least ten times as many as the conventional cluster network - we highly recommend that you use the Telnet server's filtering capabilities to manage the quantity actually sent to you. The server uses the DXSpider software, which has very flexible filtering capabilities. It will be helpful to use a short Packet Spot Timeout (set on the right-click menu of either Bandmap) - 15 minutes should be more than adequate, because CW Skimmer re-spots stations that remain on the same frequency every 10-12 minutes.

Skimmer spots can be merged with spots from conventional DX clusters using software such as WintelnetX, freeware by K1TTT. In that case, Skimmer spots are distinguished from regular spots by the addition of unique markers. In the Bandmaps, Skimmer or RBN spots are identified with "#" after the callsign and bearing; spots from your own Skimmer, identified by the callsign set in your Station Data), are marked with "!"

## Check



## In this Section...

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### Check

1. Features
  2. Colors of the callsigns
  3. Keyboard Assignments
  4. Mouse Assignments:
  5. Wildcard search
- 

## 1. Features

- The Check window displays all the callsigns from the MASTER.DTA file and worked calls from the current log, which match the input in the callsign field of the Entry window.
- The Check window is not cleared until a character is typed in the callsign field in the Entry window, so clearing the callsign field won't clear the Check window.
- All callsigns are shown in upper case.
- In order for the Check window to be active, there must be a valid master.dta file in the program file directory. A variety of such files may be downloaded [from this site](#). For example, master.dta files are available comprising only US and Canadian callsigns. The master.dta file used for a given contest is selected on the Associated Files tab of the Contest set-up window.

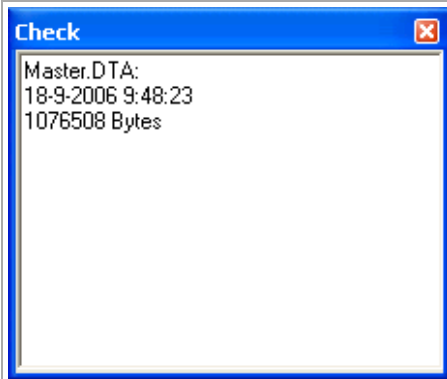
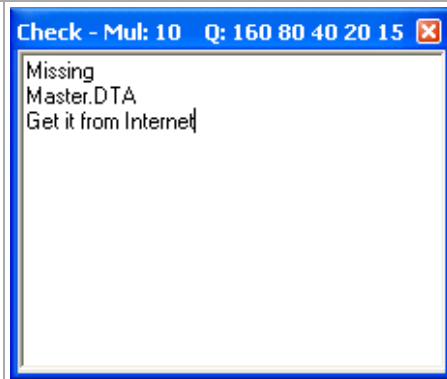
The title bar shows Mul: or Q: followed by the band.

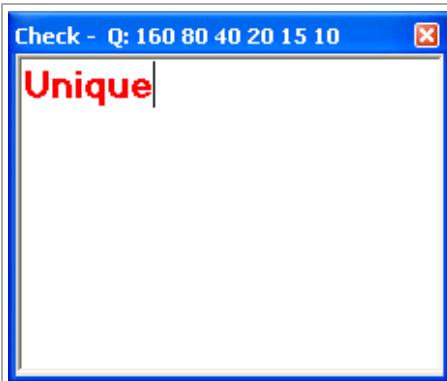
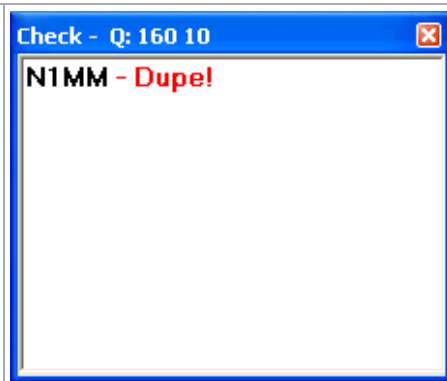
- **2X:** - This station would be a Double Multiplier on this band (this country and zone)
- **Mul:** - This station would be a Multiplier on this band (country, section, etc.)
- **Q:** - This station would be a new QSO on this band
- Example: **Mul: 15 20 Q: 160 80 40 10** - This station would be a new Multiplier on 15 and 20 meters, or just a new QSO on 160, 80, 40 and 10

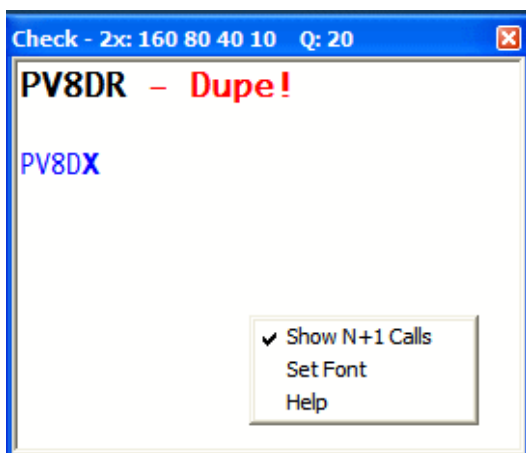
**Note: For the title bar to operate correctly, the "Available Mults and Q's" window must be open.**

The Check window is divided into two areas:

- Upper area: callsigns found in this contest log
  - QSOs made in this contest
- Lower area: callsigns found in the selected master.dta file

	<p>When the program is started and no callsign is entered the Check window will show the date, time and length of the MASTER.DTA file.</p> <p>When the master.dta file for the selected contest is not found or missing a warning will be given, Use 'Download latest Check partial file (Master.DTA) (Internet)' under 'Tools' to download the file from the Internet</p>	
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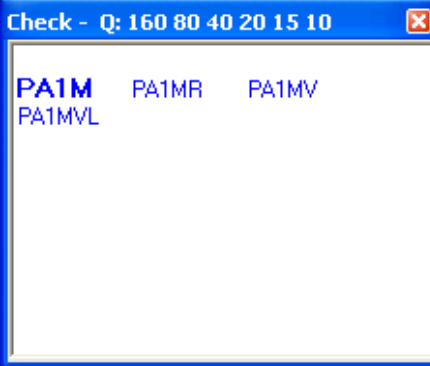
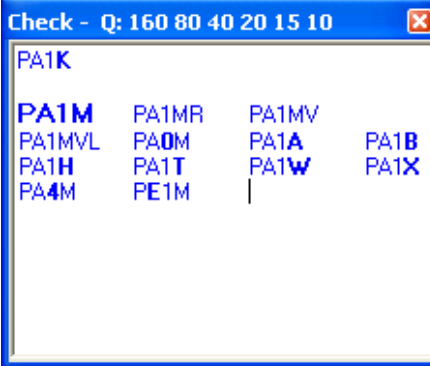
	<p>When there are no matches found Unique will be shown in big red letters</p> <p>When the station entered is a dupe it will be shown in black and the text Dupe! will be added in red</p>	
--	--	--



On this window's right-click menu, shown above, there is the option to select "Show N+1 calls." If this option is checked, callsigns will be shown that are one letter or number different from the callsign entered in the Entry Window, as in this example. This can be very helpful when listening under difficult conditions where you are not sure of the callsign.

- When a callsign entered matches a call in the log, the callsign in the Check partial window will be set to bold and 12 point font (PA1M below).

- Entering PA1M in the callsign field will give PA1M, PA1MR, PA1MV and all others with PA1M in the callsign (picture below left). When N+1 is selected also all callsigns with one character difference will be shown (picture below right).

N+1 not selected	PA1M entered in Entry window	N+1 selected
	<p>No QSOs match the entered call in the log so the window starts with a blank line. When a callsign matches the master.dta file or the log it will be set to <b>bold</b> and 12 point font (Example: PA1M)</p> <p>When N+1 selected, PA1K is found in the log and many more callsigns differing by only one character are found in the master.dta file. The differing character is shown <b>bold</b></p>	

## 2. Colors of the callsigns

Blue	New contact on this band
Black	Dupe contact or a station in a non-workable location. This means that you don't need this station because he is a dupe or you are not allowed to work him by the contest rules.

## 3. Keyboard Assignments

- Alt+Y - will "yank" the first call from the Check window into the callsign field of the Entry Window that has the entry focus.

## 4. Mouse Assignments:

- Left mouse key clicking on a callsign in the listbox
  - Click on call - Enter the call into the callsign field on the Entry window replacing whatever was there.
    - When clicking on a call with spaces, only the first token will be loaded as callsign
- Right mouse key clicking, a menu will appear
  - Show N+1 Calls - show all callsigns with one character difference from the callsign entered in the Entry window callsign field. The different character will be shown bold.
  - Set Font - Set the font for the Check Partial window, a selection window will appear.
  - Help - Show the help file for this window.

## 5. Wildcard search

If one or more characters are not known a ? may be used in the callsign field in the Entry Window. It needs two sequential characters like N?MM or N1? to find the call. So M?M will not work!

Searching for leading wildcards is also implemented. I.e. ?1M matches KN1M as well as N1MM. N+1 will do this automatically for one ? in place of each expected character in the call. The use of two question-marks is also allowed, for example ??1M

Examples:

**PA?M** will match PA1M, PA7MM etc.

**P?1M** will match PA1M, PG1M, PF1MO etc.

**P?3** will match no callsigns because there are no two sequential characters

**?1M** will match N1MM, KN1M, PA1M etc.

## Available Mults and Qs

### In this Section...

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[Quick Tour \(a must read!\)](#)

[Step 1. Setup](#)

[Step 2. Adjust Window Positions](#)

[Step 3. Connect the Sound Card and the CW interface](#)

[Step 4. Entering a Call](#)

[Step 5. Using the Space Bar to Tab](#)

- Step 6. Using the Tab Key
- Step 7. Bandmaps, Spots and Other Cool Stuff
- Step 8. Spots are Fun
- Step 9. Actually Logging Contacts
- Step 10. The Exciting Finale
- Step 11. CW and WAV Recordings

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- 2. Using the Program the First Time
- 3. Subsequent Install Instructions / Upgrading to a New Program Version
- 4. Uninstalling the Program

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- 3. Setup Packet/Telnet
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- 6. Sending Messages in CW
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  - 1.1. Hardware setup
  - 1.2. Set button examples
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7. Configurer >Winkey Tab
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  - 7.2. How to Set Up Winkey in N1MM Logger
8. Configurer >Mode Control Tab
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9. Configurer >Antennas Tab
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#### Start a New Contest Log or Open an Existing Contest Log

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#### Entry Window

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2. Callsign/Exchange Editing Features
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4. Status Bar Information
5. Callsign Colors
6. The Red and Green dots (LEDs)
7. The Entry Windows
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- 15.18. Change Packet/CW/SSB/Digital Message Buttons - Alt+K
- 15.19. Multi-User Mode
- 15.20. Change Exchange Abbreviations
- 15.21. SO2R
- 15.22. WAE - Special commands for the WAE DX contest only

16. Window Menu Selections

17. Help Menu Selections

Bandmap

1. One radio scenario
2. Two radio scenario
3. Other
4. Colors of the incoming spots:
5. Keyboard Assignments
6. Button Assignments
7. Mouse Assignments
8. Example bandmap usage

Packet and Telnet

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2. Initial Button Assignments
3. Keyboard Assignments
4. Mouse Assignments
5. Right Click Menu
  - 5.1. Packet Filters
6. Special keys:
7. Macro keys
8. How to add/edit/delete a Telnet cluster
9. How to setup and connect a Telnet cluster
10. How to setup and connect to a Packet cluster using a TNC
11. Auto connecting to a cluster
12. Spotting stations
13. Multi-User setup

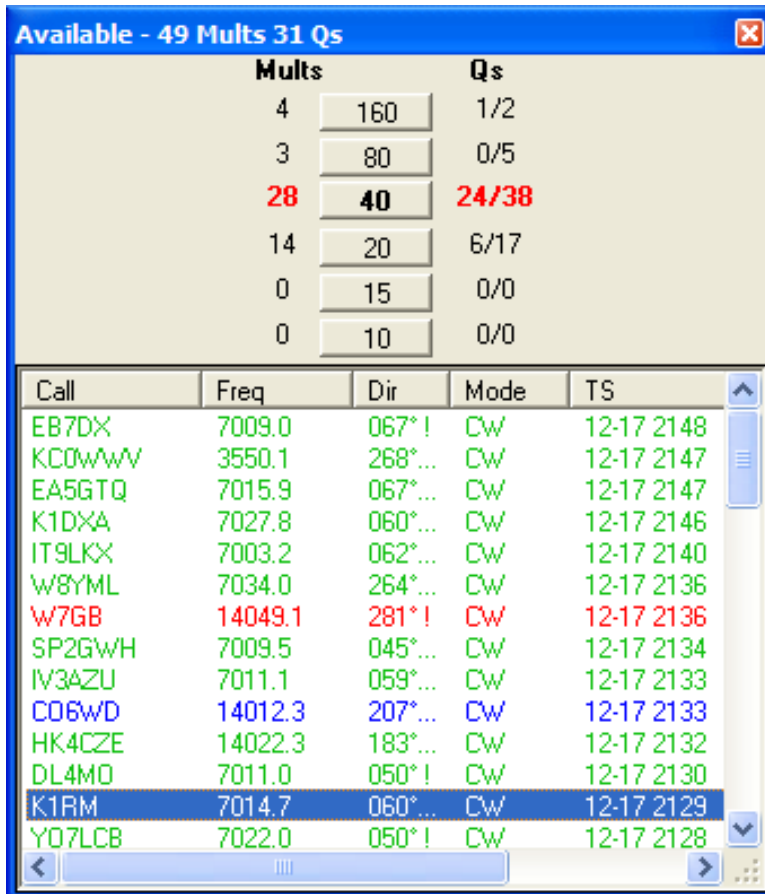


- 14. Computers on a LAN
- 15. Packet via the soundcard
- 16. Supported Packet clusters:
- 17. CW Skimmer and the Reverse Beacon Network (RBN)

Check

- 1. Features
  - 2. Colors of the callsigns
  - 3. Keyboard Assignments
  - 4. Mouse Assignments:
  - 5. Wildcard search
- Available Mults and Qs
- 1. The Header
  - 2. The Band Buttons
  - 3. Spot List Box
  - 4. Band button Assignments
  - 5. Band button background colors
  - 6. Mouse Assignments
  - 7. Right-Click menu
  - 8. Multi-mode contests

The Available Mults and Qs window for single-mode contests is similar to this example (beginning with release 9.12.5).



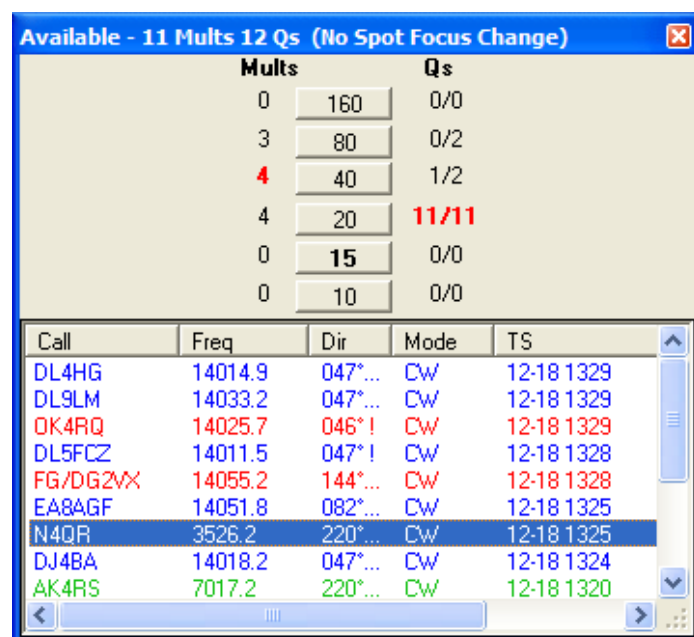
This window consists of three parts, the header, the band buttons and at the bottom the multiplier list box.

## 1. The Header

The header shows the number of Available Multipliers and QSO's. (Example 4 Mults 12 Qs), and also reports on some of the right-click menu items that may affect what happens when you click on a spot. See below for specifics.

You will note that this window does not appear to have the entry focus except when you have right-clicked to access the context menu to change the window's settings. This is as designed, because keyboard/mouse click focus should normally be on the Entry Window. Nonetheless, mouse clicks on band buttons and individual spots will be acted upon, as outlined below.

## 2. The Band Buttons



The top part of this window indicates the number of multipliers (left column) and potential contacts (right column) available on each band. The two numbers in the right column reflect the number of workable (non-dupe) QSOs available, and the total number - the latter is useful to determine relative band opening quality in a contest, like Sweepstakes, where late in the contest you may have worked most of the active stations. For example, the right column might display "2/47", indicating a wide-open band but with only two stations you have not already worked.

Red numbers indicate the band with the largest number of contacts (QSOs) available. The WARC bands only appear when DX (the default general logging contest) is the active contest. A VHF

version will appear when a VHF contest is selected.

For a contest such as FD that allows HF and VHF, the lack of band buttons for VHF+ means (i) there will be no available spot totals displayed for the VHF+ bands; and (ii) there is no single click to QSY to VHF. You must either type in a frequency or QSY the radio manually to get to a VHF+ band. Even though the HF button set is shown, VHF spots that are workable in a particular contest will still appear in the lower pane of the available window (and on the band map); like other spots, those VHF+ spots are clickable to QSY (assuming radio support).

Each of the band buttons changes color when a callsign is entered in the callsign field **or**, in the case of contests where the multiplier cannot be determined from the callsign, when the exchange is copied. The color (green, red, blue or none) denotes whether that station is needed on that band as a double multiplier (green), a single multiplier (red), a valid non-duplicate QSO (blue) or not needed (none). The intention is to let you know whether you need that current station's multiplier on other bands, so that you can move him if you wish.

The active band's button text is shown in bold.

### 3. Spot List Box

The list box (the lower section of the window) shows spots received via Packet or Telnet. There are 4 columns: Call, Frequency, Bearing (Dir), and Time (TS) in the format "mm-dd hhmm". Clicking on the selected column title will sort the column, clicking again will reverse the sort order. An indicator of split spots (a "Ã,Â±") appears next to frequency. Spots coming from a local Skimmer are shown with a (!) to the right of the bearing, and those from a non-local Skimmer with (#). A sunrise/sunset indicator (a "Ã,Â±") is shown to the right of the bearing for spots where applicable, as an aid to determining which spots may either be "perishable" or particularly suited to a gray-line QSO.

The color codes described are applied to each call listed; however, duplicate QSOs are **not** displayed.

### 4. Band button Assignments

- Left click on band button - Set the left radio or VFO-A to the first spot on the band specified.
- Right click on band button - Set the right radio or VFO-B to the first spot on the band specified.
  - Note: When both Entry windows are open on the same band (in SO2V), then clicking on a call will bring this call to the window without transmit focus. Select the correct radio/VFO by right or left clicking the band button. You should not be able to select the same band on both radios in SO2R, unless you deliberately do it on the radios' front panels. For obvious reasons, this is not a good idea,

## 5. Band button background colors

- Blue: Available QSO
- Red: Single Multiplier. Example: CQWW - QSO is either zone or country multiplier (one multiplier)
- Green: Double or better Multiplier. Example: CQWW - QSO is a zone and a country multiplier (two multipliers)
- Gray: Dupe

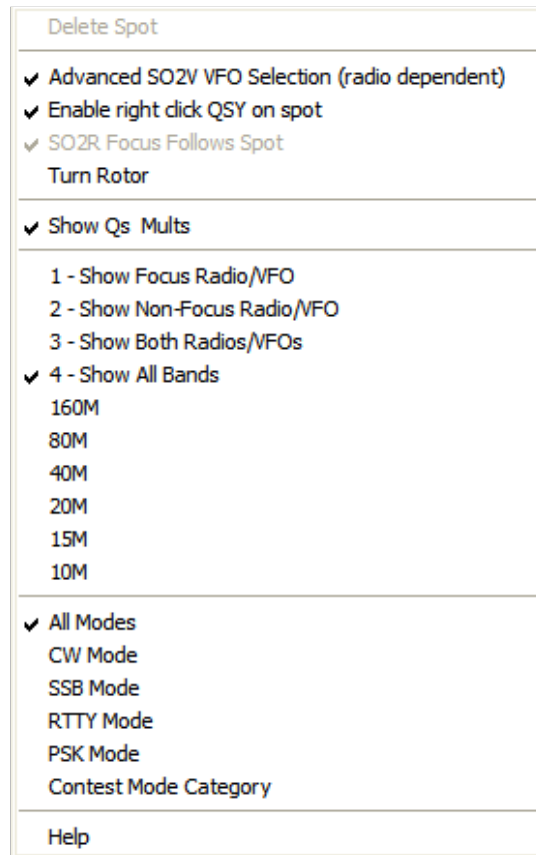
## 6. Mouse Assignments

- Left mouse key clicking on a callsign in the list box
  - SO1V
    - Single Left click - Always send the spot to VFO-A.
    - Shift + Single Left click - No action.
  - SO2V + set for "Basic VFO Selection" (set in the Right-Click menu explained below)
    - The selection "Basic VFO Selection" or "Advanced VFO Selection" can be set/seen in the right click menu.
    - When set for "Advanced VFO Selection" the window title tells you the setting of this option.
      - Single Left click - Send the spot to VFO-A.
      - Shift + Single Left click - Send the spot to VFO-B.
  - SO2V + set for "Advanced SO2V VFO Selection" (set in the Right-Click menu explained below)
    - Single Left click
      - If both VFO's are not on the spot band, send the spot to the Active VFO. The spot VFO Entry Window and Bandmap will be made active.
      - If either VFO is on the spot band, use the VFO which is on the spot band checking the active VFO first. The spot VFO Entry Window and Bandmap will be made active.
    - Shift + Single Left click - reverse the VFO selection determined above.
  - SO2R + set for "SO2R Focus Follows Spot" (set in the Right-Click menu explained below)
    - The radio that the spot is sent to will be made active if "SO2R Focus Follows Spot" is checked. If the option is un-checked, the window focus will not change.
    - Single Left click

- If both radios are not on the spot band, send the spot to the inactive radio.
- If either radio is on the spot band, send the spot to that radio.
- Shift + Single Left click - Reverse the VFO selection determined above if the selection will not place both radios on the same band.
- Double click - Go to the frequency with the active VFO. The callsign on which you have clicked is placed in the callsign field in the Entry window overwriting anything that was in there!
- Left mouse button clicking on column title
  - Toggle the sort order of the spot list between ascending and descending based on the column selected (Call, Frequency, Bearing (Dir), Time (TS)).

## 7. Right-Click menu

The following screen-shot shows the right-click menu effective with version 10.8.0



If you right click in the Available Window these menu items will appear. Not all menu items are always selectable.

- **Delete Spot** - Delete selected spot from the list of spots. This option is only selectable when you right-click on a call-sign in the lower list box.

- **Advanced SO2V VFO Selection (radio dependent)** - Determines the SO2V single left click behavior on a spot in the bandmap. See the details above. The option is grayed out when SO2V isn't selected and the window title tells you the setting of this option. Added because not all radios will work with the Advanced setting.
- **Enable right click QSY on spot** - When checked a right click on a spot will cause the inactive radio or VFO to be programmed without changing the Entry window focus. If a split spot is selected in SO2V mode, the TX frequency will not be programmed because it will change a potential RUN frequency. When this occurs, a message is printed at the bottom of the Entry window. Right clicking on a spot in SO2R mode that would place both radios on the same band is ignored. This option needs to be unchecked to allow spots to be deleted or the rotor to be turned from the Available window. This option is grayed out, not available in SO1V mode.
- **SO2R Focus Follows Spot** - Determines the SO2R single left click behavior on a spot in the bandmap. See the details above. The option is grayed out when SO2R isn't selected and the window title tells you the setting of this option.
- **Turn Rotor** - Turn rotator to bearing for selected callsign

The remaining options operate at all times. Note that none of the following options affect the contents of the bandmap(s). Only the list of calls in the Available window will change.

- **Show Q's\_Mults** - toggle between showing all spots or just multipliers
- **1 - Show Focus Radio/VFO** - Show only spots on the band of the VFO or Radio which has entry focus.
- **2 - Show Non-Focus Radio/VFO** - Show only spots on the band of the the VFO or Radio which does not have entry focus.
- **3 - Show Both Radios/VFOs** - Show spots on the bands of both VFOs or Radios.
- **4 - Show All Bands** - Show spots on all bands.
- **160** - Show only 160 meter spots.
- **80** - Show only 80 meter spots.
- **40** - Show 40 meter spots.
- **20** - Show only 20 meter spots.
- **15** - Show only 15 meter spots.
- **10** - Show only 10 meter spots.

Beginning with version 10.8.0, this menu permits setting of spot filters by mode. The options are:

- **All Modes**
- **CW Mode**
- **SSB Mode**
- **RTTY Mode**
- **PSK Mode**
- **Contest Mode Category**

Only one of these options can be selected at a time. The first three are self-explanatory. Since many spots The program distinguishes between RTTY and PSK spots based on the Comments field in the spot - BPSK, PSK31, or any other word containing "PSK". If "Contest Mode Category" is selected, the program will only display spots in the Available window that conform to the Contest Mode Category selected in the Select Log Type dialog (also called the Contest Setup dialog).

### Filtering notes

There are three levels of spot filtering available. The first of these is at the DX cluster node, using whatever filtering capabilities are built into the node. Because N1MM Logger stops processing telnet messages when CW is being sent, users who are connected to a very high volume node, such as the Reverse Beacon Network's Telnet node, may find it advantageous to block some of the less useful spots (for US users, you might not want spots from VK, for example).

The second level of spot filtering is accessible from the right-click menu of the Packet/Telnet window, and decides which spots received from the cluster node should be forwarded to the Bandmap and the Available window. If too many spots are forwarded, depending on how fast your computer is, you may encounter brief delays in execution of commands (such as sending of CW messages) while the program catches up, so it is probably a good idea to use some filtering at one or both of these levels.

The third level of filtering is in the Available window, and it only governs which spots are shown in the window's lower pane. For example, if you decide only to list CW spots, the bandmaps will continue to display all spots, and the top pane of the Available window will continue to display **overall** spot numbers for each band, but the lower pane's list of spots will contain only CW spots. You can quickly switch back and forth between showing all spots, just those on the current band, only CW or SSB or digital spots, or any other band/mode combination.

- **Help** - Shows this section of the manual from the web site. Internet required

Hovering with the mouse over a spot in the list will show a tooltip with more info about the spot (frequency, spotter, time, comments)

## 8. Multi-mode contests

Beginning with version 10.7.2, this window will display one column of band buttons for each mode in multi-mode contests. Operation is otherwise similar to that in single-mode contests. If the contest's rules specify that multipliers only count once per band, the colors of both modes' buttons

for that band will change in unison; if multipliers count once per band **and** mode, then the band button colors will show the status, as described below, on each band/mode combination.

Available - 82 Mults 151 Qs (Advanced VFO Control)

Mults	CW	SSB	Qs
9	160	160	10/10
11	80	80	11/11
25	40	40	43/43
<b>34</b>	20	20	<b>84/84</b>
2	15	15	2/2
1	10	10	1/1

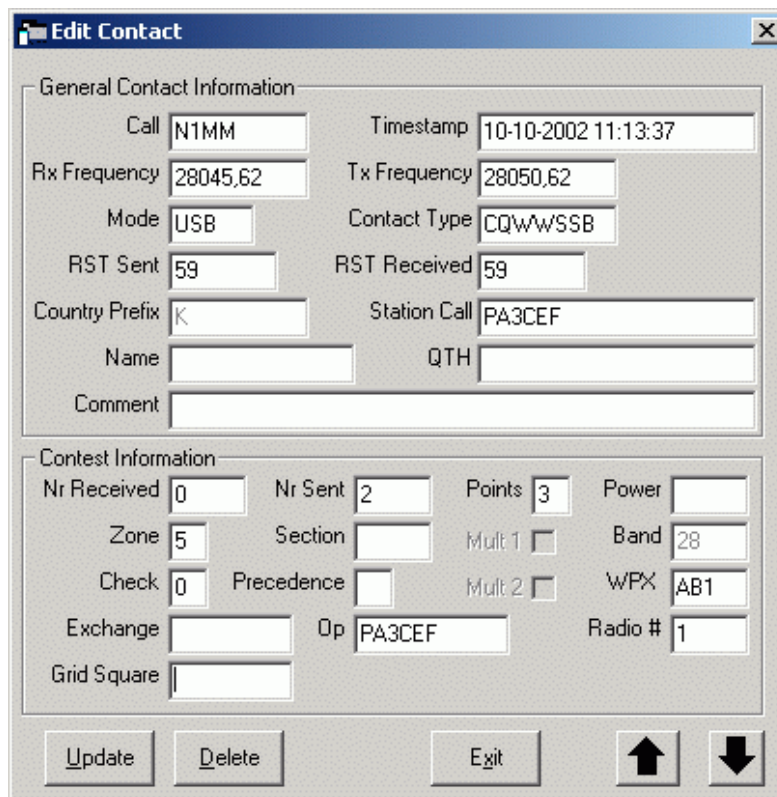
  

Call	Freq	Dir	Mode	TS
S57S	7005.7	050°...	CW	09-03 2052
SX1MAR/P	7008.2	053°...	CW	09-03 2052
4K6FO	7012.3	037°...	CW	09-03 2052
RU4F	7014.0	031°...	CW	09-03 2052
UT1AB	7022.1	040°...	CW	09-03 2052
UA3ARL	7029.6	033°...	CW	09-03 2052
RN3AA	7007.0	033°...	CW	09-03 2051
RN1NY	7009.0	029°...	CW	09-03 2051
LZ1ICZ	7018.5	050°...	CW	09-03 2051
SK3BP	7025.4	036°!	CW	09-03 2051
RN6LID	7003.0	038°...	CW	09-03 2050
F5IN	7011.0	055°...	CW	09-03 2050
DF8WI	7015.1	047°...	CW	09-03 2050
HA0MQ	7021.9	047°...	CW	09-03 2050
F6DIB	7011.9	055°...	CW	09-03 2049
S57AJ	7017.6	050°...	CW	09-03 2049
VF3IPW	7025.1	346°	CW	09-03 2049

## Edit Contact

Your Edit Contact Dialog will be similar to this one.





This screen gives the possibility to update contacts after they have been logged.

The fields 'Country Prefix', 'Mult 1' and 'Mult 2' can't be updated because they are recalculated after each contact update.

## In this Section...

### [Edit Contact](#)

- [1. Button Assignments](#)
- [2. How to permanently delete a contact?](#)
- [3. How to recover a deleted QSO?](#)
- [4. Why move and not delete?](#)

The following modes are allowed to be entered in the 'Mode' field:

CW, CW-R, LSB, USB, RTTY, rty-L, rty-U, RTTY-R, AM, FM, PSK31, PKT, PAC2, GTOR, FSK31, PSK31, PSK63, PSK125, MT63, DIGI, BPSK, bpsk, SSTV, mfsk-L, mfsk-U, MFSK, MFSK8, MFSK16, HFSK, MTTY, THRB, ASCI, HELL, Q15, PCW.

To what country the program assigns a contact doesn't really matter, except for the \*claimed\* score. The assigned country does not appear in Cabrillo. You are not penalized for an incorrect claimed score.

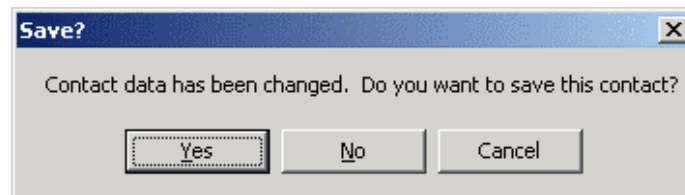
The main reason for tracking down these things is for better information about what countries are needed during the contest.

**Tip**

When the program doesn't allow you to log a contact the way you want it, log it as the program expects it and edit the contact in this screen.

Example: A KG4 station calls and gives a state as exchange, this KG4 is in the USA. The program expects this KG4 to be in Guantanamo Bay and doesn't allow entering a state but wants a number. Enter a number which the program expects and edit the contact in this screen. Of course you have to update CTY.DAT to add the KG4 station so this won't happen again. See the Tips and Tricks section how to do this. Make a note using Ctrl+N so you can update the qso later.

When a contact has been updated and you are moving on to the next/previous qso with the up or down arrow keys the following screen will be shown.



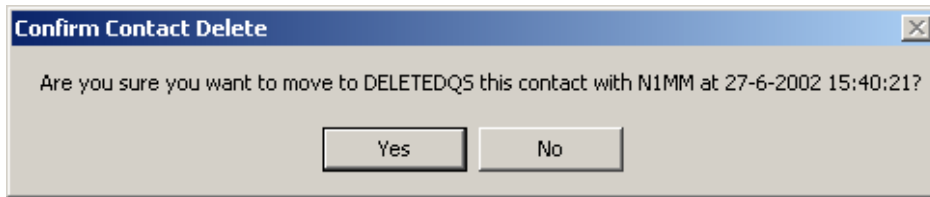
- **Yes** - Save the changes made and move on to the next or previous qso in the log.
- **No** - Don't save the changes made and move on to the next or previous qso in the log.
- **Cancel** - Go back to the qso which has been changed but not saved.

Updating the timestamp from a qso can be done from within the Entry window callsign field. Entries starting with "T" and four numeric digits will update the current row time in the log. Check out the chapter 'After the contest' for more information.



## 1. Button Assignments

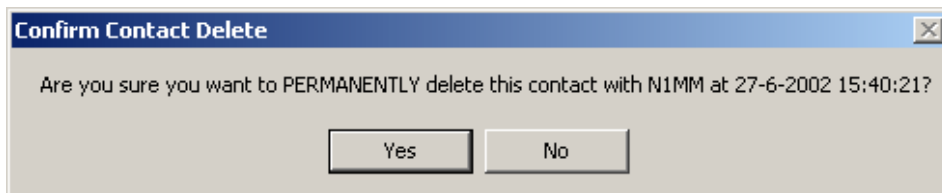
- Update - Update the log entry and exit the dialog returning to the last qso in the log.
- Delete - Removes a log entry from the current selected contest and exits the dialog returning to the last qso in the log.
  - When pressing the deleted button in a contest the following message will appear:
    - Yes, will move the qso to the DELETEDQS 'contest'
    - No, will cancel deleting the qso.



- When using multi-user mode it is only possible to delete a qso made on the station which made the qso.
  - Message: "You may not delete contacts logged by another station while in Multi-User mode. Ask station #[radionumber](#) to delete it. Delete not performed!"
- Help - Show the help file for this window.
- Exit - Exit this dialog without updating the log entry.
- Up Arrow - Go to the next entry towards the beginning of the log. Updated log entries can be saved.
- Down Arrow - Go to the next entry towards the end of the log. Updated log entries can be saved.

## 2. How to permanently delete a contact?

- Delete one QSO
  - Select a qso to delete in the log window
    - When pressing the deleted button the following message appears:
      - Yes, will delete the qso permanently from the DELETEDQS 'contest'
      - No, will cancel deleting the qso
    - It is not possible to select more than one qso and delete them. Deleting has to be done per qso.



- Delete all QSOs
  - Select the DELETEDQS 'contest'
    - File, Open Log in database, Select the DELETEDQS 'contest' in the 'Select Existing Log' dialog.
  - Delete the "DELETEDQS" contest by pressing the 'Delete' key. It will reappear with no QSOs.
    - A confirmation will be asked.

### 3. How to recover a deleted QSO?

This is not easily done. A possibility is to export the 'DELETEDQS' contest. Then import it into the contest from which it was deleted (ADIF). Before or after exporting you have to remove all the QSOs which you don't want to have imported. Always backup everything first.

- Open the DELETEDQS contest in the database.
- Left click on the contact you want to restore, then right click, select 'Copy/ADIF String'.
- Open the contest you want to paste it into.
- Right click in the log window and select 'Paste contacts'.

### 4. Why move and not delete?

A deleted contact in a contest is not permanently deleted but moved to the 'contest' DELETEDQS. This way a qso can be recovered when accidentally deleted. Permanently deleting the 'deleted' QSOs can be done in the 'DELETEDQS' contest. The technical reason to put the QSOs in another contest is that Access does not free space until you compact. It doesn't do any good to delete a qso, so why not just move it?

### Info

Your Info window will be similar to this one.

**Info - PA1M - Exch: 599 5**  
 PA1T - 14020.00 [PA1M @ 0 min]  
 PA - Netherlands, Zone 14, EU, Bearing = 308°, 3139 mi, 5052 km, LP = 128°  
 Sunrise: 06:30Z Sunset: 17:15Z Local std time: 11:49 (Fri)  
 SFI/A/K: 27-Feb-2009 09 70 2 2 No Storms -> No Storms <VE1DX>

Rates - 1 mult = 0.7 Q's

Last 10 Q's	Last 100 Q's	Since 09:49	Since 10:00	Last 60 min
79	79	4	4	56

Import Goals Goal = 56

**PA1M**  
 10 min band timer  
**05:59** **RUN**

Station	Pass	Run	Last 10	100	Current Freq	Op/Message
RUN stn Run	Not Set	<input type="checkbox"/>	79	79	0.00	PA1M
MULT stn						

10:49:44 - MULT stn (192.168.1.15) connection failed.

The info window can be found in the Entry Window dialog under the menu 'Window | Info'.

## In this Section...

### Info

1. General
2. Mouse Assignments
3. Rate information section
4. Buttons
5. Real Time graphical rate display
6. Setting a goal for the contest
7. Setting the QSO numbers
8. Multi-User information
  - 8.1. General
  - 8.2. Mouse Assignments

## 1. General

The following information currently appears in this window:

- Own callsign and Sent Exchange (statusbar)
  - The next QSO number will be shown on the title bar if it is a serial number contest.  
Example: Exch: 59 002

\*

- Callframe spot (line 1) - Info from spot from bandmap
- CountryInfo (line 2 & 3) - CallCountry, Zone, Continent, Bearing (short path), Distance (miles & km), Bearing (long path)
  - From the station in the call window, or if nothing is there, the call in the call frame.
  - If there is nothing in either, it shows the last info that was displayed there.
- Sunrise/Sunset(line 4) - Sunrise/sunset times, Local time
  - Local time is not shown for K, VE, UA and VK because of the multiple time zones in these countries.

\*

- Messages (line 5) - Packet spot information, packet talk messages (appear in red)
- WWV Messages (line 6) - WWV statistics
- Rates Section
  - Rates (left)- Rate information /goal information (colors) / band change information
    - The band change information and the band timer are hidden when Single operator or Multi-multi are selected.
    - Real Time graphical rate display
    - Import and setting Goals button
  - Graph (middle) - shows graphical information regarding qso count, hourly rates or moving averages per 30 or 60 minutes.
  - Record level indicator (middle) - for recording QSOs. For this indicator to show 'Record QSOs' under the 'Tools' menu must be on.
  - Info section (right)
    - Callsign of the operator in lower right corner (bold). Set with Ctrl+O.
    - Band change counter (contest and section dependant)
    - band timer (contest and section dependant)
- Band Chgs - Band change counter (only shown in certain contests and Operator Category dependant )
  - 10 min band timer - 10 minute band timer. Counts down after band change.
  - The band change timer does not start until the first band change of the contest.
  - The band change counter has a "stop light" (red/yellow/green) colored background.
- Multi-Run indicator - Shows MULT or RUN when Multi-One or 1 or 2 when Multi-Two selected
  - Shown only when Multi-User and Operator Category = Multi-One
  - Multiplier or Run station can be toggled with key combination Ctrl+Alt+M
- Multi-User Section - Multi user information (more information below)
  - Only shown when Multi-User Mode is selected.
- Messages Section

- Computer name, IP-address and port info when in multi-user.
- Winkey version info
- Messages between stations have a big font so that multis would easily see messages to each other.
- Pass frequencies > 100000 kHz will be shown without decimals.
- When you are being spotted on a cluster this will be shown in the message area including spotter and comment. Nice to know ;-)
- More..

## 2. Mouse Assignments

- Right-click in most parts of the window - Clicking on an item will select or deselect showing the selected information. Someparts have a menu of it's own.
  - Callframe spot - Show country and spot info from the station on the callsign field frame
    - NOT the callsign in the entry window but in the callframe above the callsign field!
  - CountryInfo - Show country info from the station in callsign field
  - Sunrise/Sunset - Show Sunrise/sunset times, Local time from the station in the callsign field.
  - Messages - Show packet talk messages
  - WWV Messages - Show the WWV messages
  - Rates Section - Show the rates section
  - Multi-User Section - Show the multi-user section
  - Help - Show the help file for this window
  - Clear Message Window - Clears the message part of the Info window

When Multi-User Mode is selected, clicking on a red or green icon in the Multi-user part of the window will give an extra menu. See the Multi-User information below.

## 3. Rate information section

The rate information is shown on the middle part of the info window. Dupe QSOs are included in the count. A zero rate will be shown as a blank.

Shown is the following information.

- Left part
  - Top of rates frame - QSOs per multiplier info ( x mult = y.y Q's)
  - Last 10 Q's - Rate last 10 QSOs (QSOs per hour)
  - Last 100 Q's- Rate last 100 QSOs (QSOs per hour)
  - Since hh:mm - Rate one hour back in GMT (QSOs per hour)
  - Since hh:00 - Number of QSOs since the start of the current clock hour

- Middle part
  - Real Time graphical rate display (middle) - see information below.
  - Record level indicator (middle) - for recording QSOs. For this indicator to show 'Record QSOs' under the 'Tools' menu must be on.
  
- Right part
  - Band Chgs - Number of band changes since beginning of the contest for multi-single operators.
    - Resets to 0 at top of hour and is free.
    - Counts band changes for each computer only if in Multi-Two
    - Band changes are not counted if the worked station on the other band is a multiplier
  - xx min band timer - Count down timer from xx minutes to 0 which starts after the first logged qso after a band change.
    - NB There is one band change counter and it works for the Run station. The multiplier station will have to keep track of changes manually.

#### Background colors rate information

The background colors change depending on the goal you have set for this contest.

- **Red** - < 50% of goal
- **Yellow** - < 51-99% of goal
- **Green** - 100+% of goal

#### 4. Buttons

- Import Goals - Use this button to import hourly rates from the current contest to be used as goal. If the contest you want as a goal is not the current contest, open it, then set the goal. Import Goals will import a text file created by Print to File in View, Statistics.
- Goal = - Manually edit the hourly rate goals to be used in this contest. Hours should be from 0-23. If an hour is missing the next lower hour will be used.

#### 5. Real Time graphical rate display

The purpose of the graph is to provide tactical data to a contester or team lead, to allow quick



decisions on band changes, antenna selection, etc.

- As such, the intention is to visualize small changes in **relative** Q rates over short periods. There is no scale information on the graph for getting a sense of raw numbers (assumption being that the numeric rates on the Info window are better at providing exact numbers). For current data, the graph does show the current hour's goal as a black line, again to provide an at-a-glance sense of how things are progressing.
- Some values are selectable (via right-click) for graphing.
  - The period shown can be either 30 or 60 minutes.
    - The graph can have 6, 10, 15, or 20 bars.
    - Each bar can represent the raw Q count for that timeslice, the hourly rate, or a moving average over the last 10, 20, or 30 minutes.
- The bars show rates for just this station. In the case of a single SO2R station, the bars show radios 1 and 2 in different colors, stacked, to show each radio's overall contribution. For multi operations, the rates of other stations are not displayed, nor are the contributions of other operators at this station displayed differently.
- Since the graph is intended to be updated in (almost) real-time, the feature set is intentionally minimal. The code draws the graphs one line at a time - this yields very dull graphics, but does not require any additional DLL files or controls, and runs well for me on an older, slower PC.
- The real-time graphical rate display has options accessible by right-clicking on the graph area. This display will not show anything until you start making QSOs in your current log.
- The horizontal line is the goal value marking line.

## 6. Setting a goal for the contest

Most people want to make each year more QSOs than the year before. So for most of us that is our goal!

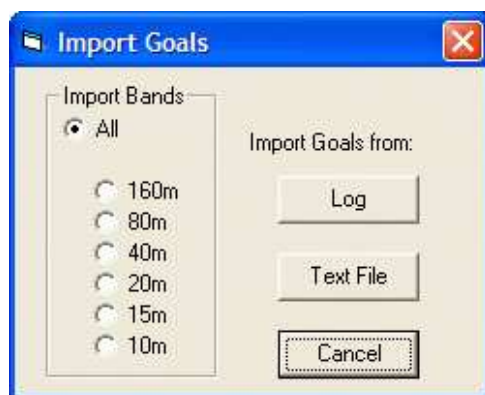
It's always nice to know what number of QSOs you had last year so you can see where your weak spots are. If this information is not available or you think these numbers are wrong (to low?) set your own! You can set the number of QSOs you want to make on an hourly basis and the program will show them on the 'Goal = ' button.

If you have the contest from last year available you can import the number of QSOs and adjust afterwards if necessary.

The only difference importing QSOs from a previous contest is what database you have loaded in N1MM logger during setup of the goal numbers. If you have the previous contest (from last year) loaded the program will calculate the QSOs per hour and display them. These numbers can be updated to set a new (higher) goal.

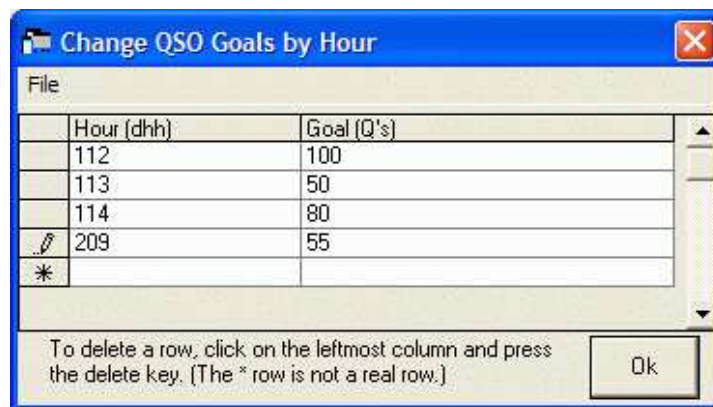
## 7. Setting the QSO numbers

You can set the number of QSOs per hour.



- Select button 'Import Goals' on the Info window. Selects the bands to import using a previous contest log or a text file.
  - Import Bands
    - Select bands to import for the selected contest
      - Choices are: All, 160m, 80m, 40m, 20m, 15m and 10m
  - Log - Import from a previous contest Log
    - Load or have loaded the previous contest (mostly from last year) in the program.
      - Use 'Choose a File' and select in the database the contest you want.
      - Select a contest in the selected database using 'Select Contest'.
      - Another type of contest is allowed to get some figures and hours imported.
      - Have an empty contest loaded or make a new contest with 'File, Open Log in Database'.
  - Text File - import goal from a text file
    - Text file can be either a whitespace delimited file (.txt) or a comma separated file (.csv).
      - User selects which file type in the Choose a File dialog box.
      - Contents of the text file are: 1st field/column is the day/hour as dhh, 2nd field/column is the all band hourly rate.
      - For importing goals by band, 1st field/column is the day/hour as dhh and the subsequent fields/columns are the hourly rate on 160, 80, 40, 20, 15 & 10.
- Select button 'Goal ' on the Info window. A screen will appear where you can enter the QSOs to make per hour. If you have not imported a contest the dialog will be empty otherwise it will be pre-filled.
  - Goals need to be in the form of dhh, where d is 1, 2 or 3, and hh is from 0-23.
  - The hh is the Z time for the first, second or third \*calendar\* day of the contest. d is the calendar day number starting with 1. ARRL Sweepstakes starts on Saturday at 2100z, so the first hour goal would be for 121. The last hour starts at 0200z on Monday, so the goal would be set for 302. With the other change made, these rates can be extracted from other contests in other databases, avoiding the necessity of first loading the contest, extracting the goals and then reloading the current contest. Now you can just choose the database and contest to use for your goals.

- The goals can also be set manually, using the scheme above. Note that goals hold for the hour they are set, and each subsequent hour until a new goal is set.
- Example below: 112 means day 1 and 12 UTC. The last line is day 2 and 09 UTC.



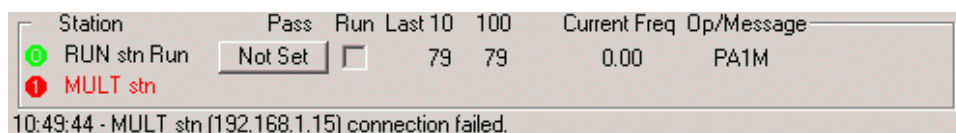
### Tip

The goal is set per database and not per contest in the database, so it is not possible to set different goals for more contests in one database. For some, another reason to use a separate database for each (major) contest.

## 8. Multi-User information

### 8.1. General

In the bottom part of the Info window all information needed during contesting is displayed. See the picture below.



- Green or Red station icon
  - **Green** means connected
  - **Red** means not connected, and the other computer is being actively polled. Users may experience delays and stutters in this state.
  - **Blue** means not connected, and the other computer is not being actively polled. The connection will be automatically reestablished when the other computer becomes

- reachable. Users will not experience delays and stutters in this state.
- Light Red means that the program has not been able to contact the other machine for a while.
  - This is a transient state, and the program will try to solve this problem, if it returns to green, then everything is ok.
  - At startup it is not an issue. If during a contest, with lots of RF, this might mean you have RF in your network cables.
- Right clicking on these icons brings up a menu
- Station
  - Name from the station as entered under 'Config / Edit Station Computer names'
- Pass frequency
  - Frequency where the station likes to receive it's passed stations.
  - Pass frequencies > 100000 kHz will be shown without decimals.
- Run
  - Selected means running
  - Not selected means he is Searching & Pouncing
- Operator
  - Who is operating the station
  - This call will change to **red** while transmitting
- Last 10
  - Rate information from the station over last 10 QSOs
- Last 100
  - Rate information from the station over last 100 QSOs
- Current Freq
  - Operating frequency
  - Mode indication like CW, SB, FM (only when in Mixed mode)

\*

## 8.2. Mouse Assignments

- Right-click on the red or green station icon - opens a menu window.
- Call for Help - On the selected station the following message will be shown: "Station x needs assistance". This way an operator can call for assistance without leaving the chair by sending a message to another (operating) position. The file "Assist.wav" from the program directory will be played on the target station.
- Help - Show the help file for this window.
- Send Message - Send a message to this station. The message will be shown in the Info window from the selected station and appears in red.
- Target for Call stacking - The stacked callsign will be put on the 'stack' for this station. See the Entry Window for more information about call stacking.

- Pass current/last QSO - Pass the current qso in the Entry window or the last qso when the Entry window is empty to this station.
- Show Status - Show status of all connections. See image below (no connection set up here).



- Close Connection - Close the network connection from this station.
- Open Connection - Open the network connection from this station (only selectable when dot is red).
- Prevent Automatic Reconnect Attempts - Prevent automatic reconnect attempts every 30 seconds by the program.

## Score

Here are three examples of the Score window, which is formatted automatically when you select a contest.

CQWWSSB	PACC	VHFREG1																																																																																																																																												
<table border="1"> <thead> <tr> <th colspan="5">Score - 4.267.572 Points</th> </tr> <tr> <th>Band</th> <th>QSOs</th> <th>Pts</th> <th>Cty</th> <th>ZN</th> </tr> </thead> <tbody> <tr><td>1,8</td><td>152</td><td>164</td><td>50</td><td>8</td></tr> <tr><td>3,5</td><td>509</td><td>647</td><td>68</td><td>13</td></tr> <tr><td>7</td><td>434</td><td>555</td><td>83</td><td>17</td></tr> <tr><td>14</td><td>975</td><td>1906</td><td>105</td><td>28</td></tr> <tr><td>21</td><td>891</td><td>2094</td><td>121</td><td>33</td></tr> <tr><td>28</td><td>370</td><td>748</td><td>140</td><td>32</td></tr> <tr><td><b>Total</b></td><td><b>3331</b></td><td><b>6114</b></td><td><b>567</b></td><td><b>131</b></td></tr> <tr><td colspan="5">Score: 4.267.572</td></tr> </tbody> </table>	Score - 4.267.572 Points					Band	QSOs	Pts	Cty	ZN	1,8	152	164	50	8	3,5	509	647	68	13	7	434	555	83	17	14	975	1906	105	28	21	891	2094	121	33	28	370	748	140	32	<b>Total</b>	<b>3331</b>	<b>6114</b>	<b>567</b>	<b>131</b>	Score: 4.267.572					<table border="1"> <thead> <tr> <th colspan="5">Score - 133.800 Points</th> </tr> <tr> <th>Band</th> <th>Mode</th> <th>QSOs</th> <th>Pts</th> <th>Cty</th> </tr> </thead> <tbody> <tr><td>1,8</td><td>CW</td><td>18</td><td>18</td><td>10</td></tr> <tr><td>3,5</td><td>CW</td><td>201</td><td>201</td><td>31</td></tr> <tr><td>3,5</td><td>LSB</td><td>1</td><td>1</td><td>0</td></tr> <tr><td>7</td><td>CW</td><td>294</td><td>294</td><td>38</td></tr> <tr><td>7</td><td>LSB</td><td>11</td><td>11</td><td>0</td></tr> <tr><td>14</td><td>CW</td><td>194</td><td>194</td><td>23</td></tr> <tr><td>14</td><td>USB</td><td>50</td><td>50</td><td>17</td></tr> <tr><td>21</td><td>CW</td><td>100</td><td>100</td><td>28</td></tr> <tr><td>21</td><td>USB</td><td>20</td><td>20</td><td>2</td></tr> <tr><td>28</td><td>USB</td><td>3</td><td>3</td><td>1</td></tr> <tr><td><b>Total Both</b></td><td></td><td><b>892</b></td><td><b>892</b></td><td><b>150</b></td></tr> <tr><td colspan="5">Score: 133.800</td></tr> </tbody> </table>	Score - 133.800 Points					Band	Mode	QSOs	Pts	Cty	1,8	CW	18	18	10	3,5	CW	201	201	31	3,5	LSB	1	1	0	7	CW	294	294	38	7	LSB	11	11	0	14	CW	194	194	23	14	USB	50	50	17	21	CW	100	100	28	21	USB	20	20	2	28	USB	3	3	1	<b>Total Both</b>		<b>892</b>	<b>892</b>	<b>150</b>	Score: 133.800					<table border="1"> <thead> <tr> <th colspan="4">Score - 245.592 Points</th> </tr> <tr> <th>Band</th> <th>Mode</th> <th>QSOs</th> <th>Pts</th> </tr> </thead> <tbody> <tr><td>144</td><td>USB</td><td>702</td><td>245592</td></tr> <tr><td><b>Total Both</b></td><td></td><td><b>702</b></td><td><b>245592</b></td></tr> <tr><td colspan="4">Score: 245.592</td></tr> </tbody> </table>	Score - 245.592 Points				Band	Mode	QSOs	Pts	144	USB	702	245592	<b>Total Both</b>		<b>702</b>	<b>245592</b>	Score: 245.592			
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## In this Section...

[Score](#)

## 1. Mouse Assignments:

The Score Summary dialog displays the score for the current contest with the points that have been achieved by band (as a single band entry). Totals for points, multipliers and score are shown. The dialog can be found under the Window menu item. The scores are updated when contacts are added/deleted.

The first and last example pictures above are single mode contests (SSB), the example in the middle is a mixed mode contest and where necessary the modes will be shown by band. The points are shown in the caption of the dialog.

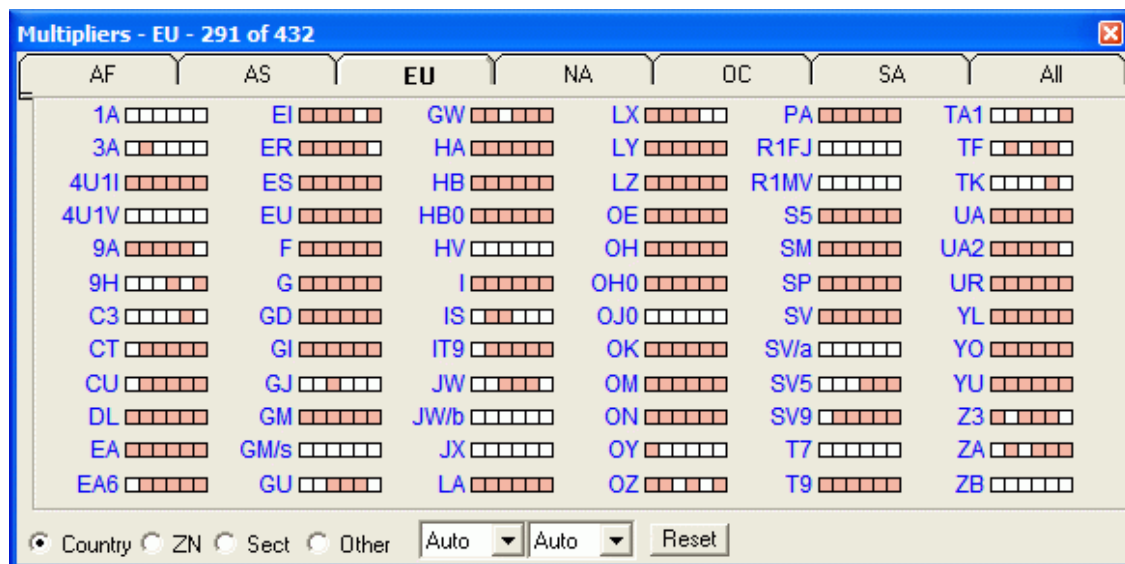
### 1. Mouse Assignments:

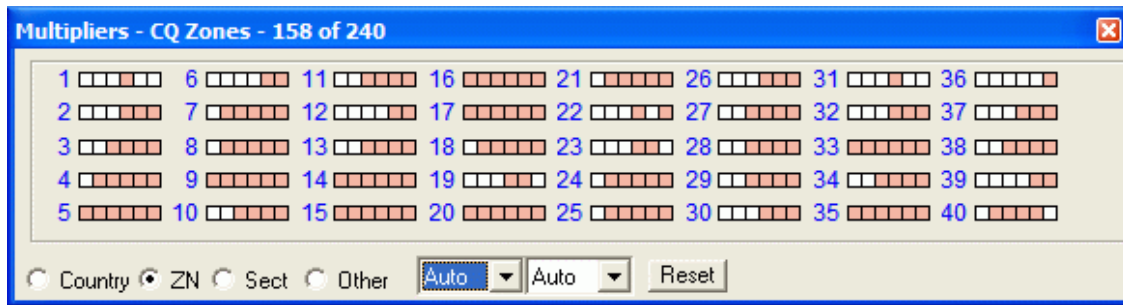
- Right mouse click, a menu will appear
  - **Copy all** - Copy all info to the Windows clipboard.
  - **Print to file** - Print the score summary to a file.
  - **Help** - Show the help file for this window.

Note: The number of contacts shown on screen and printed on the summary sheet are after duping.

## Multipliers by Band

Your Mults by Band Dialog window will be similar to these.





## In this Section...

### Multipliers by Band

1. [Keyboard Assignments](#)
2. [Mouse Assignments](#)
3. [Radio Button Assignments](#)
4. [Colors](#)

This dialog gives a band by band breakdown of worked and wanted countries/zones/sections (contest dependent) per continent when Country is selected. Each continent has its own Tab, the last Tab gives a total for all bands. In the title bar the number of worked and the total of possible countries/zones/sections is shown. The Multipliers by Band dialog can be found under the Multipliers item under Windows. A scroll bar at the bottom is added for convenience.

The blocks shown can be bands or modes depending on the contest. The number of shown blocks depends on the selected contest and selected mode (CW, SSB, Mixed).

In most contests all multipliers are shown (like countries, sections etc.). There are a few contests with many possible multipliers to much to fit in the multiplier window. In that case (like IOTA contest) only the multipliers worked are shown (and when starting the contest the Sect or Other tab shows an empty dialog and every new multiplier will add a line in the dialog).

If unknown sections are logged they will be shown under the callarea "UNK".

- The number of blocks shown **per band** depends on the 'Mode category' which can be found on the tab 'Contest' under 'File>Open Log in Database dialog'.
  - **CW, SSB, RTTY** - will give one block per band
  - **MIXED** - will give two blocks per band
    - white = CW, gray = SSB
- The bands shown depend on:
  - The selected contest, each contest has its own default which mostly will be the 6 HF bands.
  - The setting of the band filter box in the Multiplier by Band dialog.
- A combination of the Band filter box and the Mode filter box gives many possibilities.
  - Mode filter Auto means that it uses the 'Mode category' which can be found on the tab 'Contest' under 'File | Open Log in Database dialo'.
- Examples:

- Bandfilter: **Auto** Mode filter: **Auto**
  - default per contest, mostly the 6 major HF bands (160 80 40 20 15 10)
    - Used in all major contests like CQWW, ARRL DX etc
    - Single mode contests (CW or SSB)
  - 2 blocks - possible CW and SSB (mixed mode contests)
    - Used in contests like ARRL 10 meter etc.
    - White = CW, Gray = SSB
    - Mixed is selected
  
- Bandfilter: **HF+WARC** Mode filter: **SSB**
  - 9 blocks - all 9 HF bands (160 80 40 30 20 17 15 12 10)
    - used in contests like DX etc.
  
- Bandfilter: **HF+WARC** Mode filter: **Mixed**
  - 18 blocks - 2 blocks per band for all 9 HF bands (160 80 40 30 20 17 15 12 10)
  - used in contests like DX etc.
  
- Grid square overview
  - Shown when a VHF or up contest is selected
  - Clicking on a grid will center the window on that grid
  - The own station gridsquare will be shown in white/dark green

## 1. Keyboard Assignments

- **Ctrl+J** - Toggle through the Countries, Zones, Sections & Other windows
  - When the Multiplier window is not open, it will be opened.
- **Ctrl+Shift+J** - Opens or minimizes the Multiplier-by-band window
- **Ctrl+Alt+J** - Toggles through continents.

## 2. Mouse Assignments



- **Left-click on multiplier/abbreviation**
  - Click on the abbreviations and it will populate the Entry Window exchange filed with the correct syntax. It will overwrite the current exchange so be careful!
  - It will only work for contests where Exchange1 is used for the county or section, which is many contests, but not all.
- **Right-click in the window** - a menu will appear
  - **Show Zones/Countries** :
    - Countries selected: Shows the zone for a selected country.
    - Zones selected: Shows the countries in the selected zone.
  - **Show Calls Worked** - Shows all calls worked in this country or zone, or in this county (QSO parties only).
  - **Set Grid center** - Shows a dialog in which you can enter the desired grid square (4 digits long) on which to center the grid square view (grid square contests only).
  - **Help** - Show the help file for this window.

### 3. Radio Button Assignments

- **Country** - Show the countries worked for the band chosen.
- **ZN** - Show the zones worked for the band chosen.
- **Sect** - Show the sections or states worked for the band chosen.
- **Other** - Show the other possible multipliers worked for the band chosen.
  - in VHF contests a Grid square overview will be shown.
- **Auto** - Band filter
  - **Auto** - Shows the bands for the selected contest (mostly the major 6 HF bands)
  - **HF** - shows all 6 major HF bands
  - **VHF** - shows all VHF and up bands (50 MHz and up)
  - **HF + WARC** - shows all HF bands
  - **All separate bands** - 1.8, 3.5, 7 .... up to 241 GHz
- **Auto** - Mode filter
  - **Auto** - Shows the mode as selected for the chosen contest (CW, SSB, Mixed, Digi)
    - one block per band when a single mode is selected
    - two blocks per band when Mixed is chosen as 'Mode category' which can be found on the tab 'Contest' under 'File | Open Log in Database' dialog'.
  - **CW** - shows only CW contacts (one block per band)
  - **SSB** - shows only SSB contacts (one block per band)
  - **Dig** - shows only Digital contacts (one block per band)
  - **Rev** -when not in a single mode contest this button selects the other mode (SSB versus CW) (one block per band)
- **Reset** - Resets the two filters to Auto

## 4. Colors

- White - You need this one, work 'em.
- (light) Red - Worked country, zone, section or grid square.

## Statistics

Statistics can be found under View > Statistics in the Entry Window.

### Tip



During a contest, if you are checking Statistics and a station comes back, just start typing. The statistics window will go to the background and every typed characters will go to the Entry window.

## In this Section...

### Statistics

1. General
2. Button Assignments
3. File Menu
4. Example statistics

## 1. General

The statistics window has the possibility to select almost all database fields from a contest in the row or column side of the statistics table. Many different statistics can be made this way. The database fields to select from are tabulated below.

Fields	Row	Column	Remarks
Band	Y	Y	
Operator	Y	Y	compare operators, only useful when running Multi-operator
Hour	Y	N	
RadioNr	Y	Y	only useful when using more than one radio
Mode	Y	Y	useful in mixed contests

CountryPrefix	Y	N	worked number of stations per country or mode
Zone	Y	Y	
Section	Y	Y	used in many domestic or local contests - may equate to province, oblast, ARRL section, etc., depending on the contest
CK	Y	N	2 digit number used in Sweepstakes, formally denoting the year first licensed
Prec	Y	Y	"Precedence" used in Sweepstakes to denote class of entry
Points	Y	Y	
Mult1	Y	Y	multiplier, or first multiplier in contests with more than one
Mult2	Y	Y	Second multiplier in contests with more than one
Mult3	Y	Y	Third multiplier where applicable
WPXPrefix	Y	N	prefix as determined by WPX rules
GridSquare	Y	Y	4-character of grid square
Run1Run2	Y	Y	useful when doing SO2R
MiscText	Y	N	Contest specific information
ContactType	Y	Y	Blank = qso, "D" = dupe, "N" = non-workable station
Day	Y	Y	first or second day of the contest
Mult & Band	Y	Y	
Exchange1	Y	Y	Use in some contests (like WAE to show QTCs)

### Note

Old contests may not have valid values in fields that have been added since the contact was logged. The number of contacts shown on screen and printed on the summary sheet are without dupe contacts.

## 2. Button Assignments

- **Row** - Select a row field.
- **Column** - Select a column field.
- **Refresh** - Refresh the contents of the table. The statistics are not automatically updated when a contact is logged/changed/deleted.
  - The statistics window is refreshed when changing contests.

### 3. File Menu

- **Print** - Print the statistics table to a printer. Font can be set by user.
- **Print to File** - Print the statistics table to a file.

### 4. Example statistics

Here are some examples|

Row	Column	Usage	Description
CountryPrefix	Band	Always	QSOs per country per band
Hour	Operator	Multi User	QSOs per hour per operator
Band	Operator	Multi User	QSOs per band per operator
GridSquare	Band	Grid contests	QSOs per gridsquare per band
Band	Exchange1	WAE and some other	Show RQTC & SQTC info

Date	Hour	Total	N1MM	PA1M	PA1T
2003-10-25	0	55			
2003-10-25	1	125			
2003-10-25	2	39			
2003-10-25	3	48			
2003-10-25	4	12			11
2003-10-25	5	21			18
2003-10-25	6	14			
2003-10-25	7	46			31
2003-10-25	8	90			18
2003-10-25	9	100			
2003-10-25	10	97	31		
2003-10-25	11	163	139	21	
2003-10-25	12	151	7	7	
2003-10-25	13	96	9	1	
2003-10-25	14	70	20		47
2003-10-25	15	80		48	24
2003-10-25	16	114		35	
2003-10-25	17	149			
2003-10-25	18	85			1
2003-10-25	19	121			
2003-10-25	20	77			
2003-10-25	21	42			

Date	Hour	Total	PA1M	PA1T	PE90X
2004-05-01	14	76	12		64
2004-05-01	15	47			47
2004-05-01	16	46		16	30
2004-05-01	17	42			42
2004-05-01	18	46	7	39	
2004-05-01	19	27	20		7
2004-05-01	20	30	6		24
2004-05-01	21	26	18		8
2004-05-01	22	32		10	22
2004-05-01	23	20		20	
2004-05-02	0	5		5	
2004-05-02	4	20	20		
2004-05-02	5	18	15		3
2004-05-02	6	38			38
2004-05-02	7	23	4		19
2004-05-02	8	30	26		4
2004-05-02	9	42			42
2004-05-02	10	28	2	14	12
2004-05-02	11	24	16		8
2004-05-02	12	30		5	25
2004-05-02	13	25		25	
Total	All Hours	675	146	176	353

### Visual Dupesheet

## Example Visual Dupesheet



The Visual Dupesheet is a quick way to determine if a station is a dupe without having to enter the callsign in the program. The calls already worked will be indexed much like a paper dupesheet that is organized by callarea and suffix. The Visual Dupesheet is especially useful for short, high speed contests like the NA Sprint. It is closely patterned on the Visual Dupesheet used by TR Log.

- Each VFO/Radio/Bandmap has its own Visual Dupesheet. The VFO/Radio A sheet displays all of the contacts for the band VFO/Radio A is on. VFO/Radio B does the same for whatever your VFO B/Radio is set to even if you don't (or cannot) use VFO B.
- The columns signify call areas. If a call area exceeds the number of calls that will fit it will overlap into an adjacent column with some dash lines to differentiate.
- Each call area is sorted by **suffix**.
- To see the dupe sheet for any band, set your radio to that band.
- To check for a dupe, first look for the call area column, then look up the suffix, then the prefix.
- If you don't want both windows open, close one, position the other where you want it and then use Tool > Save Window Positions. The next time you start the program only one window will open.
- Unless you can copy RTTY in your head, you do not need the Visual Dupesheet for RTTY contests. Obviously RTTY calls will tell you they are dupes or not as soon as they print.
- The Visual Dupesheet can hold a maximum of 800 stations per band. Going above this limit will give a warning . Depending on computer speed and configuration, users may experience noticeable delays when using the Visible Dupe Sheet with logs containing more than 300 calls. Performance with 600 callsigns is acceptable with a 2.6 GHz computer running only Logger.
- Right-clicking on the gray area at the right of the Visual Dupesheet allows selection of a small or large font size.
- There are no menus in this dialog.

What is the usefulness of the Visual Dupesheet?

By Steve, N2IC

First, let me say what this feature is not: It is NOT intended to be a step towards paper (or electronic) dupe sheet submission. A paper dupe sheet is an obsolete artifact of the pre-computer logging era.

Now, I'll be perfectly honest about the utility of the Visual Dupesheet. I have been a user of TRLog for many years, as well as a fan of the NA Sprint contest. To do very well in an extremely fast-paced contest, like the NA Sprint, you have to minimize the amount of non-productive time. Any time you

are not actually making a QSO is non-productive time. As you tune around a band, looking for new stations to work, you need a really fast way to determine if a station that you hear is a dupe. The fastest way to do this is to use only your brain. Some contesters have an amazing ability to keep their dupesheet completely "in their head". For the rest of us, we typically reach for the keyboard and type the call into the entry window. As soon as you do this, N1MM Logger instantly tells you whether it's a dupe. Excellent. However, some of the NA Sprint operators who use TRLog have found an even faster way to check for a dupe - using TRLog's Visual Dupesheet feature. As you tune the band, you keep your eyes focused on the Visual Dupesheet. It becomes second nature to scan the Visual Dupesheet. When you hear a non-dupe that you want to call, you don't even have to enter the call in the Entry Window, yet. Just hit the Enter key. If he/she comes back to you, you now have time to enter his/her call and exchange.

Obviously, in a contest where you work many, many stations on each band, this feature won't work - it takes too long to scan the Visual Dupesheet when it is crowded with calls. However, this is not the case with the NA Sprint. The winners work no more than 150 stations per band, making the Visual Dupesheet an ideal way to dupe check.

## Digital Modes

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  - 3 [Digital Setup](#)
  - 4 [Digital - MMTTY for RTTY support](#)
  - 5 [Digital - MMVARI for PSK and other modes](#)
  - 6 [Digital - Fldigi for Sound Card Modes](#)
  - 7 [Digital - External TNC Support](#)
- 

## General RTTY and PSK Information

### In this Section...

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#### [General RTTY and PSK Information](#)

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Digital mode contesting is growing rapidly. N1MM Logger supports digital mode contesting, not only RTTY but also other digital modes, with a flexible interface.

## 1. RTTY Information

This section contains some general information about operating in RTTY that is not directly related to N1MM Logger. If you are new to digital mode contesting in general and RTTY in particular, this information may be helpful. If you are an old-timer at RTTY, you can probably skip this section.

Before the spread of personal computers, RTTY was the most prevalent digital mode (other than CW, that is!), and was done using surplus teletype equipment - mechanical teleprinters. This equipment posed severe constraints on the RTTY mode that are still evident today. Despite these constraints, RTTY has proven to be quite well-adapted to contesting, and it is still by far the most common digital contesting mode.

More recently, these mechanical teleprinters have been replaced by other devices. The first of these terminal units were self-contained microprocessor devices (modems) that converted the 5-bit Baudot code used in RTTY into ASCII characters to be sent to a terminal (keyboard and CRT display). The most popular of these units were multi-mode TNCs (Terminal Net Controllers) that supported RTTY in addition to packet radio and other digital modes. TNCs are still in use today, and N1MM Logger supports the use of TNCs for RTTY.

However, with the advent of the ubiquitous sound card-equipped PC, it became possible to perform the modulation and demodulation directly in a personal computer, and the majority of RTTY today is done using a sound card in a PC. N1MM Logger, of course, also supports this method of modulating and demodulating RTTY and other digital modes, using a sound-card based digital-mode "engine".

An RTTY signal is a single carrier (like CW), but instead of being modulated on and off like CW, the transmitted power is kept constant, and modulation is imposed by changing the frequency by a preset amount; in amateur usage, the historical practice is to use a "shift" of 170 Hz. That is, RTTY is modulated using frequency-shift keying (FSK). The frequency shifting can be done either at RF, in radios which support this method, or at audio frequencies.

The first method (usually called FSK) requires an on-off keying signal to be applied to a keying input to the radio. This keying is very similar to CW keying, except that instead of turning the carrier on and off as in CW, closing the key input shifts the transmitter's frequency. FSK therefore requires an on-off keying interface between the computer and the radio, and the radio must have the internal circuitry required to perform the frequency shifting. Radios that support this FSK mode usually have other features that assist RTTY operators, such as specialized filtering.

The second method, using audio tones fed into an SSB transmitter which converts the tones to RF in exactly the same way that SSB converts audio voice frequencies to RF, is called Audio Frequency Shift Keying (AFSK). AFSK can be used with any SSB transmitter. Because the optimum filtering and other settings for RTTY operation are different from those for voice communication, some transceivers offer special AFSK or digital-mode modes, but fundamentally these are the same as SSB.

Digital modes are harder on transmitting equipment than CW and SSB because of the higher duty cycle (sustained periods of full-power transmitting). As a result, it is important not to overstress the transmitter. It is also important to take steps to avoid transmitting extraneous noises or spurious signals.

Here are some tips for RTTY setup and operation:

Hardware interfacing:

- Unless your radio has a USB Codec built in (e.g. IC7200 and 7600), in order to receive RTTY you will need to connect the audio output from your radio to the input of the sound card being used with your computer, or if you are using a TNC or TU, to its audio input (see the manual for your TNC/TU for details)
- To transmit:
  - For AFSK, you need to connect the audio output from your sound card or TNC/TU to an audio input on your radio (exception: radios with a built-in USB Codec), either directly or via a sound card interface
  - For FSK, you need a keying circuit from a serial port to your radio's FSK keying input. If you are using a USB-to-serial adapter, you will probably need to use the EXTFSK plug-in in MMTTY
  - For either AFSK or FSK, you need some way to control PTT (TX/RX switching). If you use PTT control from N1MM Logger in other modes, the same method can be used in digital modes. Alternatively, you can control PTT from a serial port with a keying circuit. In FSK, the same port can be used for PTT and FSK

On the radio make sure:

- Audio processing is **off**
  - Speech processing is **off**
  - Hi boost is **off** (Kenwood radios)
- If the radio does not have an RTTY-specific mode, it should be in **LSB mode**
  - RTTY-specific modes may also be called FSK, AFSK, LSB-D, PKT-LSB, ...
- The most often used speed is 45.45 Baud (60 words/min)
  - Some contests use 75 Baud (100 wpm)
- The standard shift is 170 Hz
  - Some TNCs use 200 Hz shift
- When using a TNC set 'Mark' to 2125 Hz and 'Space' to 2295 Hz
- Don't overrun your finals from the transceiver and/or amplifier
  - 50 percent duty cycle is mostly ok, but some transmitters may require reduced power in digital modes
  - See the [Interfacing](#) chapter for url's and tips on interfacing
- The BAUDOT character-set does not have all ASCII characters so some special characters such as (~ \* \_ @ # =)? can not be printed/transmitted
- During contests narrow filters are normally used (250 - 500 Hz)



## 1.1. Common RTTY Frequencies

Contests	USA (kHz)	USA (kHz)	Europe/Africa (kHz)	Japan (kHz)
<i>Common</i>	<i>Common</i>	<i>DX frequency</i>	<i>Common</i>	<i>Common</i>
1800 - 1810/1835 - 1845	1800 - 1810	1838 - 1843	1838 - 1843	
3570 - 3600	3580 - 3600	3590	3580 - 3620	3520 - 3530
7025 - 7100	7025-7050/7080 - 7100	7040	7035 - 7045	7025 - 7040
	10120 - 10150		10140 - 10150	
14060 - 14120	14080 - 14100		14080 - 14100	
	18100 - 18110		18100 - 18110	
21060 - 21150	21080 - 21100		21080 - 21120	
	24910 - 24930		24920 - 24930	
28060 - 28150	28080 - 28100		28050 - 28150	

## 1.2. General RTTY Information

There are two aspects of RTTY which are often confusing to newcomers to the mode.

The first of these is the "polarity" of the signal. In FSK, there are two frequencies, conventionally called "mark" and "space". In amateur RTTY, the mark frequency is the higher of the two RF frequencies. Someone who is transmitting with the opposite polarity is said to be transmitting "upside down". His signal will be gibberish at the receiving station, unless the operator there inverts his receive polarity. When first setting up for RTTY, if you appear to be unable to decode any signals you receive, try inverting your receive polarity (in MMTTY, use the "Rev" button; in MMVARI, switch between RTTY-L and RTTY-U settings).

In FSK, getting the polarity right involves arranging things so that the switching conventions (does closing the keying input result in mark or space?) match between the radio and the computer. Unfortunately, the switching conventions are not universal. Fortunately, almost all radios affected by this have a menu item in the radio to reverse the keying polarity. Once this option is set correctly, the radio's transmit RTTY polarity will be correct from then on. On receive, most if not all radios in FSK mode receive RTTY on the lower sideband. If software is used to demodulate the received signal, it must be set so that the lower of the two audio tones is converted to mark and the upper tone to space. This is the default configuration in software that supports FSK keying (like the MMTTY engine used in N1MM Logger). Note that in FSK, the transmit and receive polarities are determined independently, i.e. it is possible to receive correctly and yet to transmit upside down.

In AFSK, getting the polarity right involves coordination between the choice of audio frequencies

generated in the sound card and the choice of sideband on the radio. The most common combination is to use lower sideband on the radio, combined with an audio tone pair in which the mark tone is the lower of the two audio frequencies (e.g. the most common pair is mark = 2125 Hz, space = 2295 Hz). The use of the lower sideband inverts these tones at RF to match the standard amateur convention. Software that uses the opposite convention (mark tone higher than space) is used with the radio in upper sideband. Fortunately, once the receive polarity is correct in AFSK, the transmit polarity will also be automatically correct.

The second sometimes puzzling aspect is related to the RTTY character set. The digital code used in RTTY predates the ASCII code used by modern computers. Instead of 8 bits, which allows for 256 different characters, the Baudot or Murray code used in RTTY has only 5 bits. This 5-bit code only has enough different characters for 26 letters plus 6 control codes, so to get numbers and punctuation the text has to be preceded with a special "FIGS" character (one of the 6 control codes) to get a second set of 26 characters (10 numbers plus 16 punctuation marks). FIGS is "sticky", so there is another special "LTRS" character to switch back to the letters case.

Just like any other character, these FIGS and LTRS characters can be damaged by noise, QRM, QSB, etc., and if they are, the received info is displayed wrongly until the next LTRS or FIGS character (or in some situations, the next space character) comes along and sets things right. Sometimes the opposite happens - a text character is converted by noise into a FIGS or LTRS code, with similar results.

The most common problem that results is numbers being printed as letters, so with a bit of experience, many RTTY operators will get used to interpreting TOO as 599 and UE as 73. Serial numbers are slightly more difficult; PQW in the input data is most likely 012, and so on. You can see which letter corresponds to which number by comparing the top (QWERTY) row of letters on the keyboard with the numbers immediately above and to the left. Letters can also be printed as numbers and punctuation; for example, CQ TEST when converted to FIGS case becomes :1 53'5 .

Various software has different ways of helping out with this. When you run MMTTY stand-alone, if you right click on a "word" (delimited by spaces), the entire word changes to the opposite case. So, for example, VE4AEO is changed to ;3R-39 and vice versa. N1MM's digital window has a box titled Letters/Figs for opposite-case display, that shows text that the mouse "hovers" over (no click necessary) in the opposite case. This requires you to move the mouse over the text that you want to convert; the unconverted text is displayed in the MouseOver box.

 **Unshift on Space**

There is a common feature called Unshift on Space (UOS or USOS) whose purpose is to deal with the lost {FIGS}/{LTRS} problem. It was designed for normal text, where the majority of information is alphabetic.

MMTTY has two UOS options. One of these is a button on the MMTTY main window that affects what you see in the receive window; the other is a setup option (under the Tx tab in the MMTTY setup) that affects what you transmit.

The receive option in the main window simply changes the receive window's case back to {LTRS} at the beginning of every new "word", i.e. after a space, unless of course the new "word" starts with {FIGS}. This takes no extra time, but improves reliability of receipt of alphabetic text.

The transmit option, on the other hand, actually transmits extra {FIGS} characters at the beginning of every numeric "word" to try to ensure greater reliability. It does not transmit an extra "LTRS" at the beginning of every alphabetic word, because using UOS on receive is a more efficient way to achieve the same end result.

When you are ragchewing, you should always use UOS on both receive and transmit. UOS assumes that the majority of "words" are alphabetic, which is true of normal text.

During contests, the receive UOS option is still helpful, especially when the exchange includes letters, and it does not cost anything. The N1MM Logger DI window's "Letters/Figs" line can be used to deal with those cases where receive UOS converts an intended numeric field to letters.

The transmit UOS option achieves greater reliability of numeric exchanges at the cost of some extra {FIGS} characters. If you are concerned about the slight speed penalty it imposes, you can leave transmit UOS on and use dashes ("-") instead of spaces between all-numeric fields, e.g. 599-123-123 . The downside of using dashes in this way is that if the initial {FIGS} character is lost, the entire exchange will be in the wrong case, e.g. TOO AQWEAQWE. Sending spaces with transmit UOS on costs two extra {FIGS} characters but is more reliable (our example with an initial lost {FIGS} character becomes TOO 123 123). On the other hand, turning transmit UOS off results in 599 QWE QWE in any receiver using UOS, even with no errors at all. A compromise among all of these possibilities is to turn transmit UOS on and use a hybrid exchange: 599-123 123 (a dash instead of a space after the signal report, but spaces after that). A single {FIGS}/{LTRS} error will not prevent at least one copy of the exchange from being decoded correctly regardless of whether the receiving station is using UOS or not.

## 2. PSK Information

### 2.1. General PSK info

PSK31 (and its higher-speed versions, PSK63 and PSK125) is an example of a "sound-card digital mode", i.e. a digital mode that was made possible by the use of sound cards in PCs. The advent of sound cards in PCs made these sound-card modes available for anyone to use with a minimum of expense. All that is needed is an SSB transceiver, an audio interface (which can be as simple as patch cables, or can include isolation and attenuation controls) and a means of controlling PTT.

Conventionally, sound-card digital modes are communicated using USB, regardless of the band. Many PSK31 users set their radio's dial to a standard frequency (14070.0 kHz is the most common) and then look for signals anywhere within their SSB filter bandwidth (e.g. from 250 Hz to 2750 Hz or so, which would correspond to transmitted frequencies from 14070.25 kHz to 14072.75 kHz). PSK31 signals are narrow-band, so there can be many different PSK31 signals simultaneously copyable within the available frequency range without changing the radio's dial setting. Tuning is often done simply by clicking on the desired signal in the waterfall display.

PSK31 is short for "Phase Shift Keying, 31.25 baud". There are also higher-speed versions, PSK63 (62.5 baud - seen fairly often) and PSK125 (125 baud - rare). Actually, in addition to using phase shift keying for modulation, PSK31 also uses amplitude modulation ("waveform shaping") to minimize the bandwidth occupied by a signal. As a result, PSK31 places great requirements on the linearity of the equipment used, from the sound card generating the signal to the transmitter, and also the receiver. The peak power of a PSK31 signal can be approximately twice as high as the average power. If a transmitter is operated near its power handling capacity, it can clip these peaks, resulting in "splatter", which shows up on the waterfall as extra "tracks" in addition to the two main modulation tracks that are normally visible. To avoid having this happen, the audio levels in the sound card and in the transmitter's input audio stages must be controlled to avoid reaching power levels that would result in clipping. In most transmitters, this is equivalent to keeping the power below the level that would result in ALC action, and often this means powers below approximately half the transmitter's maximum power rating.

Standard PSK31 (sometimes also called binary phase shift keying, or BPSK31) is sideband-independent. There is a rarely-used variation called QPSK31 (or QPSK63 for the 62.5 baud speed) that uses four phases instead of two (quadrature phase shift keying). This allows for some error correction while still delivering the same text speed. QPSK31 is sideband-dependent, i.e. the transmitting and receiving station must both be using the same sideband in their radios (by convention, upper sideband).

PSK31 works well even at low powers. In fact, once the transmitted power is sufficiently high to give an acceptable level of copy, there is no advantage to be gained by increasing power further. Unlike analog modes, where increasing power may make your signal louder relative to QRM and therefore easier to copy, increasing the power in PSK31 does not improve your signal's readability. It can even degrade copy by overloading the other station's receiver and creating splatter within the receiver. More importantly, a very strong signal will affect the AGC in every receiver that picks it up, causing the receiver gain to decrease and making copy of signals on other frequencies more difficult. For this reason, high-power operation is unpopular in PSK31.

When you plan to run PSK:

- Keep your macros short.
  - PSK is about 1/3 slower than RTTY; you can really impact your rates with wordy macros

- Use lower case letters wherever possible
  - PSK is a varicode mode. That means that characters contain a variable number of bits, unlike ASCII characters that have a fixed number of bits. Most lower-case PSK characters have fewer bits in them than their upper-case equivalents, so lower-case (in general) transmits faster

On the radio make sure:

- Audio processing is **off**
  - Speech processing is **off**
  - Hi boost is **off** (Kenwood radios)
- Radio should be in **USB** mode
  - Some radios have modes designed for digital sound card modes, e.g. PSK, DATA A
- Transmitter linearity is extremely important in PSK
  - Keep power below 1/2 the transmitter rating to avoid clipping peaks
  - Avoid any visible ALC action (except in radios with ALC designed for PSK, e.g. Elecraft K3)
  - See the Interfacing section of this help for url's and tips on interfacing
- Using lower case letters instead of all caps will increase speed and reduce TX time
- Only 100 Hz is needed as channel separation
- Example filter usage:
  - Available 2.4 kHz / 250 Hz / 100 Hz filter bandwidths
  - 2.4 kHz is used for monitoring the PSK area of band when in search and pounce mode
  - 250 Hz and 100 Hz filter bandwidths are used when in run mode

## 2.2. Common PSK and Digital Frequencies

PSK31 activity generally starts from the bottom edge of the IARU RTTY bandplan, expanding upwards as activity increases.

Band	Digital Frequencies (kHz)	PSK Frequency (kHz)	Remarks
160 meter	1800 - 1810 / 1838 - 1843	1807 / 1838	1807 in Region 2
80 meter	3575 - 3585	3580	
40 meter	7030 - 7040 / 7060 - 7085	7035 / 7080	7080 in Region 2
30 meter	10130 - 10145	10142	WARC, no contesting
20 meter	14065 - 14090	14070	
17 meter	18100 - 18110	18100	WARC, no contesting
15 meter	21060 - 21090	21080	
12 meter	24920 - 24930	24920	WARC, no contesting
10 meter	28110 - 28125	28120	

## Digital Overview and Features

### In this Section...

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#### Digital Overview and Features

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The digital part of the N1MM logger program is designed, coded and maintained by Rick Ellison, N2AMG.

### 1. Digital Overview

N1MM Logger supports a variety of methods to decode and transmit digital modes, including an external TNC/TU; the **MMTTY** engine for RTTY (sound card on receive, either sound card AFSK or FSK keying on transmit); the **MMVARI** engine for RTTY (AFSK or FSK, starting with Logger version 10.9.5), PSK31, PSK63, PSK125 (both BPSK and QPSK), and MFSK16; or the **Fldigi** engine for a broad range of sound-card digital modes including AFSK RTTY, PSK and many more. Regardless of which of these engines is used, the digital data streams pass to and from the engine via the Digital Interface (DI) window. At least one DI window must be open to operate the Logger in digital modes. Depending on your hardware configuration and operating mode, you may have either one (SO1V, SO2V) or two (SO2V, SO2R) DI windows open. Both DI windows have full receive and transmit capabilities. It is also possible to supplement the two DI windows with up to four additional receive-only windows. The user can interact with the DI windows using either the keyboard or the mouse as the primary control interface. There is a wide variety of options available to customize the operation of the digital interface.

The remainder of this section describes the operation of the DI windows, including basic operation as well as advanced features that can help make operation easier and more efficient. The next

section describes how to **set up** N1MM Logger and the DI Window for digital modes regardless of which type of digital engine is used. Engine-specific details are described in separate sections for each of the supported engines (**MMTTY**, **MMVARI**, **Fldigi** and **external TNCs**).

### **Problems?**

Check out the Digital Modes part of the Frequently Asked Questions (FAQ) of this Wiki.

## 2. Making QSOs

This section explains:

- How to make a Digital mode transmission
- Keyboard, Insert key and Mouse Assignments
- Function keys
- Macros

### 2.1. Make a Digital Mode Transmission

- Select 'Window | Digital Interface' and the Digital Interface will open. The Digital Interface window can be positioned and resized on your monitor as desired
- If an external TNC is used only the Digital Interface window is opened. When one of the sound card interfaces is chosen an extra window will appear: MMTTY, MMVARI or FLDIGI depending on which interface is selected in the DI window's Interface menu
- Left clicking on a call will grab the callsign. Right clicking on the RX and TX windows will show a menu (depends on a menu setting)
- Pressing Insert will Grab the highlighted call and sends Hiscall followed by the Exchange button
- Double clicking on a callsign in the callsign box from the Digital Interface sends that call to the Entry window
- A callsign is automatically highlighted if recognized by the program. Call signs are always recognized when they are both preceded and followed by a space. There is also an option to recognize call signs buried in garbage (without a leading or trailing space), provided that call sign is in the MASTER.DTA file

### 2.2. Digital Need to Know

- If the callsign in the callsign field in the Entry window is equal to the callsign in the received text, the call in the Entry window does not get placed into the call list.

#### **Staying Focus'ed**

Focus is automatically returned back to the Entry window when clicking a callsign in the Receive window

- Pressing Ctrl while single clicking on a call will force the call into the Entry window
- Click in the Entry window input field you want data to go to and then hold down the Ctrl key while clicking on that data. It will paste to the field you clicked into
- "-" separators between exchange elements are removed automatically
- CQ Repeat time starts
  - when using a sound card engine, from when the sending stops
  - when using an external TNC, from when the message begins, as there is no way to tell when the TNC finishes sending
- During transmit, callsigns are not grabbed from the receive window
- Linefeed characters (LF) in incoming text are replaced with Carriage Return (CR) characters

#### **Auto-CQ with a TNC**

To get auto-CQ to work correctly with a TNC set your repeat time to at least 9 or 10 seconds. It may need to be longer if you have a longer CQ macro. This will stop the TNC buffer from receiving the next string before it finishes sending the last one.

#### **Clear the TNC Transmit Buffer**

It is best to add the command that your TNC uses to clear the transmit buffer to the end of your Abort Macro. If not, the transmit buffer still holds the remaining characters that were left in the sent string and will get sent the next time the TNC sends.

#### **Stop Sending CQ**

When using a TNC turn off Config >Function Keys >Stop Sending CQ when Callsign changed. If not every time you stop an auto-CQ and you type a callsign in the box it will send the abort string to the TNC.

### 3. Tips for Making QSOs

Callsigns and exchanges are displayed in the Digital Interface (DI) window. This information can be transferred to the Entry window's Callsign field and exchange fields with the mouse, or it can be typed in manually the same as you would do in CW and SSB. Call signs recognized in the input stream are also placed in the Grab window, and can be transferred from there to the Entry window using the Grab button, the {GRAB} macro or Alt+G on the keyboard.



### 3.1. Using Hover Mode

- Hover Mode places the callsign in the callsign field in the Entry Window when you hold the mouse over a valid callsign. If you use this in combination with the 'Right click = Return NOT menu' option, you hover over the call then right click to plant the call and send your call; when the station comes back to you you click on the exchange to place it in the Entry Window. Right clicking again sends TU and logs the Q. Right click, left click, right click and you're done...
  - Note: Your own call is excluded from being picked up.
  - Hover mode is used in conjunction with the menu selection 'Rt Click = Return NOT menu' which will send a Return when right clicking in the DI RX window instead of displaying a pop up menu

### 3.2. The Rate Improver - *Right Click = Return NOT Menu*

Select from the settings menu in the Digital window "Right Click = Return NOT menu". This setting could improve your rate greatly as your hand never leaves the mouse except for the occasional difficult exchange. Making a qso:

- While in **Run** mode
  - **Right click** in the DI's RX window to **sends CQ**
  - When a station replies **left click** on the **call**
  - **Right click** sends your **exchange**
  - As he sends his **exchange left click** on it
  - **Right click** again to send **TU and log** the call
  - Right click again starts CQ (and you're back at the first bullet)
- In **S&P** it does the same thing as hitting **Enter to advance** thru the ESM mode

Right click takes the place of hitting Enter for ESM. Most of the time while in the contest I have one hand on the mouse and the other hand I have one finger resting on the space between the Esc and F1 keys. With that finger I can hit Esc if I have started a CQ and someone has started coming back to me. 73 Rick N2AMG

### 4. Do You Have... (what to check when it does not work)

Below are the most common mistakes made setting up or using N1MM logger in RTTY mode.

- Add {TX} and {RX} to each of the F Keys
- Set up Mode Control in the Configurer
- Select the DI type in the Configurer under the Tab: Digital Modes

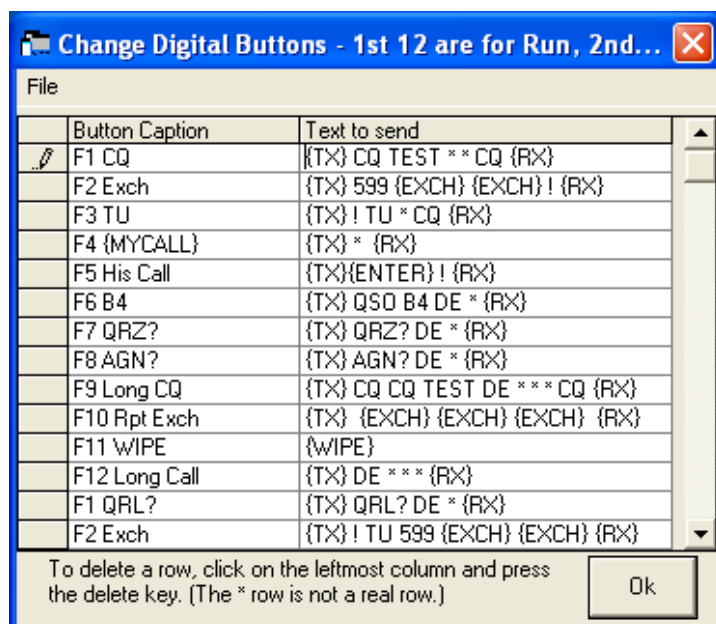
- When MMTTY selected: Set up the path to MMTTY in the Configurer under the Tab: Digital Modes
- Set up the Dig Wnd Nr in the Configurer under Hardware for Digital ports

#### 4.1. Insert Key Assignments

Mode	Enter Sends Message (ESM mode)	Ins key or ; does the following:
RUN and S&P	OFF	1. Grab Callsign from call list if callsign field empty otherwise use call in callsign field
		2. Prefills Exchange Boxes
		3. NO DUPE: Sends F5 (Hiscall) + F2 (Exchange) or DUPE: Sends Nothing
		4. Places cursor in next exchange field (Example: Sect)
RUN	ON	1. Grab Callsign from call list if callsign field empty otherwise use call in callsign field
		2. Prefills Exchange Boxes
		3. NO DUPE: Sends F5 (Hiscall) + F2 (Exchange) or
		3. DUPE
		— WorkDupes checked: Sends F5 (Hiscall) + F2 (Exchange)
		— WorkDupes not checked:Sends F6(Dupe)
		4. Places cursor in next exchange field (Example: Sect)
S&P	ON	5. Highlights F8 button
		1. Grab Callsign from call list if callsign field empty otherwise use call in callsign field.
		2. Prefills Exchange Boxes
		3. NO DUPE: Sends F4 (Mycall) or
		3. DUPE
		— WorkDupes checked: Sends F5 (Hiscall) + F2 (Exchange)
		— WorkDupes not checked:Sends F6(Dupe)
		4. Once exchange entered INSERT sends F5-F2
** Pressing INSERT again will continue to send F5-F2		
		5. Places cursor in next exchange field (Example: Sect)

## 4.2. Configuring the Entry Window Function Keys

- The Entry window function keys support 'Running' mode and 'Search & Pounce' mode.
- The function keys use the same macros for PSK and RTTY.
- The function keys can be changed under: 'Config | Change Packet/CW/SSB/Digital Message Buttons | Change Digital Buttons'.
- Below example button definitions:



## 4.3. Macro Keys

- There are 8, 16 or 24 extra macro keys possible on the RTTY interface
- A right click on the macro buttons brings up the Digital setup dialog where the macros can be configured
- These extra function keys support all the macros but don't support 'Running' mode and 'Search & Pounce' mode
- Include in your macros the control keys needed to turn on the TNC and switch to RX...
- Macro key substitution is supported by the buttons in the RTTY window and the function keys on the Entry window

The macros which can be used and some examples can be found in the [macros](#) reference section

There are several additional macros for an External TNC. Please check the [Digital - External TNC support](#) chapter. Also please check the rules for macros when using [MMTTY](#) and [MMVARI](#).

## 5. Name Lookup

The program has the possibility to lookup the name from a station entered in the Callsign field. For this to happen the following has to be done.

- Import a callsign versus name text file
  - The famous 'Friend.ini' file used in the WF1B program can be directly imported
  - Also a text file using the format for Call History import can be used
    - Callsign <comma> Name. For example: N1MM, Tom
- Select >Config >Call History Lookup
- Use the {NAME} macro to have the name sent
  - Note: The name is looked up in the Call History table with the cursor in the callsign field and pressing the Spacebar!

Example how to import the Friend.ini file from the WF1B program.

- Select >File >Import >Import Call History
- Select your 'Friend.ini' file by changing 'Files of type:' to 'All Files (\*.\*)'. Otherwise only text files will be shown!
- Select the 'Open' button. The callsigns with names from the text file will be imported
- NB. Importing info in this table will delete all previous content. There is no merge option! So if there is information in it and you only want to add info, first export this info (Select >File >Export >Export Call History) and merge the data outside the program with a Text editor like Notepad. After this import the new merged file 'Friend.ini' file
- The program will show in the bottom pane of the Entry Window status information during importing and afterwards the number of imported callsigns

## 6. Output RX Data to a Text File

Sending your RX data to a text file can be done in N1MM logger and in MMTTY.

- N1MM Logger: Right click in the RX window and select >Output to Text File (this choice is not available if you have selected the 'Right Click = Return NOT menu' option)
- MMTTY: Doing this in MMTTY is a bit tricky. Go to the directory where MMTTY has been installed and load MMTTY in standalone mode. Click on File/Log RX and close the program. From now on every time you start MMTTY either via the logger or in standalone mode an output text file will be created and all your info will be stored in this text file. In the directory where MMTTY is located files will be created that have names like 031103.txt. MMTTY creates a new file for each day. These files are a real safety feature as you can go back through them for any info you missed or lost during a crash.

## 7. Single Operator 2 Radios (SO2R)

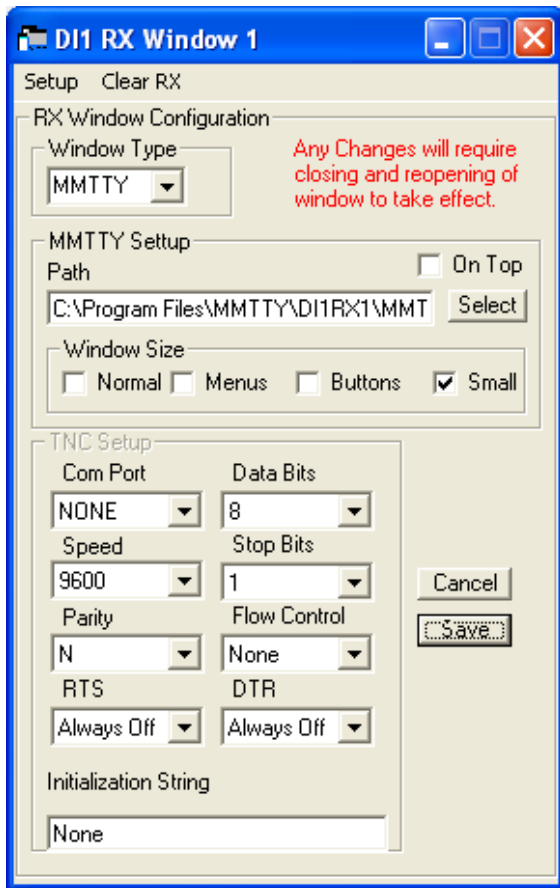
N1MM Logger also supports SO2R for RTTY. You can use any combination of either 2 MMTTY windows, 2 TNC windows or a combination of MMTTY and a TNC for SO2R operation. Info about MMTTY soundcard setup and SO2R can be found in the N1MM logger Help file in the [SO2R chapter](#).

## 8. Additional Receive-Only Windows for RTTY

N1MM Logger supports up to four additional receive-only windows for RTTY. The purpose of these windows is to allow simultaneous use of more than one decoding algorithm on the same audio input. While it is possible, by using wide bandwidth filters, to use the additional windows to decode different signals from the one in the main DI windows, the normal use of the additional windows is to decode the same signal as the one in the main window, but using a different decoding method to improve the overall ability to decode signals in difficult situations.

These receive-only windows can be distributed in any way between the two DI windows. These receive-only windows normally use additional copies of MMTTY, configured with different "profiles" (e.g. multipath, fluttered, different detection algorithms), or they can be used with additional TNCs or TUs. You can use any of the possible digital interface engines in the main DI window (MMTTY, MMVARI, Fldigi or a TNC/TU), but regardless of which engine is used in the main window, the additional receive-only windows can only use MMTTY or a hardware decoder.

The receive-only windows are invoked from the DI window's Setup > Open Add. Rx Window (4 Avail.) menu item - the number in the menu item indicates how many of these windows are unused and still available. The first time one of these windows is opened, its Setup window will be displayed.



The setup information that must be entered includes the engine type (MMTTY, TNC or Dxp38), the path to the copy of MMTTY for that window (if used), and/or the COM port information for a TNC (if used).

After the setup information has been entered, the window should be closed and re-opened, and then it will be available for use.

## Digital Setup

### In this Section...

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#### Digital Setup

1. Setup Overview
  - 1.1. Downloading and Installing MMTTY
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- 3.1. Selection: Soundcard as Interface
  - 3.2. Selection: OTHER
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    - 4.1. Tab: General/MMTTY Setup
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- 

## 1. Setup Overview

Setting up an interface involves configuring the Logger for the selected interface. Configuring has to be done within N1MM logger in a few places, including the Configurer as well as the Digital Interface window. If you are using MMTTY for FSK RTTY, you will also have to perform some configuration from within MMTTY. If you use Fldigi, there is some configuration that must be done from within Fldigi.

Before you can use MMTTY, you will have to download and install it. Likewise, before you can use Fldigi, you will have to download and install it. This process is described in the next two sub-sections. You do not need to download or install any additional files or programs to use MMVARI or a TU/TNC.

A brief note about hardware connections for sound card digital modes (using MMTTY, MMVARI or Fldigi). These depend on the radio, the sound card and the interface (if any) in use, and it is impossible to cover all of the possibilities in detail, but the following general comments apply.

First, you must have some means of connecting the radio's audio output to the sound card's input. The ideal connection would be from a fixed-level ("line out") output on the radio to a "line in" input on the sound card. If your radio has one receiver, this will probably use the left channel of the sound card; with dual receivers, the second receiver may use the right channel. If your sound card does not have a line level input, you may need to use a microphone input, and in this case you may need an attenuator to reduce the line level output from the radio to the lower level needed for the microphone level input on the sound card.

To transmit, there must be some means to convey modulation from the computer to the radio. For FSK RTTY, this is an on-off keying signal, which is normally generated by a serial port connected to the radio's FSK keying input through a simple keying circuit. This serial port cannot be the same port that is used for radio control or for a Winkey or other serial device. If it is a USB-to-serial adapter, you will probably need to use MMTTY's EXTFSK plugin. If you are using MMVARI for RTTY using FSK keying, select the appropriate plugin (FSK8250 for true serial ports, EXTFSK for USB-to-serial adapters) in the Configurer under the Digital Modes tab).

For AFSK RTTY and for all other sound card digital modes (e.g. PSK31), there must be a connection from the sound card's output ("line out", or speaker or headphone output) to the radio's audio input. If the only audio input on the radio is a microphone input, you may need attenuation to reduce the level to avoid overdriving the transmitter.

You also need some means to control TX/RX switching (PTT). The most common method is to use

hardware PTT control from a serial or parallel port via a simple keying circuit. Hardware PTT can be controlled either from the digital "engine" (MMTTY, MMVARI or Fldigi), or from N1MM Logger itself. To use serial port PTT from the digital engine, you must use a different port from the one that is used by the Logger for radio control. If you have a serial port set up for FSK keying, you can use a control line (RTS or DTR) on this same port for PTT control from the digital engine. If PTT is controlled from a digital engine rather than from the Logger, you should check the Digital box for that serial port in the Configurer and make sure to indicate the appropriate Dig Wnd Nr (1 for DI1, 2 for DI2).

If you do not have a separate serial or parallel port available for PTT in digital modes, you can control PTT directly from the Logger. For example, if your radio control interface supports PTT using RTS or DTR on the radio control serial port, you can configure the Logger to use this method. If no method of hardware PTT control is available and if your radio supports PTT via radio command, you can use software PTT control from the Logger. Warning: Using both software and hardware PTT control at the same time can cause problems; do not use both methods in parallel.

As an alternative to hardware and software PTT control, you may be able to use VOX. This does not work with all radios, it cannot be used for FSK RTTY, and setting of audio levels and VOX triggering levels can be tricky, but some users have found this to be the simplest method of PTT control, since it does not require any additional hardware connections.

## 1.1. Downloading and Installing MMTTY

MMTTY is not installed as part of the installation of N1MM Logger. It must be downloaded and installed separately. It is possible to use N1MM Logger in RTTY without using MMTTY (e.g. by only using an external TNC, or AFSK RTTY from MMVARI). If you intend never to use MMTTY, you can skip the rest of this section. However, most RTTY users will probably want to have the ability to use MMTTY, at least as an option. In particular, if you would like to make use of the additional RX windows for "diversity decode", you will most likely need to install MMTTY (unless you have several TUs/TNCs you can use for the purpose).

If you do not have a copy of MMTTY, then before continuing with the digital setup it is recommended that you download a copy of the MMTTY installer from the MM HamSoft website at <http://mmhamsoft.amateur-radio.ca/> . You can find a copy of the full installer for the current version of MMTTY at that website. This file is a self-extracting executable, similar to the N1MM Logger installer. Download the file to a temporary folder and then execute it. It is recommended that you install MMTTY in its own program folder and not in the N1MM Logger program folder. By default, the installer will install MMTTY to C:\Program Files\MMTTY\ .

If you already have a copy of MMTTY installed on your computer, you can use that copy from N1MM Logger. However, if you also use MMTTY stand-alone, it is possible that you may want (or need) to have a different setup for stand-alone use than with N1MM Logger (e.g. if you use the radio control port from within MMTTY stand-alone; this is not possible when MMTTY is used with the Logger). If you need a different setup with the Logger than the one you use stand-alone, then you should create a separate folder for each copy (for example, you can create a sub-folder inside either the



N1MM Logger program folder or the MMTTY program folder for the second copy of MMTTY). You need to copy only the MMTTY.exe and UserProfile.ini files from the main MMTTY folder into the additional folder. MMTTY will create a separate copy of MMTTY.ini when it is run.

If you plan to use two copies of MMTTY in SO2V or SO2R mode, one for each received audio stream, you will need to create two copies in separate folders with different configurations. In SO2V, one of these copies can be configured to use the left channel and the other copy to use the right channel of a single sound card. In SO2R, you can either use a stereo sound card as in SO2V, or you can use two separate sound cards, one for each radio.


If you want to use MMTTY for diversity decoding in additional RX windows, you will need to create another separate sub-folder for each additional RX window. For example, you can create sub-folders called DI1, DI2, DI1RX1, DI1RX2, DI2RX1 and DI2RX2 so that you can run up to six copies of MMTTY simultaneously; one for each main DI window, plus up to 4 additional RX windows (two additional windows for each DI window). Into each of these windows, you need only copy the MMTTY.exe and UserPara.ini files from the main MMTTY program folder created when you first installed it. Each copy will then be configured to use the appropriate sound card and channel. The "Additional RX" copies use the same sound card and channel as the parent copy in the main DI window, but they can be configured to use different decoding algorithms or profiles to give you "diversity decoding", i.e. two or three different decoding methods used on the same receive audio.

Note for users of Windows Vista and Windows 7: User Account Control (UAC) in these versions of Windows prevents user programs from writing configuration information into the Program Files path. Even if programs are run with Administrator privileges, UAC may interfere with the ability to use separate configuration files for separate copies of the same program. Therefore, it is suggested that the folders for the extra copies of MMTTY used in the two DI windows and the four RX windows should not be in the Program Files path. It is suggested that you create a new folder outside the Program Files path, such as C:\Ham Radio\MMTTY, and then place the individual sub-folders for the separate copies of MMTTY within that folder.

Once MMTTY has been downloaded and installed, you can proceed to use the Configurer to set up N1MM Logger to use it.

## 1.2. Downloading and Installing Fldigi

Fldigi is not installed as part of the installation of N1MM Logger. It must be downloaded and installed separately. It is possible to use N1MM Logger in RTTY and PSK contests without using Fldigi. Fldigi supports a wide range of other digital modes, but most of these are rarely used for contesting. If you intend never to use Fldigi, you can skip the rest of this section.

If you do not have a copy of Fldigi, then before continuing with the digital setup it is recommended that you download a copy of the Fldigi installer from the W1HKJ website at <http://www.w1hkj.com/>  . You can find a copy of the full installer for the current version of Fldigi at that website. This file is a self-extracting executable, similar to the N1MM Logger installer. Download the file to a temporary folder and then execute it. It is recommended that you install Fldigi in its own program folder and not in the N1MM Logger program folder. By default, the installer will install Fldigi to

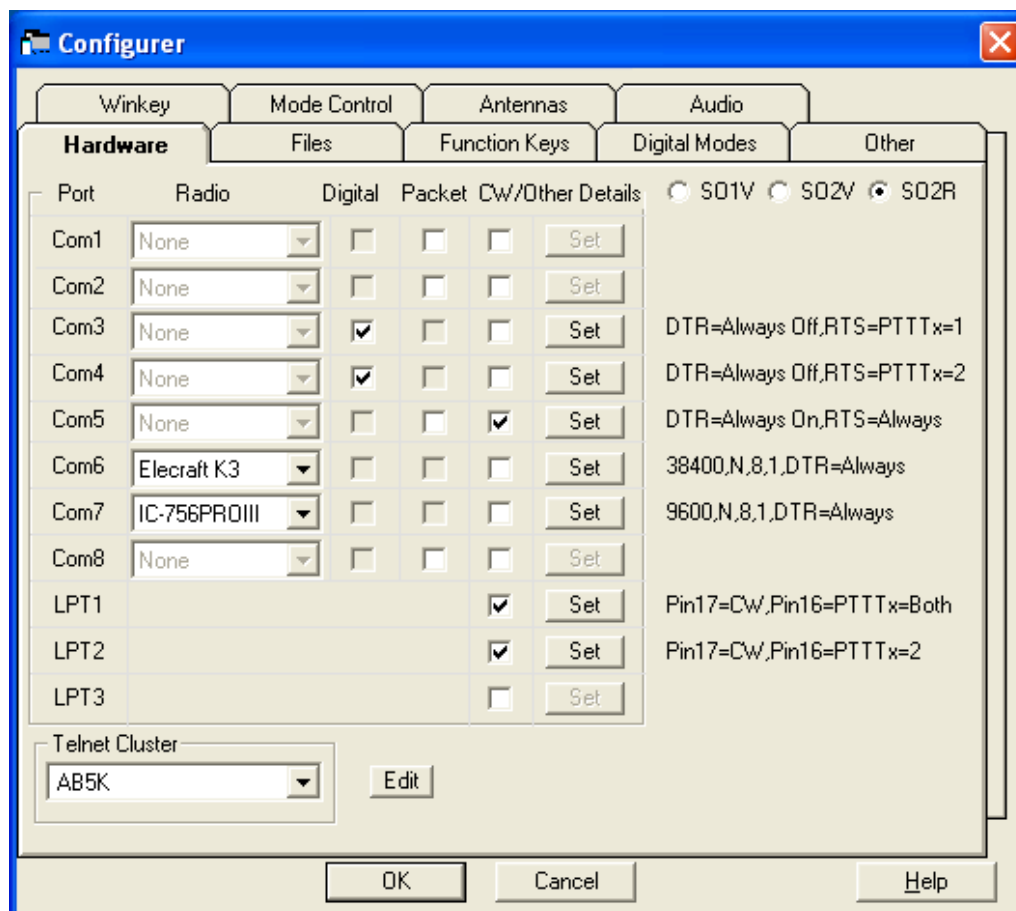
C:\Program Files\Fldigi-x.xx.xx\, where x.xx.xx is the Fldigi version number.

Note that Fldigi cannot be configured to use a single channel of a stereo sound card; Fldigi always uses its sound card in mono mode on receive. If you want to use Fldigi in a two-receiver configuration, either SO2V or SO2R, you will have to use two separate sound cards. You will also need to install two separate copies of Fldigi in separate folders, one for each DI window, in order to be able to configure each one for a separate sound card. It is suggested that you do a full install for each copy, but do not create Start menu or Desktop shortcuts for the second copy. As with MMTTY, users of Windows Vista and Windows 7 may find it necessary to install one or both of these copies outside the Program Files path.

You do not need to install separate copies of Fldigi for additional RX windows, because this feature is not implemented for Fldigi or MMVARI engines, only for MMTTY and hardware TUs/TNCs.

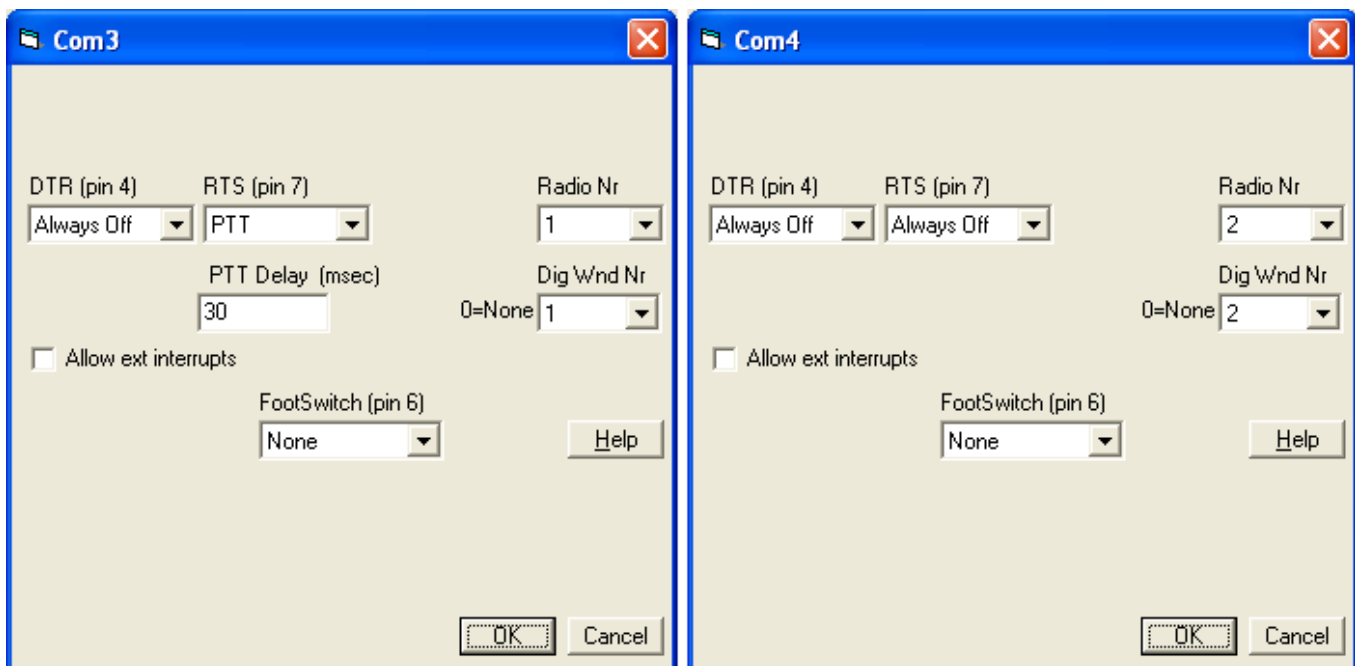
### 1.3. Setting Up the Configurer

There are three tabs in the Configurer that need to be set up when configuring N1MM Logger for digital modes. The first is the Hardware tab, where serial ports used for digital modes are set up.



- The **Digital** box in the main Configurer window indicates to the Logger that this port is used for digital mode control.
  - Use this to indicate a port that is used for an external TNC

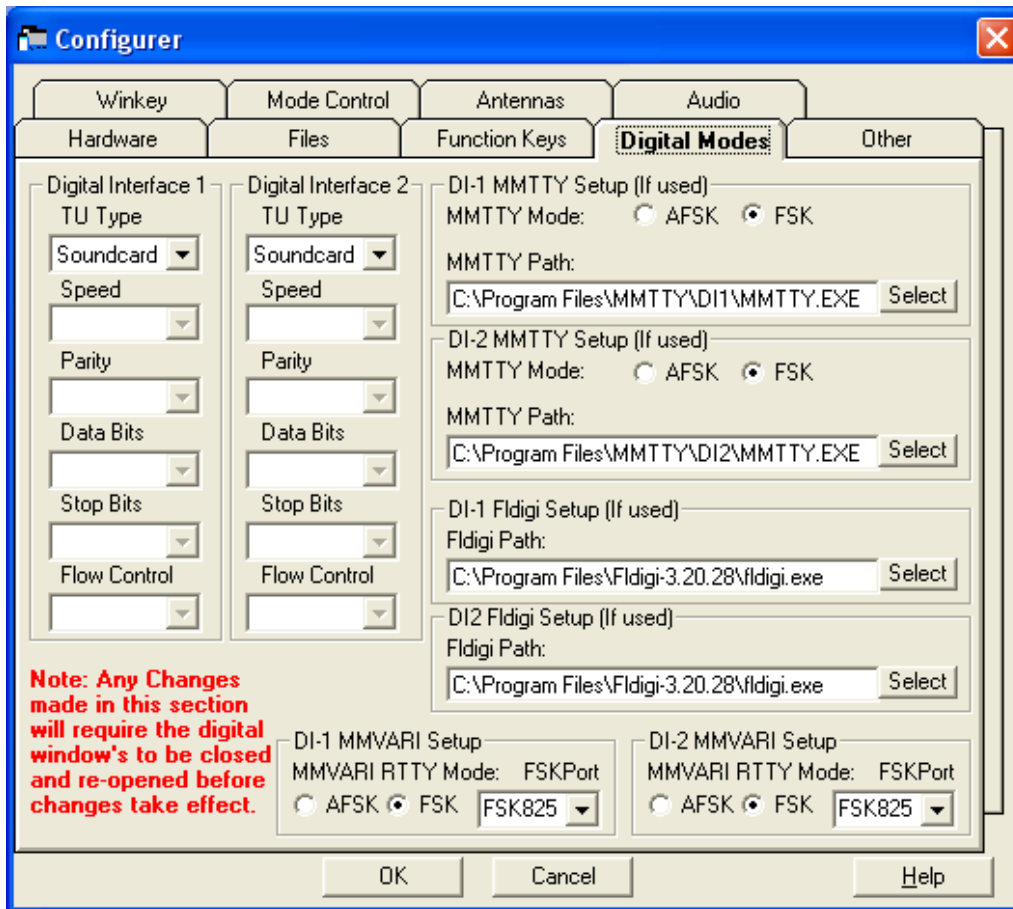
- Use this to indicate a port that is used for FSK keying with MMTTY
  - A port that is used for FSK must also be configured inside the MMTTY setup. This includes ports used with EXTFSK
  - It is possible to use a port in the range COM9-COM16 for FSK with MMTTY. In this case, there is no **Digital** box to be checked; the port must be configured entirely within MMTTY
- Use the **Digital** box to indicate a port that is used for PTT in AFSK RTTY or other digital modes with MMTTY, MMVARI or Fldigi
  - Exception: If PTT is done from a radio control port or from a Winkey, do not check the Digital box for that port
  - It is possible to share a port for both serial port CW keying (e.g. on DTR) and for PTT and FSK using MMTTY for RTTY (e.g. on RTS and TxD of the same port). In this case, check both **Digital** and **CW/Other** for that port. When in CW mode, the settings in the DTR and RTS boxes will determine how the port is used; in RTTY, it will be the settings in MMTTY that determine how the port is used



In the **Set** window for each of these serial ports, the radio and the DI window associated with the port is configured.

- The **Radio Nr** box indicates which radio this digital interface is for in SO2R mode; in SO2V and SO1V, **Radio Nr** is always = 1
- The **Dig Wnd Nr** indicates whether this port is used for DI1 or DI2. This applies to SO2V and SO2R; in SO1V, **Dig Wnd Nr** is always = 1
  - You must choose a **Dig Wnd Nr** for each port that has the **Digital** box checked; otherwise the program will not assign the port to a DI window!

The next tab to be set up is the Digital Modes tab.



- **MMTTY** (if used)
  - **Digital Interface 1/2** (left part of window)
    - **TU Type:** Soundcard
  - **DI-1/2 MMTTY Setup** (upper right part of window)
    - **MMTTY Mode:** Select AFSK or FSK
    - **MMTTY Path:** Select path to MMTTY.EXE
      - The path does not need to be in the N1MM Logger program directory
      - The paths for the two DI windows do not need to be the same

### **SO2V/SO2R in MMTTY**

You can use MMTTY with both receivers in a two-receiver setup with a single sound card. You will need to install two copies of MMTTY in two separate program folders in order to allow one copy to be configured to use the left channel of the sound card and the other copy to be configured to use the right channel of the sound card.

- **MMVARI** (if used)
  - **Digital Interface 1/2** (left part of window)
    - **TU Type:** Soundcard
  - **DI-1/2 MMVARI Setup** (bottom part of window)
    - **MMVARI RTTY Mode:** Select AFSK or FSK

- **FSKPort:** (FSK only)
  - Choose **FSK8250** if you are using a true serial port or a device that can simulate a serial port and handle 5-bit codes at low speeds (this does **not** include most USB-to-serial adapters, but it does include some commercial interfaces designed to support FSK RTTY as well as some multi-port USB-to-serial adapters)
    - When MMVARI is opened for FSK RTTY, a small window labelled MMVARIFSK1 1.04 will open, or appear on the Windows Task bar. In this window you select the COM port number and the signal line to be used for PTT (RTS or DTR). FSK keying will be done on the TxD line. If this is a USB device that simulates a serial port, check **Limiting speed**. You can use the \_ box at the top right to minimize this window after completing the setup
    - FSK8250 supports all of the RTTY speeds supported by MMVARI and the selected COM port or device
  - Choose **EXTFSK** if you are using a regular USB-to-serial adapter
    - When MMVARI is opened for FSK RTTY, a small window labelled EXTFSK 1.06 will open, or appear on the Windows Task bar. In this window you select the COM port number and the signal lines to be used for FSK keying (normally TxD) and PTT (RTS or DTR). You can use the \_ box at the top right to minimize this window after completing the setup
    - The only RTTY speed supported by EXTFSK is 45.45 baud

#### **SO2V/SO2R in MMVARI**

You can use MMVARI with both receivers in a two-receiver setup with a single sound card. In the DI Window's Digital Setup dialog box under the MMVARI Setup tab, simply configure the DI1 SoundCard to use the left channel and the DI2 SoundCard to use the right channel.

- **Fldigi** (if used)
  - **Digital Interface 1/2** (left part of window)
    - **TU Type:** Soundcard
  - **DI-1/2 Fldigi Setup** (lower right part of window)
    - **Fldigi Path:** Select path to fldigi.exe
      - The paths for the two DI windows do not need to be the same

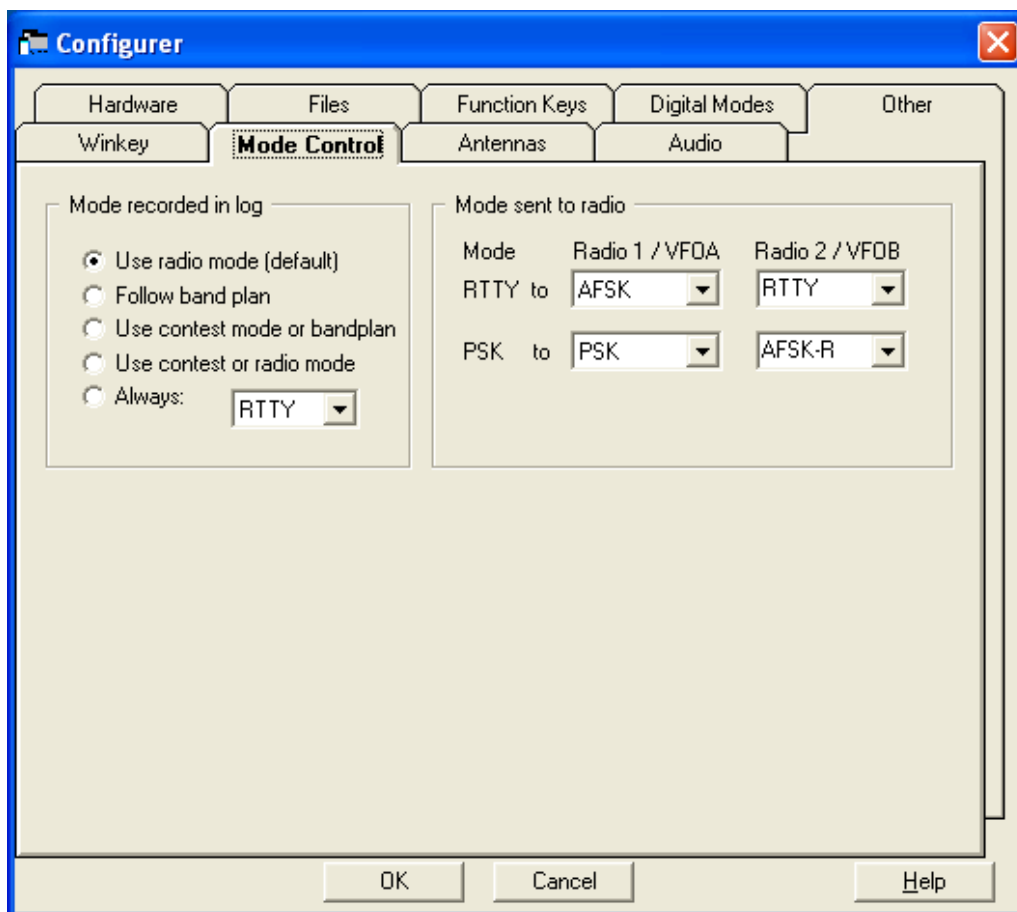
#### **SO2V/SO2R Limitation in Fldigi**

There is a basic limitation in the Fldigi engine which can make it harder to use in dual-receiver situations (SO2R and SO2V). Fldigi always receives in mono mode. If you are using a stereo sound card to decode two receivers, with one receiver in the left channel and the other receiver in the right channel, Fldigi will combine the two receivers in its waterfall. It doesn't matter whether Fldigi is the interface engine in DI1 or DI2, it will see the audio from both receivers.

Therefore, if you want to use Fldigi with both receivers in a two-receiver setup, you will need to use two separate sound cards for the two receivers. You will also need to install two copies of Fldigi in two separate program folders in order to allow a different sound card to be configured in each copy.

- **External TNC** (if used)
  - **Digital Interface 1/2** (left part of window)
    - **TU Type:** Other
    - Set other parameters appropriately for the TNC in use (Example settings: 9600, 8, N, 1, Xon-Xoff)

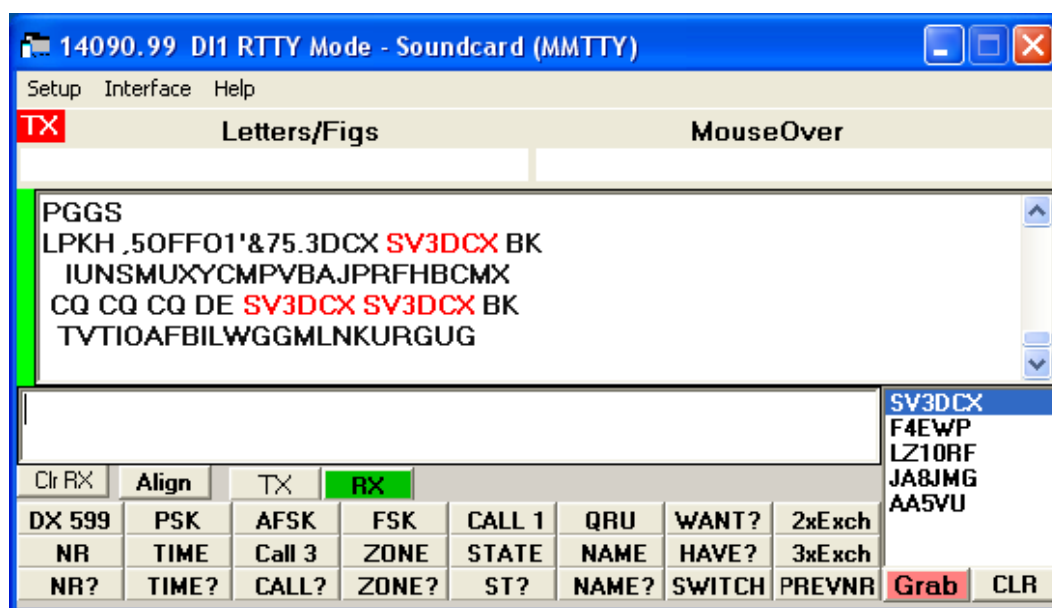
The third tab to be set up is the Mode Control tab, which determines what mode the radio will be set to use in RTTY and PSK.



The available choices in the list boxes under **Mode sent to radio** will depend on the particular radio type. For FSK RTTY, the correct choice will normally be RTTY. For AFSK RTTY, depending on the radio the appropriate choice might be AFSK or LSB/USB. For PSK and other sound card modes, the radio mode would be PSK (if available), AFSK-R (on some radios) or USB on most radios. For more information, see the [Configurer](#) page under the Config > Mode Control tab.

## 2. The Digital Interface - Window

The Digital Interface window is nearly the same regardless of which type of interface (MMTTY, MMVARI, FLDIGI or TNC) is being used. Its appearance (foreground and background font colors) can be customized using the Settings > Setup menu item.



The Digital Interface is opened from the Entry window's Window > Digital Interface menu item. If you are using two entry windows (SO2V/SO2R), each entry window has a separate DI window associated with it - DI1 with the VFO A/Radio 1 Entry window, and DI2 with the VFO B/Radio 2 Entry window. Each DI window is opened from its corresponding Entry window's menu bar.

The Digital Interface caption displays either the offset frequency (radio's dial frequency +/- audio frequency) or the radio's dial frequency, depending on what you have chosen in the Digital Setup.

- **TX** - Indicator to show which window has transmit focus (useful when using two sessions like SO2R)
- **Letters/Figs** - Shows the text under the mouse in reverse case (letters/figures switched)
- **MouseOver** - Shows the text under the mouse; this is the text that would be selected by a mouse click
- **Top RX window** - This is the receive window. This is the window used for making QSOs. There are 2 ways of placing a callsign into the callsign window of the Logger. You can single click on a callsign and it will transfer over to the main logging window, or, whenever a callsign is detected in the RX window it will be sent to the callsign grab window for easy movement to the logging window by clicking the Grab button. By clicking on the colored bar on the left you

can pause input to the receive window to scroll back through the (last 2000 lines of) text using the scroll bars. When the window is paused the color of the bar will turn Yellow. To turn input to the window back on click in the bar again and everything that was to be printed to the window will now enter the window. When the receive window is paused it is possible to select and copy text in the window.

- **Bottom TX window** - This is the transmit window, a free form typing window. If you click on the TX button the cursor will be placed into this window and what ever is typed will be sent. The size is static and doesn't change size (2 lines). For TNC users: when not transmitting, anything typed in the TX Window will be sent to the TNC. Used to change settings etc.
- **Callsign Textbox and Grab** - When a callsign is encountered in one of the receive windows it will be placed in this textbox and when you press the Grab button it will transfer the callsign over to the main Entry window. The grab callsign window holds the last 10 callsigns seen in the RX window. The most current one is at the top and is highlighted. Dupe callsigns will not be shown in the grab window. The Sort Order in the grab window can be selected by right-clicking; you can choose either Last In First Out or First In First Out as the sort order

#### **Callsign not added to grab List**

If the callsign in the callsign field in the Entry window is the same as the callsign in the received text, the call in the Entry window does not get placed into the grab call list.

- **Macro buttons** - These buttons on the Digital Interface are (max.) 24 extra macro buttons for preprogrammed messages. Configuring these macro buttons is done in the Digital Interface window under 'Setup | Settings' or by right clicking on them which brings up the Digital setup dialog. The macro buttons widths dynamically adjust in relation to the width of interface
- **Clr RX** - Clear the receive window (also possible using the right click menu)
- **Align** (MMTTY and Fldigi only) - This is used to move the signal that you are copying into the pass band of your filters. Set the frequency in the setup area. For example, if your filters are centred on 2210 Hz, RTTY signals close to the 2125/2295 Hz pair will be copied well, but signals at higher or lower frequencies may not make it through the filters. If you click on such a signal to decode it, it may not decode very well. After clicking on the signal, if you click on the Align button your transceiver will be retuned to line the signal up on the configured frequency. This is essential in FSK where the transmit frequencies are fixed in the radio, and useful also in AFSK if you want to use narrow filters
  - Note that when you are using the MMVARI interface engine, the Align button appears on the MMVARI window instead of on the Digital Interface window
- **TX** - Start the RTTY transmission, the transceiver is keyed. Will be colored Red when transmitting
- **RX** - Stop the RTTY transmission - the transceiver changes back to receive. Will be colored Green when in receive
- **AFC** (MMTTY only) - Can be used to turn MMTTY's AFC on or off (colored background means AFC is on)
- **HAM** (MMTTY only) - Restore the MMTTY frequency and shift settings to the HAM default
- **Lock** (Fldigi only) - Locks the transmit frequency at the current location. If you move the receive frequency, e.g. by clicking elsewhere in the waterfall, the transmit frequency does not change. Used for operating split
- **Rev** (Fldigi only) - In sideband-sensitive modes like RTTY, reverses the tones (e.g. opposite sideband)



- **Grab** - Transfer the selected callsign in the Callsign textbox to the callsign field on the main logger window. Once the callsign is filled, whatever you click on next will fill the next box to have info entered in. When the Digital Interface is in transmit, calls are not added to the Grab window
- **CLR** - Clear the Grab list

## 2.1. Callsign coloring

When a callsign is recognized in the receive input stream the callsign will be colored and brought to the Grab window. Valid callsigns that are separated by spaces are always recognized, and optionally the Search routine can be used to search for known call signs from the Master.dta file in garbage text strings. When the search in garbage text is enabled and two calls are found in the same string, only the last one gets highlighted. Also, if the call sign being copied contains a shorter call sign that is in the Master.dta file, using the search in garbage feature may result in the shorter call sign being recognized instead of the longer one. The highlighted calls in text strings are clickable.

If the "Use Generic Routines" option is chosen in the Digital Setup, anything that looks like a callsign will be highlighted with a color that indicates its multiplier status using the same colors as in the Bandmap and Entry window. If the "Use Master.dta File" option is chosen, only call signs in the Master.dta file will be colored according to the multiplier status; callsigns that are not in the Master.dta file will be given a different highlight color to indicate that they were not found in Master.dta. Regardless of which option is chosen, any callsign that passes the check routines will be placed in the Grab window.

## 2.2. Mouse Assignments

- **Left mouse key clicking**
  - **Single clicking** on a callsign grabs it and places it in the Callsign field on the Entry Window dialog
  - **Single clicking** on Exchange info etc. grabs it and places it in the Exchange field on the Entry Window dialog
    - NB. The callsign field must be filled first!
  - **Double clicking** on a callsign grabs it and overrides the current information in the Callsign field on the Entry Window dialog
  - **Ctrl+Single clicking** - will force what ever you are clicking to be sent to Entry window. (Must click first in Entry window where you want to place the new data)
  - **Shift+Single clicking** - will cause the moused over text to be Letter/Figs converted on the fly while sending to Entry Window (only in RTTY Mode)
  - **Alt+Single clicking** - if Digital Call Stacking is enabled, will transfer the call sign being clicked on to the Bandmap call stack (see [Single Operator Call Stacking](#) for more)

information)

- **Right mouse key clicking on RX window**
  - Will give a menu **only when the menu item 'RT Click = Return NOT menu' is NOT selected!**
    - **Clear RX** - Clear the receive window. This receive buffer can contain a maximum of 10,000 characters
    - **Output to Text File** - Output the received text to a text file named RTTY1.txt
    - **Help** - Show the help file for this window
- **Right mouse key clicking on TX window**
  - Will give a menu **only when the menu item 'RT Click = Return NOT menu' is NOT selected!**
    - **Clear TX** - Clear the transmit window
    - **Paste** - Place the TX text in the Paste buffer
- **Right mouse key clicking in GRAB window**
  - Gives a menu:
    - **Clear List** - Clear the entire grab window
    - **Clear Selected Call** - Clear the selected call in the grab window

## 2.3. Keyboard Assignments

- **Alt+T** - Toggle TX/RX, when in TX the cursor will be set to the TX window of the active interface
- **Ctrl+K** - Toggle TX/RX, and displays the CW/Digital Keyboard window to send manual information using the keyboard
- **Alt+G** - Grab most recent callsign from callsign textbox. Upon grabbing that callsign gets deleted from the grab list
- **Ctrl+Left/Right arrows** - When 2 radios are configured and 2 digital windows are open (SO2V or SO2R), pressing Ctrl+Left arrow or Ctrl+Right arrow will swap from one active Digital Interface to the other. Digital Interface 1 will follow VFO A/Radio 1, Digital Interface 2 will follow VFO B/Radio 2

## 3. The Digital Interface - Menu Selections

The digital interface has a menu at the top which is also a little different per type of interface selected. As the differences are minimal, the menu items for all interfaces can be found below.

### 3.1. Selection: Soundcard as Interface

- **Setup**

- **Settings** - Setting up the Digital Interface, see the paragraph 'Setting up the Digital Interface' below
- **Turn AutoTRXUPDATE On/Off**
  - If your radio's dial displays the actual transmitted frequency (i.e. the Mark frequency in FSK RTTY), you would turn this option off
  - If your radio's dial displays the suppressed carrier frequency (e.g. SSB mode), you would turn this option on. This causes the program to add (USB) or subtract (LSB) the audio frequency from the digital engine to/from the radio's dial frequency so that the frequency that appears in the Entry window, the Bandmap, the log and spotted to the DX cluster is the actual transmitted frequency, not the suppressed carrier frequency
- **Bring to Foreground when made Active** - Bring the Digital Interface and Engine to the foreground when its Entry window has focus
  - This adds ability to stack Digital Interfaces and Engines and have the correct one on top when the associated Entry window has focus
- **SoundCard**
  - **Receive Mixer** - Shows the Record control mixer dialog from the Windows operating system. Only for Windows versions XP and earlier
  - **Transmit Mixer** - Shows the Play control mixer dialog from the Windows operating system. Only for Windows versions XP and earlier
    - These menu items are not available when using the Fldigi engine
- **Setup MMTTY** - The MMTTY setup is shown. This menu item is only visible when MMTTY is selected
- **AFC On/Off with CQ** - If set then the AFC will turn on with CQ message or TU messages
- **NET On/Off with Run Change** - Option to turn Net function on in S&P and off in Running mode
- **Turn Hover Mode On/Off** - With hover mode when you hold the mouse over a valid call sign it places the call sign in call sign field in the Entry Window without having to click on it
  - Where this works in use with 'Right click send Enter' is you hover over the call then right click to plant the call and send your call when the station comes back to you you click on the exchange to place it in Entry Window. Right click again send TU and logs the Q. Right click, left click, right click and you're done...
  - Note: Your own call is excluded from being picked up
  - Hover mode is used in conjunction with the menu selection 'Rt Click= Return NOT menu'
- **RT Click = Return NOT menu** - When selected right clicking in the DI RX window will send a Return instead of displaying a pop up menu
  - Check the menu item Hover mode for additional information
- **Send Text File** - Send a text file. A file section dialog will open
- **Enable Digital Call Stacking** - Used together with the {LOGTHENPOP} macro. See [Single Operator Call Stacking](#) for more information
- **Open Add. RX Window (4 Avail.)** - This allows you to open an auxiliary RX window for diversity decoding of the same RTTY signal, e.g. by using a TNC in the main DI window and MMTTY in the auxiliary window, or by using a different copy of MMTTY with a different decoding algorithm to decode the same audio input

- There are up to 4 such windows available. They can be called up from either DI1 or DI2
- **Interface**
  - **MMTTY** - Select MMTTY or Other (TNC) as the interface
    - Requires MMTTY to be installed and the DI-1/2 path(s) to MMTTY to be set up in the Configurer
  - **MMVARI** - Select MMVARI as the interface
    - No other installation required - the MMVARI engine is installed during the N1MM Logger install
  - **Fldigi** - Select Fldigi as the interface
    - Requires Fldigi to be installed and the DI-1/2 path(s) to Fldigi to be set up in the Configurer
- **Help** - Shows help file

### 3.2. Selection: OTHER

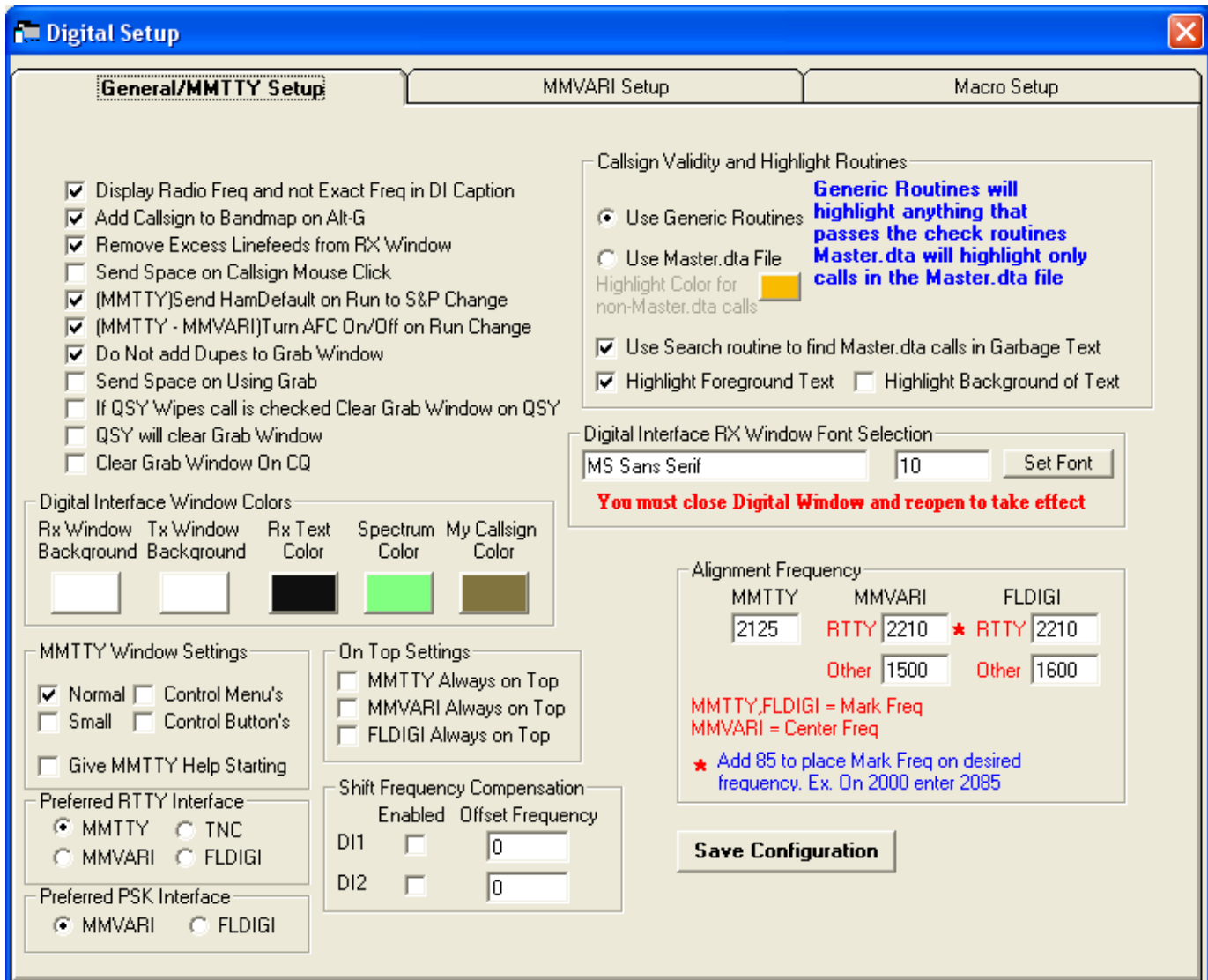
- **Setup**
  - **Settings** - Setting up the Digital Interface, see chapter below (Setting up the Digital Interface)
  - **Load TNC Settings File** - Ability to load the TNC settings file named 'SETTINGS.TXT' to the TNC. An example file which can be used for the PK-232 can be found on the website when selecting 'Other Files'
- **Mode**
  - **RTTY** - Select RTTY as mode
  - **PSK** - Select PSK as mode
  - **Help** - Shows help file

## 4. The Digital Interface - Setup

This setup dialog is for both MMTTY and MMVARI, this means that some settings are only for MMVARI, MMTTY or both. When selecting 'Setup | Settings' in the Digital Interface window a dialog like the one below will shown. Any changes made in the setup form must be saved by clicking the Save Configuration Button located on the bottom of the form. Any changes made and saved will be changed as soon as the setup area closes.

### 4.1. Tab: General/MMTTY Setup

This interface has general setup information for ANY type of interface (Soundcard or external TNC) and some specific settings for MMTTY, MMVARI and Fldigi.



- **Display Radio Freq and not Exact Freq in DI Caption**
  - Check this option if you are using a radio mode that displays the actual transmitted frequency rather than the suppressed carrier frequency (e.g. FSK RTTY)
  - Note that this setup option only affects the frequency that is displayed in the DI window. To change the frequency that is sent to the Entry window and recorded in the log, see the DI window's **Setup > Turn AutoTRXOffset On/Off** menu item
- **Add Callsign to Bandmap on Alt+G** - (MMTTY and PSK) Option to send callsign from station in callsign field (Alt+O) when doing a grab (Alt+G)
- **Remove Excess Linefeeds from RX Window** - Ability to strip excess linefeeds from RX Window
- **Send Space on Using Grab** - Setting for sending space after grabbing call from grab window
- **(MMTTY) Send HamDefault on Run to S&P change** - (MMTTY only) Ability to have Ham Default(MMTTY) sent when going from Run to S&P to reset Mark Frequency. Select to enable
- **(MMTTY-MMVARI) Turn AFC Off when switching to S&P** - (MMTTY and PSK) Ability to Turn AFC Off when going from Run to S&P. Select to enable. Many people when in Running mode will leave the Net Off and turn on AFC to find people coming back to them a little off frequency. So to turn the AFC back off when you go to S&P (without forgetting) this setting comes in handy

- **Do Not add Dupes to Grab Window** - Setting for adding dupes to Grab window or Not
  - **Send Space on Using Grab** - when doing a grab from the grab window it will also send a space press command to Entry window to advance the cursor
  - **If QSY Wipes call is checked Clear Grab Window on QSY** - If QSY Wipes and Spot call is checked then Clear the Grab window on wipe of callsign.
  - **QSY will clear Grab Window** - Changing frequency will clear the Grab window
  - **Clear Grab Window On CQ** - sending CQ will clear the Grab window
- 
- **Callsign Validity Routines**
    - **Use Generic Routines** - the generic routines will highlight anything that passes the check routines (and probably will look like a callsign)
    - **Use master.dta File** - when selected only the callsigns in the master.dta file will be highlighted
      - Highlight Color for non-Master.dta calls will be shown in the shown color.
    - **Use Search routine to find Master.dta in Garbage Text** - ability to turn off checking for callsigns in garbage text in digital modes
    - **Highlight Foreground Text** - call sign text will be in the highlight color on the normal background
    - **Highlight Background of Text** - background color surrounding call sign will be changed to the highlight color
- 
- **Digital Interface Window Colors**
    - The RTTY receive and transmit window background colors, RX text color and own callsign color in RX window can be changed here
- 
- **Digital Interface RX Window Font Selection** - Change the font and character size for the RX channels. Press the 'Set Font' button to get a selection window
    - You must close the Digital Window and reopen it so the changes can take effect
- 
- **MMTTY Window Settings**
    - **Normal** - The normal size MMTTY window is shown, including waterfall/spectrum, menu bar and control buttons
    - **Small** - The small size MMTTY window is shown, i.e. waterfall/spectrum display only
    - **Control Menu's** - Shows waterfall/spectrum plus menu bar
    - **Control Button's** - Shows waterfall/spectrum plus control buttons
    - **Give MMTTY Help Starting** - Turn MMTTY kick-starts off and on

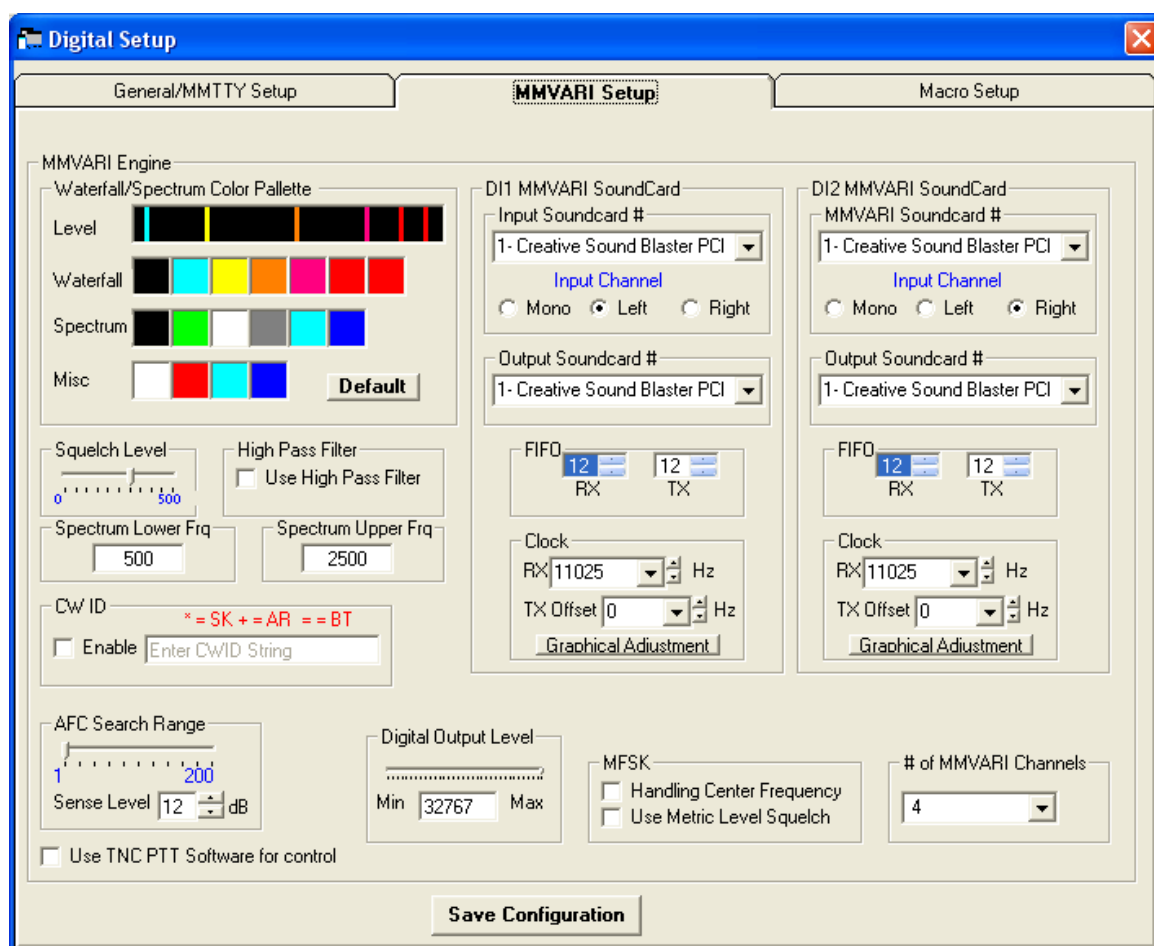
 **Having trouble getting MMTTY to start?**

If you are having trouble getting MMTTY to initialize when the DI window starts up, here are some things to try: First, upgrade to the latest version of MMTTY. Several cases of failure to start have been solved by updating to version 1.68A. Next, if that doesn't work, try checking the **Give MMTTY Help Starting** check box. If this box is already checked, try unchecking it.

- **Preferred RTTY Interface** - Select the preferred RTTY interface. Choices are: MMTTY, MMVARI, TNC or Fldigi
  
- **Preferred PSK Interface** - Select the preferred interface for PSK (and other sound card modes). Choices are MMVARI and Fldigi
  
- **On Top Settings**
  - **MMTTY always on Top** - MMTTY is always in front of all other N1MM logger windows. A restart of N1MM logger is needed to activate this function. Minimizing the N1MM logger program will not minimize the MMTTY engine
  - **MMVARI always on Top** - MMVARI is always in front of all other N1MM logger windows. A restart of N1MM logger is needed to activate this function. Minimizing the N1MM logger program will not minimize the MMVARI engine
  - **Fldigi always on Top** - Fldigi is always in front of all other N1MM logger windows. A restart of N1MM logger is needed to activate this function. Minimizing the N1MM logger program will not minimize the Fldigi engine
  
- **Shift Frequency Compensation** - for radios which use/need Shift Frequency Compensation
  - **Enabled** - Select to enable Shift Frequency Compensation
  - **Offset Frequency** - the frequency offset
  
- **Alignment Frequency** - frequency used by the Align button = preferred audio frequency
  - **MMTTY** - RTTY alignment frequency. This is the Mark frequency
  - **MMVARI** - Alignment frequencies for MMVARI
    - **RTTY** - RTTY alignment frequency in MMVARI
      - NB Add 85 to place Mark Frequency on desired frequency. Example: For 2125 Mark, enter 2210
    - **Other** - alignment frequency for other modes than RTTY
  - **FLdigi** - Alignment frequencies for Fldigi
    - **RTTY** - RTTY alignment frequency in Fldigi
      - NB Add 85 to place Mark Frequency on desired frequency. Example: For 2125 Mark, enter 2210
    - **Other** - alignment frequency for other modes than RTTY

- **Save Configuration** - Save the made configuration changes. If the changes made should not be saved select the X in the upper right corner to close the window

## 4.2. Tab: MMVARI Setup



- **MMVARI Engine**
  - **Waterfall/Spectrum/Misc Color palette** - The colors that make up the color palette can be changed to represent whatever colors you would like. The colors go from the weakest signal on the left to the strongest signal on the right. There is a color palette setting for the Waterfall, Spectrum and for Miscellaneous colors. The Default button changes the colors back to the default colors
  - **Squelch Level** - This level represents the noise level where you would like the interface to start copying signals. 0 indicates an open squelch and everything will be decoded
  - **High Pass Filter** - Select 'Use High Pass Filter' to use the internal high pass filter for RX. Although this is unnecessary with most soundcards, it sometimes is effective for eliminating hum in the input audio
  - **Spectrum Lower Frq** - the lower frequency to display when the Spectrum view or Waterfall is active

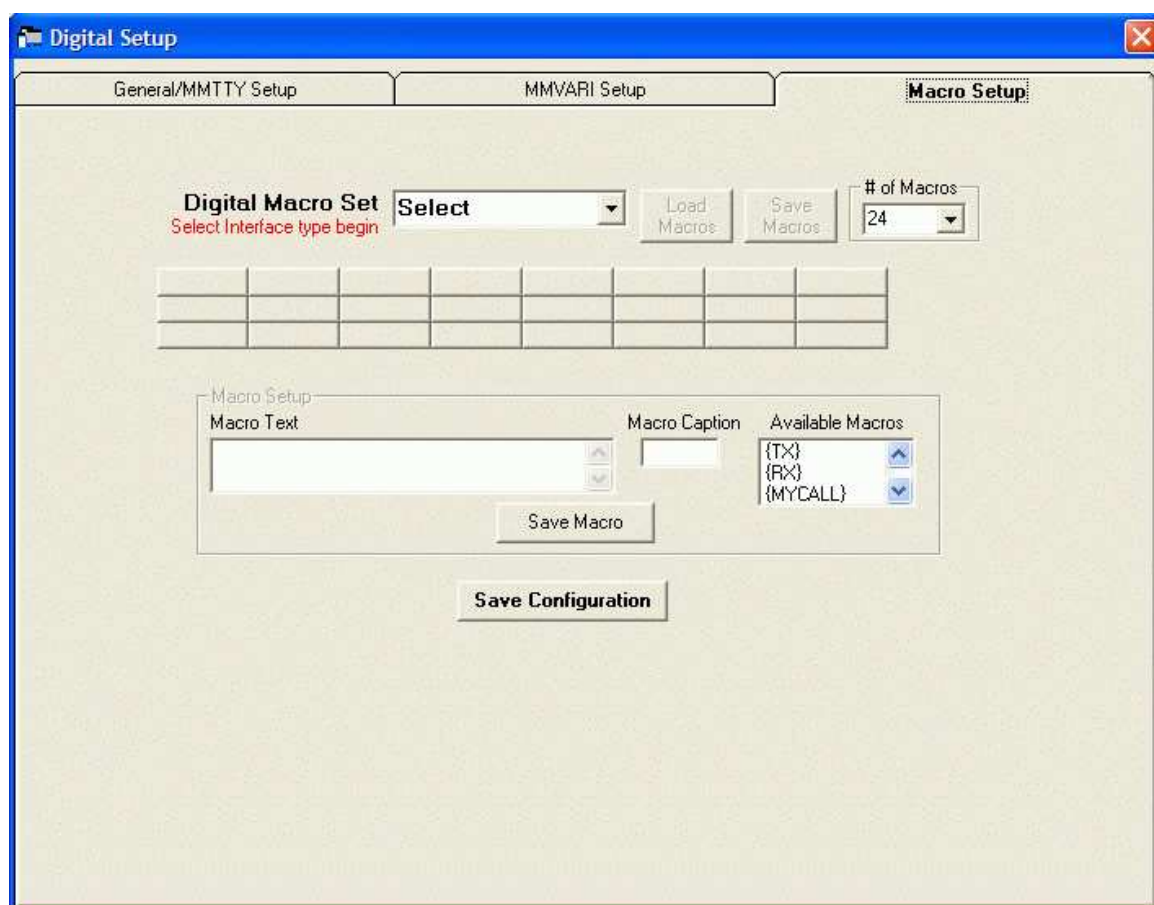


- **Spectrum Upper Frq** - the upper frequency to display when the Spectrum view or Waterfall is active
- **CW ID**
  - **Enable** - If this check box is checked (Enabled) the interface will send the string entered in the field (Enter CWID String) in CW after every transmission. A \* will be substituted by SK, + by AR and = by BT
- **AFC Search Range** - This is how far in Hz the interface will track a drifting signal i.e the frequency sweeping width (+/-Hz) for the AFC
  - **Sense Level** - specifies the S/N level (dB) for the wide AFC. When the search range is less than or equal to 50 Hz, the wide AFC does not function. The sense level is applied to all the RX channels
- **Use TNC Software for control** - When selected N1MM logger will release the serial port for the TNC so the soundboard in the TNC can have control. When using an external TNC the internal soundboard can be used
- **Digital Output Level** - specifies the digital output level in the range of 0 to 32767. The default value is 16384
  
- **DI1/DI2 MMVARI Soundcard**
  - **MMVARI Soundcard #**
    - **Input Soundcard#** - Select the input soundcard to be used when there is more than one soundcard in your computer (maximum 4)
    - **Input Channel** - Select the input channel. Mono, Left channel or Right channel
    - **Output Soundcard#** - Select the output soundcard to be used when there is more than one soundcard in your computer (maximum 4)
  - **FIFO**
    - **RX** - specifies the depth of the RX FIFO. Valid values are 4 to 32
    - **TX** - specifies the depth of the TX FIFO. Valid values are 4 to 32
  - **Clock** - Soundcard Clock adjustment
    - **RX** - specifies the tuning parameters of the RX clock adjustment function
    - **TX Offset** - the offset of the TX frequency compared to the RX frequency
    - **Graphical Adjustment** - Graphical RX clock adjustment
      - The computer clock itself is not very accurate (+- 100 ppm); that is why to use WWV or another precision source to calibrate the soundcard
      - 1. Tune to WWV or another Time Mark; adjust so tick is on 1000 Hz in Spectrum of MMVARI
      - 2. Wait for line to appear in display and adjust Clock Freq so line appears straight and not at an angle
      - 3. Click button to save new frequency when line is straight up and down
  
- **MFSK (MFSK only)**
  - **Handling Center Frequency** - When selected the center frequency is used for the carrier frequency. When not selected the base tone frequency is used for the carrier frequency
  - **Use Metric Level Squelch** - Select to use the metric level for the squelch. When not

selected the S/N level is used for the squelch

- **# of MMVARI channels** - Number of MMVARI channels to use. Choices are 1, 2, 3 or 4
  - Note that if this is set to 1, you have the option to select the Multi-Channel Rx menu item in the MMVARI menu bar, but when it is set to 2, 3 or 4 this option is not available
- **Save Configuration** - Save the made configuration changes. If the changes made should not be saved select the cross in the upper right corner to close the window

### 4.3. Tab: Macro Setup



- **Digital Macro Set** *Select Interface Type and Window Number to begin* - Update the macros definitions and button texts
  - Select an interface (TNC or soundcard DI) from the drop down menu. Choices are:
    - **MMVARI** - macros for the MMVARI interface
    - **MMTTY, Fldigi** - macros for the MMTTY and Fldigi interfaces
    - **Other** - macros for the TNC
    - **Dxp38** - macros for a DXP38
  - Click on the macro button which has to be updated
  - Type the macro text in the field 'Macro Text'
  - Type the button text in the field 'Macro Caption'
  - Click on the '**Save Macro**' button when satisfied

- The selected macro caption text will be shown on the button
- Available macros are shown in the box 'Available Macros'. First select a macro button to see them all
- The Macro buttons below (for TNC use only) have to be configured as **TX/RX** buttons. Enter what control codes are needed to turn on and off your TNC
  - *Only visible when Other is selected*
  - **RX** - Receive macro, this will become the contents of the macro {RX}
  - **TX** - Transmit macro, this will become the contents of the macro {TX}
  - **ESC** - Abort macro, used when pressing the Escape key
- **Load Macros** - Load saved macros from a saved file (\*.mc) to the selected Digital Macro Set
- **Save Macros** - Save macros from the Digital Macro Set to a file (\*.mc)
- **# of Macros** - Select the number of macro buttons. You can select 0, 8, 16 or 24
- **Macro Setup**
  - **Macro Text** - Area where to create the macro text for the selected macro
  - **Macro Caption** - Macro caption from the button
  - **Available Macros** - Shows the available macros. Clicking on a macro will transfer it to the macro text area
  - **Save Macro** - Save the created macro
- **Save Configuration** - Save the made configuration changes. If the changes made should not be saved select the cross in the upper right corner to close the window

#### 4.4. Tab: WAE RTTY Configuration

This menu item will only show when the WAE RTTY contest has been selected and the information in this tab is only valid for the WAE RTTY contest.

**Digital Setup**

General/MMTTY Setup    MMVARI Setup    Macro Setup

**WAE RTTY Configuration**

**RQTC**

RX Ready: {ENTERLRF}I AM QRV BK  
 All Agn: {ENTERLRF}ALL AGN ALL AGN BK  
 AGN: {ENTERLRF}AGN QTC: \$\$\$ **Use \$ for location of Number**  
 Save QTC: {ENTERLRF}R R ALL OK BK

**SQTC**

RU QRV: {ENTERLRF}R U QRV BK  
 Send All Heading: {ENTERLRF}{QTC} {QTC} **←Use {QTC} for location of QTC Numbers**  
 Send All Ending: {ENTERLRF}QSL?? BK DE {MyCall}  
 Save QTC: {ENTERLRF}GL DE {MYCALL}  
 DTC Spacing: {ENTERLRF} **Use {ENTER} or {ENTERLRF}**

**Note: All Macro Substitutions are allowable in the above Button Setups**

10 ▾ **Default Number of QTC to Send**

When sending request for single QTC do What?

Clear all data for that QTC  
 Clear only Bad Data  
 Do nothing just send request

**Save Configuration**

- **RQTC** - Under RQTC are the 4 messages to send when receiving a QTC
- **SQTC** - Under SQTC are the 4 messages to send when sending a QTC
- **Default Number of QTC to Send** - maximum of 10 QTC's
- When sending request for single QTC do what?
  - Clear all data for that QTC
  - Clear only Bad Data
  - Do nothing just send request
- **Save Configuration** - save the made configuration changes. If the changes made should not be saved select the cross in the upper right corner to close the window

## Digital - MMTTY for RTTY support

### In this Section...

#### Digital - MMTTY for RTTY support

1. MMTTY Windows
2. Download, Configure and Test MMTTY
  - 2.1. Download MMTTY

## 2.2. Configure MMTTY

### 2.2.1. FSK KEYING

#### 2.2.1.1. Using the RIGblaster Interface for FSK with N1MM/MMTTY Combination

### 2.2.2. AFSK KEYING

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### 5.3. When Should I Use the NET Option: NET On/Off with Run Change

### 5.4. Why to Use "Auto Update TRX Offset w/Mark Freq."

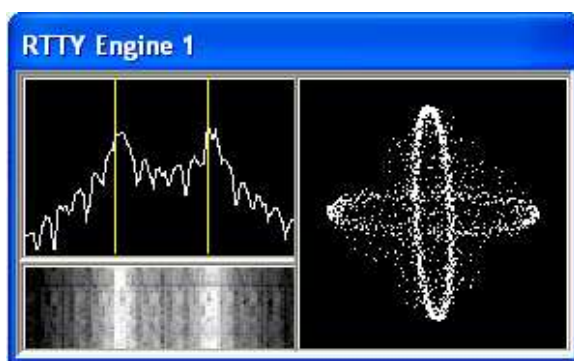
### 5.5. Using MMTTY for 75 baud RTTY

The MMTTY soundcard interface is based on the MMVARI engine by Makoto Mori, JE3HHT.

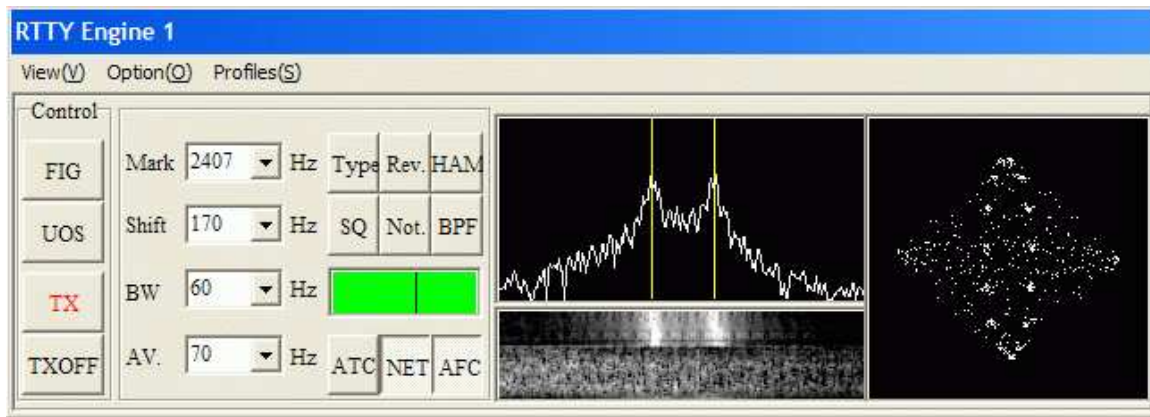
## 1. MMTTY Windows

When using MMTTY two windows will open.

- the Digital Interface window
  - is similar for MMTTY, MMVARI, Fldigi and external Interfaces (TNCs or TUs). More information about external interfaces in the chapter 'Digital - External TNC Support'
- the MMTTY engine window -
  - there are four versions which can be selected in the Digital Interface menu under Settings.
    - Small version MMTTY engine window



- Normal, or Large version MMTTY engine window



- Control Menus - small window plus the menu bar (View, Option, Setup)
  
- Control Buttons - large window minus the menu bar

## 2. Download, Configure and Test MMTTY

### 2.1. Download MMTTY

- Download the current release of MMTTY (see [Links chapter](#) for URL)
  - At least version 1.64 is needed; version 1.68A is recommended
- Run the setup program and install this to your computer (preferable) in its own directory
  - Don't install in the N1MM logger directory when using a MMTTY version from before July 7 2002. When uninstalling MMTTY all files in the install directory will be deleted and with that also N1MM logger. MMTTY version 1.64 uses a new installer and does not have this problem anymore
- The NewExe contains the file XMMT.ocx needed for MMTTY version 1.64 or higher and should be in the N1MM Logger directory after an update.

### 2.2. Configure MMTTY

#### 2.2.1. FSK KEYING

1. Select >Config >Ports, Telnet Address, Other >Digital Modes tab

- Select Soundcard as your Interface type
- Select for the selected Digital Interface as MMTTY, Mode FSK
- Select the path to your MMTTY directory (for DI-2 if you are configuring for the second DI window)
- Select the 'Hardware' tab
  - Place a check mark under the Digital column beside the port that you are using for the digital port
  - Click on the Set button and set the Dig Wnd Nr to 1 (or 2 if you are configuring for DI-2)

## 2. Save and exit

- If MMTTY is already loaded you will probably get an error message about not being able to open port xxxx

## 3. Open the Digital Interface window (under the Window menu)

- Select the Interface > MMTTY menu item in the DI window
- Select: Option > Setup in the MMTTY window, or use the DI window's Setup > Setup MMTTY menu item
  - Select the TX tab and under PTT, set the serial port that you will be using for FSK keying and data; this should be the same port that you checked the Digital box for in the Configurer
    - If you are using a USB-to-serial adapter, or a control line other than TxD to do FSK keying, you will have to select EXTFSK as the serial port and configure the port and signal line information in the EXTFSK window
  - Select the Misc tab and check COM-TxD(FSK) for the Tx Port
    - If you are using a USB device to do FSK keying, click on the USB Port button and set the option to C. Limiting Speed
  - Select the Sound Card tab (in MMTTY version 1.66G) and choose the correct sound card for Reception (the Transmission sound card is not used in FSK)
  - Close the Setup dialog
  - Close the 'Digital Interface' to have the Logger and MMTTY save the settings

### 2.2.1.1. Using the RIGblaster Interface for FSK with N1MM/MMTTY Combination

The default for FSK via MMTTY is TXD. You'll need to change the jumpers when using a Rigblaster. Also, make sure you get MMTTY working as a standalone first. Then you should just be able to specify MMTTY (select Soundcard) in the Digital Interface config in N1MM and it should take off. If you are lucky enough to have a radio where PTT is asserted via radio control ( Kenwood is one) then leave the PTT unchecked in the port setup and checked in the PTT via rig control portion.

### 2.2.2. AFSK KEYING

1. Open the Configurer (Configure Ports, Telnet Address, Other in the Config menu).
  - Select the Digital Modes tab
    - Select Soundcard as your Interface type.
    - Select for the selected Digital Interface as MMTTY, Mode AFSK
    - Select the path to your MMTTY directory (for DI-2 if you are configuring for the second DI window)
  - Select the 'Hardware' tab
    - Place a check mark under the Digital column beside the port that you are using for the digital port
    - Click on the Set button and set the Dig Wnd Nr to 1 (or 2 if you are configuring for DI-2)
2. Save and exit.
3. Open the Digital Interface window (under the Window menu)
  - Select the Interface > MMTTY menu item in the DI window
  - Select: Option > Setup in the MMTTY window, or use the DI window's Setup > Setup MMTTY menu item
    - Select the TX tab and under PTT, set the serial port that you will be using for PTT; this should be the same port that you checked the Digital box for in the Configurer
    - Select the Misc tab and check Sound for the Tx Port
    - Select the Sound Card tab (in MMTTY version 1.66G) and choose the correct sound card for both Reception and Transmission
    - Close the Setup dialog
    - Close the 'Digital Interface' to have the Logger and MMTTY save the settings

### 3. Testing MMTTY

MMTTY is also a stand alone application. So testing can be done outside N1MM logger.

### 4. Dual Receiver/Dual Radio Setup

In a dual-receiver setup (SO2R or SO2V), you may wish to be able to copy two separate RTTY signals (e.g. on two separate bands) simultaneously. To do this, you would open two Entry windows (VFO A/Radio 1 and VFO B/Radio 2) and open the Digital Interface window from each Entry window. You can then run MMTTY from each of these DI windows.

The two audio streams from the two receivers can either be decoded by two separate sound cards, or in a single stereo (two-channel) sound card using the left and right channels for the two receivers. In either of these situations, the two copies of MMTTY must have different configurations. In the case of a dual radio setup, if you are using FSK on both radios and/or if MMTTY is used to control PTT on both radios, each copy of MMTTY would also have to have access to its own serial port for PTT & FSK. This is also true in SO2V setups in order to enable transmitting from either VFO.



These serial ports are configured in two places: in the Logger's Configurer and in MMTTY. In the Configurer, you indicate which serial ports are used with check marks in the Digital column (Note: in order to check two Digital mode ports in the Configurer, you must be in SO2V or SO2R mode). You must also click on the Set button for each port in the Configurer and set the Dig Wnd Nr to 1 or 2, to indicate which of the two DI windows that serial port will be associated with. You must also set up each copy of MMTTY to use its respective serial port by choosing the relevant serial port in the PTT & FSK Port box under the TX tab in the MMTTY Setup window.

In order to support separate configurations for the two copies of MMTTY, each copy must be located in a separate folder. You can either use the main MMTTY program folder for one copy and a separate subfolder for the other copy, or you can create two subfolders for use by the Logger, leaving the copy in the main MMTTY program folder for stand-alone use. These subfolders must each contain, at a minimum, a copy of the MMTTY.exe file and the UserPara.ini file from the main MMTTY program folder. A copy of MMTTY.ini will be created the first time MMTTY is run from the folder. Other files from the main MMTTY program folder may also be copied to the subfolders, but they are not used.

The Logger's DI windows have an additional RX window feature as well. Up to four additional RX-only windows can be invoked from the Setup menus in the two DI windows. These additional windows can be distributed in any way between the two DI windows. They can use either hardware decoders or MMTTY, but the most common use is for separate copies of MMTTY using different decoding algorithms or profiles. Because they are receive-only, these windows do not need access to serial ports and are not configured in the Configurer. However, to be fully useful they do need to have separate setups from the main copy of MMTTY (e.g. to use a different decoding algorithm or profile). Therefore, if you wish to use these additional RX-only windows with MMTTY, you will need to create additional folders, one for each additional window, containing copies of the MMTTY.exe and UserPara.ini files. These additional folders do not have to be created at the time you first install MMTTY; you don't need to do this until you are ready to use the additional RX windows.

## 5. Using MMTTY

- The macros for the Interface using MMTTY are different from the way they work with the TNC . What ever you put in the macro will get transmitted. There is a macro keyword needed to turn TX ON {TX} or TX OFF {RX}.
- There is no special abort macro needed for use with MMTTY just using the ESC key will stop transmitting.
- The TX and RX buttons are for the free form typing in the TX window.
- When MMTTY loads it loads the last used settings when the Interface was closed.

### 5.1. How to Tune RTTY

- Use the VFO on your radio and dial in the peaks to match the 2 yellow lines on the spectrum

- Click view and the X-Y scope to see a crossed-ellipses tuning display
  - If the X-Y display seems to rotate in the wrong direction, open the MMTTY Option > Setup window (or the DI's Setup > Setup MMTTY menu item), select the Font/Window tab and check (or uncheck) the Reverse rotation button
- Make sure you click the "HAM" button for proper shift etc.
  - The default values for the HAM setting can be changed under the Demodulator tab in the MMTTY Option > Setup window
- It's better to set AFC off when you are in a crowded section of the band and manually tune the signals; if you leave AFC on, nearby strong signals may pull the tuning away from the signal you want to copy
- Also in crowded sections it can be helpful to use the built-in notch and bandpass filters
- If you are using AFSK, normally you would use LSB on the radio
  - If you use USB, make sure you click the "Rev." button in MMTTY
- If you are using FSK, you need to be aware that NET does not work, and that tuning in a received signal by clicking in the waterfall or by allowing AFC to tune in the signal will result in your receive frequency being different from the transmit frequency. The "HAM" button will restore the correct audio frequency in your receive decoder but without retuning the radio. The "Align" button in the DI window can be used to retune your radio so that the received signal is lined up with your radio's transmit frequency

Periodically you may get a lost sound indication in the MMTTY window and the program may quit responding to RTTY.

- This should never happen but if it does, try increasing the priority with which MMTTY runs from its default "high" to "highest". This is one step below the maximum "critical". This setting is in MMTTY under Options, Setup MMTTY and the MISC tab..... Another effect this has is to make the transition from RX-TX-RX smoother.

## 5.2. When Should I Use AFC

- Use AFC (automatic frequency control) when MMTTY should automatically track the incoming RTTY signal.
- With AFC and NET turned on, MMTTY will track the incoming signal and also keep your transmitter frequency locked to the received signal when using AFSK.

When MMTTY is set to transmit FSK, AFC will work on receive only. When in "Running" mode, you want to keep your TX frequency stable, but with RX AFC set on you can pick up stations who reply a bit off your frequency and copy the exchange without losing your TX spot. Just don't let the AFC spread get too far from where you're transmitting.

- A nice option to use is: AFC On/Off with CQ - If set then the AFC will turn on with CQ message or TU messages. This way when Running the AFC is on and during S&P the AFC is off. Check it.

### 5.3. When Should I Use the NET Option: NET On/Off with Run Change

NET only operates in AFSK. If you are using FSK, your transmit frequency is fixed by your transmitter, and the NET software feature does not work.

- When in 'Search and Pounce' mode the program will check the NET option so that once you tune a signal in, you will transmit on the same frequency you are receiving him on (Warning: this doesn't work in FSK)
- When in 'Running' mode the program will uncheck the NET option, which allows your receive decoder to follow an off-frequency caller while still leaving your transmit frequency unchanged

### 5.4. Why to Use "Auto Update TRX Offset w/Mark Freq."

If you are using FSK RTTY, most radios display the actual mark frequency on the tuning dial. A few even do this in AFSK RTTY. If your radio is like this, you don't need to use this option. The DI window title bar will display an offset frequency (radio dial (+/-) audio), but if this option is turned off the offset frequency will not be logged and you can ignore it.

If you are using AFSK RTTY, especially with the radio in LSB or USB mode, as well as when you are doing a sound card digital mode like PSK (using MMVARI or Fldigi), the radio probably displays the suppressed carrier frequency on its dial. This is different from the mark frequency. If you are using the default mark frequency of 2125 Hz, the radio's dial display will be 2125 Hz too high (LSB) or too low (USB) as compared with the actual mark frequency. By checking this option, N1MM Logger will perform the correction automatically and display the actual mark frequency in the Entry window and the Bandmap window, as well as in the DI window title bar.

### 5.5. Using MMTTY for 75 baud RTTY

There are some RTTY contests that specify 75 baud (100 wpm) RTTY instead of the usual 45.45 baud (60 wpm) speed. MMTTY can be used for 75 baud RTTY, but there are a few quirks:

- In the MMTTY Setup window, select the Decode tab, and at the top of the window, for BaudRate select 75
- The MMTTY HAM Default button cannot be used in 75 baud RTTY; **if you press HAM, the speed will be reset to 45.45 baud**. Besides not pressing the HAM button in the MMTTY window, there are a couple of other setup items you need to take care of:
  - In the DI Setup window, under the General/MMTTY Setup tab, make sure the following item is NOT checked:

- **(MMTTY)Send HamDefault on Run to S&P Change** (if you forget to uncheck this item, you will be switched back to 45.45 baud every time you switch from Run to S&P)
- If you are using FSK with a true serial port or with an interface that supports FSK without using EXTFSK (e.g. a microHAM microKeyer), turn AFC off in the MMTTY window, and make sure the following item in the DI Setup window is NOT checked:
  - **(MMTTY - MMVARI)Turn AFC On/Off on Run Change** (if you forget to uncheck this item, AFC will pull your receive frequency off your transmit frequency and you will be unable to use the HAM button to correct the situation)
    - In the DI Window's Setup menu, UNcheck **AFC On/Off with CQ** (same reason)
- If you use EXTFSK for FSK keying (e.g. via a standard USB-to-serial adapter), you will not be able to use this combination for 75 baud. **EXTFSK does not support 75 baud.** Instead, you must reconfigure for AFSK
- If you are using AFSK and like to use AFC, you may continue to do so, provided you are careful to ensure that your transmit and receive frequencies stay together. The HAM button is not available to re-align your transmit and receive frequencies. Therefore if you are using AFC, you should have NET on as well, to keep your transmit and receive frequencies together. (Note: NET does not work in FSK)
- After the 75 baud contest is over, press the HAM button in the MMTTY window to restore the 45.45 baud speed. You can also restore any of the configuration options you changed for 75 baud in order to restore normal functioning

## Digital - MMVARI for PSK and Other Modes

### In this Section...

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#### Digital - MMVARI for PSK and Other Modes

1. The MMVARI Interface
    - 1.1. The MMVARI Interface Window
    - 1.2. The Waterfall or Spectrum Window
    - 1.3. Macros
  2. Setting Up the Digital Interface
  3. MMVARI Example: Make a PSK Transmission
  4. MMVARI - Other
- 

### 1. The MMVARI Interface

The MMVARI soundcard interface is based on the MMVARI engine by Makoto Mori, JE3HHT.

Supported are all modes from the MMVARI engine including bpsk (e.g. PSK31 and PSK63), qpsk-L (LSB), qpsk-U (USB - e.g. QPSK63), also RTTY-L (LSB), RTTY-U (USB), MFSK-L (LSB) and MFSK-U (USB) as well as non-standard modes GMSK (HF), FSK (V/UHF), FSK-W (V/UHF,

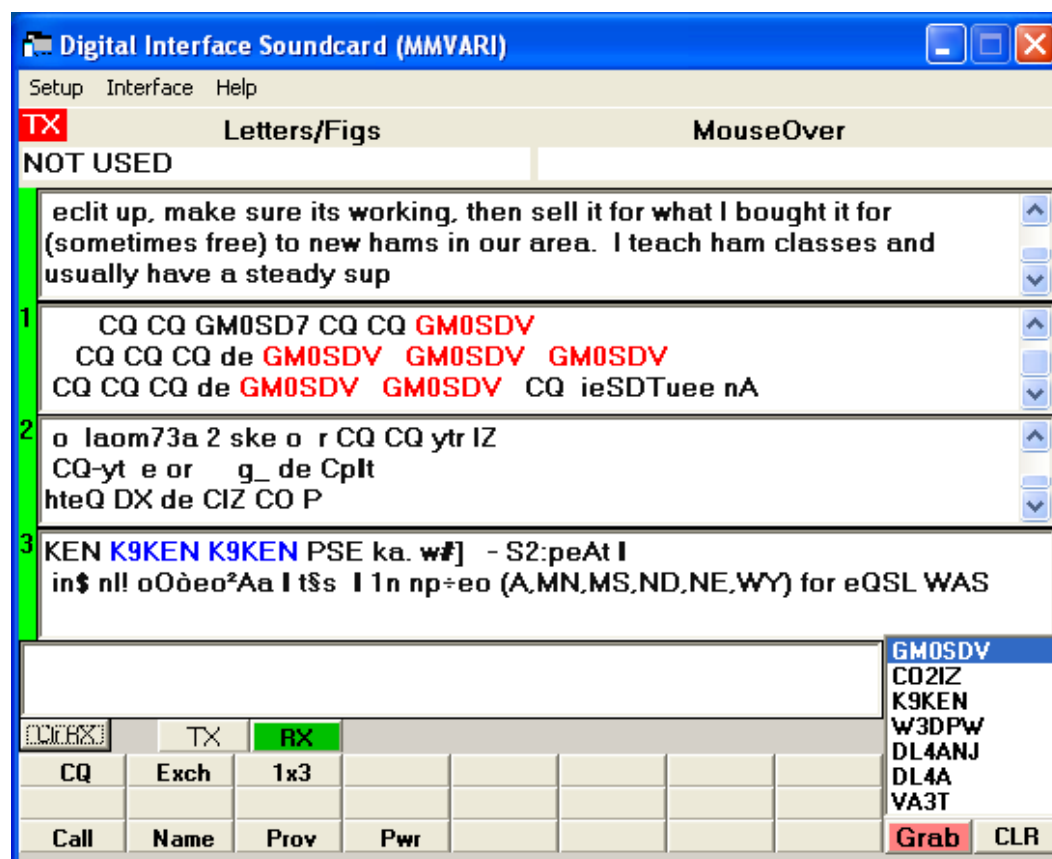
satellite).

### RTTY

In Logger versions before 10.9.5, MMVARI supported RTTY using AFSK keying only. As of version 10.9.5, MMVARI is now capable of using FSK keying for RTTY (selected from the Configurer under the Digital Modes tab). Note, however, that the "FSK" mode in the MMVARI mode box is an entirely different mode - it is not FSK RTTY.

The MMVARI engine does not have to be installed separately, it is included in the N1MM logger program program/update files and is the default digital engine when loading the digital window for the first time.

## 1.1. The MMVARI Interface Window



The Digital Interface window when using the MMVARI engine is broken into several areas which will be covered from the top down.

- **TX** - Indicator to show which DI window the transmit is going to take place from (useful when using two DI windows for SO2R/SO2V)
- **Letters/Figs** - Shows the text under the mouse in the other case (FIGS/LTRS - RTTY only)
- **MouseOver** - Shows the text which would be selected where the mouse is positioned over

- **Receive Windows** - The MMVARI engine supports from 1 to 4 receive windows. The number of receive windows is selected from the DI window's Setup > Settings menu item in the Digital Settings window under the MMVARI Setup tab at the lower right corner (# of MMVARI Channels). All of these windows operate in the same manner and you are able to grab callsigns from any of them and place them into the Entry window. Note that when the # of MMVARI Channels is set to 1, a different method of multiple RX channels becomes available (see **The Waterfall or Spectrum Window** below)

There is a colored pane on the left side of each receive window. By clicking on the colored pane you can pause input to the receive window to scroll back through the (last 2000 lines of) text using the scroll bars. When the window is paused the color of the pane will turn Yellow. To turn input to the window back on click in the pane again and everything that was to be printed to the window will now enter the window. When the receive window is paused it is possible to copy text in the window.

If you click on a callsign using your mouse it will be put into the callsign field in the Entry window. Also, whenever a callsign is printed to any of the receive windows followed by a space it will be sent to the callsign grab window for easy movement to the logging window by clicking the Grab button.

You can select any exchange info by single clicking on the sent info. This info will be transferred over to the logger Entry window item by item after the callsign is filled in.

The top receive pane is the window used for making QSOs. Selecting another frequency for this window is done by left clicking in the Waterfall or Spectrum window. Changing the frequency of the other three receive windows is done by moving the numbered marker above the waterfall to the desired location. You can also use the Swap buttons in the lower part of the Waterfall window to exchange the selected window with the top receive window.

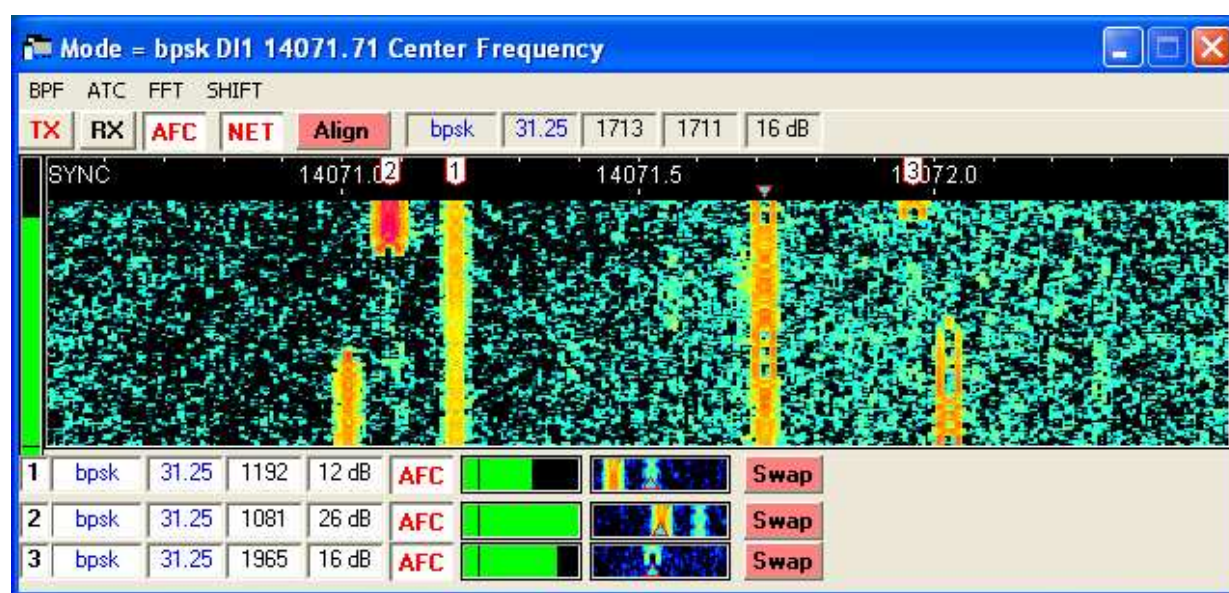
- **Transmit window** - This is a free form typing window. If you click on the TX button the cursor will be placed into this window and whatever is typed will be sent. The size of this window is fixed at 2 lines
- **Callsign Textbox and Grab** - When a callsign is encountered in one of the receive windows (followed by a space) it will be placed in this textbox and when you press the Grab button it will transfer the callsign over to the main logger window. The grab callsign window holds the last 10 callsigns seen in the RX window. The most current one is at the top and is highlighted. A right click in this box brings up a menu to clear list or selected callsign. Dupe callsigns will not be shown in the grab window

Note: If the callsign in the callsign field in the Entry window is the same as the callsign in the received text, the call in the Entry window does not get placed into the call list.

- **Clr RX** - Clear all receive windows
- **TX** - Places the interface into transmit, the transceiver is keyed, and places the cursor into the TX window for input. See the Radio Interfacing section for Parallel and Serial port info on configuring for hardware PTT
- **RX** - This will place the interface back into receive mode after all the characters in the transmit buffer have been sent. To abort transmit immediately without waiting for remaining characters to be sent, press the **Esc** key

- **Macro buttons** - These buttons on the Digital Interface are up to 24 extra Macros for preprogrammed messages. Configuring these macros is done in the Digital Interface window under 'Setup, Settings' or by right clicking on them which brings up the Digital Setup window. The macro buttons widths dynamically adjusts in relation to the width of the DI window
- **Grab** - Transfer the selected callsign in the callsign text box to the callsign field on the main logger window. The cursor advances to the exchange box ready to accept the exchange when you click on it
- **CLR** - Clears the grab window

## 1.2. The Waterfall or Spectrum Window



**The MMVARI digital engine window** - This window uses the MMVARI control from Makoto Mori, JE3HHT. Across the top the title bar shows either the offset frequency (radio (+/-) audio) or the radio's dial frequency, depending on a setup option. As you tune your radio this will update and the numbers will change.

The screen shot here shows the window with four receive channels selected in the Digital Setup. There are cursors corresponding to each of the receive windows. The inverted triangle cursor, filled in in light blue, is for the main receive window. If NET is on, this is also your transmit frequency. If NET is off, there will be another inverted triangle filled in in dark blue indicating your transmit frequency. If you have more than one receive window enabled, a cursor with a number in it (1, 2, ...) corresponds to each additional receive window. To change frequency for the main receive window you can place your mouse pointer over a signal trace and click with your left mouse button. To change frequency for one of the other receive windows, you can click on the numbered cursor and drag it to the desired location in the waterfall.

**TX Frequency and NET in FSK RTTY**

Note that if you are using FSK keying in RTTY, MMVARI has no control over your transmit frequency. Your transmit frequency in FSK RTTY is fixed by the radio. Therefore, moving the dark blue transmit indicator does not change your actual transmit frequency in FSK RTTY. Likewise, the NET function is inoperative in FSK RTTY.

- **Buttons above the waterfall**

- **TX** - Start the transmission, the transceiver is keyed and places the cursor into the TX window for input. See the Radio Interfacing section for Parallel and Serial port info for TX/RX switching (PTT)
- **RX** - Stops the transmission, the transceiver changes back to receive after all the characters in the transmit buffer have been sent. To abort immediately, press the **Esc** key
- **AFC** - Turns AFC on or off. Selected (white) means AFC on (Note: This button is greyed out and disabled when the Multi-Channel RX browser feature is enabled)
- **NET** - Turns NET on or off. Selected (white) means NET on. When NET is on the TX frequency follows the RX frequency (this function is inoperative in FSK RTTY)
- **Align** - This is used to move the signal under the receive indicator to the Alignment Frequency set up in the Digital Setup window. This can be used in most sound card modes to center the received signal in your filter bandpass, and in FSK RTTY it is used to align the received signal with your transmitter's signal

Example: Suppose the center of the filter pass band is 2200 Hz. When clicking on a signal at about 1400 Hz the signal may be difficult to copy unless you are using wide filters. To move the signal to the center of your filter bandpass, click **Align** and the rig shifts and the spectrum frequency shifts and places the station on the frequency that was initialized in the Digital Setup window in the Alignment Frequency area. This allows you to narrow your filter bandwidth around the selected signal. If you are using FSK keying for RTTY and if your receive frequency is not exactly on the center frequency of your radio's mark/space tone pair (e.g. 2210 Hz for the standard 2125/2295 "high" tone pair), then you can use the Align button to retune your radio so your receive and transmit frequencies will be aligned correctly.

- **Mode selection** - Select the mode to use by clicking on this button. The Speed selections are mode dependent. Selections are:
  - **GMSK** - MBCS experiment (HF) - Possible speed selections: **31.25, 62.5, 125, 250**
    - not used for contests
  - **FSK** - MBCS experiment (V/UHF) - Possible speed selections: **31.25, 62.5, 125, 250**
    - not used for contests
    - Do not confuse this mode with FSK RTTY - MMVARI's "FSK" mode is **not** FSK RTTY. Starting with Logger version 10.9.5, MMVARI does support FSK RTTY, but this can only be selected from the Configurer, not from the MMVARI window
  - **FSK-W** - MBCS experiment (V/UHF, satellite) - Possible speed selections: **31.25, 62.5, 125, 250**
    - not used for contests



- **BPSK** - MBCS experiment (HF) - Possible speed selections: **31.25, 62.5, 125, 250**
    - for contesting purposes, BPSK and bpsk are equivalent
  - **bpsk** - Standard BPSK (e.g. PSK31) - Possible speed selections: **31.25, 62.5, 125, 250**
  - **rtty-L** - BAUDOT RTTY (LSB) - Possible speed selections: **45.45, 50, 56, 75, 100, 110, 150, 200**
  - **rtty-U** - BAUDOT RTTY (USB) - Possible speed selections: **45.45, 50, 56, 75, 100, 110, 150, 200**
    - You may choose either AFSK or FSK keying method for RTTY in the Configurer under the Digital Modes tab
  - **mfsk-L** - MFSK (LSB) - Possible speed selections: **15.625, 31.25**
  - **mfsk-U** - MFSK (USB) - Possible speed selections: **15.625, 31.25**
  - **qpsk-L** - QPSK (LSB) - Possible speed selections: **31.25, 62.5, 125, 250**
  - **qpsk-U** - QPSK (USB) (e.g. QPSK63)- Possible speed selections: **31.25, 62.5, 125, 250**
  - **Speed selection** - Select the speed to use in bps by clicking on this button. The speed to select is mode dependent as described above
  - **Main Channel receive frequency** - audio frequency
    - In RTTY, MMVARI displays the center frequency, not the mark frequency as displayed in MMTTY
  - **Main Channel transmit frequency** - audio frequency
  - **Main Channel S/N reading**
- **The Waterfall**
    - At the top of the waterfall offset frequency (radio (+/-) audio) labels and tick marks are displayed
    - Receive channel markers
      - Top markers (tag cursors)
        - 1,2,... - frequency receive channel 1,2,...
        - N - indicates a notch filter
      - The light blue colored marker (inverted triangle on the waterfall) indicates the main RX frequency
      - The dark blue colored marker (waterfall) indicates the TX frequency if it is different from the main RX frequency (only possible if NET is off)
  - **Mouse key clicking**
    - **Left mouse key clicking** - single clicking in the waterfall will change the main RX frequency
      - **Right mouse key clicking** - the audio frequency at the point clicked on will be shown. Also a menu will show:
        - **Set notch on here** - adds a new notch filter on the selected frequency indicated by a N in a yellow area. Multiple notches can be set; you can clear an individual notch by right-clicking on the N
        - **Delete all notches** - all set notches will be removed
        - **Set TX Carrier on here** - can be used to set the TX frequency (with NET off)
        - **Turn Off Bandpass Filter** - Turns the BPF off

- **RX 1 (2,3) Freq Here** - can be used to set the RX 1, 2, or 3 frequency here (only if the # of MMVARI Channels is greater than 1)

The left vertical indicator shows the signal level meter (green) and the squelch level (yellow line). By clicking on it the squelch level can be changed.

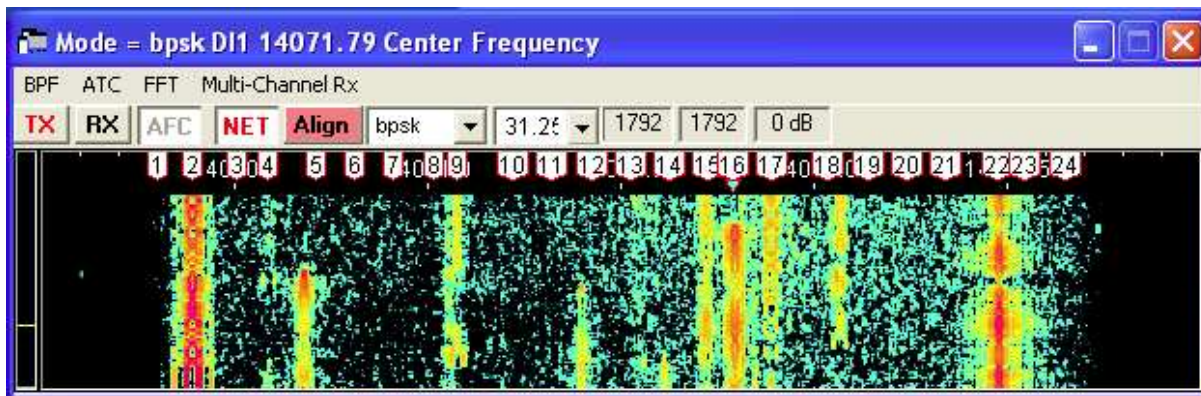
- **Receive channels below the waterfall**

- If you have chosen to use more than one MMVARI channel, below the waterfall the additional receive channels will be shown. The number of additional channels below the main waterfall is one less than the total number of MMVARI Channels set, i.e. there can be up to three additional channels (up to four MMVARI channels in total - to display more than four channels, see the Multi-Channel RX feature below)
- **Mode** - Select the mode to use for this receive channel
- **Speed** - Select the speed to use for this receive channel
- **Receive channel frequency**
- **Receive channel S/N value**
- **AFC** - Turns AFC on or off for the selected channel. Selected (white) means AFC on
- **Squelch indicator** - The squelch can be adjusted by dragging the line indicator to where you want it and turning off the squelch by dragging it all the way left
- **Miniature waterfall display** - shows within 500 hz of the signal that that channel is on. You can click anyplace in this miniature waterfall or drag the indicator to where you want it
- **Swap** - Exchanges this receive window with the main receive window. While working one station, you can dial the second station in via a second receive window and after you finish the first contact just hit swap button and then call the other station. See below for an alternative method of multi-channel receive

- **Menu at the Top**

- **BPF** - Used to enable/disable an internal audio Band Pass Filter. The BPF filter has steep skirts and 80db of rejection outside the bandpass. However, because it is in the sound card and not in the radio, it has no effect on unwanted signals inside the radio, i.e. a strong unwanted signal inside the radio's IF filter bandpass can still trigger the radio's AGC and cause gain blocking, even though the signal has been rejected in the sound card by the BPF. You can only prevent this by selecting narrow filters in your radio
  - **Enable/Disable BPF** - turns BPF on or off
  - **Wide 1000 Hz, Middle 500 Hz, Narrow 250 Hz, Ultra Narrow 100 Hz, Custom** - filter bandwidth settings (grayed out when the BPF is disabled)
    - To set Custom width after enabling the BPF, left click in the waterfall where you want the BPF bandpass to start. Drag your mouse with the left button held down and release it where you want the BPF bandpass to end. The waterfall display will immediately select the chosen Bandpass. This makes it simple to eliminate an offending station on the fly
    - The minimum width of the BPF that can be set is 100 Hz
  - The BPF can be turned off by selecting **Disable BPF** on the BPF menu or by right-

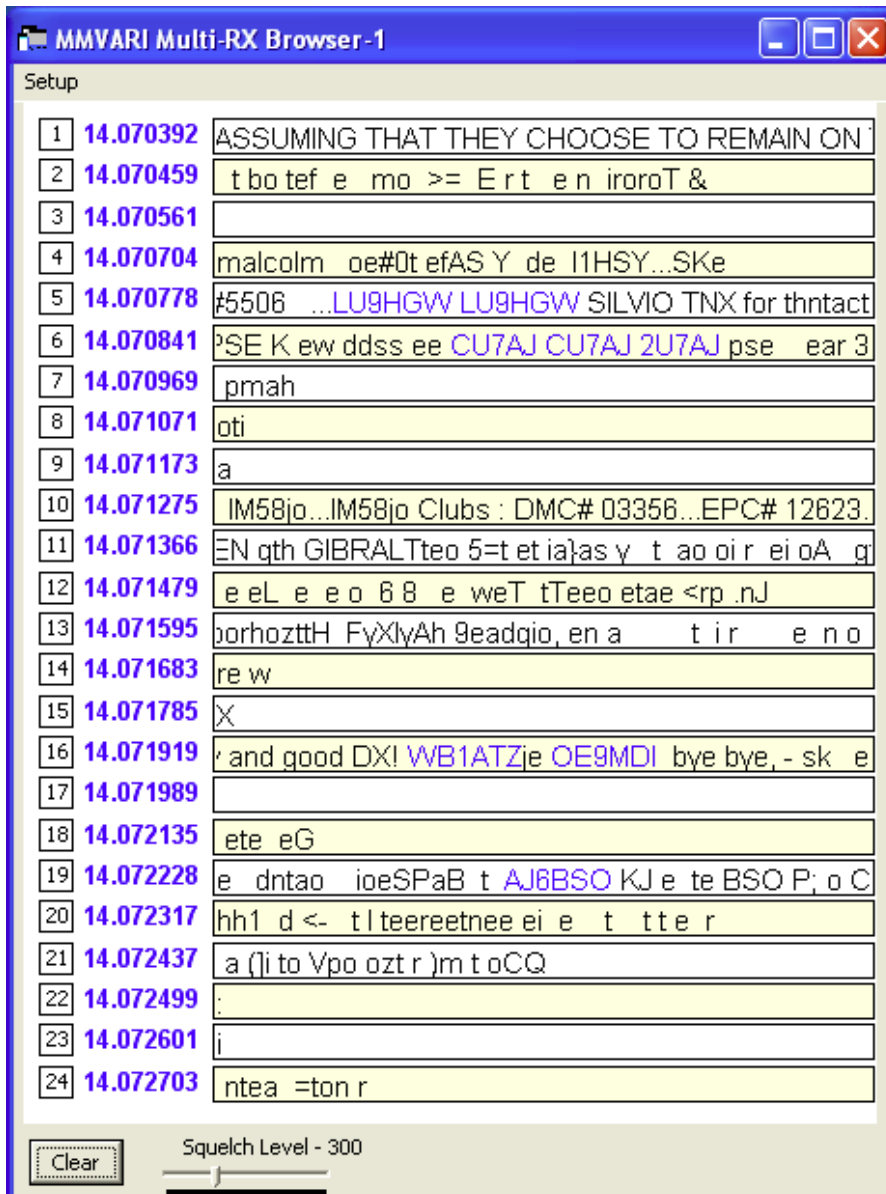
- clicking in the waterfall and selecting **Turn off bandpass filter**
  - The BPF settings are retained when you close and reopen the digital engine window
- **ATC** - Used to turn Automatic Timing Control (ATC) on or off. It is recommended to keep ATC on all the time for better signal decoding
  - when RTTY is selected ATC is always off
  - in MFSK mode ATC is always on
- **FFT** - FFT is Fast Fourier Transform, which is a method of extracting the spectrum out of a waveform. That is the basic tool that gives the waterfall and spectrum scope displays
  - **FFT Type** - Select the FFT display method. Selections are: Spectrum, Waterfall, Sync or Wave Input
  - **FFT Width** - Select the display width (frequency range). Selections are: 250 Hz, 500 Hz, 1000 Hz, 2000 Hz, 3000 Hz or User Defined. User Defined width is set in the Digital Setup window
  - **FFT Scale** - Select the vertical scale to use. Selections are: 100 dB, 60 dB, Square Amplitude
  - **Waterfall AGC** - Turn the waterfall AGC on or off
  - **Align after Left Click** - Automates the Align process. Any time a signal is clicked on in the waterfall, an automatic Align operation is performed to re-center the audio frequency on the Alignment Frequency you have selected in the Digital Setup window
- **SHIFT** - Shift selections. The choices are 170 Hz, 200 Hz, 23 Hz or User Defined
  - Only in RTTY-L, RTTY-U and GMSK
- **RTTY Demodulator** - select either IIR or FFT decoder. Depending on conditions, one may decode better than the other
  - Only in RTTY-L and RTTY-U



- **Multi-Channel Rx** - **This feature is only available when the # of MMVARI Channels in the Digital Setup window under the MMVARI Setup tab is set to 1. It is an alternative method of receiving multiple signals simultaneously with MMVARI**
  - **Enable (or Disable) Multi Channel RX** - turns this feature on or off
    - When the Multi-Channel RX feature is turned on, there will be several numbered tag cursors at the top of the waterfall, and a separate browser window will open (see below). The number of channels is user-selectable (from 2 to 24)

- Each line in the browser window shows text decoded under the corresponding numbered cursor
- There is only one RX pane in the Digital Interface window, which displays text from the main RX signal under the light blue inverted triangle cursor
- You can move the main RX cursor to the position of any of the numbered tag cursors simply by clicking in the corresponding small text window
- You can use this feature to keep track of several separate signals being received. You can work each one in turn by clicking in the corresponding numbered text window to move the main RX/TX frequency (with NET on) to each numbered cursor position in turn
- **Set Number of RX Channels** - you can select from 2 to 24 channels to display in the browser window
- **Set AFC Search Level** - Used to set the signal level (S/N ratio) used to determine whether a signal is strong enough to activate the AFC and cause the RX frequency to move to it (can be set from 1 to 20 dB)
- **Set AFC Search Range** - Each extra RX channel has AFC (automatic frequency control) which moves the cursor to keep it centered on a signal if the frequency changes slightly. This menu item is used to set the frequency range over which this feature operates (can be set from 100 to 500 Hz)
- **Set Spectrum Search Frequencies** - Allows you to set the lower and upper limits for the browser channels. The lower limit can be 250 Hz or higher, and the upper limit can be 2700 Hz or lower

The Multi-Channel RX method allows you to keep track of more channels than the older # of MMVARI Channels method that you set up from the Digital Setup window. The displayed "memory" for each channel is less (only the size of the small scrolling text window, instead of one of the RX panes in the main DI window). You cannot click directly on call signs in the small scrolling windows; you have to first change the main RX window to the chosen signal and then click in the DI window. The older method also allows you to change modes in the extra channels independently (i.e. to receive signals in two different modes simultaneously). However, although this newer method is less full-featured than the older method, you may find it easier to use, especially in a contest situation. Try them both to see which you prefer. (For yet another way to do multiple receive in PSK only, you can also try the PSK Browser in Fldigi).



Browser window for Multi-Channel RX

- **Setup** menu
  - **Set On Top** - check this if you want to ensure that the browser window is always on top of other windows
  - **Set AFC Width** - set the frequency range for AFC in each browser channel
  - **Set AFC Level** - set the signal level that activates AFC

### 1.3. Macros

- The macros for the Interface using MMVARI are different from the way they work with the TNC . What ever you put in the macro will get transmitted. There is a macro keyword needed to turn TX ON {TX} or TX OFF {RX}
- There is no special abort macro needed for use with MMVARI just using the ESC key will stop transmitting

- The TX and RX buttons are for the free form typing in the TX window
- When MMVARI loads, it loads the last used settings when the Interface was closed

## 2. Setting Up the Digital Interface

The setup dialog is for both MMTTY and MMVARI, this means that some settings are only for MMVARI, MMTTY or both. When selecting 'Setup | Settings' in the Digital Interface window a dialog will be shown which is both for MMTTY and MMVARI. Please check the setup information in the [Digital Setup](#) chapter.

## 3. MMVARI Example: Make a PSK Transmission

- We need to make room for the Digital Interface so for now minimize the Logger Telnet/Packet window
- Now select 'Window | Digital Interface' and the Digital Interface and the Waterfall/Spectrum window will open. The Digital Interface dialog can be positioned and resized on your monitor as desired
- Left clicking on a call will grab the callsign. Right clicking on the RX and TX window will pop a menu (S&P mode) or send the Exchange function key in Running mode
- Pressing Insert will Grab the highlighted call and sends His call followed by the Exchange button
- Double clicking on a callsign in the callsign box from the Digital Interface sends that call to the Entry window
- A callsign is automatically highlighted if recognized by the program. For that to happen it needs to have a space before and a space after the callsign. If the first thing on a new line in the Digital Interface window is a valid callsign, it is not highlighted or added to the grab list

## 4. MMVARI - Other

- The Radio Frequency display on the Waterfall and Spectrum display follows the active Radio Frequency
- The last PSK mode used is remembered, so the next time the last used mode is selected.
- Getting (PSK) object errors during program start or starting PSK?
- During transmit, callsigns are not grabbed from the receive window.

## Digital - Fldigi for Sound Card Modes

### In this Section...

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## Digital - Fldigi for Sound Card Modes

1. The Fldigi interface
  2. Download and Configure Fldigi
    - 2.1. Download Fldigi
    - 2.2. Fldigi Initial Configuration
  3. The Fldigi Interface Window
- 

### 1. The Fldigi interface

The Fldigi sound card interface is based on the fldigi code by Dave Freese, W1HKJ.

Fldigi supports a wide variety of digital modes, including not only AFSK RTTY and PSK, but also other less common modes such as MFSK, MT63, Olivia, Throb, etc.

Fldigi does not support keying outputs on serial or parallel ports, as used by N1MM Logger for CW and FSK keying. However, although it does not support transmitting in CW mode, Fldigi can be used as a CW receive decoder within the Logger.

Fldigi is a stand alone application, so you can use it from outside N1MM Logger as well. Note that the configurations for Fldigi stand-alone and within the Logger are separate, i.e. changes made to the stand-alone configuration will not be applied to the configuration within the Logger, and vice versa.

### 2. Download and Configure Fldigi

#### 2.1. Download Fldigi

- Download the current release of Fldigi from the W1HKJ website at <http://www.w1hkj.com/> . You can find a copy of the full installer for the current version of Fldigi at that website. This file is a self-extracting executable, similar to the N1MM Logger installer. Download the installer file to a temporary folder and then execute it. It is recommended that you install Fldigi in its own program folder and not in the N1MM Logger program folder. By default, the installer will install Fldigi to C:\Program Files\Fldigi-x.xx.xx\, where x.xx.xx is the Fldigi version number.

#### 2.2. Fldigi Initial Configuration

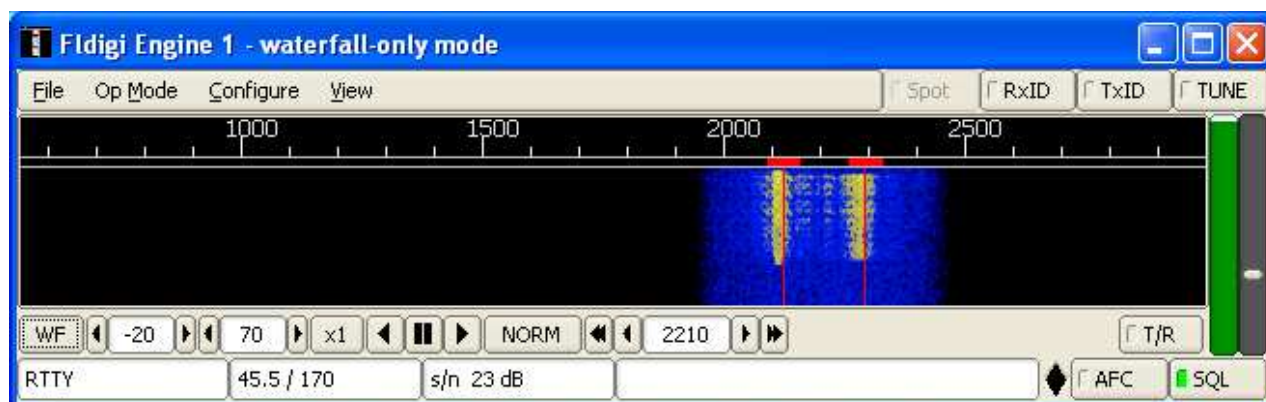
After Fldigi has been downloaded and installed, open the Configurer and set up the path to Fldigi under the Digital Modes tab. After closing the Configurer, choose a contest in N1MM Logger that supports digital modes, select the Logger's Window > Digital Interface menu item, and then in the Digital Interface window, select the Interface > Fldigi menu item.

When you first open the Fldigi interface from the Logger, and also any time you install a new version of Fldigi, you will be prompted to fill in some configuration information by the Fldigi configuration wizard, as follows:

- **Operator information** - You do not need to fill in any of this information
- **Audio devices** - Under the **Devices** tab, check the **PortAudio** box and select the sound card you are using for both **Capture** and **Playback**
- **Transceiver control** - Select the **XML-RPC** tab, check the **Use XML-RPC Program box**, and click on **Initialize**
  - If you are using hardware PTT controlled by the digital interface, select the **Hardware PTT** tab, check the **Use separate serial port PTT** checkbox, select the appropriate COM port in the Device: window, and check either **Use RTS** or **Use DTR**, depending on which one your hardware setup uses. If the label on the **Initialize** button is red, click on the button

The Fldigi configuration wizard does not automatically save these settings. After you have exited the configuration wizard and the main Fldigi interface window has opened, you must save the configuration settings using the Fldigi **Configure > Save Config** menu item. If you don't do this, then every time you open the Fldigi window you will have to go through the configuration wizard steps again.


### 3. The Fldigi Interface Window



- **Menu**
  - **File**
    - **Exit** - closes the Fldigi window



- **Op Mode**
  - **CW** - receive-only
  - **PSK** - select BPSK-31 for normal PSK31, BPSK-63 for PSK63, etc.
  - **RTTY** - select RTTY-45 for normal 45 baud AFSK RTTY
  - Other selections can be used for other modes - see the fldigi help for details
- **Configure**
  - **Waterfall** - under the **Display** tab, you can select whether to show audio or RF frequencies in the scale at the top of the waterfall, and whether to display transmitted as well as received signals
  - **Rig control** - XML-RPC should have been selected during the initial configuration. You can use the **Hardware PTT** tab to change the PTT settings for a separate hardware PTT port
  - **Sound card** - you can select the sound card to be used by Fldigi under the **Devices** tab
  - **Modems** - this is where you make configuration changes that apply to specific modes only (e.g. PSK-specific changes, or RTTY-specific changes)
  - **Save Config** - use this to save the new configuration any time you make changes
- **View**
  - **PSK Browser** - opens a browser window that can display up to 30 signals within the waterfall simultaneously (PSK only). To configure this browser window, use Fldigi's Configure > Modems > PSK > Viewer configuration window to set the number of channels, the starting (lowest) audio frequency (channel separation is 100 Hz), and various other parameters

Most Fldigi menu items not mentioned above are either not used by N1MM Logger, or perform advanced functions that are not needed for basic operation. See the fldigi help at the W1HKJ web site for more details (there is a link to the Fldigi-Help page from the download page at <http://www.w1hkj.com/download.html> .

Note also that when the Fldigi engine is selected, additional buttons appear in the Logger's Digital Interface window:

- **Align** - for retuning the radio so that the desired signal is aligned on a pre-configured frequency
- **Lock** - to lock the transmit frequency at the present position in the waterfall while allowing the receive frequency to vary (for operating split)
- **Rev** - in sideband-sensitive modes like RTTY, reverses the tones

 **SO2V/SO2R Limitation**

There is a basic limitation in the Fldigi engine which can make it harder to use in dual-receiver situations (SO2R and SO2V). Fldigi always receives in mono mode. If you are using a stereo sound card to decode two receivers, with one receiver in the left channel and the other receiver in the right channel, Fldigi will combine the two receivers in its waterfall. It doesn't matter whether Fldigi is the interface engine in DI1 or DI2, it will see the audio from both receivers.

Therefore, if you want to use Fldigi with both receivers in a two-receiver setup, you will need to use two separate sound cards for the two receivers. You will also need to install two copies of Fldigi in two separate program folders in order to allow a different sound card to be configured in each copy.

## Digital - External TNC Support

### In this Section...

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#### Digital - External TNC Support

1. The Digital Interface
  2. Setting Up the TNC in the Configurer
  3. Test Your External TNC
  4. Additional Macros for the External TNC Interface
  5. HAL DXP38 Setup
    - 5.1. Hardware Setup
    - 5.2. Software Setup in N1MM logger
    - 5.3. Known Problems
  6. HAL ST-8000 Setup (not supported)
  7. KAM Setup
  8. PK-232 Setup
    - 8.1. Setting up the PK-232
  9. SCS PTC Setup
- 

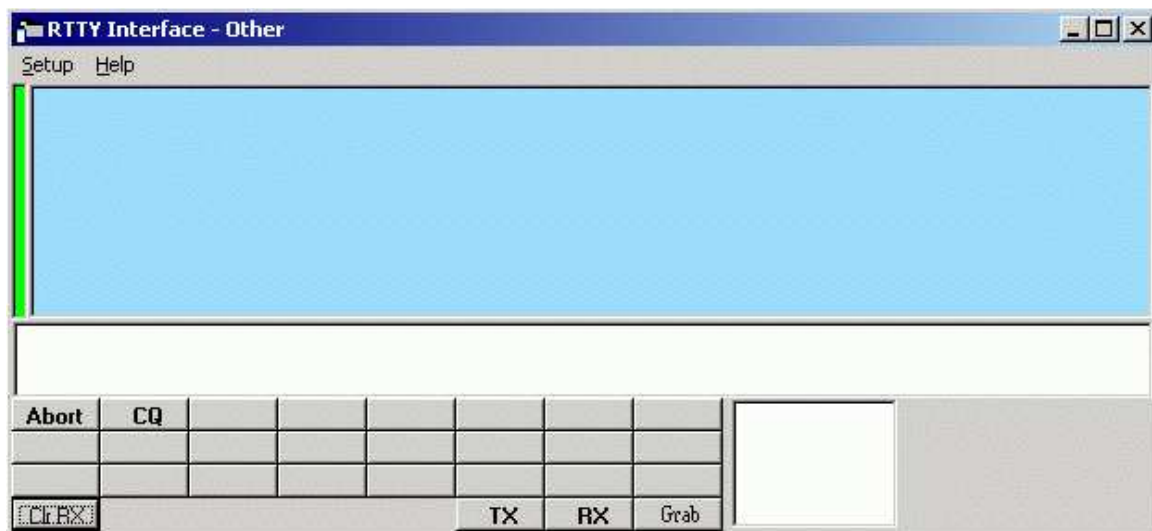
The Digital Interface will not only work with MMTTY, MMVARI and external TNC's like the PK232, HAL DXP38 but with ANY TNC.

This is because the commands for the TNC are not hard coded into the program. This has to be done by the user of the program 😊

Information about the following external TNCs can be found below but as already stated ANY TNC can be used with N1MM logger which uses serial communication.

### 1. The Digital Interface

The Digital Interface can be used with any external TNC.



Using a TNC will show an interface like the one above.

## 2. Setting Up the TNC in the Configurer

1. Start the N1MM Logger application
2. On the Logger Main Window select >Config >Configure Ports, Telnet Address, Other >Digital Modes tab
3. In Digital Setup
  1. Choose Other for Interface
  2. Set other parameters accordingly (Example settings: Com 4 ,9600 ,8 ,N ,1, RST-Xon)
  3. Save the configuration < OK >
4. Load the Digital Interface from the Window menu
5. Create your Abort macro (This should be in the upper left corner) by right clicking on it. This will open up the RTTY setup area. Click on the same macro and enter what ever key sequence you need to abort transmission and save the macro

Example PK-232: {Ctrl-C}R{ENTER} Save the macro

1. You should be ready to copy RTTY make sure your interface is set to copy 45 baud and 170 shift. You can configure a macro key to change this or you can type the key sequence needed in the transmit window and it will get sent to the TNC

That should be it. You will need to add the CTRL keys that turn on and off the TNC

Example CQ macro for the PK-232: X{ENTER} CQ CQ CQ TEST DE {MYCALL} {MYCALL} K {Ctrl-D}

## 3. Test Your External TNC

- Test stand-alone
- See the separate sections for the PK-232, KAM, HAL etc. If your TNC is not mentioned please set it up like the other mentioned TNC's

Make sure your radio and TNC work on your computers serial port by testing them with an existing terminal program. Connect your TNC/Radio into your computers serial port. The Hyperterm terminal program is included with Windows and works well. Make sure you note all COM port parameters. You should be able to tune in a RTTY signal and print it using the Hyperterm program. The Windows Hyperterm is geared toward modem communications and is not especially intuitive for direct COM port use. As stated previously, you can use any number of terminal emulator programs. For example, the Tera Term Pro 3.1.3 by Ayera Technologies is a small, open source, free terminal emulator that is available for download.

The interface has been tested with the three mentioned TNC's below and works fine with them. Any other TNC should also work as long as you place the right commands for that TNC in the macros.

#### 4. Additional Macros for the External TNC Interface

The Digital Interface will accept all of the Macro keywords that can be used in the Packet window and other places in the Logger and will also accept the following:

Ctrl+A	Ctrl+B	Ctrl+C	Ctrl+D	Ctrl+E	Ctrl+F	Ctrl+G
Ctrl+H	Ctrl+I	Ctrl+J	Ctrl+K	Ctrl+L	Ctrl+M	Ctrl+N
Ctrl+O	Ctrl+P	Ctrl+Q	Ctrl+R	Ctrl+S	Ctrl+T	Ctrl+U
Ctrl+V	Ctrl+W	Ctrl+X	Ctrl+Y	Ctrl+Z	Esc	Enter

Macro keywords can be used in any of the macro buttons or the Logger function keys..

The TX window will accept all control key commands except for the Esc key, this must be sent as a Shift+Escape combination.

Remember that when to set up a macro key that is not a TNC command you will need to include the sequence to key the TNC before it sends. If you click on the macro without the TNC transmitting, your TNC will think it is a command being sent to it and not know how to process it.

TNC users have to enter in whatever CTRL characters are needed to turn on and off your specific TNC.

To use the free form typing in the TX window you need to create a macro that will key your TNC and another to Turn it off. Click the macro that starts transmitting and then click in the TX window. Whatever you type will be sent out. Then click the macro to turn things off after you are done.

#### 5. HAL DXP38 Setup

By Brian, K3KO

The following instructions will get the HAL DXP38 TNC up and running for FSK in N1MMLogger. I

admit to not trying AFSK but it should work. This implementation is not elegant but does work with some 'features' of its own. There is a built-in tuning indicator accessible through macro toggles. The implementation is very basic but is working, there are other programs around if you want all the bells and whistles. Thanks go to N2AMG for making the program changes necessary to accommodate HAL commands.

Since there is essentially only one way communication between N1MMlogger and the DXP38 in the command mode, don't expect error checking or error detection. It is assumed that turning on the DXP38 properly loads the internal software. No capability exists here to do such. No capability exists to update the internal programs. This must be done with the HAL software. My unit uses the latest update .LOD and .S28 files from the HAL website <http://www.halcomm.com>. It is not clear that the updated files are needed here. However, the reason given for the update was to fix a PTT error with another program. So if you are having problems with PTT activation, these updates may be appropriate. Unless you alter the attached initialization macro, you must use LSB RTTY for FSK or LSB for AFSK..

There are three distinct phases - Hardware setup, Software Setup, and Use. The last section discusses two problems that have cropped up and solutions found.

## 5.1. Hardware Setup

It is recommended that one first get the DXP38 running with WF1B, HAL or a known 'tried and true' software package first. Doing so eliminates the need to troubleshoot both hardware and software when configuring N1MMLogger. Hardware setup:

1. Connect the PTT and FSK lines to the rig
2. Connect the COM port (1 for HAL software) to the TNC
3. Connect audio input to the DXP-38
4. Connecting the power
5. Connecting AFSK output to the rig (AFSK only)
6. Consult the DXP-38 manuals for the details. The rig must be set FSK RTTY (LSB) or LSB for AFSK

## 5.2. Software Setup in N1MM logger

There are three parts in setting up N1MM logger to work with the HAL DSP38. Make sure the version of N1MMLogger being used supports the DXP38 hexadecimal commands.

**Port configuration** - The DXP38 port should have checkmarks in digital and set. DTR/RTS should be set to always on.

**Digital configuration** - On the digital configuration dialog

- Choose a free port and configure it for 9600 baud, N,8,1 and no handshaking
  - It works fine on the first port but was not tried yet on the second channel. Nor have I tried using two channels
  - I have been able to get the DXP38 to run on the first port and MMTTY on the second port

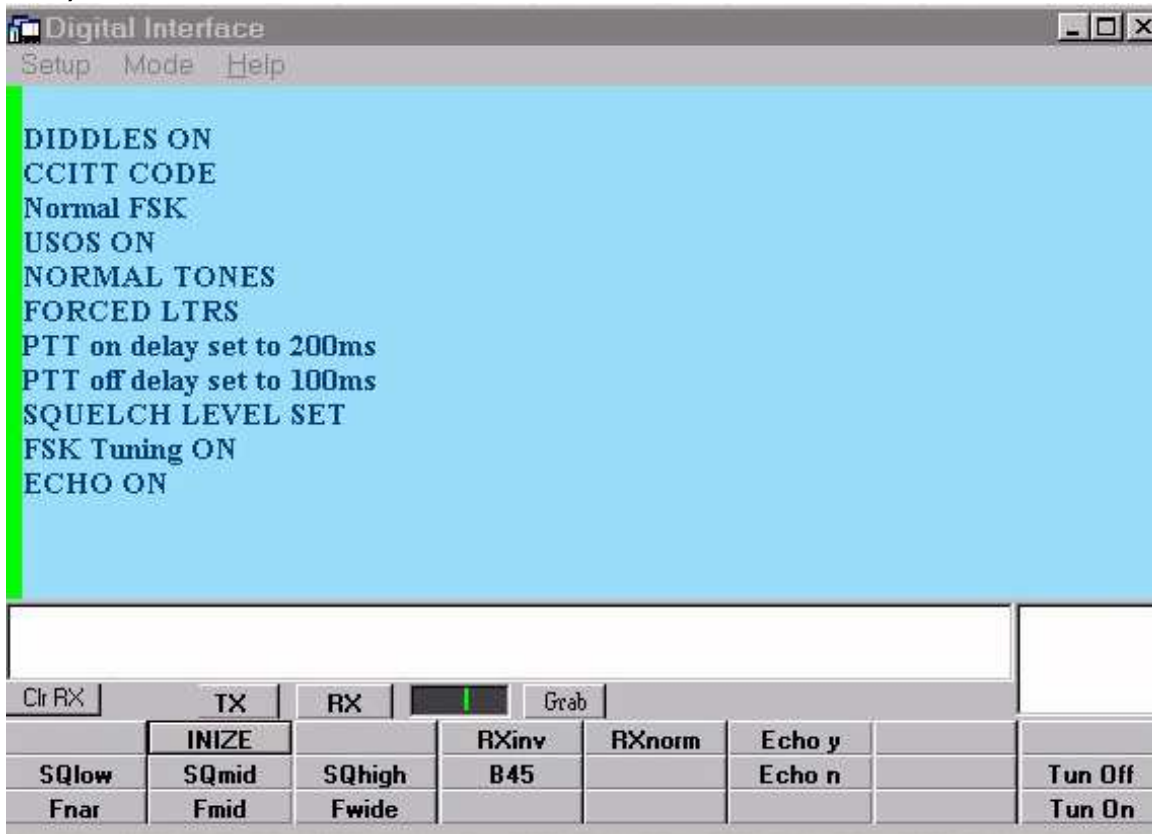
## Macro Creation required to initialize and control the DXP38

- These macros are the 24 box macros not the function keys
  - Important. This process is error prone. Go to the N1MM logger directory and create a backup of the MDB file in use. If you don't, the results of an error in the macros could be unpleasant. The program may give one a 'type mismatch' error which may not be correctable without either a whole new logging file or somehow editing the .MDB file (using Access) to remove the error. If one does cause this error to happen, just copy the backup file to the original file name. It is a good idea to do the macro creation in steps with backups along the way. N2AMG has some coding in place to help avoid the unpleasantness
- Command structure
  - The HAL DXP38 expects commands in the form of two hexadecimal bytes. The first byte is hexadecimal 80 and the second is the hexadecimal command number. Some commands require a second set of two bytes giving the value of a parameter being set. These commands look like {H8084} on the macro page. The {} tell N1MM it is a function, not text. The H triggers the routine which reads what follows as two hexadecimal, one byte numbers and sends them to the DXP38. The first number is always 80. Note: Only the numerals 0-9 and the letters A-F can be used to define the hexadecimal number. Use of any other characters within {} will produce a type mismatch and unpredictable operation. Any text character not in {} is considered text to be sent by the DXP38. As such, it will put the TNC into the transmit mode. The TNC will not return to the receive mode at the end of the macro unless a {RX} is present
  - Common errors: the use of ( >s instead of {, the letter O for a zero, lower case L for a 1
- Macro programming
  - Right click on an empty macro box on the RTTY TNC screen. This will open the macro editing screen which has to be edited. Make sure the commands are of the form {H80xx}. Be very careful with the syntax. There must be four digits and a leading H. Save the macro file and save the configuration. The example uses the macro 'Other 1' and saved the file under 'Other 1.mc'
  - The HAL command set included in the DSP4100 TNC technical documentation at the HAL website
  - The printout of the macro file below shows an example
    - The ESC macro under the TX, RX definition box and (it is no longer the first macro box)
    - The INIZE macro is the initialization macro
      - Although shown on two lines in most editors, it is programmed as just a series of commands in N1MM
      - The last command is a return to RX (in hexadecimal). This initialization macro establishes the following TNC characteristics: FSK, BAUDOT, 45 baud, normal FSK mark, normal tones, USOS on, force to letters, TX/RX polarity

the same, diddles on, squelch level set to 15, PTT delay =200 ms for XMIT and 100 ms for RX, transmit text echo and tuning indicator on

- There are three levels of squelch control provided. The second word in the macro contains a 80nn. The nn is the squelch level. Zero is the lowest and 99 is the highest. You may have to tailor these to your particular radio. RXnorm and RXinv permit inversion of received signals. Echo y (echo yes) and Echo n (echo no) permit echoing of the transmitted characters as they are sent in the received screen area
- Fnar, Fmid, Fwide are the filter width selection macros (55Hz, 75Hz, 100Hz)
- B45 sets the baud rate to 45 baud. If you want another rate change the 8000 command to 800x, where x =1, 2, 3, 4, 5 for 50, 57, 75, 100, 110 baud respectively
- Tun on and Tun off control the tuning indicator. The tuning indicator is a freq offset bar indicator with a center zero position. Turn the radio knob towards the bar until it aligns with the center mark. This indicator currently has one problem. It can't be used with call capture. The frequency offset data being sent back confuses the call capture logic
  - Turn On using {H805D}
  - Turn Off using {H804D}

**An Example Macro file (other 1.mc) is available for download from the N1MM website (Other files)**



**First time startup**

- Start up N1MM logger first
  - After the program loads, make sure focus is on the TNC received text screen. Then turn

on the DXP38. If the data link is OK , an @ will be printed on the screen. You will have to create the macros the first time, save the configuration and save the macros to the file. I saved them to the 'Other 1.mac'

- Subsequent startups
  - Turn on the DXP38. Start N1MM logger. Click on the INIZ macro. One should see a text rendition of the initialization process on the screen. See the picture above. If the function keys have not been defined yet, do so. Almost without exception, end with an {RX}. The call sign in the S&P mode might not have the {RX} command. Now use the program as one would a CW or SSB contest. Call capture as well as the insert key work just like the CW mode Note: The initialization macro puts the TNC and rig in the transmit mode. No other macros do unless one embeds text characters, spaces or a {TX} command.

### 5.3. Known Problems

I have experienced some occasional problems on start-up and shutdown.

**Startup** - Sometimes the DXP38 and N1MM logger just don't want to communicate. The TNC won't accept the initialization commands. The cure is to shut off the TNC and wait about 45 seconds. Shutdown N1MM logger. Start up the TNC and wait until it has finished its internal initialization. (LED indicators have stopped flashing). Restart N1MMLogger. This may be a problem I have with the COM3 port here and you may never see it.

**Shutdown** - About half the time the DXP38 will go into the transmit mode when N1MMLogger is shutdown. The cure is to turn off the DXP38. Hopefully a more graceful shutdown can be developed.

### 6. HAL ST-8000 Setup (not supported)

The HAL ST-8000 TNC is not supported and will not work with N1MM Logger as the baud rate used by the HAL is 45 baud and the serial port control in N1MM only will go as low as 110 baud...

### 7. KAM Setup

- Launch Hyperterm and set its parameters to 9600 bps, 8 databits, no-parity, 1 stopbit and no flow control
- Connect the KAM to the port configured in Hyperterm
- Turn on the KAM
- When you see the message 'Press (\*) to set Baud Rate, press the "\*" button'
- Then set your callsign as prompted
- To place the unit into RTTY mode type "RTTY"
- Also make sure the unit is set up for software handshaking XFLOW = ON
- Once you are communicating with the KAM and have it in the RTTY mode, you can also tune



in a RTTY signal and it will decode and print on the Hyperterm window

- Now try to transmit by typing a Ctrl+C and a "T" on the keyboard followed by several characters that you wish to transmit. To get back to receive, type a Ctrl+C and a "R"
- If you have problems, consult your KAM manual
- Now exit the Hyperterm program and start Logger

Below are sample RTTY settings for the KAM TNC

AUTOOCR	0	AUTOLF	ON	AUTOSTRT	OFF
BKONDEL	ON	CD	SOFTWARE	CRADD	OFF
DIDDLE	ON	ECHO	ON	FILTER	OFF
FSKINV	OFF	INVERT	OFF	LFSUP	OFF
LOWTONES	OFF	MARK	2125HZ	RBAUD	45
SHIFT	170	SPACE	2295HZ	USOS	ON
XFLOW	ON	XMITECHO	ON		

There are three parts in setting up N1MM logger to work with the KAM.

#### 1. Port configuration

- The KAM should have a checkmark in digital

#### 2. Digital configuration

- On the digital configuration dialog
- Choose a free port and configure it for 9600 baud, N,8,1 and none

#### 3. Macro Creation required to control the KAM

- Set the TX macro to: {Ctrl-C}T
- will go into transmit
- Set the RX macro to: {Ctrl-C}E
- return to receive after the message is completed
- Set the ESC macro to: {Ctrl-C}R
- this will immediately return the system to receive before sending any text
- For example
  - CQ macro: {TX} CQ CQ CQ DE W3PP W3PP W3PP KKK {RX}

## 8. PK-232 Setup

- Make sure the PK-232 autobaud is set and the unit is set to RTTY mode
- Launch Hyperterm and set its parameters to 1200 baud, 8-data, no-parity, 2 stop bits, and no

flow control

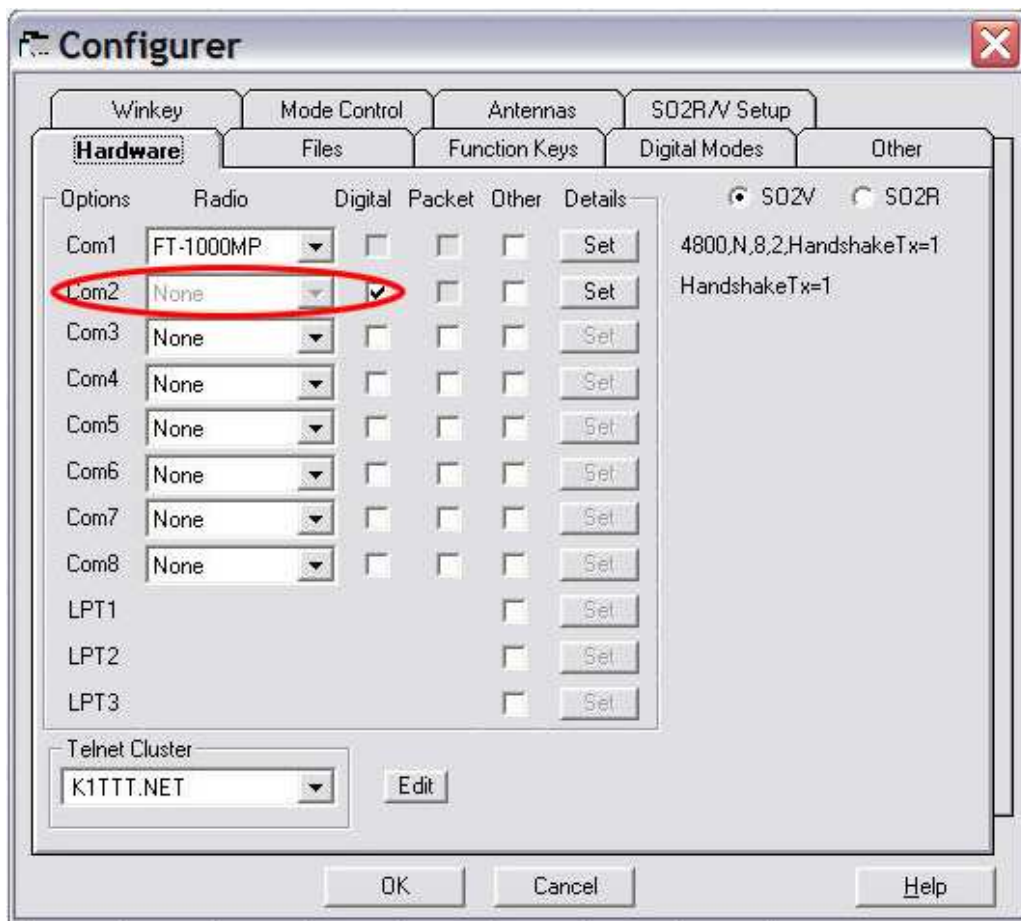
- Connect the PK-232 to the port configured in Hyperterm
- Turn on the PK-232
- Type a few "\*" characters so your PK-232 will autobaud to the 1200 baud rate
- Now place the PK-232 in the RTTY mode by typing the command "BAUDOT". It should respond OPMODE now BAUDOT
- Turn the threshold pot full clockwise and make sure the LED is on
- Also make sure the unit is set up for software handshaking XFLOW = ON
- Once you are communicating with the PK-232 and have it in the BAUDOT mode, you can also tune in a RTTY signal and it will decode and print on the Hyperterm window
- Now try a transmit by typing a "X" on the keyboard followed by several characters that you wish to transmit. To get back to receive, type a Ctrl+C and a "R"
- If you have problems, consult your PK-232 manual
- Now exit the Hyperterm program and start Logger

## 8.1. Setting up the PK-232

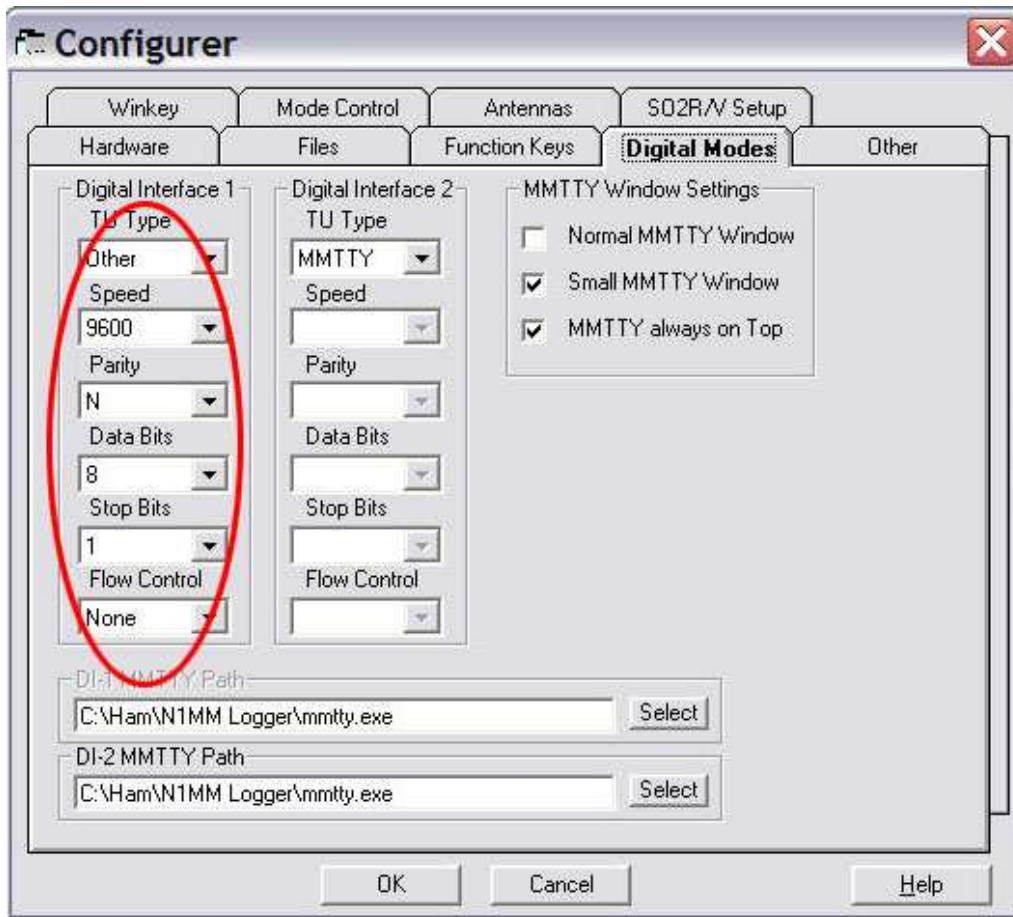
By John VK4WPX / VK4CEJ

Setting up the PK-232 for RTTY is very simple and straightforward.

- First, open the 'Configurer' (On the main logging window click Config, Configure Ports, Telnet addresses, Other)
- Click the Hardware tab
  - Click in the box adjacent to the COM port that you have your PK-232 connected to in the column labeled 'Digital'
  - See picture below, the example here shows the PK-232 on COM-2



- Next, click on the Digital Modes tab and set up the Digital Interface 1 parameters
  - The example in the picture below shows that the PK-232 is set for 9600 baud, no parity and 8 data bits



Setting up macros and the main logging window "F" keys for the PK-232 is also really very simple.

- Modify any existing macros that came pre-configured by replacing every instance of ' {TX}' with ' {Ctrl-C}Xmit{ENTER}'
  - I found that the command did not work every time unless it was followed by the {ENTER}
  - or, if the macro does not have {TX} or {RX} in it and you want it to start transmitting or go to receive, add those commands and, replace every instance of {RX} with {Ctrl-D}
- Example: F1 "CQ" macro would therefore be " {Ctrl-C}Xmit{ENTER}CQ CQ CQ DE \* \* \* K{Ctrl-D} "
- Example: F5 macro "Hiscall" would be " {Ctrl-C}Xmit{ENTER}! "
  - Which would leave the rig in transmit mode so that you could type more info in the transmit window
  - To return to receive, press Ctrl+D (hold down the Ctrl key and press D)

## 9. SCS PTC Setup

- Take the PTC as you use it for other digimode programs e.g. ALPHA (by DH7RG), XPWIN (By KF7XP), LOGGER (by K4CY)
- Set the PTC to SERBAUD 19200 (not AUTO ! ) > switch the PTC OFF
- Start N1MMLogger and go to 'Config | Configure Ports, Telnet Address, Other', Select the tab 'Digital Modes'. Set 'Digital Interface 1 TU Type' to 'CW/Other', set the used serial port to

- 19200 Baud, N-8-1-none. Set the 'Digital Interface 2 TU Type' to 'None'. Save with 'OK'
- Click on Windows and select Digital Interface
- Be sure that the PTC is connected to the right serial port and switch it ON and the start info will appear in the upper window finished by the prompt cmd: If you can't see anything check serial port and settings
- Click in the lower window, enter with the keyboard 'Escape+Shift bau 45 ENTER' the PTC will switch to RTTY (look at the PTC mode display). Add 'Escape+Shift term 1 ENTER' to switch the PTC to echo the transmitted signs in the upper window. Note : Escape without Shift will switch the cursor to the main window
- In the open Digital Interface select 'File | Settings' and select Tab: 'Macro Setup'. Select behind 'Digital Macro Set' 'Other 1'. Now three buttons appear with TX, RX and ESC on it. These buttons have to filled with the sequence to put the PTC in TX and RX and to get a correct function for canceling the AUTO-CQ function or make a break with the ESC-key on the keyboard
  - Digital Macro Set: Other 1
  - TX button: {Ctrl-Y} NB. in capital letters
    - Now the macro {TX} can be used to switch the TX ON
  - RX button: {Ctrl-Y} NB. in capital letters
    - Now the macro {RX} can be used to switch the TX OFF
  - ESC button: {ESC}CLR{ENTER}{Ctrl-D}{ENTER}
    - The macro will reset the PTC-2 to PACTOR, clear the TX buffer and switch the PTC-2 back to RTTY
- There are a maximum of 24 extra functionkeys. One of them may be configured to switch the PTC-2 from the default state PACTOR to RTTY
  - Name button: RTTY
  - Contents button: {ESC}clear{ENTER}{ESC}bau 45{ENTER}{ESC}term 1{ENTER}
    - Every time you start the PTC-2 you may click on this key to start the RTTY-mode. You need 'term 1' to get a delayed echo on the RX-window when your text is transmitted
- You may generate more macros with simple QSO texts using the installed N1MMLogger macros as !, \*, DATE, TIME etc
- Don't forget to start a functionkey with {TX} and at the end place {RX} to switch back to receive
- See for some macro examples at macros page

## VHF and Up Contesting

### In this Section...

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#### VHF and Up Contesting

1. VHF Options
2. Gridsquare Key Assignments (VHF and up)
  - 2.1. Call History Lookup
  - 2.2. Updating the Call History File
3. VHF master.dta File
  - 3.1. Transverter Support

- 4. VHF Beacons
- 5. Example Contest Setup
  - 5.1. Create (days) Before the Contest
- 6. Before Starting the Program
- 7. After Starting the Program

N1MM logger has some features which will be appreciated especially by VHF and up contesters. The program supports bands up to the SHF bands 10, 24, 47, 76, 142 and 241 GHz

**Multipliers - County/Other - 64 worked**

IO	IO	JO	JO	JO	JO	JO	JO	JO	JO	JO
89	99	09	19	29	39	49	59	69	79	89
IO	IO	JO	JO	JO	JO	JO	JO	JO	JO	JO
88	98	08	18	28	38	48	58	68	78	88
IO	IO	JO	JO	JO	JO	JO	JO	JO	JO	JO
87	97	07	17	27	37	47	57	67	77	87
IO	IO	JO	JO	JO	JO	JO	JO	JO	JO	JO
86	96	06	16	26	36	46	56	66	76	86
IO	IO	JO	JO	JO	JO	JO	JO	JO	JO	JO
85	95	05	15	25	35	45	55	65	75	85
IO	IO	JO	JO	JO	JO	JO	JO	JO	JO	JO
84	94	04	14	24	34	44	54	64	74	84
IO	IO	JO	JO	JO	JO	JO	JO	JO	JO	JO
83	93	03	13	23	33	43	53	63	73	83
IO	IO	JO	JO	JO	JO	JO	JO	JO	JO	JO
82	92	02	12	22	32	42	52	62	72	82
IO	IO	JO	JO	JO	JO	JO	JO	JO	JO	JO
81	91	01	11	21	31	41	51	61	71	81
IO	IO	JO	JO	JO	JO	JO	JO	JO	JO	JO
80	90	00	10	20	30	40	50	60	70	80
IN	IN	JN	JN	JN	JN	JN	JN	JN	JN	JN
89	99	09	19	29	39	49	59	69	79	89
IN	IN	JN	JN	JN	JN	JN	JN	JN	JN	JN
88	98	08	18	28	38	48	58	68	78	88
IN	IN	JN	JN	JN	JN	JN	JN	JN	JN	JN
87	97	07	17	27	37	47	57	67	77	87
IN	IN	JN	JN	JN	JN	JN	JN	JN	JN	JN
86	96	06	16	26	36	46	56	66	76	86

Country ZN Sect  Other Auto Auto Reset

## 1. VHF Options

The frequency is shown in the Bandmap and in the Entrywindow. When the frequency is above 1 GHz the band will be shown in cm, not the exact frequency in the Entry window. When entering QSOs it's easy this way to recognize the band in which you log.

## 2. Gridsquare Key Assignments (VHF and up)

- **Alt+equal (=)** - Search entered info from both the Callsign field and the Gridsquare field in the call history table

- The results will be shown in the Check window
- **Alt+minus (-)** - Toggle through call history and entered grid squares (max 3) in the grid square entry field
  - When no grids are found in the call history there is nothing to toggle

## 2.1. Call History Lookup

More information about this can be found in the [Before the Contest chapter](#).

This feature is very useful in VHF contests. Lookup examples are lookups for names (Friends file in RTTY contests), gridsquares for VHF contests, ages in All Asian DX contests etc. With the importing and exporting options the call history table can be updated.

Call history lookup is enabled with the option >Config >Call History Lookup. If enabled, it will look up in VHF contests: Grid Square (max 2) and Name.

## 2.2. Updating the Call History File

The program itself does have a function to export the log file to (update) the call history table under >Tools >Update Call History with current log'. This function will fill the call history table with the contents of the currently selected log.

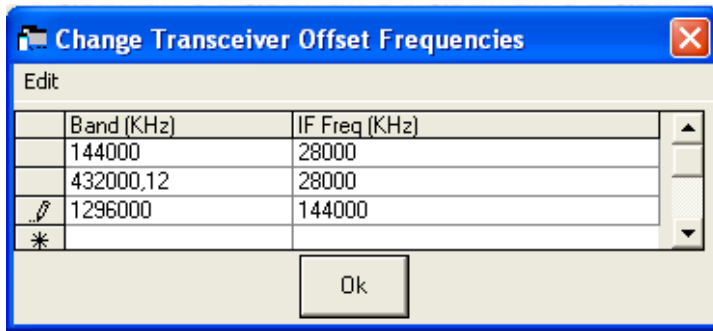
Another method used which gives more control is the separate program called *Thucydides* by Carel, PC5M. Check it out in the [Links chapter](#) chapter and the [Third Party Software chapter](#)..

## 3. VHF master.dta File

For HF there are several master.dta files which contain callsigns of active contesters. Select the Master Callsign database link on the download page. There are separate files for RTTY and for VHF and up contesting. A very nice tool to create a master.dta file has been written by Alex, VE3NEA. This tool can be downloaded from his site (see the [Links chapter](#)) and is freeware! A text file with callsigns is needed. An example master.dta file for VHF is available from the N1MM website in the 'Other Files' menu under 'Downloads'.

### 3.1. Transverter Support

N1MM logger has transverter support in the form that per band an offset frequency can be set. Right click on the bandmap and select >Set transceiver offset frequency. The offset value is saved by the program so after a restart the offset is still there.



- **Band (kHz)** - enter the transmit frequency of the transverter
- **IF Freq (kHz)** - the frequency used between the radio and the transverter

An offset can also be added to adjust the transverter radio to the exact frequency (like when the oscillator is a bit off).

See the 432000,12 example where a correction is being made of 120 Hz. Great to have to be right on the packet cluster spots!

### Bandup/Banddown

If you have a radio that has 160-2m, and you want to use bandup/banddown, you'll need to put entries in for bands that you do not have transverters for, if there are gaps in bands that the radio/transverters cover. You would really have to put a lot of transverters offsets in if you want the frequencies to "wrap".

#### Next Offset Band

If the next band is not defined as offset to a frequency that my radio can handle and bandup/down is used, it goes to an HF frequency (without offset).

- It does not work if your radio does not accept the calculated frequency. For example, set up for Band: 144000 and IF freq: 28000 and you put in 146100 and your radio can't go to 30100, you will get strange results
- Remember to enter the frequency of the transceiver and not that of the transverter when going into split mode (Alt+F7).

## 4. VHF Beacons

N1MM logger is capable to show beacons in the bandmaps for a defined period of time. Normally every spot in the bandmaps will disappear after the 'Packet Spot Timeout' which is valid for every spot in the bandmap. The same for beacons coming in as spots. So an extra import option has been added for beacons with where the spot timeout can be set to a much higher value (like days or even weeks).



Importing beacons and showing them in the bandmaps for the bands can be done by importing a text file in a specific format. Enter the text `BEACONS` in the Entry window callsign field and a file selection dialog will open where a .txt file (with beacons in the correct format) can be imported. An example beacons text file can be found in the N1MM logger program directory (called Beacons.txt). In the beacons text file lines with a # are remarks, the first line in the text is the timeout for all beacons in hours. Every line with a beacon must contain callsign, frequency (in kHz) and grid locator (4 or 6 digit). The frequency may be in either US (50000.25) or European (50000,25) format. A comment per beacon is optional. Note the ; as separator (don't forget one or it won't import). Below an example beacons.txt file.

```
# Hours to stay in bandmap (mostly > 24 or > 48)
```

```
60
```

```
# Call beacon;Frequency;Grid;Comments
```

```
OZ7IGY/B;144471,1;JO55WM;
```

```
PI7CIS/B;144416,2;JO22DC;Should always be heard
```

```
DL0PR/B;144486,3;JO44JH;Switches power!
```

```
GB3VHF/B;144430.4;JO01DH;QRG with a .
```

```
ON0VHF/B;144418,5;JO20;4 digit grid
```

A file with beacons in the correct format for Europe (Region I) can be found on the N1MM website under 'Other Files' in the 'Download' menu.

#### The NCDXF/IARU Beacon Network

No need to add the NCDXF/IARU Beacon Network on 14.100, 18.110, 21.150, 24.930 and 28.200. They are already incorporated in the program and the beacon transmitting at that time (when your PC clock is correct) will be shown in the Entry window statusbar when you are listening on one of these frequencies.

## 5. Example Contest Setup

Additions are welcome!

### 5.1. Create (days) Before the Contest

- New master.dta file

- Use tool from Alex, VE3NEA, see the [Links chapter](#)
- Create 'N1MM logger.ini' to use during the contest
  - Setup all the program setting and place the windows as you like them during the contest (on the computer to use)
  - Don't forget the tab 'Mode Control' in the Configurer.
  - After closing the program it has created a file called 'N1MM logger.ini' with all the settings
  - Copy 'N1MM logger.ini' (not .init) to 'VHFsettings.ini'.
- Text file with contents Function keys for SSB/CW
  - As a start:
    - 'File | Export | Export Function Keys to file... | SSB Function Keys'
      - Give a name like: VHFssbfunctionkeys.mc
    - 'File | Export | Export Function Keys to file... | CWFunction Keys'

#### \* Transverter support

- As a start:
  - 'File | Export | Export Function Keys to file... | SSB Function Keys'
    - Give a name like: VHFssbfunctionkeys.mc
  - 'File | Export | Export Function Keys to file... | CWFunction Keys'
    - Give a name like: VHFcwffunctionkeys.mc
- Update these text files if needed
- Check possible macros in the [Macros chapter](#)
- Packet/Telnet button text file
  - As a start: '>File >Export >Export Packet/Telnet Buttons to file...'
  - Update this text file if needed
  - Give a name like: VHFpacketbuttons.txt
  - Check possible macros in the [Macros chapter](#) like {GRIDSQUARE}
- Lookup database text file for the VHF contests to use
  - Create a text file with callsign, name, locators etc.
  - Give a name like: VHFlookup.txt
  - See info about CallHist file
- SSB: Wav files for CQ, rst, exchange etc.
  - Create wav files for all operators
  - See {OPERATOR} macro in the [Macros chapter](#)
- Download up to date country file (cty.dat)
  - mostly a country file is not used for VHF and up contesting but the program gives information in the Info window about the logged callsign so download the latest version
- Check if the selected contest is still ok, make some test QSOs
  - This should be done weeks before the contest!
- ....

## 6. Before Starting the Program

- Copy the created master.dta file in the N1MM logger program directory

- Copy the wav files from all operators in the WAV directory
- Turn off Windows sounds if using WAV files
  - Windows >Control Panel >Sounds - Scheme: No Sounds
- Rename ' VHFsettings.ini'. to 'N1MM logger.ini' and copy it into the program directory
  - The program will start using the settings as set up days before the contest

## 7. After Starting the Program

- Select/Check if correct database is used
  - >File >Open Log in Database, select VHF database'.
- Import
  - This has to be done only once if every time the same database is used!
  - Each database can handle many contests and thousands of QSOs, don't use a database for every contest!
  - Updated files (like the lookup file) have to be imported before every contest.
    - The function keys macros (SSB/CW)
      - >File >Import >Import Function Keys to file... >SSB Function Keys. Use file created above (Example: VHFssbfunctionkeys.mc)
      - >File >Import >Import Function Keys to file... >CW Function Keys. Use file created above (Example: VHFcwffunctionkeys.mc)
    - The packet/telnet buttons
      - >File >Import >Import Packet/Telnet Buttons from file... Use file created above (Example: VHFpacketbuttons.txt)
    - Lookup file
      - >File >Import >Import Call History File. Use file created above (Example: VHFlookup.txt)
    - Country file
      - >Tools >Import country list from downloaded file. Use file downloaded/updated above
  - Check Station dialog (>Config >Change your Station Data)
  - The locator from this dialog is used for distance calculation so needs to be entered!
- Check contest ( >File >Choose Which Contest to Log)
  - Check if entered information is correct.
  - Enter Sent Exchange (this is contest specific, see [Setup Contests chapter](#))
- Setup configuration (Rig control, PTT, CW)
  - Check Configurer >Mode Control tab
- When using a transverter, enter offset for bandmap A and bandmap B
- ....

Have fun during the contest!

# Operating a Contest

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## Before the Contest

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#### Before the Contest

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  - 2. Check the Contest Rules and if the Contest Program Uses Them Correctly
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### 1. Start of the contest season

With the start of the fall it is time to get ready for the big contests. Here are some suggested steps for your station:

#### 1.1. All Stations

- Print out the key assignments help file and mark it up with a highlighter. Use one color for things you know how to use, and another color for keys that you didn't realize were there but are interesting.
- Learn how to enter frequencies from the entry window. You can type 14022. If you are already on a band, you can type offset from the bottom of the band or the last three digits of the

frequency. On 80m examples are 22 for 3522 and 795 for 3795.

- Learn how to set split. Use the callsign textbox if you have not already copied the call. e.g. On 40m, 214 ctl-enter will set your tx freq to 7214. Use **Alt+F7** to set split when there is already a call in the textbox. A recent change allows you to clear split by pressing **Alt+F7** and pressing enter with no frequency entered. Esc still leaves split alone.
- On many radios, the up/down keys tune the radio or the rit depending on whether you are running or S&P. You can adjust the step amount in the configurer.
- Learn to use check partial. I find it is usually faster to make a good guess at the callsign and let them correct you than to just say what you know. I usually ask if their call is correct.
- On CW, use ESM. It's a skill that pays big rewards in believe it or not, reducing stress. Instead of thinking all the time "what key next", the program does it for you. Also learn to use the = key. It means, send the last message. Another good trick when you are tired.
- Make sure you understand how the bandmap and callframe work even if you are not assisted. As you work stations, they will be "spotted" in your local bandmap. This allows you to skip over them during your next S&P trip through the band. This saves a lot of time. The call will appear in grey in the callframe as the station gets within the user-definable tuning tolerance. Grey means you worked them. Tune on.
- Make sure you load the lasted wl\_cyt.dat and check partial files prior to the contest. Note that the wl\_cyt.dat has to be imported into the program. A step many forget.
- During the contest, if you work a station that is not handled properly by the country file, just put the correct prefix in front of it like (W8/N8SS), then log with **Ctrl+Alt+Enter**. You can put a note to check it later. You don't want to take a lot of time to fool with it during the contest. The other approach is to use Tools/Add call to country. To use this, you need to know the base countries in cyt.dat. A printed copy at the operating position is helpful in this.

## 1.2. Assisted or Multi-op Stations

- You can use the available window to help determine band strategy. Bands with lots of available spots are likely open well to where the spots are from.
- Loud stations can jump from spot-to-spot and pick off many Qs. Be sure to confirm the callsign. Spot quality has been deteriorating. You don't want to get penalized for a broken call.
- Remove broken callsigns with **Alt+D**. If the call is in your callframe, **Alt+D** will delete it. Quick and easy. Otherwise use the right-click option from the bandmap or available list.
- During slow times, you may need to turn your antenna to "clean" a band of spotted stations. Clicking on the beam heading column heading lets you sort the list so you can get them with minimum rotor movement. Note that clicking all of the headings works. Click a second time to reverse the sort. Default sort is descending on spotted time (last column - usually hidden. Scroll over to see it.)
- Be sure to adjust the spot timeout and the filtering based on time of day and conditions. If times are slow, I allow more spots through. At peak times, I want last 20 min, North American spots only.
- Try "call stacking" mode. In multi-op, you can specify another computer as the "target for call stacking". If both stations set this to each other (recommended) they can see what each other types in their call textbox in the callframe. This \*only\* works if they are on a run frequency.

The idea is that you have two ops with headphones listening to a run. If the secondary op copies the callsign, the primary op can wipe his and just press enter (in ESM mode). Since the correct call is in the callframe, it will be pulled into the call textbox and be sent as part of the exchange. This mode has not been used a lot, so I would recommend some ambitious souls try it out and let me know what needs changing. Also note that this function works across the internet. Now there aren't many contests that allow this - IARU for HQ stations is the only one I know of - but wouldn't it be an interesting kind of entry class? You could have one big gun and lots of listening stations supporting it. If you do this across the internet with stations exceeding the contest's separation limit, you must submit your log as a check log. The internet mode is useful for practicing with your Multi-op partner without the necessity of going to a single location.

73, Tom - N1MM

## 2. Check the Contest Rules and if the Contest Program Uses Them Correctly

But of course the program should keep up with all the rules for the contests it logs... but there is just one problem, there are so many of them! And you know what?? If there is an obvious bug like that found during the contest it is there for one, and only one, reason. YOU didn't test the software before the contest! (no Tom, not just you, I'm pointing at all the users out there)

Remember, the N1MM logger is free, written by volunteers, tested as much as we can before it gets out to users, but none of the relatively small group of writers and beta testers has time to try out every contest, all the possible scenarios, and all the combinations of them. Look at the list of contests supported, multiply by something like 1.5 for contests that have different rules 'in state' vs 'out of state' (or country, or continent, or whatever), then multiply by at least 4 or 5 for entry classes with unique rules, then multiply by 3 or 4 again for the different types of multiplier lists, points to assign, qso's that do count or don't count in each set of rules, and then multiply by a couple more things... and you get LOTS of combinations. In the software profession the logger would be considered virtually untestable for a single release, let alone for release after release adding new features, changing contest modules to update for the latest rule changes, updating country lists, county lists, list lists, and there isn't enough time in the year for anyone to even begin to test it all.

So, its up to YOU, the users, to test. Yes, YOU. YOU are the ones that know the rules, YOU are the ones that will be depending on it working for a whole weekend... and if you add up all the YOU's out there who are using the software every weekend it adds up to enough man power to do a reasonable job of covering the critical parts of the program.

The key is, if you are planning to operate in a contest a couple weeks from now, lets say, cqww ssb... Load the latest software NOW, create a dummy database, and sit down with your radio, computer, cluster connection, keyers, and whatever else you use, and log a couple dozen contacts as if you were running(fake them, type and hit function keys as fast as you can and see if it responds reasonably quickly)... then log a few more in S&P mode, make sure your messages and macros work as expected, make sure you can record and playback ssb messages on the fly, make sure the multipliers you think should be counted are scored right, log some contacts that shouldn't be multipliers or points and make sure they aren't. grab some spots, make some spots, make sure

the spots show up in the right colors for the contest rules. Use the new feature to save your screen layout so you can get it back later. Then create a Cabrillo file and make sure that looks ok... make detailed notes of problems and put in bug reports well in advance. If everyone did that on some evening, or rainy day, or some morning when you wake up and can't get back to sleep, we would stand a chance of catching simple things like multipliers that aren't counted right BEFORE the contest weekend.

So get out there and TEST!

David Robbins K1TTT

### 3. Update the Call History Lookup File

In some contests part of the exchange is known if the callsign is known. So it would be easy to have this information shown (or already prefilled) if the callsign is entered. Lookup examples are names (Friends file in RTTY contests), gridsquares for VHF contests, ages in All Asian DX contests etc. In all cases the possibility to use this lookup function means changes in the contest class by the programmer. A lookup is only done when the cursor is in the callsign field in the Entry window and SPACE or TAB is pressed.

Update the Call History file or create a new one if the contest supports this and the exchange could be/is known.

More information about Call History can be found in the [Advanced Functions chapter](#).

### 4. Importing and Exporting Message Function Keys

The CW messages and SSB wav file messages are not contest-specific, but rather portable between contests.

When you get the message keys set up for a particular contest do the following: >File >Export >Export Function Keys to >File >CW Function Keys (for example). This saves the message key setup as a Macro file. Name it after the contest. You can recall that set of function keys any time you like by importing them: >File >Import >Import Function Keys from File >CW Function Keys (for example) > (select file)

This way you can make and reuse different files for all the different contests. Just import the message keys for the contest de jour.

### 5. Getting Ready for CQWW (and other contests)

Top testers have a checklist of things to do prior to a major contest. Please consider adding these logging program related items to your list:

1. Make a few dozen test contacts in the contest. Make several QSOs in 'running' mode and several QSOs in S&P mode. Press the CQ function key to set yourself to 'running' mode. If it

does not, make sure the 'Configurer | Function Keys tab' matches your button setup

2. If you plan to use any of the following features, make sure they work as you expect:
  1. Enter sends messages
  2. Autocompletion
  3. Multi-op
  4. Send leading zeros
  5. Send corrected call
  6. Radio interface
  7. Packet connection
  8. Telnet connection
3. Get the latest CTY.DAT and install & test it. The About window will tell you the version you are using
4. Get the latest MASTER.DTA and put it in your install directory. The Check window at startup will tell you the version you are using
5. Prepare your CW function keys, SSB wav files, or CQ/RTTY messages. Test them!
6. Make sure that RF does not get into your cabling
7. Make sure you have selected the correct options in the contest setup dialog. For CQWW your exchange field should contain only your zone. Read the contest rules so you know how to setup the contest, Function keys etc
8. Run Cabrillo output and check for proper generation
9. Sync your time with an Internet time standard, if possible. I use a freeware program called **Dimension 4** and resync periodically (every hour?) during the contest
10. Review "Key Assignments" in the help. Print it out or print out a keyboard template which can be found on the N1MM website under 'Downloads', select in the 'Download' menu, 'Other Files'.

73, & GL in the contests

Tom Wagner - N1MM

## 6. How to Record WAV Files for the Function Keys Used in SSB Contests

By Tom, N1MM.

1. I use Cool Edit 96, but there are later versions
2. Record **\*\*all\*\*** of the messages on one wav file. Make sure you have a quiet room. Record each message at least TWICE. Sound excited!
3. Leave 5 seconds of empty space at the beginning of the recording
4. Record
5. Save the recording as "Raw CQ" or some such
6. Use Cool's noise reduction feature. Mark the blank part of the wav, and set the noise reduction, then noise reduce the whole wav file
7. Save the recording as "Noise reduced CQ"
8. Perform bass reduction, treble boost or whatever other transformations and save them as you do them
9. You can use compression, but I don't recommend it



10. Split the wav file into the separate messages, saving the best of the two recorded

Recording ALL your messages in one recording and afterwards splitting them up using a WAV editor will avoid the pops at the start and end of recording, as well as making it more likely that all the messages will be recorded at the same volume level and sound the same.

Don't ask why you need **Cool Edit**. Just get it.

Another nice program is **Audacity** and this one is freeware. This program can scale the peak amplitude of all the audio files to be the same. In order to set the audio level out of the computer, I recorded 10 seconds of a 800 Hz tone. Scaled the amplitude (peak = mean) and assigned it to F7. I call it cal.wav. I turn off the speech processor, and turn up the computer volume just until full output is reached. Although not guaranteed, the peak amplitude of my audio files should now be in the dynamic range of my transceiver. Afterwards I turn the processor on again.  
P.S. OK then, I admit to sometimes turning the volume just 1 or 2 ticks higher to be on the safe side..... - Thanks PA5DD

## 6.1. Storing Voice Files

Place the WAV files you have made in the \wav subdirectory of the N1MM Logger program directory. Call the files whatever you wish. One way is to label them as:

```
CQ      C:\Program Files\N1MM logger\WAV\cq.wav
N1MM    C:\Program Files\N1MM logger\WAV\n1mm.wav
Exch    C:\Program Files\N1MM logger\WAV\59.wav
```

## 6.2. Recording Letters and Numbers

The recording process for individual letters and numbers is the same, but these individual letter files must be placed in the \letters subdirectory of the N1MM program directory. Do **NOT** put them in \WAV\letters.

Examples:

```
letters\1.wav
letters\2.wav etc
```

```
? = letters\query.wav
/ = letters\stroke.wav
```

It is extraordinarily difficult to achieve fully natural voiced callsigns or serial numbers, because our

inflection varies so much depending on whether a letter or number occurs at the beginning, in the middle of, or at the end of a callsign or serial number. This is particularly true with serial numbers, where being able to say the number 595 as "five hundred ninety five" instead of "five nine five" is a big aid to intelligibility.

One option is to use voiced callsigns only while running, to save your voice and confirm the call of the station you are answering, and not to use voiced serial numbers at all.

### **6.3. Turn Off Windows Sounds When Using WAV Files**

- Open >Windows >Control Panel
- Double-click the Sounds folder
- Click on the Sounds Tab
- Select scheme: No Sounds

## **7. Making the Window Focus More Distinctive**

By Pete, N4ZR

The standard Windows XP color scheme does not make the active window (among many) distinctive enough for quick recognition during a contest. This can be an issue particularly in SO2R operation. Fortunately, this can be fixed. You can do the same thing with Windows 98 as well, just by right-clicking on the desktop and proceeding as outlined.

In Windows XP the specific process is as follows:

- Open >Windows >Control Panel >Appearance and Themes
- Click on Display
- Click on the Appearance Tab
- Under Windows and Buttons, select Windows Classic
- Click the Advanced Button
- Under Item, select the Active Title Bar and choose a color for it
  - I use dark red for the active window and gray for the inactive
- Then select Active Window Border and choose a color for it

You will probably want to fool around for a while before you settle on what you like best. Once you have done that, back out to the Themes tab under Display Properties. Click the Save As button and name this theme and save it to your settings.

From now on, all you need to do to switch to your N1MM setup is to right-click somewhere on your desktop, select Properties, and then choose your N1MM theme.

## **8. Adding a New Font to Windows**

- Select Windows >Control Panel >Fonts folder
- Select >File >Install New Font
- In the Drives box, click the drive and select the folder that contains the fonts
- Click the font you want to add. To select more than one font at a time, press and hold down the Ctrl key while you click each font
- Click to select the Copy Fonts To Fonts Folder check box (mostly already selected)
- Click < OK >
- Done!

## During the Contest

### In this Section...

---

#### During the Contest

##### 1. The Scenario

##### 2. Bugs Encountered During a Contest

---

### 1. The Scenario

During a contest you should know all the basic functions of the program like changing frequency, band and mode. The program should have no secrets any more. Your only concern is making QSOs, working multipliers, having a good strategy. The manual is lying next to you but you don't need it, the key assignments (shortlist) has been printed and is hanging within visual range so when you might forget you can take a peek.

You know there are no bugs in your version because you tested it, made test QSOs. You have reported bugs long before the contest and of course these have been solved long before the contest starts.

Long before the contest you have read the [Key Assignments](#), [Basic Functions](#), [Setting up the Program](#), [Entry Window](#) and the [Quick Tour](#) to have basic program information. So questions have been asked and answered, the manual has been read several times.

You have made a clean database, recorded your WAV files and programmed your CW messages, etc. weeks before the contest.

**Nothing can happen to you, you have prepared!**

### 2. Bugs Encountered During a Contest

When a bug was missed during testing and comes out during the contest please report it right after

the contest or during the contest if it is a show stopper. Tom participates in many contests but he also reads the mail during contests and can give hints or sometimes bring out a new version. In addition to Tom there are many other hams available who can help solving problems, giving hints etc.

Rather than writing down problems during the contest, try the following:

1. Use Alt+N to write a Note that will be attached as a comment to the QSO. For example, "This call not in master.dta."
2. At the end of the contest, use the menu option >View >Notes to see all the notes you have made during the contest

## After the contest

When the contest is over we are not ready yet. The points have to be calculated and the log has to be submitted.

### In this Section...

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#### After the contest

1. [Entering QSOs After the Contest](#)
    - 1.1. [Enter QSOs](#)
    - 1.2. [Change Time/Date for a Single Hand-Entered QSO](#)
    - 1.3. [Change Time/Date for Multiple Hand-Entered QSOs](#)
  2. [Change All QSOs Time/Dates by a Fixed Amount](#)
  3. [How to Create Cabrillo Files](#)
  4. [How to Print the Log](#)
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## 1. Entering QSOs After the Contest

Made a paper log during (part of) the contest? The QSOs have to be entered after the contest. The program has some nice features that will allow rapid QSO entry, and allow you to easily set the date and time via interpolation. (Remember, exact QSO times are not critical for contest sponsors, just within reason) This feature is most useful if you have a bunch of QSOs to enter. If you have one or two QSOs on paper you might as well do it the old way...

### 1.1. Enter QSOs

## Suggested way to enter QSOs

- Type frequency/band, hit Enter
- Continue entering calls and exchange as long as they are on the same band (type as fast as you can and don't worry about the times, they will be fixed later)
- If the band changes, type new frequency/band, and finish typing calls on that band

### Example:

7000 Enter

W1ABC 35 CT Enter

W2XYZ 55 MA Enter

14000 Enter

W5JOE 42 TX Enter

...

## 1.2. Change Time/Date for a Single Hand-Entered QSO

Updating the timestamp from a qso can be done from within the Entry window using the callsign field. Entries starting with "T" and four numeric digits will update the current row time in the log. Example: T1234 will enter the time 12:34. When entering qso's after the contest, first enter the qso information and enter the qso in the log. Then update the time using Txxxx and the time of the last entered qso will be updated.

## 1.3. Change Time/Date for Multiple Hand-Entered QSOs

### Make a Copy of Your Log

Make a copy of your log, and only use the copy for this process! You cannot (automatically) reverse the time interpolation process below. You have been warned!

To change time/date of a series of the hand-entered QSOs:

- Put mouse over the **first QSO** you want to change the time/date and single click to highlight the row
- With mouse over log window, right click
- Select >Set Start Interpolation Time Row
- Enter desired start time, and hit < OK >
- Put mouse over the **last QSO** you want to change the time/date and single click to highlight

the row

- With mouse over log window, right click
- Select >Set Stop Interpolation Time Row
- Enter desired stop time, and hit < OK >

### **Changing QSO Time and Date**



The utility will average out the time for each QSO in the group of QSOs you have selected.

**Remember there is no "undo" feature**, so make a copy of your log before using this utility. If you have a large gap in time in your hand log, enter the first batch of QSOs, and do the interpolation. Then enter the second group of QSOs and do a 2nd interpolation (by breaking up the interpolation, you can better accommodate gaps in the log).

## **2. Change All QSOs Time/Dates by a Fixed Amount**

### **Backup Your Log**



While you could easily recover from a mistake during the following adjustment by performing another offset, it is advisable that you backup your log before doing any changes.

This will fix a log where all QSOs are off by a common amount of time

- Put the mouse over the log window and right click
- Select >Change All Contest Timestamps by a Fixed Amount
- A dialog box will open, and enter offset time (+ or -) in minutes

The date will automatically adjust if the offset rolls a QSO into a different day. Time is entered in minutes, and can be negative time to go backwards. (You might need a calculator to determine the offset minutes if your date was off by many days, months, or years). For example, entering +1440 will shift a complete day forward; -2880 two days back.

## **3. How to Create Cabrillo Files**

Cabrillo is used by all major contests.

- Select >File >Export >Export Cabrillo to file...
  - This creates a Cabrillo file for contest log submission
  - Make sure that the Station information >Config >Change Your Station Data, and overall contest information (>File >Choose Which Contest to Log ) is correct before creating this file
  - It is also a good idea to >Tools >Rescore Current Contest before submitting
  - A Cabrillo file will be created named <yourcall>.LOG in the N1MM logger program directory

In the [Technical Information chapter](#) there is additional information about files the program can

produce. (Cabrillo, summary sheet, log, ADIF etc.)

#### 4. How to Print the Log

Well, there is no print function 'as such', and I don't think many of us print logs. Paper? Ouch! ;o)

Go to >File >Export, where you see a broad variety of choices. Make an ADIF file for importing in another program, to import the contest QSOs in the general DXlog. It is possible to make a summary sheet, save the file, open it in WordPad and then print it. CSV (comma separated value) format is also an option.

#### 5. How to Get Statistics

The program does have very nice statistics by itself. Also there is a external tool from I8NHJ. Some alternatives are listed below:

- Select >View >Statistics. Take your pick
- Export to ADIF and import in a general DX log. Use the statistics from that program
- Use the Cabrillo output format, needed by most (if not all) contest sponsors
- Use the brilliant I8NHJ's tool (also free!) to analyze the log afterwards
  - More info about this tool is given in the [Third Party Software chapter](#).

#### 6. Submitting E-mail Logs for ARRL/CQ Contests

ARRL and CQ require Cabrillo log files for each contest.

- The Cabrillo log file named: <yourcall>.LOG Example: N1MM.log
  - Select >File >Export >Export Cabrillo to file...

Submitting the files

- **Check the Cabrillo file** with Notepad. Read the the first part (header) of the log file to check if all is correct
- Enter the appropriate **e-mail address** for this contest. See the ARRL and CQ Web sites
  - ARRL at <http://www.arrl.org/contests/email.html>
  - CQ at <http://www.cqww.com>
- Enter the correct **e-mail subject line**:
  - ARRL: Contest, Yourcall, Class and Power
    - For example E-mail subject line: ARRL DX CW N1MM SOA HP
  - CQ: Callsign and the mode (SSB or CW)
    - For example E-mail subject line: N1MM CW
- **Attach the Cabrillo file** named < yourcall >.\* . DO NOT send as text but as attached files
- Press < **Send** >

- You'll receive an automated reply from the contest email robot (answering computer), acknowledging receipt of your log. Please save this message
- Remember that logs received after the deadline will be considered check logs only!

## 6.1. ARRL Contest Robot

Log files to the ARRL have to be Cabrillo files and need to be sent as attachments (not as text)!

Below is a typical, automated response from the ARRL contest Robot.

Thank you for your participation in the contest and for submitting your log in Cabrillo format. While the robot appears to be able to process your log, it appears to have discovered irregularities in your log. These do not affect its ability to be processed but correcting these problems will help ensure the entry is properly scored. These irregularities appear in a report at the bottom of this message. You are encouraged to review and fix these irregularities. You may then re-send it to [dxcw@arrl.org](mailto:dxcw@arrl.org). You may have to resubmit your log two or three times to get everything just right. Don't worry, the robot replaces the previous file as long as the callsign remains the same. We want to make sure that we have your information right! If you have any questions regarding this, please contact me at [n1nd@arrl.org](mailto:n1nd@arrl.org) or by phone at 860-594-0232.

Your tracking number is [3044.dxcw](#). Please save this receipt until verifying that your log appears on the Logs Received web page at <http://www.arrl.org/contests/claimed/>

Thanks for your cooperation.

73 Dan Henderson, N1ND  
5  
ARRL Contest Branch Manager

### ARRL DX CONTEST LOG WARNING MESSAGE REPORT FROM THE ROBOT

CATEGORY-OVERLAY: N/A%%

Line 7 was discarded. The CATEGORY-OVERLAY: tag is not used in ARRL contests. You may delete this line from your log.

Delete the line and send the log again. Now the log is accepted without warning messages.

## 7. Printing QSL Cards

N1MM logger doesn't have a QSL cards sent/received feature. Why? If every general logging feature people want has to be implemented, the program would be neither a good contest program, nor a good general logging program. It has been decided early that this was to be a contest



program with a few general logging features. To print QSL cards use a dedicated QSL manager (like BV) or use your daily logging program. Almost all logging programs who can print QSL card can accept ADIF input.

## 8. Importing a Contest Log into Your General Logging Program

By Franki, ON5ZO

N1MMLogger can be used for DX-logging but this is not where it was written for. You are missing some basic features of course, like award and country tracking and QSL'ing options. There is no way around this than using a specific DX logger for DX, or at least to do the "bookkeeping" afterwards. You can do this by exporting your N1MM log to ADIF and importing this file in the DX logger.

What I mean is this: N1MMLogger provides the ADIF-export feature. This creates a simple and plain ASCII file from your log-database. You can open and edit this file with any ASCII-editor, like the old DOS "Edit", Windows' Notepad or WordPad. In this file, the different parts that define a "QSO" (time, QRG, call, reports etc. etc.) are separated by field identifiers or tags that are defined in the standard of the ADIF-format. Read all about it at: <http://www.hosenose.com/adif/adif.html>

You cannot simply use this file for DX logging, but you can import this file in any casual DX logging program.

When I entered a contest, and I made -let's say- 300 QSOs, I export this file to an ADIF file. ADIF specifies a field named "comment", so I put a comment like "QSO in ARRL DX CW 2002" in the first QSO and save this. Then I have WordPad replace all the 299 empty "COMMENT" tags by "<COMMENT>QSO in ARRL DX CW 2002", so each of these 300 QSOs gets this comment added. When I import this file in my general DX-log containing a few thousand QSOs, these are marked with the specific comment. This is what I mean with "interacting". Other feature is that, in that same contest, the RST from the American stations, i.e. their state, is automatically filled in, in the "state" field in DX4WIN.

I never log a rag chew QSO or a DXpedition with N1MMLogger, and I never enter a contest with my DX-logging software. Yet all my contest contacts end up in my "general DX log", with a special note indicating what contest it was.

## Help

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## Help Files and Manual

This wiki-based manual is now maintained in real-time by volunteer authors who make changes to this document as the program changes. If you are reading this on the web, you are guaranteed to get the absolute latest version of the N1MM Logger manual.

However, you may need to access the N1MM Logger manual from a location without Internet access; or you may prefer the material in a different format (Adobe PDF, Windows .CHM Help); or you may require a non-English version of the manual.

To make your own off-line copies of the current English manual (either printed paper copies, or electronic PDF / HTML copies), see the [Off-line Copies of Wiki Documents](#) chapter in the wiki Users Guide.

## N1MM Logger Tips and Tricks

This chapter gives some tips and tricks on using the program. All tips are from Tom, N1MM unless otherwise mentioned. The tips are examples how you could use the program, not how you should use it, that is up to you!

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## 1. Bandmaps, Entry Windows and the Mysteries Thereof...

### Two Entry Windows

Here is what you should be able to do:

- Change keyboard focus with backslash \
- Change keyboard and transmit focus with **Ctrl+left/right arrow**

With one vfo on one band, and another on the same or second band, you should be able to jump from spot-to-spot using **Ctrl+up/down arrow** on the main vfo. With **Ctrl+Shift+Up/Down arrow**, you should be able to jump from spot to spot on the secondary vfo. If your radio has dual receive (Orion, FT-1000 series), you should be able to listen to both VFOs at once. **Alt+F12** swaps MAIN and SUB receiver.

With the Orion and FT-1000 series, the way I envision this being used in S&P: You would find a station on the main vfo, and wait for it. In dual receive, you would use **Ctrl+Shift Up/Down arrow** to find another station that is ready to be worked. You would call whichever station is ready first. This could be done on two bands (SOA), or on a single band (MM). If one has spotted a number of calls locally (QSYing wipes the call & spots QSO in bandmap), one could use it on one or more bands in SO.

**Bandmaps - Clicking on a spot** on either bandmap will set that vfo to keyboard & transmit focus, and put the call in the callframe. **Double-clicking** will put the call in the callsign field.

Please print and read the keyboard assignments help. You will be rewarded with greater enjoyment of the program. Trust me.

## 2. Bandmaps, What are They Good For...

The ONLY time they are to be used is for Search & Pounce AND the only thing they are good for is to do a quick match up of a partial call you hear on the radio with what you are seeing go by in the band map so you can keep moving instead of stopping to listen. That being said, the size of the band map can be kept small and well zoomed so it only shows a narrow part of the band...

Now why you might ask?? I want to see multipliers that just got spotted at the bottom of the band when I'm CQ-ing up at the top of the band, or I want to see multipliers on another band. THAT is what the Available window is for! Learn to use it and it will serve you well in finding multipliers on other bands. So shrink the band maps and enlarge the Available window and be more efficient at both scanning the band yourself and grabbing spots. Now wait, what about if I want to tune up the band to the next multiplier, shouldn't I have more band map shown so I can click on the next one up the band??? NO, that is what **Ctrl+Alt+Up Arrow/Ctrl+Alt+Down Arrow** are for, if you want to click on mults use the Available window list instead... sort it by frequency if you must, but I prefer to go after the freshest spots first since they are most likely to still be there.  
73, Dave K1TTT

## 3. N1MM Logger Contest Technique

I can't emphasize this enough. All the pretty bandmap stuff is not there to look nice. It's there to help you make Q's. Here is how to do it...

When there are lots of spots in the bandmap, you can work lots of stations with S&P. Start anywhere in the band. Press Ctrl+Up. Listen. Is he CLOSE to ready to be called? If yes, call him. If not, press Ctrl+Up again. Repeat this until you work through all the available Q's. This way you don't waste time listening to endless repeats when one station is working a weak one. I have made a 90/hr rate doing this.

More tips: If a spot is dead, or not in a legal part of the band, use Alt+D to delete it. You won't have to stop at it next time.

If you don't want to see spots for the wrong mode, right-click Allow spots for this contest's mode(s) only in the packet window. Be careful using this one on 80 & 40.

Print the Key Assignments for how to jump between mults.

Variation: You are CQ'ing, but the rate is slow. Use the S&P technique to jump between spots. Then quickly return to your CQ frequency with Alt+Q.

Unassisted S&P: DO NOT TURN OFF "Show non-workable spots". The only exception is for Sprint contests, such as the NA Sprint, EU Sprint and AP Sprint, where stations change their frequency

after every QSO. Here is my recommendation. Tune up or down the band, listening and watching the entry window for band edges, but also for calls that you have heard before or worked before in the callframe. If the call is unworkable, speed up your tuning, and find the next station. When you come to a station who is working someone else, type in his callsign. Work him if it is quick. If not, tune on, and the guy's call will be spotted. Tune up for a short time, then return to his freq with Ctrl+Up or Ctrl+Down. If he is ready, work him, if not repeat the process of trying to find another station.

The bandmaps are not supposed to be nice & clean. They are supposed to show you where stations can be worked. The bandmaps can be zoomed with the numeric +/- keys or by right-clicking on the bandmap. It is important to know if a frequency is in use to save time listening to a dupe or non-workable station.

The final, dirty little secret... What do you call a spot where there is no station? Your new CQ frequency...

Rate is everything...

## **4. Start of the Contest Season**

Approaching CQWW SSB means the start of the main part of the contest season. Enhancements to the program will be curtailed during this part of the year to focus on eliminating any bugs or performance problems.

### **4.1. Testing**

Please start testing with your favorite fall/ winter contest in the autumn. Make a copy of ham.mdb (or whatever you have called it), and use last year's contest as a test platform. Why? Some problems only appear with larger logs. Find out performance issues. I relay on the users to let me know about them.

Would you like a guide to testing? Check out the website (Download | Other Files and select "TestPlan.wri". We would be interested in any improvements you would like to suggest for this form.

### **4.2. Key Assignments**

Now is also a good time to review the Key Assignments. That is a good place to start to pique your interest in what the program can do. The Key Assignments Shortlist is great to print and hang beside the radio.

### **4.3. Enter Sends Messages (ESM) Mode**

If you are planning to operate CW or RTTY, you MUST learn about ESM (Enter Sends Messages). It

reduces fatigue and errors by sending the right message each time just by pressing Enter. It may take you a while to understand and set up ESM, so don't leave this to the last minute. Believe me, those that learn to use ESM, love it.

#### 4.4. Dual Entry Windows

It would be a good idea to try those out, so you don't get frustrated during the contest. For your reference:

\ backslash switches keyboard focus, **Ctrl+left/right arrow** changes keyboard & transmit focus. Also, **Ctrl+Fn**, and **Ctrl+Enter** send on the radio that does NOT have focus.

#### 4.5. Configurer Options

Finally, make sure you understand what settings you want for the following Configurer options:

- SO2V/SO2R
- Send corrected call
- Send partial calls
- Stop sending CQ when callsign changed
- ESM only sends your call once in S&P, then ready to copy received exchange
- Config/QSYing wipes the call & spots QSO in bandmap

#### 4.6. Autocompletion Mode

Later in a contest, you hear a lot of stations that you have already worked, whether on this band or another band.

If you check Autocompletion mode (Configurer | Other tab) the program will match the first characters that you typed to previous callsigns. It will then pre-fill the callsign field with the rest of the call. The portion of the call that you did not type will be highlighted, and you can remove it with the delete key. However, if you press space, the call will be kept in its entirety.

This function is similar the technique used in Internet Explorer to "guess" which url you are typing.

Some like it, some don't. Try it with an existing log that has a large number of QSOs.

### 5. Log Editing

You should rarely/never have to use the edit window during a contest. To get back your last QSO, press Ctrl+Q. To go back another QSO, use Ctrl+Q again. To go forward, use Ctrl+A. These keys

ignore QSOs made by other stations when in Multi-User mode. It is also much better, because you are using the same Entry window to edit that your fingers have gotten used to. To abandon edit of a QSO, press Escape. The background color of the text panes changes while in "quick edit"

## 6. Force to Log Whatever Heard

**Ctrl+Alt+Enter** will force the program to log whatever it doesn't recognize in the exchange field. The receive frequency is being reset to the transmit frequency.

## 7. Country Not Found When Logging Contact (no multiplier credit)

1. The preferred way to handle this is to load the latest wl\_cty.dat file prior to the contest
2. A second way to handle it is to force a particular call to a country with >Tools >Add Call to Country
  - o Note that this addition will be wiped out on the next reload of the country file
3. A third way to handle it is to add a note (Alt+N) to the QSO, and fix it later. >View > Notes will help you find those QSOs with notes

## 8. Having F1 NOT Always Send CQ

Pressing F1 will send the F1 message This when F1 is defined as CQ-key in the Function keys tab in Configurer. Pressing the CQ-key (i.e. F1) the place the program in Running mode but what if you do not want to go to running mode and want to stay in S&P mode? Here is the trick. Use the {S&P} macro in the F1 S&P key (13 th row). Easy as that.

## 9. Silence the Function Keys

If you want to 'silence' the function keys so they do not send anything and do not PTT the radio, just put a single blank space in the Fkey contents of the button you want to silence. A space is a real character, but not one that is transmitted, and the program knows not to switch the PTT in that case.

## 10. How I Recommend to S&P on a New Band

1. Look at the available window. Are there any Mults to be had? (You should already know this, since you just chose this band.)
2. If there are mults to be worked, use Ctrl+Alt+Up/Down to jump to them. Look at the callsign frame for the callsign. Use your ears to decide if that's the station and that they are near ready

to work you

3. Jump through all the mults until you have worked those that you can in a reasonable time. You may need to repeat the search several times to get them all. Note that you don't want to spend a lot of time waiting for them. Just keep going up and down the band and clean 'em out
4. Repeat the process with Q's that are available (Ctrl+up/down). When you find a dead frequency, try a short cq. Maybe you can get a run going. Otherwise, clean out the QSOs
5. Once you have worked all the spotted stations (assuming assisted), start manual S&P. Turn on "QSYing wipes the call..." option. If a station is hard to work, put in his call and tune to the next. The call will be spotted on your computer(s) only. You can use the technique in steps 1-4 to work him
6. Spot non-workable stations if you are a good typist. It's nice to know where they are so you don't waste time on them during the next sweep

## 11. Setting Contest Goals

How do you get better at contesting? One way is to set goals for yourself.

The info window supports this by allowing you to set how many QSOs per hour you want to try to accomplish. As you are contesting, the four rate panes will let you know if you are at less than 50% of goal (red), between 50-100% of goal (yellow), or ahead of goal (green).

Note whatever goals you set for an hour will continue until the hour for the next goal is reached.

What if you want to beat last year's score?

The program supports that as well. Just open LAST year's log, and click the Import Goals button. Choose the day (1 or 2) and press enter. You goals are now set to your hourly totals from last year. Don't forget to start a new log for this year! The goals will be kept until you reset them explicitly or until you LOAD A NEW DATABASE.

You don't want to have a different database for each (small) contest. This is a common misconception.

## 12. Problems During a Contest

What do you do if you have problems during a contest?

1. Make sure you have a **previous version** of the logging program around that you have used successfully in the past.
2. Make sure you have **tested the program ahead of time** using the modes you plan to use during the contest. Log a few sample QSOs. Check all the windows you plan to use. Connect to packet or telnet if that is your plan. You might want to run through a test plan.
3. If you find **problems before the contest**, please send the bugs in to be fixed as much before the contest as possible



4. **Check the update page** on the N1MM website. We frequently fix problems during the contest. The problems that we try to fix are either fatal ones, or low-risk ones. Nonessential functions that present some risk to fix, are left until after the contest.

### 13. Using Up/Down Arrows to Tune

The Up and Down arrow keys can be used to tune your radio. If you are in S&P, then just use them to tune in the station you are trying to work. This is particularly good for packet spots.

If you are Running, you might try this technique. Set your radio up for split, and use the up/down arrows as RIT.

The amount to be tuned up/down with each keypress is set in the Configurer >Other tab.

### 14. CW Tips

#### 14.1. CW Macro Tip

Some calls have letter combinations where it's hard for to copy correctly. For example, 6Y2A is often copied as BY2A. To help make your call easier to copy, Go to >Config >Change Packet/CW /SSB/Digital Message Buttons >Change CW Buttons, and try changing the default F1 and/or F4 message where \* is used for your call. In this example, 6Y2A changes F4 from \* to >6<~Y2A.

Result: the 6 is sent 2 WPM slower compared to the rest of the call, and an additional half space is added between the 6 and Y. Try other combinations of <, >, or ~ to make your call easier to copy.

#### 14.2. Contest Spacing for CW

Select >Config >Change Ports, Telnet Address, Other >Function Keys >Use Contest Spacing for CW. The box is default ON. This setting changes the spacing between words in your CW, where "N1MM 599 5" is 3 words. Default is 6 bits for "contest spacing". When this box is not checked, 7 bits between words is used, which is "normal spacing".

### 15. Working Dupes

The default is to work them. The theory is that it's faster to work them than it is to argue, and you might really not be in there log. If that is the case, and they submit a log, you'll lose points by not working them.

The "work dupes" option in the configurer is for ESM and running mode. All it does is determine what is sent when a dupe calls you AND YOU PRESS ENTER.

When using Enter Send Message (ESM) mode the behavior is a follows:

- In S&P using ESM, if you press Enter with a dupe call in the entry window nothing will happen (intentional), but you can always work him by pressing F4 instead.
- In Run using ESM with "Work Dupes" checked, when you press Enter you will send his call sign and the exchange whether he is a dupe or not. If you want to send "QSO B4" you can just press F6 instead.
- If you don't have "Work Dupes" checked, then to work a dupe in Run mode you will have to press F5 and then F2 to send his call sign and the exchange; pressing Enter will send the F6 message.

All that being said, you can work dupes in either situation (Run and S&P) by pressing the F-keys.

A goal of the program is to promote good operating. Working dupes while running is good operating. That's why work dupes is the DEFAULT. It is an option because an argument was made that in a long exchange contest like SS, you might not want to automatically work dupes.

What I suspect happened is that someone turned work dupes off while playing with the program. This is a complicated program. Changing options that you don't know the meaning of can lead to a lot of confusion. My advice is:

1. Get the program working with your equipment
2. Save the ini file
3. Play with the options
4. Discard that ini file and revert to the one from step 2
5. Change any options you feel you truly understand and want changed
6. If an option doesn't seem to "do anything" — watch out! You might want to set it back to the original setting

## **16. What Setting Should I Use for Packet Spot Timeout?**

For general DX-ing, 30 minutes is not too long.

For a contest, you might want to crank it down to 20 minutes, since there is more movement of stations. Also, a lower timeout will mean fewer spots are managed by the program. This may help performance for those with marginally performing machines.

For testing packet spot behavior when there are few spots, or for testing performance, a timeout setting of 1000 minutes might be right.

## **17. How Should I Really Use this Program if I am Single Operator Assisted (SOA)?**

Try these techniques:

- Connect to a telnet node. Do a sh/dx/100 to fill up the bandmap.
- Pick the band with the most mults as shown in the Available window.
- Go to that band and use Ctrl+Alt+Up arrow and Ctrl+Ctrl+Down arrow to work all the mults on the band. Don't waste too much time on each one.
- Go back through the band and use Ctrl+Up arrow and Ctrl+Down arrow to work all other stations on the band. If you find that a frequency is dead, do you know what you call that? You call it your new RUN frequency! Call CQ and get a run going.
- When the run is over, go pick up any more mults or QSOs on this band.
- Now, either move to another band and repeat, or try these techniques. Turn on "QSYing wipes the call & spots QSO in bandmap" Tune up or down through the band, looking for stations you haven't worked. Enter all or part of their calls, then tune off. The call will be "spotted" in the bandmap. You can use Ctrl+Up/Down arrow to work them later. Again, what do we call a dead frequency? That's right, it's a RUN frequency. ;-) (As you are doing this, if you can work the station without waiting, of course you should work it.)
- If you don't want to type a call, and you know you don't want to work the station, you can mark the frequency busy with the Mark button (Alt+M).
- As you are tuning, watch the bandmap. It will give you big hints as to whether you should waste time listening to a station. If you start hearing "grumble grumble" 2 kHz away from the frequency marked with Joe down the street's call, you know to speed right by.

## 18. How to Find a Worked Station in the Log When I Missed Parts?

There are three possibilities to find a worked call in the log. The results are shown in the bottom part of the log window below the logged QSOs.

- When entering the beginning of a callsign after 3 characters a worked station starting with these three characters will be shown automatically.
- When you have from N1MM only N?M this is also enough to show N1MM and every other station that ends with N?M.
- When you only have 1MM and missed the first part of the prefix you can place a \* in front of the characters you have. \*1MM will show N1MM and every other station that starts with 1MM in the callsign.

Combinations are also possible:

- \*1?M will show N1MM but also K1MR, J41YM etc.
- \*3? or \*3\* will show all worked callsign with a 3 in the callsign
- \*3\*Z will show every station with a 3 followed by a Z somewhere in the callsign like K3ZO, VA3UZ etc.

Using a \* is called a "like" search in SQL. The problem is that a "like" search is very slow so on slow computers this will take some time.

In VHF contests use Alt+= (equal) and the program will search everything which matches the content of the callsign and the gridsquare fields.

## 19. Databases versus Contests

There is a lot of confusion about how contests are stored in the logging program.

To clear this up, let's start with a couple of definitions:

**Database** - an Access 2000 format database file with a file extension of .mdb. Any number of contests may be stored in a database.

**Contest** - a set of QSOs within the database. They are stored in rows in a table called DXLOG. Each contest row has a ContestNr which ties it to a ContestInstance entry.

Much of the confusion comes from people thinking that they need to have only one contest in a database. This is not the case. I have only one database that I log "official" QSOs in. (Of course I have many test & backup databases.) Why? because the performance of the program is not very sensitive to database size. I currently have about 14,000 QSOs in my database.

Now if you plan to go on a DXpedition and log 25,000 QSOs, I would recommend a separate database for that. For most users, no.

Another thing. Did you ever notice the option "Copy (and compact) Database". This is one I bet you never use, but should use. Deleted space in most databases is not recovered automatically, and Access is no exception. If you delete a contest, or delete contacts (see tip on deleting contacts), you will need to run this option to recover the space. Do you need to run it every day? No. Maybe once every 6 months would do for most people, or before archiving a database.

The most important thing to remember about databases is to BACK THEM UP. Periodically copy your database to a backup device, or zip it up and copy to a floppy. Even e-mailing it to work would do! It is your entire record for all of your QSOs using the program. Don't lose it. Also, if you are going to import data, or delete data, that is a good time to back up your database. If you don't have the data anymore, no one can help you!

## 20. How to Upgrade the Database to a Newer Version?

The best way upgrade the database to the current version by opening it with a current version of the program on the first machine. Then you can open it with the same version on the second machine, and no database upgrades will need to be done.

Please do a backup first!

Now what do I mean by a "database upgrade"? From time to time, I add columns, indexes, data etc. to the database. For each of those changes, I have the program query the database to see if the change has already been made. If not, I make the change. To the user of the program, this is automatic. All he will notice is that startup takes some additional time.

This works very well. Haven't had any complaints. Nevertheless, a database that is a year or two since the last time it was opened will have quite a bit of updating to be done. Why not do it on a

known, working machine?

## 21. Deleting QSOs (especially important for Multi-User)

This topic affects all users, but multi-user contesters the most.

As part of the multi-user support, I implemented a DELETEDQS contest. When a contact is "deleted" with Alt+D or the Delete key, it is not really deleted. It is moved to the DELETEDQS contest. Yes, you could go to DELETEDQS, and remove it, but that would not be wise. Why? Because there is no reason to delete it, and there are good reasons not to. With it in DELETEDQS, you can recover it by exporting it to an ADIF file, changing the ADIF file and importing it into the original contest. That, however is not the overriding reason not to touch DELETEDQS. The main reason is a Multi-User reason.

In multi-user, DELETEDQS is how I determine to "delete" a contact in the logs of other stations. Since no contact is ever really deleted, I need only gather all the QSOs and DELETEDQS logged by a station and add or update them in the other station's logs. This lets me avoid the danger of deleting rows in a database. Therefore, DON'T MESS WITH DELETEDQS during the contest. Make a backup after the contest of all the stations' logs. Then you can do anything you want, and I can help you recover, since you have a backup. If you don't follow this advice, you will not be happy. 😞

Oh, but if it is a dupe, that's different, right? NO! Log dupes. Cabrillo doesn't care, the contest sponsor doesn't care, and it doesn't hurt your score. It CAN help your score. Log those dupes, and DON'T delete them.

## 22. QSYing Wipes the Call & Spots QSO in Bandmap

Have you ever noticed that the logging program will "spot" dupes in the bandmaps. That is, if you type in the call of a dupe then tune away from it, the entry fields will be cleared (wiped) and the call placed in the bandmap.

That feature is always active. There is a similar feature that you must turn on to use. It is called "QSYing wipes the call & spots QSO in bandmap". It does the same thing as the dupe spotting, but for other calls you enter. You must be in S&P mode for this to work.

This option is good for combing a band for stations to work during a contest. If a station you hear is not finishing a qso, you can move on to find another. The program will spot the call in bold, and you can use Ctrl+Up/Down to go back through and work the ones you skipped.

## 23. Exchange Abbreviations

What are exchange abbreviations?

Some contests require sections, counties or other entities for the exchange. These must be LOGGED with standard abbreviations. The menu item >Config >Change Exchange Abbreviations allows you to edit them.

What if you don't like for example the standard ARRL abbreviations? Well, you can enter your own. Let's say you'd like to enter CONN for CT. You can ADD CONN CT in the exchange abbreviation list and if you enter CONN or CT, the program will LOG CT. Don't replace the abbreviations that are already there. It's best to just add the ones you like. (I use the presence of certain abbreviations to determine whether to reload some of the lists.)

## 24. Too Many Calls on the Bandmap!

What do you do if the calls are crowded together on the bandmap? You need to zoom in or out...

There are two ways to do it. On a traditional keyboard, using the numeric pad plus (+) and minus (-) keys will zoom the current bandmap. The current bandmap is the one with the cyan frequency display. If you want to do it with the mouse, hold the cursor over the bandmap you want to zoom, then right click. Choose zoom in or zoom out.

It is also possible not to show "non workable contacts". This means that only the stations are shown in the bandmaps which are valid QSOs in the contest and not have been worked before (all normally gray contacts will disappear from the bandmaps).

## 25. Gray Line Openings

Watch for gray line openings when your sunrise or sunset match the other station's sunrise or sunset. You must have entered your lat/long accurately (watch the +/-) in the Station dialog. Your sunrise & sunset times can be found in Help/About.

Sunrise & sunset for a prefix or call can be found by typing it in the entry window, and looking at the Info window. Note that the sunset & sunset times are for whatever central point in that country is specified in the loaded country file (wl\_cty.dat or cty.dat).

## 26. QSO Confirmation

Some contest rules state that the received exchange must be acknowledged for the QSO to count. If a contest sponsor wants you to acknowledge (i.e. confirm) the exchange, they mean for you to send "QSL", "TU", or "R" to indicate receipt.

This does not mean a resend from the report back to the station. A resend would provide verification, not acknowledgment. Only under rare circumstances would you ever repeat the other stations exchange.

## 27. Serial Number Contest

When waiting to work a station in a serial number contest, you sometimes log the number, then increment it for each time you don't win in the pileup. **Ctrl+U** increments the received serial # by 1.

## 28. Dead Radio at Startup

If you fail to turn on your radio at startup, the program will refuse to log contacts. This feature is to prevent a dead radio from causing you to log contacts on a wrong frequency. If the radio really is dead, go to the configurer and remove it.

If you just forgot to turn on the radio, then turn it on. If the bandmaps do not show the frequency after 10 sec or so, you can force the program to open the radio connection by opening the configurer and pressing the "OK" button. Some people think you have to restart the program, but that is slower than the configurer approach.

## 29. Read the Update Log

Every version of the program has a revised update log with it. This log is in the zip file, and can be accessed with WordPad or from within the logging program (see the help menu). This is a good source for determining what might have made some feature start or stop working. This is a cooperative project. The more research you can help with on reporting bugs, the quicker Rick & I can fix them.

Note that I occasionally change the description or credits on an item after another version has been released. If you did not get credit for reporting a bug, let me know I'll update the log. The latest version always contains the most up-to-date info, so there is no reason to save old ones.

## 30. Packet/telnet Button Setup

Here are the buttons I currently use for AR-Cluster nodes: I don't think these are necessarily optimal, but they give you an idea of what is possible.

NE only means (near) New England only. (W1 & W2). The first column is the command, the second column is the button label. & in the button label makes it an Alt hotkey.

Anyone want to post a similar list for other cluster software? (Please test them first.) Also, what about screening out cw or ssb spots when in a single mode contest?

Note that the menu item >Tools >Clear All Spots will remove all spots from the bandmap. You might decide that there was too many unreadable stations in the bandmap. You would set a filter (below), then clear all spots. You could then use sh/dx/100 to refill the bandmap.

Button text	Command
BYE	BYE
CONN	C K1TTT
DI/N	DI/N
SH/DX	SH/DX/30
USERS	SH/U
WWV	SH/WWV
Clear NE	set/filters dxorigstate/off
Yes DX	set/filters dxorigcty/off
NE only	set/filters dxorigstate/pass ny,nj,ct,ri,ma,nh,vt,me

No DX	set/filters dxorigcty/pass k,ve, xe
No VHF	set/filters vhf/reject
K1TTT	{MYCALL}

### 31. Slow PC Syndrome

On some COMPAQ & Toshiba laptops with Win98, it has been seen that the PC can turn very slow after a beep (eg. CW monitor) has been given. Pulling down menu's take forever, and the PC clock operates about 10 times slower than usual. This situation persists even when the logger is shut down, and until the next boot. The fix is simple just deactivate "Monitor via PC speaker" (Config - Configure Ports - Function Keys) and boot the PC, and it will never happen again. You only need to do this if you have noticed the behavior described above.

73 Uffe PA5DD

### 32. Move RX Frequency from the Keyboard

At a local club meeting last night we watched the FO0AAA video. I've seen a number of other DXpedition videos before and they all show the operator reaching over after each or so QSOs and moving the RX frequency. Given this is standard practice for DXpeditions, both SSB and CW, I thought it would be a useful feature to have that function built into the logging program.

As it turns out, it's really there already in N1MM. If one sets the radio on SPLIT and TXs on the second VFO, pressing either UP/DOWN ARROW moves the RX frequency up or down by the amount set in CONFIG/CONFIG PORT, TELNET...../OTHER window. It also works well for regular contesting. Put the radio on SPLIT SIMPLEX (A=B) and use the UP/DWN arrows instead of the RIT for those off frequency callers when you're RUNNING.

Gerry VE6LB/VA6XDX

### 33. Recording QSOs

The program has the possibility to record all QSOs made. With this feature it is possible to listen back to all QSOs made.

- Select 'Record QSOs' under Config' to turn it on/off.
- The 'normal' connection would be to have your microphone to the sound card 'microphone in' and the radio audio out to the sound card 'line-in'. this way the microphone can be used to record SSB messages on the fly and the line-in can be used to record QSOs or for RTTY without having to rewire anything. Switching can be done automatically using the setup in the Audio tab for SSB recording and playback, and also works for CW qso recording. Switching to RTTY may need



a manual operation on the windows volume control to select the input source for MMTTY.

- Beware that when using the headphone output the level will change with the volume of the radio so preferable use a fixed audio source from the radio. Also your transmitted audio level will depend on the monitor level from the send audio/sidetone. There are some nice programs which can set your audio levels and remember the settings the next time you need them. See the [Links chapter](#).
- You probably want to record not only the station you work but also your own audio/sidetone. 'Monitor on' is needed on most radios.
- A recording for a new qso will start as soon as the qso before has been logged, so a recording will stop when a qso is logged and a new recording will begin.
- There is a recording timer the Audio tab in the configurer.
- Each qso will become a separate recording (wav file). The wav file is named: '<Callsign> <Date> - <Time>.wav.' Example: "N1MM 10-26-03 - 22 47 45.wav"
- The Wav files (recordings) are stored in a directory under the program directory named after the selected contest. So when selecting CQWWCW the directory will be named CQWWCW. E.g. C:\Program Files\N1MM Logger\CQWW\....
- Wav files can be played from within the program by right clicking on the qso in the 'Log Window' and selecting 'Play contact'. Pressing Escape stops playback of recorded contacts.
- These Wav files can of course also be played outside the program with any other media player on your computer which supports WAV files.
- Recording uses about 1 GB per 24 hours (40-50 MB per hour) when 8 bits, 11025 Hz/sec is used. There are programs which can compress these wav files to MP3 files but if this can be done at the same time when giving CQ depends a lot on the computer used. A clunker will surely not do it. There is of course the possibility to do this after the contest. Enough harddisk space during the contest is necessary.
- Recording is stopped when there is less than 40 MB space free on the current drive.
- Test before using this feature. To get the recording levels all the same (received and transmitted audio/cw) can be a bit tricky when not using a fixed audio level from the radio.

#### Soundcard Settings in Configurer

The Configurer lets you pick parameters that your sound card may not support... usually 16 bit, 11025 Hz/sec is safe for all cards.

## Troubleshooting

The object of this page is to suggest how to proceed when something goes wrong. If you take these measures **before** posting a query on the reflector, you will greatly enhance your chances of getting good, solid, usable advice the first time around.

### 1. Get Current

Make sure you are running a recent version - no more than one or two behind. This is absolutely necessary because of the rapid evolution of the program, with typically 100 or more versions released each year. If you aren't running a recent version, update and see if the problem goes away - it could be something that was noticed and fixed while **you** were "away."

Every year, Tom (N1MM) publishes a new "Base Install" version of the program, which contains all the files you will need to run the program. Subsequent updates contain only those files that have changed, so simply downloading and installing the most recent version won't probably be enough unless you have first downloaded and installed the Base Install on which it is based.

### Important changes in Version 10

At the beginning of 2010, Tom published version 10.0.0. Because it involves some very significant changes to the audio tab of the Configurer, it is very important that users update to 10.0.0 and from there to the latest update.

## 2. Try Simplifying Your Configuration

Problems with the program often arise as the result of changes inadvertently made to the overall configuration of the program or corruption of the database you were using the last time the program was open, so a first step is to eliminate those two possibilities.

First, rename your N1MM Logger.ini file so that the program will not recognize it - N1MM Logger.**old** is good. Try to restart the program. If it starts, though in very simplified form (one Entry window, etc.), then you know the problem was somewhere in your configuration, as stored in the .ini file. Then you can add back your personal configuration choices, one at a time. Start with radio control ports, then add PTT and CW options. Finally, set up your general options in the Configurer, and in the various specialized sub-menus that you use.

If the program still won't run, then leave the simplified configuration in place and try renaming your database(s) or moving them to another directory. It should then start up and create a new empty database (at least, with no QSOs in it.). If it doesn't start up then, you should probably consider yourself cursed, and take up a new hobby.

No, seriously, if the problem does seem to be in the database(s), there are a couple of options on the File menu in the entry Window, including a link to a stand-alone Microsoft utility that you can download to repair a corrupted database.

If it still won't start after all that, or if the function you're having trouble with still won't work, now and only now try a reinstallation. A corrupted installation is rarely to blame for the problems people have, but recently a lot of folks have had trouble because of missing program files. Typically, this is caused by not installing version 10.0.0 before trying to install and run version 10.x.x Even if you think you've done this correctly, it may be worth the few minutes necessary to reinstall.

If you feel you need to reinstall, take an extra minute and uninstall your current version from the control panel. This is normally unnecessary, but recently there have been a case or two where the uninstallation was necessary to fix persistent problems that did not respond to any normal

troubleshooting methods.

#### **Where is the program installed?**

For version 9 and before, the default installation location was in C:\Program Files\N1MM Logger. Because this caused inconvenience for users of Vista and Windows 7, beginning with Version 10, the default location is C:\N1MM Logger.

If you are making a first-time installation of the Version 10 Base Install, the installer will automatically choose this location. Thereafter, the update installer should point to the same place. However, some experienced users have chosen to continue to install to Program Files, and a few of them have reported that the update installer insists on pointing to C:\. As you can imagine, putting the Base Install in one place and updates in another can cause all sorts of problems. It's worth a double-check.

### **3. Search the Manual - some tips**

Now that the manual is on the website in wiki format [here](#), we are working hard to keep it up to date and to fix things that may have gotten broken along the way. You can help by letting us know when you notice things that should be changed. Drop a note to [n4zr@contesting.com](mailto:n4zr@contesting.com) or [k8ut@arrl.net](mailto:k8ut@arrl.net) unless you think that the subject would benefit from others' input, in which case, by all means, use the [reflector](#).

So, how best to use the manual for troubleshooting? We recommend using the search function on the web page. This is still evolving, but you'll find the latest information on using it [in this section of the Website User Manual](#).

Once you've opened a page, though, you may discover that the topic you want is nowhere to be seen. Don't despair, just hit Ctrl+F to open your browser's search routine, and enter your search phrase there. This is necessary because some of the pages in the manual are very long, and your search topic may not appear in the first screenful.

If the program is so badly broken that you can't do a Google search from there, just open [the manual](#) and you should see the search box in the upper right corner of the page. If you don't see it, you are probably in full-screen mode. Just click the icon of a window with a small dot on it, which will be at the far upper right corner of the page, and the search box will come back.

### **4. Looking for Help on the Reflector**

OK, so you're really stuck. You have over 3,000 fellow users out there willing to help. You can make it more likely to pay off quickly if you follow this checklist for information you provide in your first message:

- N1MM program version

- Operating system
- Relevant interfacing information
  - For radio control, whether USB or hardware serial port, and what radio
  - For CW problems, indicate whether you are using serial, parallel or other interface (Winkey, MicroHAM, etc.)
  - For voice message problems, what interface to the radio you're using
- Symptoms
  - Include any error messages you received, and be sure to quote them in full
- What you have already tried

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## Key Assignments Short List

<b>Running keys</b>	<b>S&amp;P Keys</b>
<b>F1</b> = CQ	<b>Shift+F1</b> = Call CQ and switch to run
<b>;</b> or <b>insert</b> = Send call and report	<b>Alt+U</b> = Toggle S&P/Run. Set CQ-frequency for pass
<b>'</b> = Send TU message and enter in log	<b>Alt+Q</b> = Return to CQ-frequency
<b>Alt+R</b> = Enable CQ repeat	<b>Ctrl+Up/Dn arrow</b> = Grab next qso from bandmap
<b>Ctrl+R</b> = Set repeat time	<b>Ctrl+Alt+Up/Dn arrow</b> = Grab next mult from bandmap
<b>Esc</b> = Stop sending, stop repeat	-
<b>General keys</b>	<b>Radio control</b>
<b>Ctrl+O</b> = Set operator call (or OPON in Callsign field)	<b>Alt+F10</b> = Swap VFOs
<b>Ctrl+N</b> = Add note to log	<b>Alt+Q</b> = Return to CQ frequency
<b>Ctrl+W</b> or <b>Alt+W</b> = Wipe entry fields, Release a reserved serial number	<b>Alt+F8</b> = Return to last frequency
<b>SPACE</b> or <b>TAB</b> = Move between logging fields	<b>Ctrl+PgUp/PgDn</b> = Up/Down a band
<b>ENTER</b> = Log it (see ESM mode)	<b>Type CW/USB/LSB/RTTY</b> = Change mode <b>Type frequency in KHz</b> = Change frequency or band
<b>Ctrl+Q/A</b> = Quick edit previous or next call	<b>Ctrl+S</b> = Set radio into split <b>Ctrl+Alt+S</b> - Toggle split mode
<b>Ctrl+D</b> = Delete last qso!	<b>Ctrl+Enter</b> = Set split frequency
<b>Alt+H</b> = Show help	<b>Alt+F7</b> = Set split frequency or offset to specified frequency
<b>Alt+K</b> = Edit message buttons	<b>Alt+'</b> = Toggle between the wide and narrow filters
<b>Ctrl+Alt+Enter</b> = Log a not accepted 'invalid' qso	<b>Alt+F12</b> - Copy frequency and mode to other radio/VFO or swaps MAIN and SUB using the CAT radio command
-	Backslash ( \ ) = Change Receive (RX) focus (VFO/Radio)
<b>DX Spots and Band Map</b>	<b>ESM Mode</b>
<b>Mouse wheel</b> = Zoom in/out bandmap	<b>Ctrl+M</b> = Turn on/off
<b>Keypad +/-</b> = Zoom in/out bandmap	<b>Insert</b> or <b>;</b> = Send call and exchange
<b>Alt+D</b> = Remove spot	<b>Enter</b> = Send TU and log it
<b>Alt+P</b> = Send spot	<b>Enter</b> = Start CQ again...
<b>Ctrl+P</b> = Send spot with comment	<b>Alt+Enter</b> = Log without sending anything
<b>Ctrl+Tab</b> = Toggle to/from packet window	<b>Multi-User Mode</b>
<b>Alt+O</b> = Store contact in the Bandmap	<b>Alt+Z</b> = Set pass frequency (broadcast to all computers)

CW	SSB	RTTY	VHF
<b>Page Up</b> = speed up	<b>Ctrl+Shift+F1</b> =Record CQ	<b>Alt+G</b> = Grab call from stack	<b>Alt+=</b> = Search entered info
<b>Page Down</b> = speed down	<b>Ctrl+Shift+F*</b> =Record F-key message	<b>Alt+T</b> = RX/TX toggle	<b>Alt+minus</b> = Toggle grids
<b>=</b> = send last Fkey again	<b>NB.</b> Same keys again to stop recording	<b>Ctrl+Arrows</b> = Swaps DI	<b>Ctrl+E</b> = Send message to stations
<b>Ctrl+K</b> = CW window	-	<b>Ctrl+K</b> = manual window	<b>Alt+Z</b> = Set pass frequency
<b>Esc</b> = Stop sending	-	<b>Esc</b> = Stop sending	-

## Key Assignments

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#### Key Assignments

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## 17. Window Key Assignments

### 18. Lookup Table Edit

#### Note

The keys below work from all main windows

## 1. General Key Assignments

- **Space** - The spacebar will jump from field to field filling in defaults like the callsign from the frame, 59/599, and information from previous contacts with this station. ***SPACE IS THE PREFERRED TAB CHARACTER.***
- **Tab** - Jump to the next entry field in the Entry Window.
- **Shift+Tab** - Jump to the previous entry field in the Entry Window.
- **Alt+H** - Show this help file. Note that pressing Alt+H in any window will show the help specific to that window.
- **Ctrl+Tab** - Toggle between the Entry window and the Packet window.
- **Alt+F9** - toggle through all the antennas for that band. The selected antenna will show in the status pane.
- **Alt+F4** - Quit the program. If two Entry windows (SO2R) the program will not exit. You are being asked if you are sure.

## 2. Active Radio/Bandmap Control Key Assignments

### 2.1. Jump to Spots

#### Note

If you are operating single mode, your mode won't change when jumping between spots.

- **Ctrl+Down Arrow** - Get next spot higher in frequency.
- **Ctrl+Up Arrow** - Get next spot lower in frequency.
- **Ctrl+Alt+Down Arrow** - Get next spot higher in frequency that is a multiplier.
- **Ctrl+Alt+Up Arrow** - Get next spot lower in frequency that is a multiplier.

### 2.2. Jump to CQ Frequencies

- **Alt+Q** - Jumps to the last CQ frequency on this band (active bandmap) and will clear all textboxes in the Entry Window.
- **Shift+Alt+Q** - Jumps to the last CQ frequency on other band (non-active bandmap).
- **Ctrl+Alt+Q** - Jumps to your last used CQ frequency on any band and tune active bandmap to that frequency.
- **Shift+Alt+Up Arrow** - Get next spot lower in frequency that is self-spotted.
- **Shift+Alt+Down Arrow** - Get next spot higher in frequency that is self-spotted.

## 2.3. Tune the Radio

- **Ctrl+Page Up** - Go up one band. WARC bands are being skipped while logging for a contest.
- **Ctrl+Page Down** - Go down one band. WARC bands are being skipped while logging for a contest.
- **Up Arrow** - Tune radio down 100 Hz on SSB, 20 Hz on CW (adjustable in the configurer).
  - **FT-1000MP, FT-890, FT-920, FT-990 and FT-1000 and all Kenwood radios**
    - **In S&P** - pressing the up/down arrows will turn off RIT and tune your main VFO.
    - **In Running mode** - it will turn on your RIT and tune the RIT.
- **Down Arrow** - Tune radio up 100 Hz on SSB, 20 Hz on CW (adjustable).
  - See Up Arrow information above
- 
- **Alt+F7** - Set split frequency or offset from current frequency for the active radio. When hitting Enter or click OK with nothing on the line split will be cleared. Press ESC or click Cancel to exit. More information about working split can be found in the Basic Functions chapter.
- **Ctrl+Enter** - Entering a frequency or offset in the callsign field and entered with Ctrl+Enter will set a split frequency.
- **Alt+S** - When your rig is in the split mode, Alt+S will reset the RX frequency back to your transmit frequency, but the split mode is preserved. "Reset RX frequency when running split" is associated with Alt+S. When invoked, the program will automatically do an Alt+S as you log each QSO. Operates on VFO-A only!
- **Ctrl+S** - Set radio to split operation, if not in split mode already.
- **Ctrl+Alt+S** - Toggle Split mode on the radio. 'Split' will be shown in the Entry window.
- **Alt+F5** - Swap radio frequency, mode, and callsigns between VFOs (SO2V) or radios (SO2R). In SO2R, the receive focus changes to the non-active radio.
- **Alt+F6** - Identical to Alt+F5 except the receive focus does not change.
- **Alt+F8** - Jump to your last frequency.
- **Alt+' (Alt+singlequote)** - toggle between the wide and narrow filter for the selected mode (SSB, CW and Digi modes).
- **Ctrl+Alt+D** - Allows the SO2V user to enable CQ repeat, call CQ on VFOA, and tune the sub-receiver (VFOB) between CQ's. Currently, this feature is only enabled for the K3, IC756, IC756Pro, IC756Pro2, IC756Pro3, IC7800, and IC7600.
  - If "Dual RX always on" is ON and the Sub RX is ON, turn "Dual RX Always On" to OFF and leave the Sub RX ON



- If "Dual RX always on" is ON and the Sub RX is OFF, turn "Dual RX Always On" to OFF and leave the Sub RX OFF
- If "Dual RX always on" is OFF and the Sub RX is ON, turn "Dual RX Always On" to ON and leave the Sub RX ON
- If "Dual RX always on" is OFF and the Sub RX is OFF, turn both ON

## 2.4. Change Keyboard & Radio Focus

- **Ctrl+Left arrow** - Move both TX and RX/Keyboard focus to VFO A or in SO2R to left radio
- **Ctrl+Right arrow** - Move both TX and RX/Keyboard focus to VFO B or in SO2R to right radio
- **Alt+F10** - Swap between VFOs when using one radio (VFO A-B). On Icom 756 and 7800 toggle between Main and Sub frequencies.
  - Command is disabled during SO2R for Icom radios that lack a swap VFO CAT command. This is because the program is unaware of Icom VFO B frequency in SO2R mode.
- **Pause** - Swap radios and match keyboard to radio.
- **Backslash ( \ )** - Move RX focus and launches a second Entry Window if only one Entry window is open (not supported for SO1V).
  - **SO2V** - One radio - 2 VFOs - Moves RX focus between the 2 VFOs on the radio.
  - **SO2R** - Two radios - Moves RX focus between the 2 radios.

## 2.5. Other Nifty Tricks

- **Mouse wheel** - Zoom in or out the bandmap which has KEYBOARD focus.
- **Numeric keypad + (plus)** - Zoom in the bandmap which has KEYBOARD focus to show fewer stations (less bandwidth).
- **Numeric keypad - (minus)** - Zoom out the bandmap which has KEYBOARD focus to show more stations (more bandwidth).
- **Ctrl+T** - Turn on the radio and send continuous CW (tune). Ctrl+T again or the Escape key ends the transmission.
- **Alt+F11** - Toggle the setting of the run box. Toggle to go into S&P or stay in Run mode when the frequency is changed (DXpedition mode).
- **Alt+F12** - Most radios. use this command to copy frequency and mode to other radio/VFO.
  - A few radios use Alt+F12 for specific features and then mostly swaps MAIN and SUB using the CAT radio command
  - **FT-1000MP + FT1000D + Elecraft K3 + Icom IC-756 series, IC-781 ,IC-775 and IC-7800 only**
    - Dual Receive toggle. NB. Only turn Dual Receive on/off from the keyboard so it stays in sync with the program.
  - **TenTec Orion**

- Toggle between Main/left Sub/Right and Active in both ears.
- **` (backquote or grave accent)** - Toggle Stereo/Mono ( LPT pin 5). Disabled in SO1V mode.
  - Backquote (grave accent) can be found on US keyboard as the unshifted tilde ~
- **= (equal key)** - Will send the last message key (F1-F12) again.

### 3. Non-Active Radio/Bandmap Control Key Assignments

#### 3.1. Jump to Spots

- **Ctrl+Shift+Down Arrow** - Get next spot higher in frequency and will skip over CQ-Frequency when radios/VFOs are on the same band. Proper keystroke operation is radio dependent. Disabled for SO1V.
- **Ctrl+Shift+Up Arrow** - Get next spot lower in frequency and will skip over CQ-Frequency when radios/VFOs are on the same band. Proper keystroke operation is radio dependent. Disabled for SO1V.
- **Shift+Ctrl+Alt+Down Arrow** - Get next spot higher in frequency that is a multiplier. If you are operating single mode, your mode won't change when jumping between spots. Disabled for SO1V.
- **Shift+Ctrl+Alt+Up Arrow** - Get next spot lower in frequency that is a multiplier. If you are operating single mode, your mode won't change when jumping between spots. Disabled for SO1V.
- **Shift+Alt+Q** - Jumps to your last CQ frequency on the inactive VFO/radio.

#### 3.2. Tune the Radio

- **Ctrl+Shift+Page Up** - Go up one band.
- **Ctrl+Shift+Page Down** - Go down one band.
- **Shift + Numeric keypad + (plus)** - Zoom in the inactive bandmap which not has KEYBOARD focus to show fewer stations (less bandwidth).
- **Shift + Numeric keypad - (minus)** - Zoom out the inactive bandmap which not has KEYBOARD focus to show more stations (more bandwidth).

### 4. Logging Key Assignments

- **Enter**
  - Log contact, when 'Enter sends message' is off in config menu.
  - Sends message when 'Enter sends message' is on in config menu. The send messages depend on the field values i.e. in which field the cursor is in the Entry Window. Check the highlighted keys.
- **Space** - Preferred character to move sequentially through Entry Window fields .
  - Jumps from callsign to Exchange field or vice versa.
  - Other fields' default values will be filled in
  - If there is a call on the callsign frame and if the callsign field is empty, the call from the frame will be placed in the callsign textbox.
- **Alt+Enter** - Send End of Contact message key and log the contact. In ESM it just logs the contact (nothing sent).
- **Insert or ;** - Sends His Call key followed by the Exchange key.
- **'** - Send TU message and enter in log .
- **Alt+W or Ctrl+W** (Alt+W = Ctrl+W)
  - Wipe Out Entry Fields, clear information about the current contact in this window
  - If all of the entry fields are blank, this restores the last wiped contact ("unwipe" function)
  - Serial number contests: Release a reserved serial number after it has been reserved
- **Ctrl+Shift+W** - Wipe out other window's contact information.
- **Ctrl+Alt+Enter** - Log a not accepted 'invalid' qso (invalid exchange etc.). It will prompt for a comment. Use 'View | Notes' to correct later.
  - When no comment is entered "Forced QSO" will be added to the comment field.
- **Ctrl+Y** - Edit last contact.
- **Ctrl+D** - Delete the last contact.
- **Alt+O** - Store contact in the bandmap.
- **Alt+M** - Mark this frequency in the bandmap as being in use.
- **Alt+D** - Removes the spot from the bandmap which is on the callsign frame or in the callsign field in the Entry window when S&P or CQ-frequency when Running.
- **Alt+P** - Spot the contact on the current Packet/Telnet connection.
- **Ctrl+F** - Find the callsign entered in the callsign field in the log. Pressing Ctrl+F again will find the next instance.
- **Ctrl+M** - Enable/disable 'Enter sends message' mode.
- **Ctrl+N** - Add a note/comment to your last or current contact.
- **Ctrl+Q** - Quick Edit mode, go back one qso in the log. Enter logs and Escape discards the changes made. No content checking!
- **Ctrl+A** - Quick Edit mode, go forward one qso in the log. Enter logs and Escape discards the changes made. No content checking!
- **Ctrl+U** - Increase the number in the exchange field by 1.
- **Shift+Enter** - This command is used for callsign stacking and only available in 'Multi-User Mode'. It is described in the Advanced Functions section.
- **Alt+U** - Toggles "Running' box". When running is checked, the behavior of Enter Sends Messages mode changes appropriately. Additionally contacts are logged as being part of a run.
- **Alt+K** - Change the contents of the Packet/CW/SSB/Digital message buttons.
- **Alt+Y** - Will "yank" the first call from the Check window in the Entry window callsign field.
- **Ctl+G** - Cut number mode toggle.

- **Ctrl+Shift+M** - Set threshold for Auto-Send option.
- **Ctrl+Alt+G** - to stack additional callsigns in all modes. Same as the macro {STACKANOTHER}

Key	Send function key(s)	Action(s)
<b>Insert</b>	<b>His Call Key &amp; Exchange Key</b>	Send his call followed by the Exchange.
<b>;</b>	<b>His Call Key &amp; Exchange Key</b>	Send His call followed by the Exchange.
<b>Alt+Enter</b>		Log the contact.
<b>'</b>	<b>End of QSO Key &amp; Log contact</b>	Send the End of QSO message and log the contact.

## 5. Callsign/Exchange Editing Features

- **Space Bar** - Moves cursor to the position the last position the cursor was in prior to leaving the Callsign or Exchange fields.
- **Tab** - Move to the next field.
- **Shift+Tab** - Move to the previous field.
- **Home** - Moves cursor to beginning of the field it's in.
- **End** - Moves cursor to end of the field it's in.
- **Question mark (?)** - Sends a ?, and will cause the ? to be highlighted when you reenter the field . E.g. N?MM will send what is typed, but automatically highlight the ? so you can replace it. A double ?, as in DL?K?A will highlight all text in between and including the ? marks. The first keystroke entered will replace all three characters.
- **Left/Right Arrow** - Moves cursor to left or right one position within the field it's in.
- **Backspace** - Delete character to the left.
- **Delete** - Delete character to the right.
- **Shift+Home** - Will highlight from the cursor insertion point to the home (beginning) of the textbox.
- **Shift+End** - Will highlight from the cursor insertion point to the end of the textbox.
- **Shift+arrow key** - Will highlight as you press the keys. When you type the first character, it will delete the highlighted character.

## 6. Message Key Assignments

The message send by the function keys F1 through F12 depends if you are in Running mode or in Search and Pounce mode.

It all depends if the Running indicator in the Entry window is marked or not.

Below the function keys with their associated default messages, the function keys can be remapped

to others on the Function Keys tab in the configurer.

Default Function Keys							
<b>F1</b>	CQ key	<b>F2</b>	Exchange key	<b>F3</b>	End of QSO Key	<b>F4</b>	My Call Key
<b>F5</b>	His Call Key	<b>F6</b>	QSO B4 Key	<b>F7</b>	-	<b>F8</b>	Again Key
<b>F9</b>	-	<b>F10</b>	-	<b>F11</b>	-	<b>F12</b>	-

- Esc - Stop sending CW or wav. file.
- Ctrl+R - Set CQ repeat time in seconds or milliseconds (Example: 1.8 or 1800)
- Alt+R - Turn on repeat mode. Escape turns it off.
- Ctrl+Shift+Fx - Record SSB message for the assigned function key. Pressing Ctrl+Shift+Fx again stops the recording. Fx can be F1 to F12.
- Ctrl+Alt+Fx - Record external DVK memory 1 to 4. Fx can be F1 to F4.

## 7. CW Key Assignments

- **PgUp/PgDn** - Adjust CW speed Up/Down active radio using Primary CW Speed Step (Other tab in Configurer).
- Shift+PgUp/PgDn - Adjust CW speed Up/Down active radio/VFO using Secondary CW Speed Step (Other tab in Configurer) in SO2R/SO2V mode.
- **Alt+PgUp/PgDn** - Adjust CW speed Up/Down inactive radio/VFO using Secondary CW Speed Step (Other tab in Configurer) in SO2R/SO2V mode.
- **Ctrl+K** - This will open the CW window to send manual CW. Pressing Ctrl+K again will close the window.
  - CW will continue to be send when closing the window and the CW message was not finished sending.
- **Ctrl+Shift+R** - Toggle CW Reverse/No Reverse.

## 8. Multipliers by Band window Key Assignments

- **Ctrl+J** - Toggle through the Countries, Zones, Sections & Other windows (if the window is not open, it will be opened)
- **Ctrl+Shift+J** - Opens or closes the Multiplier-by-band window

## 9. Multi-User Key Assignments

- **Ctrl+E** - Talk, send a message to another station in the network.
- **Ctrl+O** - Change operator callsign (Multi-user).
- **Alt+Z** - Set pass frequency which is broadcasted to all connected computers.
- **Ctrl+Alt+M** - Change the RUN/MULT status (only when Operator Category = Multi-One)

## 10. 'Enter Sends Message' mode (ESM)

- **Ctrl+M** - Toggle 'Enter Sends Message' mode
- **Alt+Enter** - Log without sending anything

<b>ESM Mode versus Run Mode Keys</b>			
<b>Callsign field</b>	<b>Exchange field</b>	<b>In Run Enter sends</b>	<b>In S&amp;P Enter sends</b>
Empty	Empty	CQ (F1)	My Call (F4)
New Call (1st time)	Empty or invalid	His Call + Exch(F5 + F2)	My Call (F4)
New Call (repeat)	Empty or invalid	Again? (F8)	My Call (F4)
New Call	Valid (before sending exchange)	His Call + Exch(F5 + F2)	Exchange (F2)
New Call	Valid (after sending exchange)	End QSO + Log(F3 + Log It)	End QSO + Log(F3 + Log It)
Duplicate Call	Empty or invalid	QSO B4 (F6)	QSO B4 (F6)
Duplicate Call	Valid (before sending exchange)	QSO B4 (F6) Exchange (F2)	
Duplicate Call	Valid (after sending exchange)	End QSO + Log(F3 + Log It)	End QSO + Log(F3 + Log It)
Dupe (1st time) Work Dupes checked	Empty or invalid	His Call + Exch(F5 + F2)	QSO B4 (F6)
Dupe (repeat) Work Dupes checked	Empty or invalid	Again? (F8)	QSO B4 (F6)
Dupe - Work Dupes checked	Valid (before sending exchange)	His Call + Exch (F5 + F2)	Exchange (F2)
Dupe - Work Dupes checked	Valid (after sending exchange)	End QSO + Log (F3 + Log It)	End QSO + Log (F3 + Log It)

## 11. Packet/Telnet Key Assignments

- **Ctrl+P** - Spot the station entered in the callsign field as a spot to the active cluster connection, either packet or telnet. You will be prompted for a comment. If no station is entered in the callsign field, the last station worked this session will be spotted.
- **Left-click** - Tune the active radio to the frequency of the spot.
- **Shift+Left-click** - Tune the inactive radio to the frequency of the spot.
- **SH/DX** - Entered in Entry window Callsign field will be passed through to active Packet window for processing.

## 12. Available Window Key Assignments

- **Left-click** - Mostly tunes the active radio to the frequency of the spot. Behavior depends on SO1V, SO2V or SO2R and .
- **Shift+Left-click** - Mostly tunes the inactive radio to the frequency of the spot. Behavior depends on SO1V, SO2V or SO2R.
- **Double click** - Go to the frequency with the active VFO.

### 13. SO2R Key Assignments

- **Ctrl+Enter** - Send next ESM state on alternate radio (assuming ESM turned on).
- **Ctrl+F1 to F12** - Send Fn message on alternate radio.
- **Ctrl+Left Arrow** - In SO2R move both Transmit and Receive/Keyboard focus to left radio, or in SO2V move both TX and RX/Keyboard focus to VFO A.
- **Ctrl+Right Arrow** - In SO2R move both Transmit and Receive/Keyboard focus to right radio, or in SO2V move both TX and RX/Keyboard focus to VFO B.
- **Pause** - Move both TX and RX Keyboard focus to other radio (or other VFO in SO2V). If TX and RX focus are split when you hit pause, TX focus will move to where the RX focus is.
- **Ctrl+B** - Dueling CQ's will send CQ (without delay) alternately on each radio. If Dueling CQ's is turned on, both radios become run radios. Dueling SSB and CW CQ's are supported too.
- **Grave accent, backquote, or unshifted tilde key (~)** Toggle STEREO mode on/off, or toggle Auto/PTT modes with modified DXD . Notes: On US keyboards, the key we are talking about is the key just to the left of the number 1 key.
- **Ctrl+I** - Toggle SO2R Mode (Soundcard). Toggle through the SO2R modes supported by the program. Only operative in '\$5SO2R' when N1MM logger controls the audio, not when using an external SO2R controller.
- **Ctrl+PgUp/Down** - When changing band using Ctrl+PgUp/Down will skip the other radio's band.
  - THIS IS NOT A SUBSTITUTE FOR HARDWARE LOCKOUT!!
- **Ctrl+Shift+I** - Toggle 'Advanced SO2R'. An advanced method of automated focus control. See [SO2R](#).
- **Ctrl+Shift+N** - Set advanced SO2R delay time
- **Ctrl+Shift+K** - FocusOther, Another method of automated focus control. Forces entry focus to non-transmitting radio, with entry focus returning to the transmitting radio as soon as it reverts to receive. See [SO2R](#). Disabled in SO1V mode.
- **Ctrl+Shift+L** - Toggle CTRLFX Macro. This macro allows the user to send on the other radio (CW only).

### 14. RTTY Key Assignments



- **Alt+T** - Toggle TX - RX
- **Alt+G** - Grab callsign
- **Ctrl+K** - Toggle TX/RX, and displays the CW/Digital Keyboard window to send manual information using the keyboard
- **Ctrl+Arrows** - Swaps from one active DI to the other DI. DI1 will follow entry window 1. DI2 will follow entry window 2
- **Esc** - Stop sending

## 15. Gridsquare Key Assignments (VHF and up)

- **Alt+equal (=)** - Search entered info from both the Callsign field and the Gridsquare field in the call history table.
  - The results will be shown in the Check window.
- **Alt+minus (-)** - Toggle through call history and entered grid squares (max 3) in the grid square entry field.
  - When no grids are found in the call history there is nothing to toggle..

## 16. Rotator Key Assignments

- **Alt+J** - Turn rotor to bearing for the callsign in the Entry window or to the callsign in the callframe (when callsign field is empty).
- **Alt+L** - Turn rotator to long path bearing for the callsign in the Entry window.
- **Ctrl+Alt+J** - Stop turning the rotator when turning and no bearing in callsign field in Entry window.

## 17. Window Key Assignments

- **Ctrl+Tab** - Toggles between the Entry window and Packet window.
- **Ctrl+K** - Display the CW/Digital Keyboard window to send manual information using the keyboard.
- **Ctrl+L** - Display the Log window (toggles between open and minimized).
- **Ctrl+J** - Display the Multiplier window, Toggle through the Countries, Zones, Sections & Other windows when open.

## 18. Lookup Table Edit

- **Ctrl+D** - to delete a row in the table or use the right click menu
- **Scroll Lock** - the Scroll Lock key selects the current row for editing

## Interfacing

### In this Section...

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#### Interfacing

1. General
  2. Radio interfacing
  3. Interfacing for CW Keying and PTT
    - 3.1. Parallel (LPT) Port
    - 3.2. Serial (COM) Port
    - 3.3. Using a transistor
    - 3.4. Using an opto-Isolator (opto-coupler)
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    - 9.3. Renumber your serial ports
  10. Hooking up a Footswitch
    - 10.1. Parallel port
    - 10.2. Serial port footswitch information (using the 9 pin connector numbers)
- 

### 1. General

The program can interface with your radio using several ports from the computer. These ports are:

- **Serial port** - With a serial port it is possible to send CW, key PTT or communicate with your radio. Most computers nowadays have one Serial communication port with 9. Laptops mostly have one serial port but sometimes no serial port at all. When there is no serial port (available)

- a USB to serial converter can be used.
- Parallel port - With the parallel port it is possible to send CW and key PTT at the same time. There is additional info available on the parallel port. With this additional info you can switch antennas with the right interface connected. Also there is a pin that indicates which radio is currently active.
  - USB port - The USB port can be used with a USB-to-serial converter. Not every USB-to-serial converter can send CW. Also devices like the microHAM - microKEYER can be used but have far more capabilities than just being a serial port converter. See the chapter Supported Hardware for more information.
  - Sound card - The sound card is used to send sound (Wav) files to your radio for instance for giving CQ and for sending and receiving when using RTTY with MMTTY. The sound card can also be used to record all the QSOs you are making.

For CW the parallel and serial ports are assumed to have the default addresses shown in the list below. These addresses can be changed in the configurer to match your Windows setup.

Port	Address
LPT1	&H378
LPT2	&H278
LPT3	&H3BC

Port	Address
COM1	&H3F8
COM2	&H2F8
COM3	&H3E8
COM4	&H2E8
COM5	&H2F0
COM6	&H3E0
COM7	&H2E0
COM8	&H260

These addresses used in Windows can be checked in 'Control Panel > System > Device Manager > Ports (COM & LPT) > (Choose a port) > Resources > Input Output Range'.

Nonstandard port addresses will not work for CW.

#### Tip

If you have one standard and one non-standard COM port, assign the non-standard to the radio, and the standard port to CW.

## 2. Radio interfacing

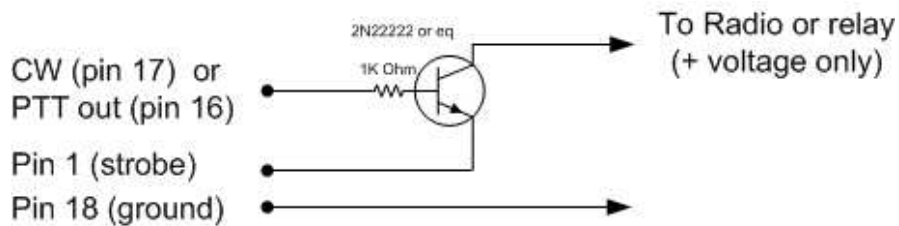
Pin DB9	Pin DB25	Name	Description
1	8	CD	Carrier Detect
2	3	RXD	Receive Data
3	2	TXD	Transmit Data
4	20	DTR	Data Terminal Ready
5	7	GND	System Ground
6	6	DSR	Data Set Ready / Footswitch input port
7	4	RTS	Request to Send
8	5	CTS	Clear to Send
9	22	RI	Ring Indicator

Software handshaking	DB9	DB25	Hardware handshaking
Ground	pin 5	pin 7	Ground
RXD	pin 2	pin 3	RXD
TXD	pin 3	pin 2	TXD
Not used	pin 7	pin 4	RTS
Not used	pin 8	pin 5	CTS

### 3. Interfacing for CW Keying and PTT

#### 3.1. Parallel (LPT) Port

This is a typical simple interface



Parallel port cw or ptt interface.

#### Parallel (LPT) port pinouts

- Pin 1 - Strobe
- Pin 16 - PTT output
- Pin 17 - CW output

- Pin 18 - Ground

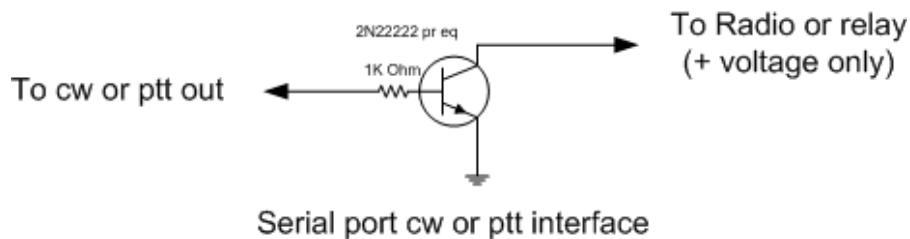
### 3.2. Serial (COM) Port

Serial port (9 pin)	Serial port (25 pin)
Pin 7 - PTT output (RTS)	Pin 4 - PTT output (RTS)
Pin 4 - CW output (DTR)	Pin 20 - CW output (DTR)
Pin 5 - Ground	Pin 7 - Ground

**Note**

The CW **and** PTT lines for a radio must be on the same serial/parallel port. Example: When COM4 is the CW Port and Radio 1 or Both is selected, PTT control for Radio 1 must also be on COM4. USB-to-serial converters are supported, but USB-to-LPT (parallel) converters are not.

### 3.3. Using a transistor



- Equivalent for the 2N2222 are 2N3904, BC547 or BC548.
- NB. It isn't a bad idea to add a 1 kOhm resistor from base to ground, also adding a shunt capacitor of 10 nF is highly recommended at the collector output to ground in order to prevent RF feedback to base and subsequent blocking.

### 3.4. Using an opto-Isolator (opto-coupler)

Some users prefer to use an opto-isolator rather than a transistor, in order to provide more protection for the serial port in the event of something going wrong downstream. In that case, however, two special considerations may apply:

- You may need to place a diode in series with the input of the opto-isolator, to protect it from negative voltage swings on a standard serial port. Check the specifications of the opto-isolator you use to determine whether this is necessary.
- Some opto-isolators may not pull their output "low" enough (close enough to zero volts) to switch PTT or CW on a given transceiver. In that case, appropriate "pull-down" measures must be applied.

## 4. Via USB port

Not all computers have serial ports anymore or not enough to control transceivers, packet, serial CW keying etc. In this case consider a USB to serial port adapter. Most of them do nicely control the radio. The problem with these interfaces is doing CW and/or PTT (and 5 bit codes). Test before or ask around if they work for radio control, CW or PTT control with your computer and radio! Also look first if drivers for your operating system are available.

With N1MM CW will work with native serial ports and with USB-to-serial adapters. For perfect CW not dependent on Windows processes the answer is Winkey by K1EL. CW transmitted as normal ASCII characters via the serial port. A USB/serial adapter will work fine with K1EL, because it is standard serial communications. Check the Winkey manual for more information.

In some cases PTT and CW keying may unexpectedly stop working when using a USB-to-serial converter. Check this Windows setting:

- Control Panel; System Icon,
- Hardware Device Manager Tab or button.
- Expand USB Serial Bus Controllers
- Highlight each USB Root Hub
- Double click for Properties settings, Power Management tab,
- Remove the check mark from 'Allow the computer to turn off this device to save power'.
  - The box is checked by default in most cases.
- Reboot the computer

A table giving evaluations by N1MM users of various USB-to-serial converters is in [the References Section](#). Another overview of serial- to-USB converters can be found at the RTTY contesting page

by AA5AU at: <http://www.rttycontesting.com>

## 5. Additional Parallel Port Interfacing

If the type of CW port chosen is LPT1, LPT2 or LPT3, and a hardware LPT port is used, additional information will be present on the chosen parallel port. In configurer select for which Radio the output has to be given on the selected port (Radio 1 or Radio 2). The BCD data on the LPT is that of the current active radio/VFO. The band data is available on multiple LPT ports — Radio 1 on LPT1, Radio 2 on LPT2 and so on. USB-to-LPT converters are not supported.

When DVK is selected, the Antenna selection via the LPT port is disabled.

The DVK pins and the antenna pins on the LPT port overlap.

Parallel port pin layout

LPT pin	Description
1	Return for PTT and CW output. This pin has limited sink capability, so you may need to buffer it
2	Band output (Least Significant Bit) set by Antenna tab in Configurer. This pin is also used to stop the message sent on the hardware DVK.
3	NA-compatible TX focus. - Radio 1/2 Pin 3 will go to a logic LOW level (0V) when Radio 1 has TX focus and to a logic HIGH level (5V) when Radio 2 has TX focus. (NB. LPT pin 3 is the complement of Pin 14). Set ONLY if no hardware DVK output is selected (msg# 1).
4	NA-compatible RX focus. LPT Pin 4 will go to a logic LOW level when Radio 1 has RX focus and to a logic HIGH level when Radio 2 has RX focus. Set ONLY if no hardware DVK output is selected (msg# 2).
5	(Shift+singlequote) to toggle for Stereo mono. LPT Pin 5 will go to a logic LOW level for mono audio and to a logic HIGH level for stereo audio. Set ONLY if no hardware DVK output is selected (msg# 3).
6	Set ONLY if no hardware DVK output is selected (msg# 4).
7	Band output set by Antenna tab in Configurer
8	Band output set by Antenna tab in Configurer
9	Band output (Most Significant Bit) set by Antenna tab in Configurer
14	Radio select A/B (transmit focus) for DX Doubler compatibility. LPT Pin 14 will go to a HIGH level when Radio 1 has TX focus and to a LOW level when Radio 2 has TX focus. (NB. LPT pin 14 is the complement of Pin 3)
15	Footswitch input port
16	PTT output, high = transmit mode
17	CW output
18-25	Return for Band output

## 6. Band decoder output

Pins 9, 8, 7 and 2 can be set using the Antenna tab in Configurer. The output on the pins will follow the selected code which is being set up by the selected antenna.

Code	Result on LPT port				Code	Result on LPT port			
	pin 9 D	pin 8 C	pin 7 B	pin 2 A		pin 9 D	pin 8 C	pin 7 B	pin 2 A
0	0	0	0	0	8	1	0	0	0
1	0	0	0	1	9	1	0	0	1
2	0	0	1	0	10	1	0	1	0
3	0	0	1	1	11	1	0	1	1
4	0	1	0	0	12	1	1	0	0
5	0	1	0	1	13	1	1	0	1
6	0	1	1	0	14	1	1	1	0
7	0	1	1	1	15	1	1	1	1

### 6.1. Sample configs

Code	Antenna	Bands
0		
1	160 mtr	1.8
2	80 mtr	3.5
3	40 mtr	7
4	30 mtr	10
5	20 mtr	14
6	17 mtr	18
7	15 mtr	21
8	12 mtr	24
9	10 mtr	28

Code	Antenna	Bands
0		
1	3 el yagi 10-15-20	10, 21, 14
2	3 band vertical	7, 3.8, 1.8
3	40 mtr dipole	7
4	80 mtr dipole	3.8
5		
6		
7		
8		
9		

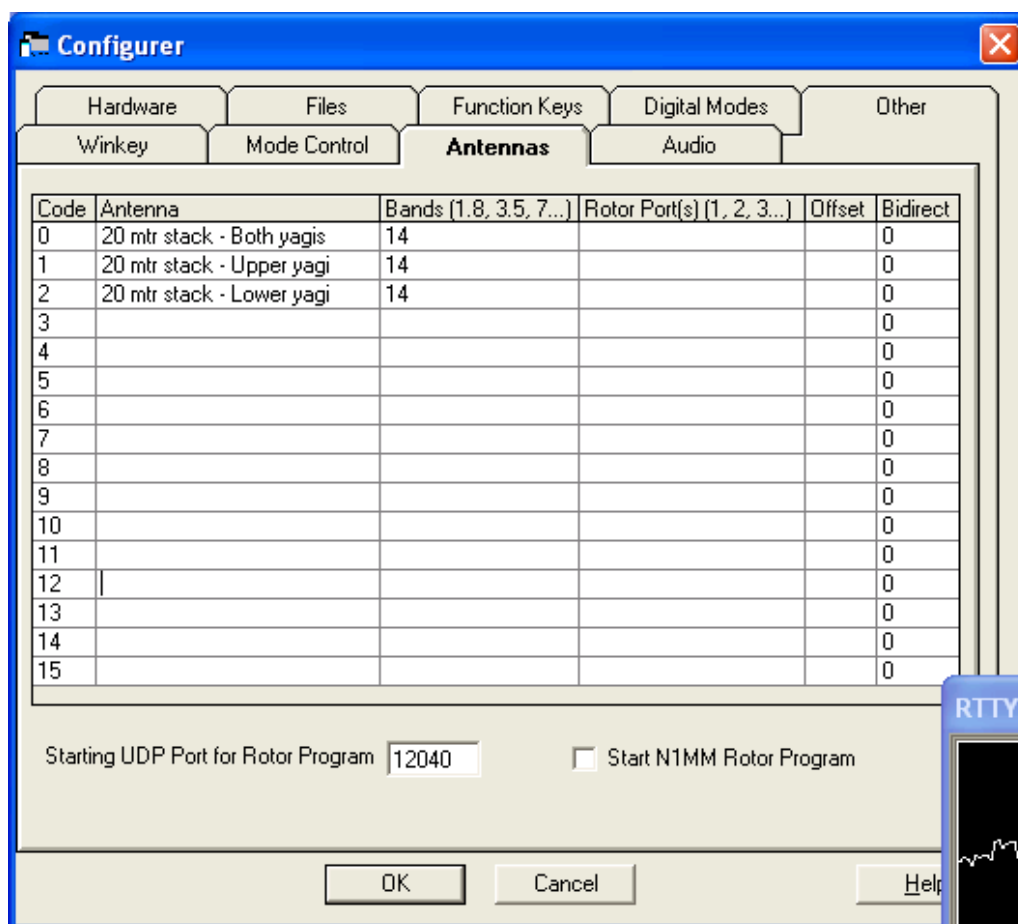


To replicate the default Top-Ten Devices behavior, you would need to set up the Antenna tab in Configurer as shown above to the left]

It is possible to use more than one antenna per band with N1MM logger. With Alt+F9 it is possible to toggle between these antennas.

NB. Don't forget to add a space after the comma when more than one band is specified (e.g., 7, 3.8, not 7,3.8)

## 6.2. Sample Config > Antenna for two stacked antennas



You will need to make appropriate provision with a diode matrix on the output of your band decoder to select the appropriate antenna or antennas when a given code is sent from the program to the decoder. For example, if your band decoder outputs positive voltage

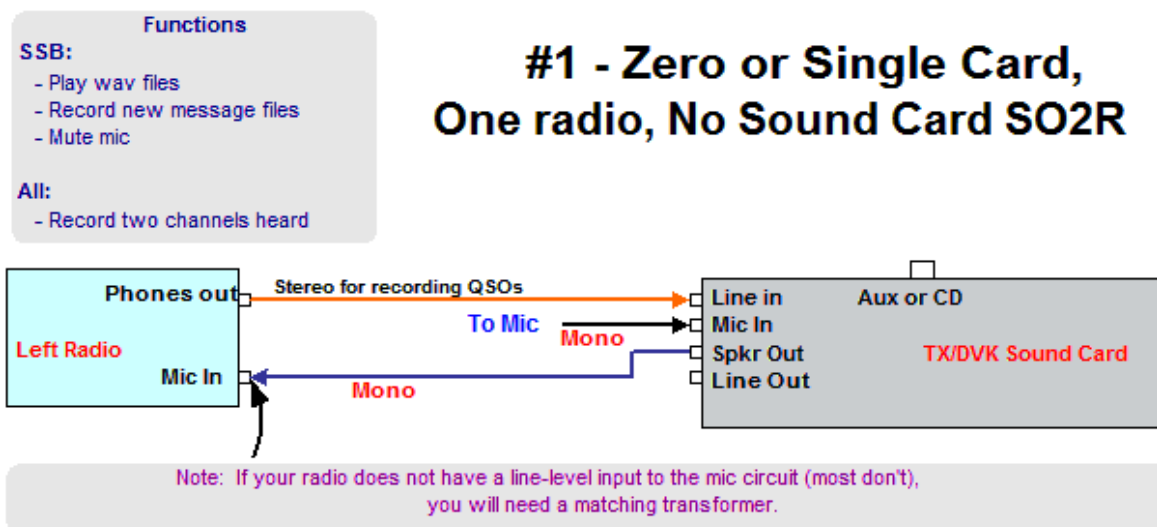
## 7. Bearing data

Bearing data for rotator control is currently not available on the LPT port.

## 8. Sound card interfacing

### 8.1. Preferred method

It is better to run the mic through the sound card all the time. That way your audio sounds the same either recorded or live. It also lets you re-record cq's on the fly, something that is really needed for 40m and 80m split cq'ing. Check out "#1 - Zero or Single Card, One radio, No Sound Card SO2R " which can also be found with more examples in the SO2R section.



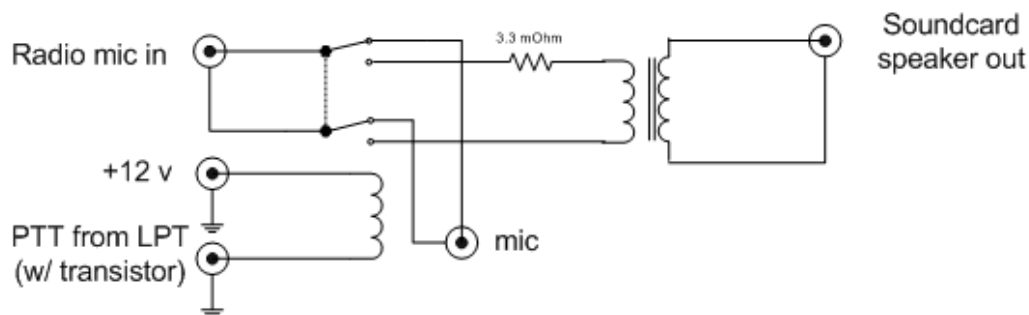
Select '1 - Single Card - One radio, No Sound Card SO2R' on the 'Audio' tab in the Configurer and setup the top part of this dialog.

The sound is centered rather than set to a radio channel.

### 8.2. Another possible soundcard interface.

This is NOT the preferred method any more!

## Sound Card DVK Interface



**Transformer**  
Radio Shack 273-1380 or equivalent  
8 ohm to soundcard,  
1000+ ohm to radio mic in.

**Relay**  
Any dip-type 12v dpdt relay

- A 8:1000 ohms transformer should be used when the sound card speaker output is used to the radio microphone input.
- A 600:600 ohms (1:1) transformer should be used when the line output from the sound card is used to the radio microphone input.

## 9. Serial and Parallel port interfacing under Windows NT/2000/XP

Windows NT, Windows 2000, XP and their descendants require a special dll, DLPORTIO, which will be installed by running: PORT95NT.EXE to use the parallel, serial and USB ports. Windows 95, 98 (SE), ME don't need this special dll. In these operating systems N1MM logger can access the parallel port direct without the need for an extra driver.

To install the NT/2000/XP capable dll, do the following:

- Download PORT95NT.EXE. A link to this file can be found in the installation section.
- The size is about 1,6 Mb.
- To install, just run port95nt.exe
  - Select Next, Yes and typical where appropriate.
  - Yes to boot your PC
  - You are done.
- You have to be the administrator of your machine when running port95nt.exe

### 9.1. Everything on one COM port

By Uffe PA5DD.

Shared ports allow for example Radio control/PTT/PTT-interrupt/CW on just one COM port, which might be all you have on your laptop. It requires that you make a serial splitter or a common interface. There are some pitfalls though:

- Radio control communication is without hardware handshake (as you are using the hardware control pins for other purposes). This is not a problem as such, since hardware handshake is not used by your radio. True at least for ICOM & YAESU.
- Some interfaces wire RTS/CTS together to allow a PC set for hardware handshake to work properly. This link must be removed for port sharing, as it will generate a permanent PTT interrupt on the CTS pin. This will abort your messages as soon as you start them. Also DSR should not be connected to anything.
- In some radio control serial level converters the handshake signals are used as power supply. This is not possible if both RTS & DTR are used for CW/Other. You will have to provide power supply from somewhere else (I use the PS/2 mouse port). Note that in this case you only have to split out GND TXD RXD for the radio control.

## 9.2. I need more serial ports

By Didier KO4BB

Interrupts are the limiting factor to more than a handful of serial (com) ports. There are 2 ways to address that:

1) You want to use "standard" hardware using Windows "standard" com port model, and as long as the software will let you select IO port and IRQ, and as long as you don't need parallel printer or floppy (and as long as your video card does not use IRQs also), and if the program lets you share IRQs (for instance, you don't need an IRQ for a serial port used to drive the PTT line), (that's a lot of if's!!!) you can probably cram 4 to 6 com ports into a single PC. Note that you may still have problems if you try to run high bit rate on all the ports at once (that should not be a problem with radio control though). Please note that the "standard" PC setup (and Windows) supports 4 com ports with only 2 IRQs. Those who have tried know that you don't want to run high bit rate on COM 1 and COM 3 at the same time because they share the same IRQ.

2a) You do away with standard hardware, and then you can use specialty boards that have 4, 8 or even 16 ports. However, these boards use communication processors so they only need one IRQ from the PC but your software needs to be aware of and be able to communicate with that processor, either through custom software, or through a driver for your OS (Operating System i.e. Windows), or both. That's what ISPs use to gang a bunch of modems to support more than a couple phone lines/modems with each PC. While these may have high communication rate capabilities (because the communications processor uses FIFOs, small memory buffers that store incoming data until the PC is ready to take it), they also offer higher latency (response time) than a native port, not ideal for CW, although with a fast PC, most users have been satisfied with this

setup.

2b) USB adapters fall in the category of non-standard hardware, but because USB is now built into the motherboard, the communication processor hardware is directly supported by the BIOS, and the OS has the proper drivers, so that has quickly become a standard. However, the USB standard was not designed to minimize latency, so a USB-serial adapter, while OK to talk to a radio via it's serial port, is not ideal to do things such as CW using bit twiddling. That should be reserved to native serial or parallel ports (motherboard or add-on card). USB adapters are probably a little worse (with regard to latency and CW capability) than custom communication processors described at 2a) because the USB adapters communicate with the PC through a serial link instead of being directly connected to the processor bus, so the bit twiddling has to be done though a serial link, which adds latency. In addition, since the USB port may be shared with other devices, accessing these other devices while sending CW would be a bad thing.

Bottom Line: There are excellent USB combination interfaces now available that can control one or more radios, key them with Winkey, and even provide soundcard facilities.

### 9.3. Renumber your serial ports

As you install new serial ports (serial or USB devices) Windows may arbitrarily assign COM port numbers to them that are outside the COM 1-8 range of the N1MM Logger configuration menu. Reassign the serial/USB port to a different number. Here's how:

- 1) Right click "My Computer"
- 2) Left click on "Manage"
- 3) Left click on "Device Manager"
- 4) Look in the right window and find + Ports (COM & LPT)
- 5) Left click on the Plus sign
- 6) Right click on the COM17 line
- 7) Left click on the "Properties" selection
- 8) Left click on the "Port Settings" tab
- 9) Left click on the "Advanced" button
- 10) Select the COM Port Number you want in the drop down menu
- 11) Click on "OK" a bunch of times to back all the way out
- 12) Your serial/USB port number will now appear as the number you chose

If you have more than one COM port, you can change them all by selecting each one in turn and going through this process.

73 de Bob - KÅ~RC in MN

## 10. Hooking up a Footswitch

A footswitch can be hooked up to a serial and a parallel port. The footswitch program action is for both LPT and COM ports on switch closure.

### 10.1. Parallel port

If pin 14 is not used to switch radios using an external SO2R box (for example, by using the Pause key), then hooking up a footswitch to LPT1 can be done by connecting a 10k resistor from pin 14 to pin 15. Pin 14 is normally +5V and provides pull-up voltage for pin 15.. Then connect a normally open footswitch between pin 15 and pin 18 of LPT1. Closing the footswitch pulls pin 15 low and performs the function selected in the configurer.

If pin 14 is being used for Radio A/Radio B control of an external SO2R box, a 5V supply with a 10k series resistor can be used to provide the pull-up voltage for pin 15.

### 10.2. Serial port footswitch information (using the 9 pin connector numbers)

Connect a 10k resistor between pin 6 and pin 7. Set DTR, pin 4 to "Always On" and RTS, pin 7 to "Always Off". Connect the footswitch between pins 4 and pin 6.

The program action will be on footswitch closure. The footswitch wires can not be referenced or connected to ground.

## User Evaluation of USB to Serial I/O Interface Devices for use with N1MM Logger

First, a cautionary note, courtesy of Bob, W5OV:

This is a good reference, but potential users should not get a false sense of security because someone else may have had success with a particular device. In other words, it's more than just the hardware; the success rate is also closely tied to what operating system you have, what revision of the driver you are installing for the device you are trying to use, and what other drivers you have installed previously (which could have been for something you no longer use or no longer have connected to the computer), and your computer's particular configuration in general.

Drivers: One key thing to never do is to allow Windows to tell you that it already has the driver for a particular device - you should always install the driver that comes with your interface. Windows can

misidentify these devices when you plug them in and Windows will let you fail by using the driver it thinks is correct - and most often Windows is dead wrong.

Generally speaking, with XP you can use most any USB to serial device (Prolific or FTDI chipsets) as long as you do not have a conflict. When it comes to Vista or Windows 7, FTDI seems to be the only game in town for close to sure results (Editor's note - not all users agree with this characterization. See the table below.)

Even with all of this, depending on what you have done with your computer previously, you may have problems. And again, the point of all of this is that the problems may have nothing to do with what hardware you are trying to use. It could be something left over by some earlier activity on your computer. That said, most installations of these devices goes well right from the start. When they do not, it can be very frustrating.

A further technical note, posted on the N1MM Logger reflector by Joe, W4TV, concerns an easy way to tell whether a given adapter can handle 45.5 baud RTTY:

Windows serial drivers set the data rate (baud rate divisor) with 14 bits of a "double word." That limits the max/min range of the driver/UART to  $2^{14}:1$  ... and **any maximum rate higher than 512K will preclude operation at 45.45 bps.**

**The lower rates are not a 100% guarantee of compatibility but the higher rate is a certain sign that EXTFSK or AFSK will be required for RTTY.**


Be sure to look at the numbered notes for each device - that's where you will find specific issues discussed. Also, please remember that this table is based on N1MM user comments, and we have no additional information. Please contact the evaluator for any further details.


Device (Name or model of Device)	Vendor (Company Name)	Type	Submitted by (E-mail Address)	CAT (RS-232 rig control)	CW/PTT (DTR/RTS works)	RTTY Win (5 Bit 45 baud)	XP
USB to RS232 with FTDI Chipset (note 1)	? From UK	USB to SIO	q.g.collier@btinternet.com	Y	Y	?	Y
UC232A (note 2)	ATEN	USB to SIO	paul@w8aef.com	Y	?	?	Y
USB to Serial Cable (note 3)	Belkin	USB to SIO	pgerhardt@hotmail.com	?	?	?	?
USB2-4COM-M (note 4)	ByteRunner	USB to SIO	dave.n3rd@verizon.net	Y	Y	N	Y


<b>Device (Name or model of Device)</b>	<b>Vendor (Company Name)</b>	<b>Type Submitted by (E-mail Address)</b>	<b>CAT (RS-232 rig control)</b>	<b>CW/PTT (DTR/RTS works)</b>	<b>RTTY Win (5 Bit 45 baud)</b>	<b>XP</b>
USB-COM-CBL (note 5)	ByteRunner	USB wc0v10@embarqmail.com to SIO	Y	Y	?	Y
Edgeport/4 - 4 RS-232 serial DB-9 (note 6)	Digi International	USB yungthor@ca.rr.com to SIO	Y	Y	Y?	Y
USB-COM-PL (note 7)	EasySync Ltd.	USB garyhess999@hotmail.com to SIO	Y	?	?	Y
2U 4S Hub (note 8)	Entrega	USB n3tl@bellsouth.net to SIO	?	?	?	?
USB-RS232 Adapter (note 9)	HoseNose	USB cx6vm.jorge@adinet.com.uy to SIO	Y	?	?	Y
USB to 2 port serial converter (note 10)	IOgear 2	USB lew@paceley.com to SIO	Y	?	?	Y
FT232BM (note 11)	PI Manufacturing	USB W1TR@ARRL.net to SIO	Y	?	?	Y
Gigaware 6-ft. USB-A to Serial Cable (note 12)	Radio Shack	USB pgerhardt@hotmail.com to SIO	Y	?	?	Y
TU-S9 (note 13)	Trendnet	USB lew@paceley.com to SIO	N	?	?	
Keyspan USA-19HS (note 14)	Tripp Lite	USB rojomn@charter.net to SIO	Y	?	?	Y
USB Interface Cable (note 15)	West Mountain Radio	USB jeffnjr484@yahoo.com to SIO	Y	Y	Y?	?
Edgeport /8 - 8 RS-232 serial DB-9 (note 16)	Digi International	USB david_yahoo@levinecentral.com to SIO	Y	Y	Y	Y




Device (Name or model of Device)	Vendor (Company Name)	Type Submitted by (E-mail Address)	CAT (RS-232 rig control)	CW/PTT (DTR/RTS works)	RTTY Win (5 Bit 45 baud)	XP
Valley Enterprises CT-62 (note 17)	Valley Enterprises	USB N4JIK kd4lcr@gmail.com to SIO	Y	?	?	?


Note 1: I have used these with both Vista and XP machines, both of which were able to find the appropriate drivers. The applications in question were the N1MM and SD logging programs, and I have also used the adapters with the original (pre USB) Winkey device, again with good results. [http://www.usbnow.co.uk/p48/USB\\_to\\_RS232\\_with\\_FTDI\\_Chipset\\_\(1.8M\\_Cable\)/product\\_info.html](http://www.usbnow.co.uk/p48/USB_to_RS232_with_FTDI_Chipset_(1.8M_Cable)/product_info.html)  
 **Note: W4TV says that no current FTDI device will do 45.5 baud RTTY without EXTFSK because no current FTDI chipset will handle data below 300 baud.**

Note 2: I have a pair of Aten and one Prolific PL-2303 USB to serial port adapters. Currently I am using one of the Aten adapters with PL-2303 a driver. All adapters work fine on Vista64  
<http://www.aten.com/products/productItem.php?pcid=2005010513171002&psid=20070130144911002&pid=2005022316346005&layerid=subClass7> 

Note 3: No Joy. Driver by MFG CD-Rom was VERY difficult to install and also tried to find and use a newer one from the mfg website w/o success. Got the lights to flash on the device like it was trying but was not making the handshake and would time out the attempt to connect.  
[http://www.belkin.com/IWCatProductPage.process?Product\\_Id=281230](http://www.belkin.com/IWCatProductPage.process?Product_Id=281230) 

Note 4: Tested with Green Heron Everywhere software for control of their RT-20/21 rotator control boxes. Uses the FTDI chip set. Dave N3RD

Note 5: Works fine with Vista and Win 7 64 bit. Be sure to avoid the Prolific chipset adapters. those either don't work or crash the OS. [http://www.byterunner.com/byterunner/product\\_name=USB-COM-CBL/user-id=/password=/exchange=/exact\\_match=exact](http://www.byterunner.com/byterunner/product_name=USB-COM-CBL/user-id=/password=/exchange=/exact_match=exact) . I downloaded the Win 7 drivers. It seems to be functioning OK. Tom - W4BQF

Note 6: I can get mine to work fine on XP Pro but while it installs in Vista and is recognized it will not set up serial ports without crashing the system. I use the Edgeport 4 port USB to serial and it works fine for FSK and rig control of a 765. Geo N4UA <http://www.digi.com/products/model.jsp?lid=EN&pgid=38&pfid=25&mtid=215&amtid=215&pm=Y> 

Note 7: I had trouble with my first adapter (Prolific). Then I ordered an FTDI device from EasySync in the UK and it worked immediately. <http://www.easysync.co.uk/> 

Note 8: It requires a power source which is unmarked I have no specs and need all the help I can get (N3TL) [www.entrega.com?](http://www.entrega.com?)

Note 9: This adapter can also be plugged directly into any rig that has a 9-pin female serial port for interfacing, such as the Elecraft K3 or Yaesu FT-920. Compatible with 32 and 64-bit versions of: Windows 7, Windows Vista, Windows 2003, and Windows XP. <http://hosenose.com>

[/interfaces.asp#USB-RS232](#)

Note 10: Wasn't recognized by Vista. Purchased on Fry's.com. Did work for Rig Control of FT1000MP under N1MM/Vista32 with K1EL USB Winkeyer. <http://www.iogear.com/product/GUC2322/>

Note 11: Vintage 2003, [http://www.pimfg.com/product\\_detail.asp?part=UN8BE&child=N&kwid2=2418 USB Devices&keywordx=5744 USB Converter](http://www.pimfg.com/product_detail.asp?part=UN8BE&child=N&kwid2=2418USBDevices&keywordx=5744USBConverter)

Note 12: Worked fine with N1MM, <http://www.radioshack.com/product/index.jsp?productId=3120513#>

Note 13: Did NOT Work for Rig Control of FT1000MP under N1MM/Vista32 or with K1ELUSB Winkeyer. Prolific 2302 chipset. Purchased on Amazon.com. [http://trendnet.com/products/proddetail.asp?prod=150\\_TU-S9&cat=49](http://trendnet.com/products/proddetail.asp?prod=150_TU-S9&cat=49)

Note 14: Get the Keyspan USB-19 or other Keyspan with same chip and your problems will all be solved. It was not worth trying to avoid spending \$28 with shipping to get two reliable devices. Available at a very good price at Amazon and quick ship. <http://www.triplite.com/en/products/model.cfm?txtSeriesID=518&EID=13384&txtModelID=3914>

Note 15: I've used the adapter from West Mountain Radio with great success on PTT and RTTY and it works for me. Web page states that FSK RTTY support requires MMTTY and EXTFSK software. (W1TR)<http://www.westmountainradio.com/Image/StoreConfigs/usb2serial.htm>. W4TV says that based on study of the driver .inf file, he believes that this device may not function properly for radio control.

Note 16: After installing MMTTY and N1MM on the new Win7 notebook, I plugged in the EdgePort/8 and crossed my fingers. Windows recognized the device was connected and then went to Windows Update online and found the driver. It installed without issue and worked immediately with N1MM and MMTTY. It has a small but nice program that easily allows you to adjust which COMx maps to which of the physical ports on the device. I have the actual Com port selected in MMTTY's TX tab and not EXTFSK.

Though I grabbed the /8 I would hope the /4 installs and works just as well, providing 4 serial connections. I participated in the Mexico RTTY contest this past weekend and the rig control via 1 serial port to my Kenwood TS-2000 worked perfectly. The 2nd serial port is used for a RTTY FSK/CW connection to the ACC2 port on the Kenwood TS-2000 and that worked perfectly as well. - K2DSL

Note 17: Per N4JIK, the CT-62 cable from Valley Enterprises Intl. <http://www.valley-ent.com> would not work with the latest Prolific drivers from the company's website, but worked fine with a Yaesu 8x7 series radio and a driver downloaded from [Valley's web site](#). See note 2 for another success story using an adapter with the Prolific PL-2303 chipset. N4ZR spoke with Valley Enterprises, who advised that they obtained the driver from [G4HFQ](#), a CAT software writer and hardware vendor in the UK.

## Macros

## In this Section...

### Macros

1. General Macros
  - 1.1. {END} Macro Examples
2. CATHEX and CATASC Radio Hex Macro Commands
3. CATAHEX, CATIHEX, CATAASC, and CATIASC Macro Commands
4. Antenna and Rotor Control Macro Commands
5. CW Macros
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6. SSB Macros
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7. SO2V/SO2R Macros
8. Multi-User Macros
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9. Digital (RTTY and PSK) Macros
  - 9.1. RTTY and PSK Macro Examples
10. Packet/Telnet Macros
  - 10.1. Packet Macro Examples

Macros are key words in a text to send which are being replaced when send. An example is the ! which will be replaced by the station entered in the callsign field. The macros can be used in several places in the program.

- Function key buttons (Entry window)
- Packet buttons (Packet window)
- RTTY programmable buttons (RTTY window)
- PSK programmable buttons (PSK window)

#### Macro use



Not every macro can be used in all the places mentioned above.

Macros are executed as they are interpreted, i.e. the program replaces all the macros with their values and then sends the cw. In the case of things like {log}, it logs the Q, then sends the message. This is not a programming language, it's a substitution system.

When placing several macros under a function-key during the sending of it they will be substituted with the contents of the macros.

Example: \* will be replaced with your call, so when your call is PA1M a \* will be substituted with 4 characters.

Calling a few times another function key with several substitutions in it could bring this up to several 100 characters per function key. To prevent infinite loops the length of the string after substitutions may not exceed 1024 characters. After this length the program will stop substituting. 1024 characters is over 12 lines of text (from 80 characters).

**Macro CaSe and Length**

Macros may be in Upper, Lower or Mixed case. The maximum macro length is 255 characters.

When exporting or importing a macro it can not be longer than 70 characters long and the caption can not be longer than 9 characters wide.

**1. General Macros**

General macros can be used in all the places mentioned above.

Note that the table below is sortable alphabetically by the name of the macro, by clicking on the up/down arrow icon just to the left of the "Result" heading.

Macro keyword	Result
*	Call from the Station info dialog, same as {MYCALL}
!	Sends the callsign entered in the callsign field. The "!" substitution occurs before most macro executions /substitutions. The F-Key and Digital Interface macro substitutions ({F5} {DI5}) occur last.
@	To voice the current receive frequency. The frequency will be voiced to the nearest 100 Hz dropping .0 if receiving on an even KHz frequency. This capability can be used to avoid having to rerecord CQ messages on 40m split. Example message: C:\Program Files\N1MM logger\wav\{operator}\CQ Listening.wav@C:\Program Files\N1MM logger\wav\{operator}\AndThisFreq.wav
{BEEP}	Make a clicking sound from the PC speaker
{CALL}	Call in callsign textbox or, if none, the last call logged. Note: This will send the call as it was when the message STARTED. If you want to be able to type the call and send the changes use ! (exclamation point). It does not ever send the previous call, however.
{CHNAME}	If a Call history file is loaded into the current database, and a callsign is entered for which a name is present in the file, then this macro will send that name. Call History lookup does not have to be activated for this to work.
{CLUSTER}	Cluster callsign from Station info dialog. See examples
{Comment}	Macro to add string following {Comment} to comment field of current or last QSO
{END}	This macro stores all macro text after the {END} macro string and executes it after CW, SSB or DIGI messages are sent. One use of the {END} macro is to send CAT commands to the radio(s) after a transmission ends. All QSO message text placed after the {END} macro command is deleted
#	Send next (or last) serial number

<b>Macro keyword</b>	<b>Result</b>
{EXCH}	Sent Exchange, either for the last QSO or for the current one, depending on whether there's a callsign in the entry window or call-frame
{FORCELOG}	Same effect as Ctrl+Alt+Enter, but does not ask for a note to be entered
{FORCELOGNOTE}	As above but asks whether you want to enter a note.
{FREQ}	Frequency from the contact in the Entry window
{GRID}	Gridsquare from Station info dialog
{GRIDSQUARE}	Gridsquare from grid textbox (contact in Entry window)
{GRIDBEARING}	Bearing between own gridsquare and grid textbox (contact in Entry window)
{REVGRIDBEARING}	Reverse bearing between own gridsquare and grid textbox (contact in Entry window)
{KMGRIGDISTANCE}	Distance in kilometer between own gridsquare and grid textbox (contact in Entry window)
{LOG}	CW:Logs the current contact. Same as ENTER in the Entry Window. Digital: Put the {LOG} macro after the {RX} macro... The receive frequency is being reset to the transmit frequency. Note: does not work in phone (SSB, FM etc)
{LASTCALL}	Call of last station logged
{LASTEXCH}	Exchange of last station logged. For ROPOCO and LZOPEN only. It does NOT work for other contests!
{MYCALL}	My Call from Station info dialog, same as *
{NAME}	Sends the name as entered in the Entry window name field (Example: TARA) or when no Entry window name field, searches the name in the call history table
{NAMEANDSPACE}	Sends the name as entered in the Entry window name field (Example: TARA) or when no Entry window name field, searches the name in the call history table and adds a space behind it
{OTHERFREQ}	Is replaced by the frequency of the non-active radio. Used for passing stations to other bands. Substitutes "R" for decimal on CW
{OTRSP XXXX}	Used to send a command to an OTRSP (Open Two-Radio Switching Protocol) device. XXXX can be any command known to the OTRSP device
{PGDN}	Change frequency up equal to amount set under 'PgUp/PgDn Incr (kHz)' 'in the Configurer under the 'Other tab'. For use after {END} macro like NA Sprint
{PGUP}	Change frequency down equal to amount set under 'PgUp/PgDn Incr (kHz)' 'in the Configurer under the 'Other tab'. For use after {END} macro like NA Sprint
{PREVNR}	Sends the QSO # of the last logged QSO
{LRMHZ}	Frequency Left Radio/VFO-A in MHz. Example: 28 when on 28.1234 MHz
{RRMHZ}	Frequency Right Radio/VFO-B in MHz. Example: 14 when on 14.1235 MHz

Macro keyword	Result
{RUN}	Sends the last logged callsign and then goes into Running mode
{S&P}	Sends the last logged callsign and then goes into S&P mode
{STEREOOFF}	The stereo bit on the LPT port will be set to OFF
{STEREOON}	The stereo bit on the LPT port will be set to ON
{TIMESTAMP}	Date and Time from the contact in the Entry window
{TX}	CW/SSB: when sent in a function key will key ptt. Use Esc to turn off. This is a manual PTT from the keyboard. RTTY: Check out the Digital macros below. <b>Note: This does not appear to work with some radio/interface combinations.</b>
{CLEARRIT}	Reset the RIT to zero. Could be used in the macro that confirms the contact, usually F3. Use the RIT when the station is calling and when logged the RIT clears (using F3). Note: Will only work for radios that support that function. Most ICOM radios do not. Your manual will tell you for sure
{CTRL-A}...{CTRL-Z}	Sends Ctrl+A character to TNC. All characters from the alphabet can be used (A to Z). Not valid in MMTTY and PSK. See examples
{ENTER}	Sends ENTER to TNC
{ENTERLF}	Sends Return/Line Feed to the TNC. Try this if ENTER doesn't seem to work
{ESC}	Sends Escape character to TNC. Not valid in MMTTY and PSK. See examples
{DATE}	Short date in Windows format as set in Regional settings
{DATE1}	Date in Nordlink-TF/WA8DED format (dd.mm.yy)- format: 26.02.99
{SENTRST}	Sends the RST sent as entered in Entry window Snt field
{SENTRSTCUT}	Sends the RST sent with the number 9 sent as the character N. Will send 57N or 5NN etc
{TIME}	Time in Windows format as set in Regional settings
{TIME1}	Time in Nordlink-TF/WA8DED format (hh:mm:ss)- format: 20:36:55
{TIME2}	Short GMT time (hhmm)- format: 2036 Information how this macro works in digital contests can be found at: Time2- How it works
{DAYTIME}	Date in TAPR DayTime format - format: 0107162036
{DATEGMT}	Date and GMT time - format: 16-jul-01 18:36:55
{TIMEGMT}	GMT time - format: 18:36:55
{F1} - {F12}	Sends text assigned to function keys F1 through F12
{SOCALLSTACK}	This macro enables single operator callsign stacking. When in RUN mode, this macro gives the operator the ability to stack and retrieve a single callsign when multiple stations are calling. The stacked callsign does not

Macro keyword	Result
	<p>need to be a full call and it can contain a "?". Single operator call stacking can be used in SO1V/2V or SO2R mode, in both entry windows, and with/without ESM. When in RUN mode, {SOCALLSTACK} will move a call or partial call and place it in the callsign frame and bandmap. If a stacked call exists on the call frame, the callsigns will be exchanged. If the callsign contains a question mark ("?"), the cursor will highlight the question mark when the text is popped off the stack. If the callsign does not contain a question mark, the cursor is placed at the beginning of the callsign upon return to the entry window. Using the existing command ALT+D, it is possible to delete a stacked call from the bandmap and call frame without popping it off the stack with when the callsign entry window is blank. {SOCALLSTACK} will also pop the call off the stack if ESM replaced the stacked call with the string CQ-Frequency. When this occurs, the stacked call will be visible in the bandmap. {SOCALLSTACK} is not intended to be used with the MM call stacking function. See also the macro {STACKANOTHER}. Callsigns stacked by {SOCALLSTACK} can be popped off the stack by pressing the space bar when the CQ-Literal is on the call frame. More info and examples in the chapter: Advanced functions</p>
{STACKANOTHER}	<p>Macro to stack additional callsigns in all modes. Also check the keycombination CTRL+ALT+G More info and examples in the chapter: Advanced functions</p>
{LOGTHENPOP}	<p>RUN mode only. Intended for with the single operator call stacking feature. It logs the current station sending corrections if enabled, pops the next call off the stack, and updates ESM if enabled, to the correct step. The macro can be used with or without ESM. The suggested macro key is: {LOGTHENPOP} TU NW {F5}{F2}. In CW, if {LOGTHENPOP} can not pop a call off the stack and the logged callsign was changed, send corrected call if enabled and the TU message. More info and examples in the chapter: Advanced functions. Example function key setup can be found in the Chapter Function Keys (CW: example 3)</p>
{ROVERQTH}	<p>Sends the Rover QTH. Check out the chapter Advanced Functions for more information on Rover support</p>
{VARYMSG1} {VARYMSG2}	<p>These macros allow the user to control how often a alternate form of a function key message is sent instead of the primary form. Each can be used once in a given Function Key set. The form of the macro is <b>{VARYMSGn&amp;Primary Message&amp;Alternate Message&amp;How Often to Send Alternate&amp;}</b>. Substitute the form of the message you want to send most often for Primary Message. Then substitute the message you want to send at intervals for Alternate Message. Finally, specify how often you want to send the Alternate message in How Often to Send Alternate. 2 through 5 tells the program to send the Alternate Message every 2-5 times that function key is sent. 0 sends the Primary Message all the time; 1 sends the Alternate Message all the time. <b>Examples:</b> in the CQ Key definition (RUN F1), {VARYMSG1 &amp;CQ * *&amp;CQ CQ * *&amp;3&amp;} will send a slightly longer CQ</p>

Macro keyword	Result
	every three times. In the TU Key definition (RUN F3), {VARYMSG2 &TU&TU *&4&} will send TU alone after a completed QSO, and send your call only every 4th time. Any function key text before or after the {VARYMSGn} macro string is preserved. So, RTTY users may place the {TX} {RX} macros before and after the {VARYMSGn} macro string. The primary and alternate {VARYMSGn} fields may contain other macros but the two {VARYMSGn} macros may not be nested.

The TNC Interface *does accept* all of the macros above.

## 1.1. {END} Macro Examples

The {END} macro signals the program that the remaining {} commands are to be executed when the program returns from sending the CW, SSB or DIGI messages (this may not yet work for digi). Here is an example:

- Macro: F1 {STEREOOFF}CQ TEST \*{END}{STEREOON}

Whenever the F1 key is pressed, the stereo bit on the LPT port will be set to OFF. CQ will be sent via the current mode, and after the message is complete, the stereo bit on the LPT port will be turned back on. Thus, one can listen to just the second radio while the CQ is being sent, then listen to both radios after it is finished.

### More to send after the {END} Macro?

Only {} macros with side effects are used when they are placed after the {END} macro. For example, if you put {MYCALL} or "5NN" after the {END} macro, they will be ignored. Why? Well the message is over, there is nothing more to send

So the rule is: **All macros with side effects are executed before the message is sent, except for those that appear after the {END} macro.**

So where could this lead? Well, what if I created a radio control macro? That is, a macro where you could define commands for your particular radio. The syntax would be something like {R1 cmd}. "cmd" would be replaced with user settable, radio specific commands, like are used with the bandwidth functions accessible from the bandmap. Using the Orion as an example, a macro could be set up like this:

- Macro: F1 {R1 \*UM0}CQ TEST \*{END}{R1 \*UM85}
- This would set radio 1's (an Orion) volume to zero at the beginning of a cq, then back to 85 at the end of the cq. This is equivalent to turning off monitor just for CQ's. The possibilities are pretty interesting (There would also be an {R2} macro for SO2R)



This could lead to controlling RX mute/unmute, monitor on/off, frequency QSY ala NA Sprint rule, possibly letting keyboard entry and or transmit focus follow the moving VFO etc.

## 2. CATHEX and CATASC Radio Hex Macro Commands

Macro keyword	Substituted by
<p><b>{CAT1HEX radio_hex_command(s)}</b></p> <p><b>{CAT2HEX radio_hex_command(s)}</b></p>	<p>These commands can be used to send commands to radio # 1 or radio # 2 requiring hex data input. The macro name must be followed by the radio hex data and closing terminator }. An example is shown below. There must be two hex characters per byte including zero ( zero entered as 00). Spaces are allowed anywhere in the hex command string to make entry and verification easier. You can not place more than one CAT1HEX or CAT2HEX command in a macro but the macro can contain one of each command. The exception to this rule is when the {END} macro is used. More than one radio command can be sent to the radio by placing a / character between the radio commands. Spaces are allowed around the / character. Multiple radio commands are broken into separate radio commands and sent to the radio using internal command pacing. Depending on the computer speed and the number of commands in the string, the use of these macros may delay the operation of the program when sending of CW or other program operation. There are no precautions which prevent the use of these macros while the radio is transmitting. If the user wants to switch an antenna port safely, use the {ANTRX#TOGGLE} macros which contain a TX inhibit. An example of an Icom command is: {CAT1HEX FEFE66E01C0102FD / FEFE66E01C0102FD }</p>
<p><b>{CAT1ASC radio_ASCII_command(s)}</b></p> <p><b>{CAT2ASC radio_ASCII_command(s)}</b></p>	<p>These commands can be used to send commands to radio # 1 or radio # 2 requiring ASCII data input. The macro name must be followed by the radio ASCII data and closing terminator }. An example is shown below. All leading spaces before the radio command portion begins are removed and not sent to the radio. All other spaces in the command are sent to the radio. You can not place more than one CAT1ASC or CAT2ASC command in a macro but the macro can contain one of each command. The exception to this rule is when the {END} macro is used. More than one radio command can be sent to the radio by either placing a / character between the radio commands or by concatenating them together. Spaces before or after the / character are sent to the radio. Multiple radio commands using the / separator are broken into individual radio commands and sent to the radio using internal command pacing. Non-ASCII characters may be included in the radio command string by delimiting the two character hex value with &lt; &gt;. The leading &lt; and trailing &gt; characters are not sent to the radio. Spaces are not allowed</p>

Macro keyword	Substituted by
	<p>inside the &lt; &gt; characters. Depending on the computer speed and the number of commands in the string, the use of these macros may delay the operation of the program when sending of CW or other program operation. There are no precautions which prevent the use of these macros while the radio is transmitting. If the user wants to switch an antenna port safely, use the {ANTRX#TOGGLE} macros which contain a TX inhibit. Examples of several forms of this command are: {CAT1ASC PB1;/PB2;} {CAT1ASC PB1;PB2;} {CAT1ASC P&lt;42&gt;1;PB2;} FT2000 - Play message #1 would be: {CAT1ASC PB01;} You may place a space between the macro name and the radio CAT command to improve readability. All leading spaces after the CAT1ASC macro command name are removed. If the ASCII radio command contains characters that are macros (*, !, #), these characters must be sent using the hex notation explained above.</p> <p>As an example, this macro contains a macro character {CAT1ASC *UM0} and will not work correctly. The correct form using hex notation would be {CAT1ASC &lt;2A&gt;UM0}</p>

### 3. CATAHEX, CATIHEX, CATAASC, and CATIASC Macro Commands

Macro keyword	Substituted by
Active radio <b>{CATA1HEX radio_hex_command(s)}</b>	These eight macros's provide flexibility to send ASCII or HEX commands to either radio in SO2R mode (or VFO in SO2V) mode based on Active or Inactive radio/VFO.
<b>{CATA2HEX radio_hex_command(s)}</b>	Radio specific commands were added for those SO2R users that do not have identical radios. The new macros follow the same syntax as the CAT1HEX and CAT1ASC macros.
<b>{CATA1ASC radio_ASCII_command(s)}</b>	The F-key macro text passes through a routine that removes CAT macros for radio(s) that do not qualify based on Active/Inactive radio(s). This allows one F-key string to be used for multiple purposes.
<b>{CATA2ASC radio_ASCII_command(s)}</b>	
Inactive radio <b>{CATI1HEX radio_hex_command(s)}</b>	An example of a Pro3 macro string that switches DualWatch and the Rx antenna based on the radio activity is shown below. {catA1hex fefe6ee0 12 00 00fd}{catI1hex fefe6ee0 12 00 01fd}{catA2hex fefe6ee0 07 c0 fd}{catI2hex fefe6ee0 07 c1 fd}
<b>{CATI2HEX radio_hex_command(s)}</b>	

Macro keyword	Substituted by
{CATI1ASC radio_ASCII_command(s)}	
{CATI2ASC radio_ASCII_command(s)}	
{CATDELAY}	This macro suspends the entire program operation to allow CAT commands to be received and executed by the radio possibly before a transmission begins. The need for this macro is dependent on the computer speed, radio interface rate, and radio type. The form of the CATDELAY macro is {CATDELAY N} where "N" is a user programmable delay in 50ms increments. The value of N is internally limited to 20 which would be a delay of 1 second

#### 4. Antenna and Rotor Control Macro Commands

Macro keyword	Substituted by
{ANTRX1TOGGLE}	<p>These macros can be used to switch between antenna ports and toggle the receive antenna input on some radios when the program is not transmitting. Some radio models have multiple inputs but lack the CI-V command to control the port so the functionality of these macros is radio dependent. When the {ANTRX#TOGGLE} macro is executed, the numbered antenna port is selected. If the same antenna port macro executed again and the radio is equipped, the receive antenna will be toggled on and off with each macro execution. If the antenna port is switched to another port, the current setting of the RX antenna is stored and used when this antenna is selected again. If only one radio antenna port is used it is only necessary to assign that {ANTRX#TOGGLE} macro to a F-key to toggle the RX antenna on/off quickly.</p> <p>Supported radios: Yaesu FT950, FTDX9000, FT2000 Icom: IC746, IC746Pro, IC756, IC756Pro, IC756Pro2, IC756Pro3, IC775, IC7700, IC7800 and Elecraft K3, TenTec Orion, Kenwood TS2000</p>
{ANTRX2TOGGLE}	
{ANTRX3TOGGLE}	
{ANTRX4TOGGLE}	
{TURNROTOR}	Turn the rotor to the direction based on the calculated direction
{STOPROTOR}	Stop turning the rotor. Note that per the manual some functions are not supported for all rotor brands

#### 5. CW Macros

CW macros are only substituted when used in substitutions for CW buttons.

CW Program Control and Prosign Macros	
Macro keyword	Substituted by
<	Increment CW speed with 2 wpm. See examples
>	Decrement CW speed with 2 wpm. See examples
~	Send half space character. See examples
[	SK prosign    . . . _ . _
]	AS prosign    . _ . . .
+	AR prosign    . _ . _ .
=	BT prosign    _ . . . . _

Special Character Macros			
Macro keyword	Substituted by	Macro keyword	Substituted by
! * ^	. . _ _ .	É	. . _ . .
"	. _ . . _ .	Ü	. . _ _
'	. _ _ _ _ .	Ä	. _ . _
?	. . _ _ . .	Á	. _ _ . _
/	_ . . _ .	Ñ	_ _ . _ _
:	_ _ _ . . .	Ö	_ _ _ .
;	_ . _ . _ .	-	. _ _ . _
(	_ . _ _ .	\$	. . . _ . . _
)	_ . _ _ . _	@	. _ _ . _ .
,	_ _ . . _ _	!	
-	_ . . . . _	!	

\* the ! Macro: To send the CW code for an exclamation point, substitute a caret ^ in the macro

### Improving CW Readability

Some calls have letter combinations where it's hard for to copy correctly. E.g. 6Y2A is often copied as BY2A. To help make your call easier to copy, Go to Config > Change Packet/CW /SSB/Digital Message Buttons> Change CW Buttons, and try changing the default F1 and/or F4 message where \* is used for your call. In this example, 6Y2A changes F4 from \* to>6<~Y2A. Result: the 6 is sent 2 WPM slower compared to the rest of the call, and an additional half space is added between the 6 and Y. Try other combinations of <, >, or ~ to make your call easier to copy.

## 5.1. CW Macro Examples

- Sent the call entered in the callsign field
  - Macro: !
    - Send his call. The callsign entered in the callsign entry field will be sent by the program via the serial or parallel port

- Sent CQ with your call sent as a macro substitution
  - Macro: **cq~test~de~\***
    - The time between the words is a half space (~).
    - The \* will be replaced with the callsign from the Station dialog {MYCALL}
  
- Send part of exchange faster (report sent 6 wpm faster)
  - Macro: **<<<5nn>>>{EXCH}**
    - The report 5nn is sent 6 wpm faster than the exchange (<<< >>>).

## 6. SSB Macros

SSB macros are only substituted when used in substitutions for SSB buttons. SSB macros can be concatenated using a comma.

SSB Macros	
Macro keyword	Substituted by
{OPERATOR}	Specify wav files like: C:\Program Files\N1MM logger\wav\{OPERATOR}\cq.wav Default to station callsign if not specified. See examples

### 6.1. SSB Macro Examples

- Send the call entered in the callsign field
  - Macro: !
    - Send his call. The callsign entered in the callsign entry field will be sent by the soundcard. In the 'Letters' directory all the WAV files for the letters/numbers etc. must be present. See [here](#)
- Let each operator have his own WAV files
  - Macro: **C:\Program Files\N1MM logger\wav\{OPERATOR}\cq.wav**
    - You can specify WAV files like: C:\Program Files\N1MM logger\wav\{OPERATOR}\cq.wav As you change operators in a multi user contest, the WAV files will change as well. You will have to name them consistently. Note that the WAV directory syntax indicates a subdirectory under install directory. You can also fully qualify the file name, like: "C:\wavfiles\cq.wav"
    - If you *really* wanted to, you could have: C:\Program Files\N1MM logger\wav\{OPERATOR}CQ.wav and name them:
      - **N1MMCQ.wav**

- **PA1MCQ.wav**
  - Play exchange with operators voice: **C:\Program Files\N1MM logger\wav\{OPERATOR}\5905.wav**
  - {OPERATOR} is a string substitution only implemented for SSB buttons
- 
- Hear a 'click' and not call the dupe (in S&P)
    - If you set up S&P F6 to issue the command **{BEEP}**, you will hear a "click" when you try to work a dupe

## 7. SO2V/SO2R Macros

SO2V/SO2R macros are only substituted when SO2V or SO2R is selected.

<b>Single Op 2 VFO and Single Op 2 Radio Macros</b>	
<b>Macro keyword</b>	<b>Substituted by</b>
<b>{OTHERBAND}</b>	Sends the band of the other (inactive) VFO/radio (e.g. 80)
<b>{OTHERMHZ}</b>	Sends the frequency of the other (inactive) VFO/radio in MHz (e.g. 3.5 and 3R5 in CW)
<b>{OTHERFREQCUT}</b>	CW only. Sends last digits of the frequency of the other (inactive) VFO/radio as cut numbers. Uses the cut number style selected in Configurer
<b>{JUMPRX}</b>	Change the RX focus to the other input window. If only one input window is shown the second window will be opened
<b>{WIPE}</b>	Wipe the focus window. If the entry boxes are all empty, restores the last wiped contact ("unwipe")
<b>{ADVSO2RON}</b>	Turn 'Advanced SO2R' on. See Chapter 'SO2R'
<b>{ASVSO2ROFF}</b>	Turn 'Advanced SO2R' off. See Chapter 'SO2R'
<b>{CTRLFX}</b>	CW only. Sends on the other radio. Thus a CW Button might look like: "tu EXCH{CTRLF9}" where F9 on the other radio is set to send a CQ. It is important to note that via hotkey Ctrl+Shift+L will turn this feature on or off. When off the CTRLFn macro is ignored
<b>{CONDJUMP}</b>	When RX and TX focus are split between two radios, and the user hits the Enter key, TX focus is first moved to the radio with RX focus. The CW message is sent. After the CW message has been completed, TX and RX focus are both moved to the other radio. When RX and TX focus are not split between radios, and the user hits the Enter key, the CW message is sent. When the CW message has been completed, TX and RX focus remain unchanged. Typical usage in Sprint is: Run F3: TU {END} {CONDJUMP}
<b>{QSYCQ}</b>	Allows QSYing to the last CQ frequency on the focus radio

## 8. Multi-User Macros

Multi-User macros are only substituted when in Multi-User mode.

Macro keyword	Substituted by
<b>{MESSAGE}</b>	Send a message (via function key) to other connected stations over the network. See examples
<b>{PASS 0}</b> ... <b>{PASS 15}</b>	Pass frequency from station 0 (Master station) through station 15. The Pass frequency is rounded to the nearest kHz
<b>{PASS 1800}</b> ... <b>{PASS 28000}</b>	Insert pass frequency for first connected station found on that band. Valid values are PASS 1800, 3500, 7000, 14000, 21000 and 28000
<b>{PASSMSG 1}</b> ... <b>{PASSMSG 15}</b>	Pass last QSO information from station 0 (Master station) through station 15

### 8.1. {MESSAGE} Macro Examples

The {MESSAGE} macro sends a message (via a function key) to other connected stations over the network. The info will be shown in big red letters in the Info window from the receiving station(s). Place a number directly after the {MESSAGE} macro if you want to send the message to one specific station. If you don't want to send to a specific station, but want to start your message with a number put "- " in front of the message. Because "\*" is used by macro substitution to indicate a callsign, you cannot put a \* at the beginning of a message to indicate that the message should be sent to all stations. Since sending to all stations is the default behavior, this is not a problem. Just don't start the message with a number if you want to send the message to all stations.

<b>{MESSAGE} Macro Examples</b>	
Button text	Macro
<b>F8 Pass station</b>	{MESSAGE}2 {TIMEGMT} {PASS 1} {CALL} {GRIDSQUARE} {GRIDBEARING}deg. {KMGRIDDISTANCE} km. Message sent to station 2 with info about the station in the callsign field. This is a macro which could be used in VHFREG1 where a station is sent from one band to another
<b>F8 Pass station</b>	{MESSAGE} {TIMEGMT} {PASS 1} {CALL} {GRIDSQUARE} {GRIDBEARING}deg. {KMGRIDDISTANCE} km. Message sent to all connected stations with info about the station in the callsign field
<b>F8 OK</b>	{MESSAGE}2 OK. Send OK to station 2



## 9. Digital (RTTY and PSK) Macros

The following substitutions will be made when sending function key.

In the Digital interface the macros below can be used but also all other macros shown under general macros.

<b>Macro keyword</b>	<b>Substituted by</b>
<b>{TX}</b>	Start transmission in the digital interfaces (needed to transmit!) Needed at the beginning of every Digital macro!
<b>{RX}</b>	Switch to receive in the digital interfaces (needed to get back to receive). Needed at the end of every Digital macro!
<b>{CLRRX}</b>	Clear the RX window. This macro can be used either alone or after an {END} macro.
<b>{SCQ}</b>	Placed at end of TU macro, resume CQ
<b>{GRAB}</b>	Grab first callsign from grab callsign window
<b>{DELALL}</b>	Delete all entries from grab callsign window
<b>{DELTOP}</b>	Delete Top Entry from grab callsign window
<b>{DELSEL}</b>	Delete highlighted entry from grab callsign window
<b>_</b>	(Underscore) MMTTY only. Send an idle tone
<b>^</b>	Send the ! character (! sends the other station's call; use ^ to put a ! character in a message)
<b>{FILE:xxxx}</b>	Send textfile located in N1MM Logger program directory. xxxxx is replaced by the name of the text file and the text file needs to be in the logger directory. The macro works any place in a macro string. If the text file only contains one line it does not add CR to end of line. When the text file is multi lined the CR from the last line will be removed so the following text will be on the same line. Multiple {FILE:xxxx} macros are allowed in one macro string
<b>{LDIGFQ}</b>	Left Digital Interface Frequency
<b>{RDIGFQ}</b>	Right Digital Interface Frequency
<b>{PREVTIME}</b>	Send previously sent time (for ANARTS and BARTG alike contests)
<b>{ALIGN}</b>	Move signal into bandpass range. Does the same as Align Buttons on Digital Interfaces and the PSK Engine
<b>{PROFILE0}</b>	MMTTY only. Reset to HAM default definitions for RTTY mark, space, width
<b>{PROFILE1}</b> ... <b>{PROFILE8}</b>	MMTTY only. {PROFILE1} through {PROFILE8} in the function keys at the start of a CQ or S&P macro will change MMTTY's profile. This way it is possible to have one profile for CQing and another one for S&P or however you want to set them up
<b>{HXXXX}</b>	HAL DXP38 only. The DXP-38 commands are in the form of Hex that look like \$80 \$EA. This macro substitution takes the text string in the form of {HXXXX} or {H80EA} and converts this to the appropriate command that should be sent to the TU. See the RTTY chapter for more HAL DXP38 info
<b>{DI1}...{DI24}</b>	Send text assigned to the digital macro keys DI-1 to DI-24 on the Digital Interface
<b>{LOGTHENGRAB}</b>	Run Mode only. Log the current contact and grab the top callsign from the Grab window of the DI. If the grab window is empty, logs the current contact

**! Always use {TX} and {RX} together**

Use {TX} and {RX} together in your macros. Otherwise, {TX} alone in a macro will cause the radio to **remain in transmit** until you press an RX button or the ESC key

**TNC - Clear Buffer After Abort**

It is best to add the command that your TNC uses to clear the transmit buffer to the end of your Abort Macro. If not, the transmit buffer still holds the remaining characters that were left in the sent string and will get sent the next time the TNC sends.

### 9.1. RTTY and PSK Macro Examples

#### Example Function Key Macros

Function	Macro
Log the contact, grab a call from the Grab box and give an exchange to the next station. If the Grab box is empty, this macro will log the contact and just send the TU message instead.	{TX}{ENTER} ! {LOGTHENGRAB} TU NW {F5}{F2}{RX}
Log the contact, pull the next callsign from the call stack and send the exchange to him (see Single Operator Call Stacking in Advanced Functions). If you want to stack another station that has called you, just Alt-Click on the call in the RX window and it will be placed on the call stack where you can get it with this macro.	{TX}{ENTER} ! {LOGTHENPOP} TU NW {F5}{F2}{RX}

#### Example Macros for the PK-232 (Digital Interface window)

Button text	Macro
<b>Abort</b>	{CTRL-C}R{ENTER}TC{ENTER}
<b>TX</b>	X{ENTER}
<b>RX</b>	{CTRL-D}
<b>Band Up</b>	RB U{ENTER}
<b>RxReverse</b>	RXREV T{ENTER}

**Example Function Key Macros for the PK-232 (Entry window)**

Mode	Button text	Macro
Running	<b>F1 CQ</b>	X{ENTER}CQ CQ CQ TEST DE {MYCALL} {MYCALL} K CQ{CTRL-D}
Running	<b>F2 Exch</b>	X{ENTER} ! UR 599 {EXCH} 599 {EXCH} BK{CTRL-D}
Running	<b>F3 Tnx/Qrz</b>	X{ENTER} ! TU GL DE {MYCALL} QRZ{CTRL-D}
S&P	<b>F1 {MYCALL}</b>	X{ENTER}! DE {MYCALL} {MYCALL}{CTRL-D}
S&P	<b>F2 Exch</b>	X{ENTER}! UR 599 {EXCH} 599 {EXCH} GL DE {MYCALL}{CTRL-D}

**Example Macros for the KAM**

Button text	Macro
<b>Abort</b>	{CTRL-C}R RTTY {ENTER}
<b>TX</b>	{CTRL-C}T
<b>RX</b>	{CTRL-C}E

**Example Macros for the SCS PTC (Digital Interface window)**

Button text	Macro
<b>Abort</b>	{ESC}CLR{ENTER}{CTRL-D}{ENTER}
<b>TX/RX</b>	{CTRL-Y}
<b>RX-Reverse</b>	{ESC}TR 1{ENTER}
<b>RX-Norm</b>	{ESC}TR 0{ENTER}
<b>45 Baud</b>	{ESC}BAU 45{ENTER}
<b>75 Baud</b>	{ESC}BAU 75{ENTER}
<b>Command mode</b>	{ESC}Q{ENTER}
---	---
<b>RTTY</b>	{ESC}Q{ENTER}BAU{ENTER}
<b>PSK31</b>	{ESC}Q{ENTER}PSKT{ENTER}
<b>CW</b>	{ESC}Q{ENTER}CWT{ENTER}
<b>AMTOR</b>	{ESC}Q{ENTER}AMTOR{ENTER}
<b>FACTOR</b>	{ESC}Q{ENTER}PT{ENTER}
<b>PACKET</b>	{ESC}Q{ENTER}PACKET{ENTER}

Example Function Key Macros for the SCS PTC (Entry window)		
Mode	Button text	Macro
Running	<b>F1 CQ</b>	{CTRL-Y}CQ TEST DE * * * K{ENTER}{CTRL-Y}
Running	<b>F2 Exch</b>	{CTRL-Y}! HI 599 {EXCH} {EXCH} K{CTRL-Y}
Running	<b>F3 CFM</b>	{CTRL-Y}! QSL TU DE * QRZ? K{CTRL-Y}
S&P	<b>F1 {MYCALL}</b>	{CTRL-Y}! DE * * K{CTRL-Y}
S&P	<b>F2 Exch</b>	{CTRL-Y}DE * TU 599 {EXCH} {EXCH} GL DE *{CTRL-Y}

Example Function Key Macros for MMTTY (Entry window)		
Mode	Button text	Macro
Running	<b>F1 CQ</b>	{TX} CQ CQ CQ TEST DE {MYCALL} {MYCALL} K CQ {RX}
Running	<b>F2 Exch</b>	{TX} ! UR 599 {EXCH} 599 {EXCH} BK{RX}
Running	<b>F3 Tnx/Qrz</b>	{TX} ! TU GL DE {MYCALL} QRZ {RX}
S&P	<b>F1 {MYCALL}</b>	{TX} ! DE {MYCALL} {MYCALL}{RX}
S&P	<b>F2 Exch</b>	{TX} ! UR 599 {EXCH} 599 {EXCH} GL DE {MYCALL}{RX}
Send CQ on new line	<b>F1 CQ</b>	{TX}{ENTERLF} CQ DE {MYCALL}{RX}

## 10. Packet/Telnet Macros

Packet/Telnet macros are only substituted when used in the packet/telnet buttons.

Macros for use in packet/telnet buttons	
Macro keyword	Substituted by
<b>{WAIT}</b>	Wait 5 seconds (fixed value)

Macros for use in 'Comment For All Spots' (in Telnet/Packet window).

**Macros for use in 'Comment For All Spots' (in Telnet/Packet window)**

Macro keyword	Substituted by
<b>{GRIDSQUARE}</b>	Gridsquare from grid textbox in Entry window
<b>{MODE}</b>	Mode used during contact in Entry window
<b>{QTH}</b>	QTH from section/qth textbox in Entry window
<b>{ZONE}</b>	Zone for state/province/section/oblast/other textbix in Entry window

**10.1. Packet Macro Examples**

- Connect the local DXcluster using TAPR firmware
  - Macro: **{CTRL-C}C {CLUSTER}{ENTER}**
  - The above sentence is specified for a function key in the Packet Window
    - **{CTRL-C}** sends a Control-C character to the TNC which is placed in command mode
    - **{CLUSTER}** will be substituted with the Packet Node Call from the Station Information dialog. As example: PI8XXX
    - **{ENTER}** will be substituted with the Enter key
  - The result is that the TNC is placed in Command mode (with Ctrl+C) and C PI8XXX is sent to the TNC because an Enter is sent after the command
  
- Connect the Local DXcluster using TF/Nordlink firmware:
  - Macro: **{ESC}C {CLUSTER}{ENTER}**
  - The above sentence is specified for a function key in the Packet Window
    - **{ESC}** places an Escape character in the command line buffer. This is the same as Shift+Escape when the cursor is on the command line from the Packet Window
    - **{CLUSTER}** will be substituted with the Packet Node Call from the Station Information dialog. As example: PI8XXX
    - **{ENTER}** will be substituted with the Enter key
  - The result is that the TNC is placed in Command mode (with ESC) and C PI8XXX is sent to the TNC because an Enter is sent after the command
  
- This is an example where more commands are placed under one function key:
  - Macro: **{ESC}I {MYCALL}{ENTER}{ESC}P 100{ENTER}{ESC}S1{ENTER}{ESC}C {CLUSTER}{ENTER}**
  - The above sentence is specified for a function key in the Packet Window
    - **{ESC}I {MYCALL}{ENTER}** Send my call to the TNC
    - **{ESC}P 100{ENTER}** Change the Persistence to 100

- **{ESC}C {CLUSTER}{ENTER}** Connect my local DXcluster
- *So one function key does it all!*
  
- This is an example using the {WAIT} macro:
  - Macro: **{CTRL-M}{WAIT}C PE1M-7{WAIT}PA1M**
  - In the substitutions you can include things like {CTRL-M}. The {WAIT} macro that waits 5 seconds.
  - Enter is sent automatically after each command. This may cause a problem with some systems.
  
- This example sends Ctrl+Z to the DX-cluster to send packet mail (end message)
  - When you have no way to send CTRL+Z to the packet TNC. Then set one of the packet macros to {CTRL-Z} and that works just fine.
  - Example F12: **{CTRL-Z}**

## Multi-User Support

### In this Section...

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#### Multi-User Support

1. Features
  2. Configuration
  3. Multi-User Tools Menu
  4. Information
    - 4.1. Rules
    - 4.2. Displaying Rules
  5. Macro keys
  6. Features
  7. Where to Place the Database Files
  8. Other Info
  9. Example Multi-User Setup
    - 9.1. Before the Contest
    - 9.2. During the Contest
    - 9.3. After the Contest
  10. Multi-user log synchronization
  11. Multi-Multi Distributed - Multi-User via the Internet
- 

It is possible to use N1MM logger in a multi-computer networking environment, supporting the multi-operator contest categories. For this to work you need at least two networked computers, with a maximum of 16. These computers need to have network interface cards or wireless interfaces. The networking protocol used is TCP/IP. The network needs a so-called "Master" station. The "Master" station is the one that sets the time, connects to packet/telnet, etc. The Master station is always

station number 0, in the "Edit Station Computer Names" table.

## 1. Features

- Maximum of 16 networked computers with one 'master' station (0-15)
- Use of standard network interface cards (NIC's) and wireless interfaces
- IP-addresses are used during configuring
- Connected computers can be on the same subnet, or distributed across a wide area to any internet-connected computer
- Talk capability between networked stations
- Automatic time synchronization
- Pass frequency information between stations
- DX Spots from Telnet or Packet
  - Distributed to all connected computers
  - The ability to send spotting commands from any station on the network
- Error messages when a station can't be questioned/updated
- **The Info Window gives status information and extra options**
- The Config menu has a special Multi-User Tools menu
- Auto resync when a station comes on-line

### Turning Off Multi-User

NEVER turn off the multi-user switch during a contest. This results in contacts being logged to the wrong station while the multi-user switch is turned off. During testing, to simulate a network failure, kill the ethernet connection.

## 2. Configuration

Assume that the network is setup and working correctly, so every computer can ping each other. There is no need to 'see' all the other computers in the 'Networking environment' (My Network Places etc.), but it helps when sharing/copying/updating files outside of N1MM Logger. You must be able to ping every computer from every other computer before proceeding with these instructions. It is not important if the network uses CAT5, wireless, etc.

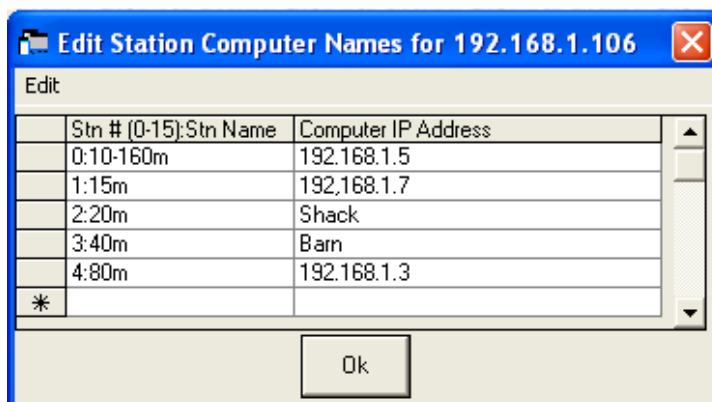
Networks connected using serial ports (older DOS programs) are not supported.

### Problems with IP address subnet n=masks

When using the 10.x.x.x range and using Windows XP/SP2 the subnet mask 255.255.255.0, as can be used with other Windows versions, could give a problem. Windows XP/SP2 doesn't like this subnet mask, if that is the case use as subnet mask: 255.0.0.0. The 192.168 range of IP addresses is recommended, with a subnet mask of 255.255.255.0



- Setup all the computers
  - Setup all the computers with their radio's as if they were being used stand-alone. Verify that the radio can be controlled, PTT/CW/.Wav files are working etc.
  - All computers must use the same version of the program N1MM Logger
- Only for the "Master" station
  - Packet/Telnet has to be working only on this computer
  - Set the computer clock to the correct time. Every computer will use this time!
  - This has to be **station 0** in the "Edit Station Computer Names" table !
- All other networked stations (not the "Master" station 0)
  - Select the **Telnet window** to have all DX cluster info shown (received from the master station)
    - The **Packet window** will not give any info on a slave computer
  - Always use the Telnet window on the slaves, no matter if you use Packet or Telnet on the master computer
- Set up all the stations identically in the "Edit Station Computer Names" table before starting Multi-User mode
- Set up the computer numbers with their associated names on all computers. Your window will be similar to this one. This is an example of a five computer network.



- Go to >Config >Edit Station Computer Names
  - **Stn # (0-15): Stn Name** column - Enter the station number starting with 0 for the master station. The computer name can optionally be entered after a "colon" : (e.g. 0:15m) The computer name can be chosen independently from the Windows computer (NetBIOS) name. The "Master" station **MUST BE** number **0** and the others must be numbered 1, 2, 3, etc., in order.
  - **Computer IP Address** column - Enter the computer IP-address or the computer name. Your choice depends whether the computers are using DYNAMIC or STATIC IP addresses. If you don't know which, it's safest to use the Computer Name when setting up this window. If the computer uses DYNAMIC IP addresses, you should always use

the Computer Name. If the computer uses static IP addresses, you can use either the IP address or the computer name. Most computers that interface to the internet are set for Dynamic IP addresses. The use of Static IP addresses in an N1MM Logger network is strongly recommended.

- NOTE: In the above example, the 10-160m, 15m, and 80m station computers are using STATIC IP addresses, and the 20m and 40m computers have DYNAMIC IP addresses
- To check or create your "computer name", go to: Windows > Control Panel > System. In the Systems Properties window that opens, click on the Computer Name tab. The computer name will appear there. To change the computer name, click on the "Change" button in this window
  - NOTE: Verify the "WORKGROUP" name is the same on all workstations. Any deviation in the workgroup name will prevent basic Windows communication between the workstations (not needed for N1MM Logger but it is desirable for copying files among the computers on the network).
- To check the IP address of your workstation, look at the title bar of the "Edit Station Computer Names" window. The IP address will be displayed there, as shown in the graphic above. The following method allows you to check and change an IP address if necessary. Go to: Windows > Control Panel > Network Connections > Right Click on the connection that's used to access the internet and select Properties > In the new window, go to the middle box with the slider and find the line with Internet Protocol (TCP/IP) and double click on that line. In the new window on the "General" tab, check or set your IP address.
  - NOTE: Each workstation on the network must have a unique IP address assignment.
- If you do not use a local IP for your address, put an asterisk in the description for the node, so that the program will know not to connect to that port
- An error dialog will be shown when a station connects from an unexpected IP-address
- **All the computers should have the same settings in the "Edit Station Computer Names" table, in the same order. Don't swap any entries!**
- A warning is shown if a blank entry has been added to the multi-computer station table. A blank entry can cause computers to not be able to connect to each other

### Copying Setup Information

The setup information is kept in the **database**. The network configuration will apply to all contest logs stored within the database. To save time, you can set up the contest & the Multi-User configuration info on one computer including messages etc. and then copy the database (\*.mdb file) to all the other computers. Next, start Logger, select the database, and select the contest. Enable Multi-User mode and all workstations should come online within a minute or less.

- Start Multi-User mode
  - Go to >Config >Multi-User Mode.

Clicking on this selection will enable this option.

## Number Your Multi-User Stations ⊙

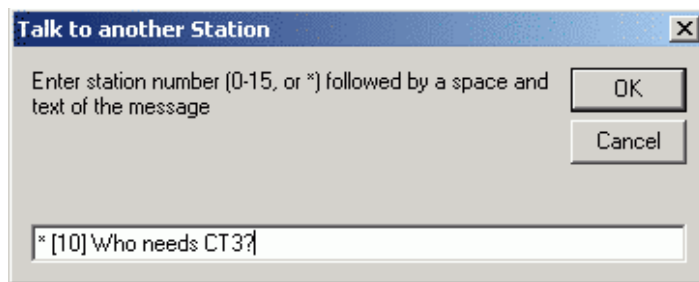
Multi-2 support: You need to identify which station is run1 and which is run 2. There is a large blue number in the Info Window to remind you what you have set for that station. Set up Run radio 2 in the Multi-User Tools menu as: Set station as Run 2. In the Configurer under Setup Run radio 1 to use Port 1 and Run radio 2 to use Port 2 (so not both to Both, 1 or 2)

### 3. Multi-User Tools Menu

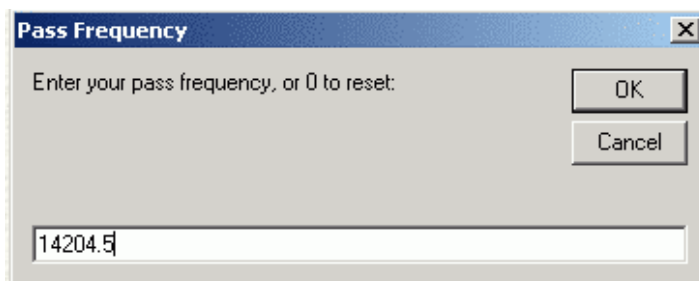
Adding and deleting QSOs all works automatically. Also that the bandmaps are filled with spots from the packet/telnet connection from the "Master" station. Below are some tools which you may use.

Go to >Config >Multi-User Tools

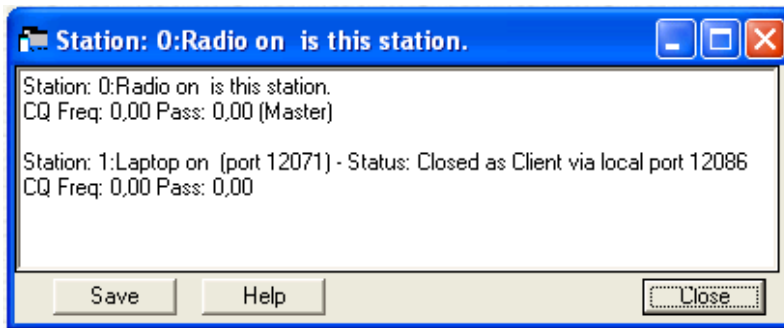
- **Multi Call Stacking Options** - Multiple options can be selected (one selection per set below)
  - Send Freq/mode to Call Stack Target Station **Alt+I**
  
  - Send Partner F-Keys to Stack Target VFOA/Radio 1
  - Send Partner F-Keys to Stack Target VFOB/Radio 2
  - Send Partner F-Keys to Stack Target - Disabled
  
  - Wipe Partner Call if Logged By Stack Target - Disabled
  - Wipe Partner Call if Logged By Stack Target - Enabled
  
  - Partner Logging - Disabled
  - Partner Logging - Enabled
  
- **Talk to another station Ctrl+E** - Send a message to one or all stations. The text sent will appear in big red letters in the messages part of the Info window from the receiving station. Enter station number (0-15 or \*) followed by a space followed by the text of the message. By default the program places a \* and behind that the band of the station who sends the message.
  - Station Possible station numbers
    - \* - Send the message to all stations. Or, omitting the number sends the message to all connected stations
    - 0 - Send a message to station 0 (Master station)
    - 1 - Send a message to station 1
    - . . .



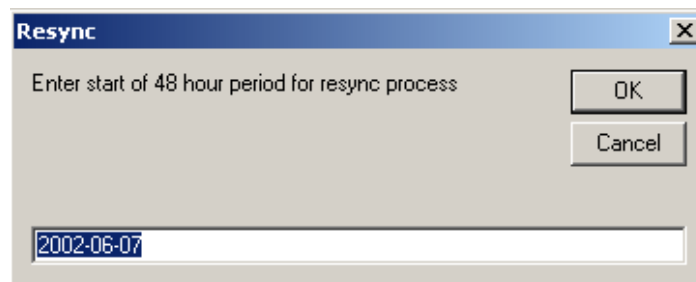
- **Force Time Sync Now** - Force date and time synchronization with the "Master" computer. This happens automatically at start up and every 5 minutes thereafter.
  - There are tools for resyncing your time with Internet time standards. A nice one used by N1MM logger users is Dimension 4
- **Set your pass frequency Alt+Z** - Send the frequency that you would like other stations to send contacts to. The pass frequency will be sent to all your Multi-User computers currently connected. If you just want stations sent to your CQ frequency, you do not need to set the pass frequency. At the present time, the pass frequency is reset only after restarting the program. If you put {PASS 3} in one of your CW or RTTY messages, the current pass (or CQ) frequency for station #3 will be sent in the message. When sent in CW, the program will automatically substitute 'R' for the decimal point. DO NOT enter 'R' in the pass frequency.
  - Enter 0 to reset your frequency.
  - The pass frequency is shown in the first bottom pane of the Entry window when entered and in the info window .



- **Send Freq/Mode to Call Stack Target Station Alt+I** - This command was originally put in for WRTC-2006 competitors. It allows the partner station to remotely load VFO B on a target station. NB Will only work when Multi-user mode is selected.
- **Log QSOs at all stations** - Check this option to log all QSOs on all stations. Selected by default. All other information (packet spots, pass frequencies) are still distributed to all networked stations.
- **Show Connections** - Show connection info from all the networked stations.





- **Status messages**
  - Connected - a connection has been made with that station
  - Listening - listening for the master station, no connection made (yet)
  - Error - the Master station is not there (or not in Multi-User mode)
  
- **Reset Serial Numbers on all Stations** - All QSO numbers on all attached stations will be set to 0. This is an option when the contest starts to have all attached computers start with 0 even when there are 'practice' QSOs in the log
  
- **Resync Logs by Date** - Allows a computer to gather all differing QSOs from other computers in the network for a 48 hour period
  - Enter the start date for the resync (48 hour contests). The date and time shown defaults to the time of the first contact in this computers log. If there is no log, then it defaults to the date of the contest from the log selection dialog.
  - The contests to resync have to be the same (all computers should have selected the same contest. Example: CQWWSSB).
  - Resync only pulls QSOs from other computers to the computer where the resync is requested. The resync is not bi-directional. It does not push QSOs to other stations. This way it does not load down the other computers as much.
  - When resyncing old logs you should just have to put in the correct starting point. The contacts must be logged with the correct station number (which is in the database). I.e. Station 0 will only send QSOs that are recorded for station 0. Station 1 will only send QSOs that are recorded for station 1



- **Resync Last n Hours** - Allows a computer to gather all differing QSOs from other computers for a period. The period is set in hours. For more info about resync see 'Resync Logs by Date'
- **Rescore last n Hours** - Rescore the last N hours for the current contest. It may be run at any time but is rather slow
- **Trace Multi-User Messages** - Check this option to trace the Multi-User messages send and received by the station to a trace file (\*.TRC). A file name can be entered. This option is normally only used for error/bug tracking
- **Force Other Station to Stop Transmitting When I Transmit** - Option to force other station to stop sending
  - In M/2 and Multi-Single it stops other stations with the same run1/2 selection
- **Block my Tx Only if Other Stn Transmitting on Same Band&Mode (Multi-One)** - This option permits a second (mult) TRX to transmit simultaneously on another band. If this option is not checked, the second TRX is locked out on all bands, not just the same band&mode (for multi-one stations - check the contest rules!)
- **Don't automatically change to S&P mode** - This option disables automatic change to S&P when QSY. Useful when there is more than one radio on the same band.
- **Set station as Run 2** - Set this station as the Run 2 station (when in M/2)
- **Don't work non-mults** - Do not allow this computer to log non-multipliers. Also giving CQ on this computer/radio is not allowed when selected
- **Show Computer Name \_ IP Address Info** - Shows computer name and IP address info by running the program 'IPCONFIG /ALL'

## 4. Information

The picture below shows the bottom part of the Info Window where multi-user information is displayed. Right clicking on the green/red icons will show a menu. See the Info Window for more information.

Station	Pass	Run	Operator	Last 10	100	Freq
 USA	28235	<input checked="" type="checkbox"/>	N1MM	0	0	28235.0
 *Europe		<input type="checkbox"/>	PA3CEF	12	13	14263.0

12:20:34 - Connected to USA (64.252.136.17)

- Connection status:
  - **Green** - Connected
  - **Red** - Not connected, but the other computer is being actively polled. Initially, when a computer is unable to reach another computer in the N1MM Logger network, the connection "ball" in the Info Window will turn red polling for the unreachable computer will continue for 3 minutes. . Users may experience delays or stuttering in this state. After 3 minutes, the polling will be automatically suspended, and the connection "ball"

will turn blue. Since polling has been suspended, there will be no performance impact on users. When the unreachable computer comes back on-line, the computers will automatically reconnect, and the connection "ball" will turn green.

- Blue - Not connected, but the other computer is not being polled. When the other computer becomes reachable, the connection will be automatically reestablished. Users will not experience delays or stuttering in this state.
- Light red - Connection in progress or connection lost, the program will try to solve this situation. This is a transient state.
- Station name
- Pass frequency - clicking the pass frequency will send a message to the selected station. If the selected station is your own computer then the left VFO frequency will be changed to the current pass frequency.
- Is he running or S&P
- Who is the operator
- Rate information
- Run/pass frequency

## 4.1. Rules

The following 'smart' rules for run/pass frequency are implemented.

- Running
  - I'm on & running
    - If the running check box is checked, always send to run frequency
- Not running
  - I have a run frequency, but I'm chasing a multiplier
    - The run frequency holds for 1 min, then gets zeroed
  - I'm not running, and I have a pass frequency way up the band
    - The user will have to specify the pass frequency
  - Don't pass, my pass frequency is no good
    - I guess it is the operators responsibility to zero the pass frequency
    - Maybe a timer to remind if no QSOs on pass frequency for n minutes? (*not yet implemented*)
  - Don't pass, my CQ frequency is no good
    - Timer with no CQ's or QSOs on run frequency for 1 min? (*not yet implemented*)

## 4.2. Displaying Rules

**Running** - Show the run frequency

**Not running** - Show the pass frequency if non-zero, if no pass frequency then show last CQ frequency if non-zero.

## 5. Macro keys

Macro key substitution is supported by most programmable buttons in the program. For Multi-User mode there are a few specific macros which can be found on the Macros Chapter.

## 6. Features

- **Call stacking** - Call stacking between computers, enter a callsign on a remote computers 'stack'
  - To indicate which station you want to stack for, right click on it's "cue-ball" in the info window, and select the option "Target for call stacking"
  - A maximum of one callsign can be stacked. If the stack is empty another one may be stacked
- **Prohibit transmitting**
  - If another station is sending (single operator or multi-one) don't allow sending if another station is sending
  - If another station is sending (multi-two or multi-multi) don't allow sending on same band
  - See also the option in the Multi-User tools under Config: Force Other Station to Stop Transmitting When I Transmit

## 7. Where to Place the Database Files

**Do not** share the log on a server, place it locally on the hard disk of each station.

- Sharing logs on a server will **MOSTLY** not work. Mostly is not good enough. You will think you are ok, but are not. I do not check for Multi-User temporary errors. The program was **NOT** designed nor tested for this
- Having the log on every PC provides redundancy, which is important in an RF-filled environment
- It will not perform as well. Local access is almost always faster.

There is no harm in using a server to aid in copying files. The mdb files are simply files. They may be moved around. It is best to close the program before moving them, as with any program writing to an open file.

## 8. Other Info



- Deleting QSOs made by another station in a Multi-User situation is not allowed, a warning message is shown. QSO's must be deleted on the station that made the QSO.
- Station 0 sends all incoming spots to every station so the bandmaps are being filled. Use the Telnet window (not the Packet window) on the other computers in the network. If you send a message to the packet cluster from any station in the network it will be sent out to packet/telnet via computer 0. The received answer from the packet cluster will be send out on the network to all stations
- The program can't be shutdown while initializing Multi-User otherwise unpredictable situations could occur
- You will be prompted for the operator call if it has not been entered (with Ctrl+O). A periodic warning message will be shown if no operator has been specified
- The CQ/pass frequencies will be requested at startup
- When going through the possible contests you will see a "contest" DELETEDQS. This is not a contest but deleted QSOs will be moved here by the program, this is especially for Multi-User support
- Connection status is shown at the bottom of the info window
- A connection is checked every 10 seconds
- All connections are stopped/started when the database, the contest or the connection list is changed
- Also Non-master stations are allowed to close telnet/packet ports
- Time synchronization is only shown on the master station
- If you Mark or Store spots on a local machine, they will be Marked or Stored on all other machines
- The station name prefixes telnet/packet commands that are displayed. The prefix is not sent to the cluster. Example: **20M** sh/dx
- When a connection drops out it will try to reconnect every 30 seconds
- Ctrl+Alt+M changes the station status. For Multi-single, ctrl-alt-M changes toggles the station between Run and Mult status. For multi-2, ctrl-alt-M toggles the station between Run1 and Run2 status. This station status will be shown on the Cabrillo output.
- In the multi-multi category the Cabrillo output will show the station number. In the multi-single category, the Cabrillo output will show whether the QSO was made by the Run or Mult station. In the mult-2 category, the Cabrillo output will show whether the QSO was made by the Run1 or Run2 station.
- Any station that is harmonically related with the frequency will be colored **red** in the Info window
- For single operator and multi-one, the operator callsign will be colored red when transmitting
- Group edits are not allowed in the Log window while in Multi-User mode
- If a station has selected 'Config | Multi-User tools | Don't work non-mults' , CQing on that station is not allowed
- Only the master station will auto-reconnect to packet/telnet when enabled

## 9. Example Multi-User Setup

The example below uses file sharing and Netbios lookup for computer (you can see them in the Networking environment). This is not necessary for N1MM logger to work in Multi-User. When the computers can be 'pinged' from both sides this is enough to work. All lines with a \* are not necessary to work but are nice to have for other purposes like updating of files etc. This does not mean that the action mentioned should not be done. It can also be done via other media (CD / diskettes). In that case the Windows network is not used, as the N1MM network is using the TCP/IP stack only.

## 9.1. Before the Contest

### Master computer

- Enable File sharing for Windows networks (\*)
- Enable "sharing" on master hard disk (\*)
- Have all installation files ready on master (\*)
- Set Master IP address according to Station Computer Names list (see below)
  - This could include a restart and a request for the Windows CD
  - Note previous IP setting for restoration after contest
- Note master Windows computer (NetBIOS) name & workgroup (\*)
- Start N1MM Logger
- Select a new empty database (e.g. PACC2003.MDB) on master
- Start a new log for the contest (e.g. PACC) (check manual)
- Configure Function keys (SSB/CW/Packet)
- Edit Station Computer Names according to plan. For example:
  - Stn#:Stn Name Computer IP Address
  - 0:master 192.168.10.10
  - 1:160M 192.168.10.1
  - 2:80M 192.168.10.2
- Load the relevant country file (e.g. CTY-PACC.DAT) (Tools menu)
- Select the Master.dta file to use ('File | Choose Which Contest to Log')
- Establish DX cluster communications on the master computer (Packet or Telnet)
- Setup or disable internal firewall

### Non-master computers

- Install Network card & TCP/IP when not already done
- Setup or disable internal firewall
- Enable File sharing for Windows networks (\*)
- Set IP address according to Station Computer Names list
  - Windows 98/ME: might include a restart & Windows CD
  - Note previous IP setting for restoration after contest
- Find master on the Windows network (\*)
  - Use Search Computers in Network Neighborhood/Places using the masters Windows computer (NetBIOS) name

- Install/Update N1MM Logger
  - Copy from master via network (\*)
- Copy database (eg.PACC2003.MDB) from master on this computer
  - Copy from master via network (\*)
- Copy WAV directory from master on this computer
  - Copy from master via network (\*)

### **All computers**

- Start N1MM Logger
- Import windows settings
- Open database (e.g. PACC2003.MDB) ('File menu) | Select: PACC log')
- Set Multi-User on
- Setup configuration (Rig control, PTT, CW)
- Turn off Windows sounds if using WAV files
  - Control Panel - Sounds - Scheme: No Sounds

### **Always**

- Make sure you are running the same version of the program on all computers
- Make sure you are using the same contest on all computers
- Make sure that all computers have the same time zone and daylight savings offset
- Preferable, see if all computers have the same regional settings for numbers, dates, currency, etc
- Preferable, see if all computers have the same short and long date and time formats

## **9.2. During the Contest**

- Check master time setting regularly
  - Use Internet time server if possible so it is done automatically
- Observe network status, and reconnect/resync if necessary on all computers
  - Note that a resync only imports QSOs to the computer you import from! The computer where the import comes from is not being updated with the log from computer where you import to. Stated another way, a workstation will always "pull" QSOs from another workstation log, it never "pushes" QSOs out.

## **9.3. After the Contest**

- Make sure all used computers are connected
- Do a resync on all computers
- Check QSOs/multiplier status on all computers & compare
- Copy & compact database (e.g. PACC2003.MDB) to backup directory
- Restore IP settings & Windows sounds scheme on borrowed PCs

## 10. Multi-user log synchronization

Log synchronization is something you should run very infrequently. Each station has its own copy of the log, so syncing them is only necessary to keep track of mults. They will get out of sync when one of the stations goes off line. Generally, you should only need to resync the last hour, if you were disconnected for less time than that. If a new station comes on line, then one of the stations should email him their database, and he can resync the log when he gets it, for the few minutes he missed. Where it would take a long time is when a station was off for many hours, and you want to preserve any contacts that may be in his log, but not in the others.

## 11. Multi-Multi Distributed - Multi-User via the Internet

It is possible to setup some or all of the other stations outside your LAN on the internet. A use for that might be for one station away from the contest station to connect the contest station, and spot stations on a band privately so that only his operators could see them. This was done in years past with spotting nets, and then packet nets. It is not done so much today. Much more than this would violate the spirit, if not the letter of the rules.

There are some caveats when trying this. You need more than basic computer knowledge for this. You need to know about IP-addresses, firewall's, routers, port settings, NAT etc.

You need to know your computer (external) IP-address. When directly connected to the web this can be obtained using the program ipconfig.exe (NT, 2000, XP) or winipcfg.exe (98, ME). This command 'Ipconfig' should be entered in a DOS window to see the output. When your computer is in a LAN your connection to the internet will probably be made via a router. All computers will use internal IP-addresses, the router uses the external IP-address. This link will give your (external) ip-address in both cases: <http://megawx.aws.com/support/faq/software/ip.asp>

When a Multi-User connection is not working anymore check the IP-addresses. This address changes from time-to time (when using dynamic IP addresses - DHCP). Mostly after a reboot from the PC when directly connected or a reboot from your router when in a lan.

The router should be setup to route incoming traffic to your PC IP-address. No port transformation should be done. Instructions for this will not be given in detail. With the many different kind of routers this can not be done. Remember, this is a specialist job!

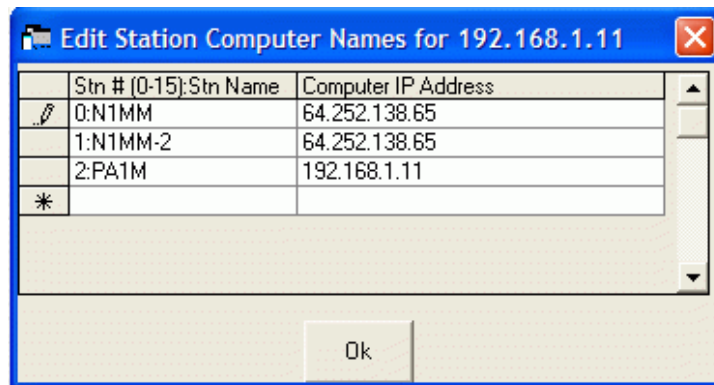
The used incoming port is equal to 12070 + Station Nr (0-15) to allow port forwarding in routers. 12070 is used for the first PC in the list, 12071 for the second etc.

Firewall - Open port 12070 + Station Nr (0-15) for incoming traffic.

Router - You probably should use NAT to route incoming traffic on port 12070 + Station Nr (0-15) to your PC IP-address.

>Config >Edit Station Computer Names

- Computers using N1MM logger in the local network need to use the local IP address, computers outside the local network need to use the external ip-address from the external network. The router on the external network should use port forwarding to the correct computer using N1MM logger
- Example setup:
  - The address 192.168.1.11 is the local IP-address at my end (PA1M)
  - The first two entries are two instances of N1MM logger on two different PC's from Tom (N1MM)
  - Example 'Port redirection table' in the router used at PA1M, the given names differ per router brand:
    - Service name : N1MM (does not matter)
    - Protocol: TCP
    - Public Port: 12072
    - 12072 = 12070 + 2, my local pc which needs to be connected from the 'outside'
    - Private IP: 192.168.1.11
    - Private Port: 12072
    - Active: Yes
  - NB the IP-address given in this example is not the IP-address used by Tom, N1MM anymore 😊



The latencies when we tested were in the 100 mSec range.

#### IP Addresses

The list of IP addresses needs to be different on each machine. Make sure the remote machine has its external IP address, and the local machine(s) has its internal address

#### Example at PA1M

0:N1MM 64.252.138.65

1:PA1M 192.168.0.1

## Example at N1MM

0:N1MM 192.168.0.1

1:PA1M 63.133.11.55

### Is this ethical?

A good legal use for this within today's rules would be for remote spotting stations that could check for your station needs before stacking a spot for you. This could give guys stuck at home without much of a station some way to contribute to a multi-op.

The purpose of this is to support IARU HQ stations, and to perhaps inspire a new entry class, such as the CQWW "Extreme" category. I think it would add a lot to the experience of smaller stations to be able to participate in a Multi-Multi-Distributed effort and get some of the comraderie that comes with Multi-Multi operation.

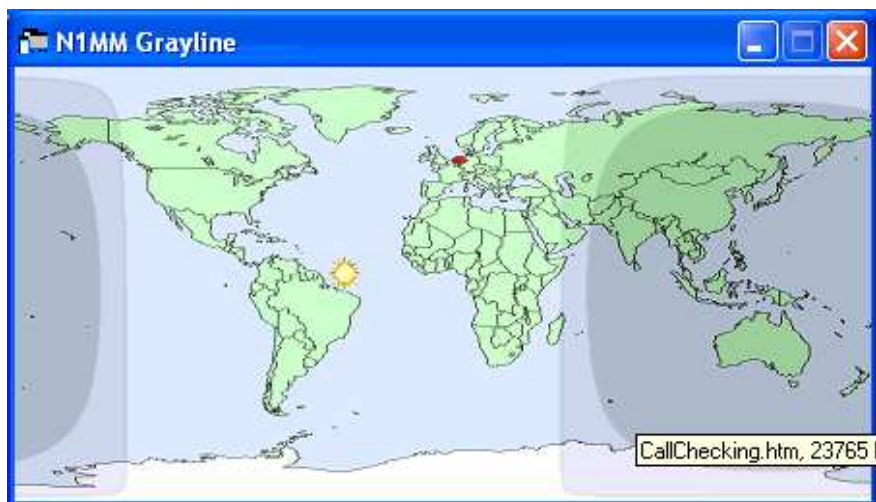
It is a neat idea to have the 10m station in OA, 15m in 6W, 160m in TF etc.

Do we need a new category like Multi-Multi Distributed?

Most rules have provisions that the stations need to be on the same property, and be connected by wires, or be separated by no more the 500m? Some exceptions are HQ (headquarters) stations in the IARU contest, and the "Extreme" category in the CQWW contest.  
text?

## Grayline program

A Grayline program comes with the N1MM logger software package. It is included in the N1MM full installation program. You may install the Grayline program at any time, during initial installation or later. N1MM logger does not need to be running to use it, or even installed, but you may start the program from the Window menu in the N1MM Logger Entry Window.



## 1. Right Click Menu Selections

- Grayline contrast
  - A dialog will open the Sunset and Darkness can be adjusted. A test button is available to check the settings.
- Show my Location - Will show a red dot on your location.
  - The location as set in the N1MM Logger main program is used (Config | Change Your Station data| Latitude & Longitude).
- Show Meridian Lines - Show the meridian lines on the Grayline map.
- Sun
  - Show Sun - Select or de-select showing the current position of the sun on the Grayline map.
  - Small sun - Show a small sun.
  - Medium Sun - Show a medium sun.
  - Large Sun - Show a large sun.
- Twilight terminator- the width of the gray line in degrees.
  - Civil terminator -  $6^{\circ}$
  - Nautical terminator -  $12^{\circ}$
  - Astronomical terminator -  $18^{\circ}$

### Note



The Grayline program was not written by the N1MM team, and they have no ability to implement enhancements or bug fixes.

One frequent issue reported by users has to do with the Grayline window "disappearing" from the screen. This appears to happen because something corrupts the Grayline program's ".ini" file (actually named QTH.txt and located in the Grayline folder of the N1MM program directory).

If you encounter this problem, there are two ways to fix it.

1. Right-click on the icon in the task bar, and select "Move" (if "Move" is greyed out, first select "Restore", then "Move"). Tap one of the arrow keys on the keyboard (this is important but not obvious). Move your mouse around until the window appears on screen. Left click to freeze the window where you want it.

**or**

2. open QTH.txt in Notepad and delete the first two lines. The next time the Grayline program is started, the window will reappear at the default location, and you can then adjust its position and size to meet your needs.

## In this Section...

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### SO2R

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- 

## 1. SO2R Basics

Single Operator 2 Radio (aka SO2R) is an operating technique that when done properly, can add



many extra QSOs and multipliers to your log. This is accomplished by increasing your efficiency during slow times. For example, when you are CQing on one radio, but getting few answers. Efficiency is increased by listening on a 2nd radio while you are transmitting on the 1st radio. On the 2nd radio you are scanning the bands for needed QSOs and multipliers. If you find a new station to work on the 2nd radio, you leave it staged on the 2nd Entry Window until you get a free moment to work this station. Even adding a few QSOs an hour will greatly boost your score.

The philosophy for SO2R development is to allow any two radios to be used; they do not have to be identical. In its most simple form, two transceivers feed two separate antennas on two different bands. With sufficient attention to antenna separation and filtering, it is possible to do this without interference from a transmitting radio to a receiving radio. Many serious SO2R operators use identical radios to reduce the confusion factor, but having identical radios isn't necessary.

The receiver on one band is used to locate new contacts during the time that the transmitter on the other band is active. This can mean that you tune the 2nd radio while N1MM Logger sends CQ on the 1st radio. The most critical requirement for SO2R is automated transmission — if you have to speak into a microphone or squeeze a paddle while you tune the receiver you will not make the most of the second radio. It's easy to reach a level of mental fatigue while operating SO2R that results in an overall score reduction rather than helping your score.

If your radio is not supported by N1MM Logger, or it's an older radio with no computer interface, the radio can still be used, but you just don't get many of the advantages automated radio control offered by N1MM Logger.

N1MM Logger also supports "Single Operator 2 VFOs", or SO2V. If your radio simply has 2 VFOs, VFO A/B will be assigned to each of the two Entry Windows. If you have a radio with a sub-receiver, each of the receivers gets assigned to each of the Entry Windows. When developing the specs, we actually felt SO2V would be more widely used than SO2R. When operating SO2V (and SO2R), you also need to change your LPT or Winkey keying from Radio 1 (default) to BOTH. Otherwise, you will not get any keying on VFO B or Radio 2.

A maximum of two radios are supported with N1MM Logger.

N1MM Logger's SO2V interface is essentially identical to the SO2R interface, but with SO2V you are using a single radio. Two windows can be displayed in SO2V, one for VFO A & B. SO2V makes better use of the 2nd receiver now present in most high-end radios. With the 2nd receiver, you can be tuning the band while you are listening for a response to your CQ. Since you cannot listen on the sub-receiver while transmitting, SO2V is not as efficient as SO2R.

For the new SO2R operator, we have 3 words for you: practice, practice, practice! SO2R is definitely a learned skill that takes time to learn, and even longer to master.

## 2. Intuitive User Interface

As you will quickly see, N1MM Logger's SO2R implementation is more intuitive than most other SO2R implementations:

- Entry Windows can be arranged to reflect equipment layout

- Entry Windows can be used for any function (not dedicated functions like others)
- You always know what each VFO or radio is going to send next (when in ESM mode)
- Visual cues identifying transmit focus, Run vs. S&P, and more!

### 3. Supported features

N1MM Logger supports all of the features you would expect from any world-class SO2R software. In addition, there are a lot of unique features:

- Two Entry windows are displayed that are fully interchangeable in functionality (windows are not dedicated to a specific task)
- Running and S&P modes are maintained for each SO2R Entry window, such that the 2 windows can be used for
  - Running / S&P
  - S&P / Running
  - S&P / S&P
  - Running / Running
- Entry windows can be arranged on screen as desired: typically left/right, or top/bottom, to represent physical station layout
- Each Entry Window has a frequency readout in the top pane
- 'LEDs' identify which radio has focus. The sending radio has a red LED indicating TX Focus, a green LED identifies the radio that has RX **and** Keyboard focus (combined)
- Background colors of the entry field change color depending on whether that radio is running or S&P: white = run; canary = S&P
- Ability to change frequency of inactive radio from the active radio. Use the / before entering the frequency in the callsign field to enter frequency for other radio/VFO
- Supports Enter Sends Messages Mode (ESM) on both windows
- Typing a call in inactive radio Entry window does not abort sending on the active radio
- Hitting Escape stops sending on either VFO or radio, but does not change keyboard focus
- Changing transmit focus (for any function) stops sending before switching and sending on alternate radio
- **Ctrl+function keys** and **Ctrl+Enter** sends messages on alternate radio (Concept is Ctrl = Alternate radio control)
- "Hotkey's" for specific tasks and sending on alternate radio
- All Key Assignments work on both radios (unless otherwise specified)
- Supports Top Ten DX Doubler, WX0B Station Master, Microham MK2R, YCCC SO2R, and other SO2R controllers.
- Support SO2R without interfaced radios.
- Dueling CQ's will send CQ alternately on each radio (**Ctrl+B**)
  - If dueling CQ's is enabled, and CQ sent then both radios become Run radios
  - **Ctrl+F1** or **Ctrl+Enter** will not start Dueling CQ
  - Dueling SSB and CW CQ's (different modes in each Entry window) are supported
  - When you disable Dueling CQs, the pre-existing SO2R options are restored
- A SO2R software radio lockout for is implemented

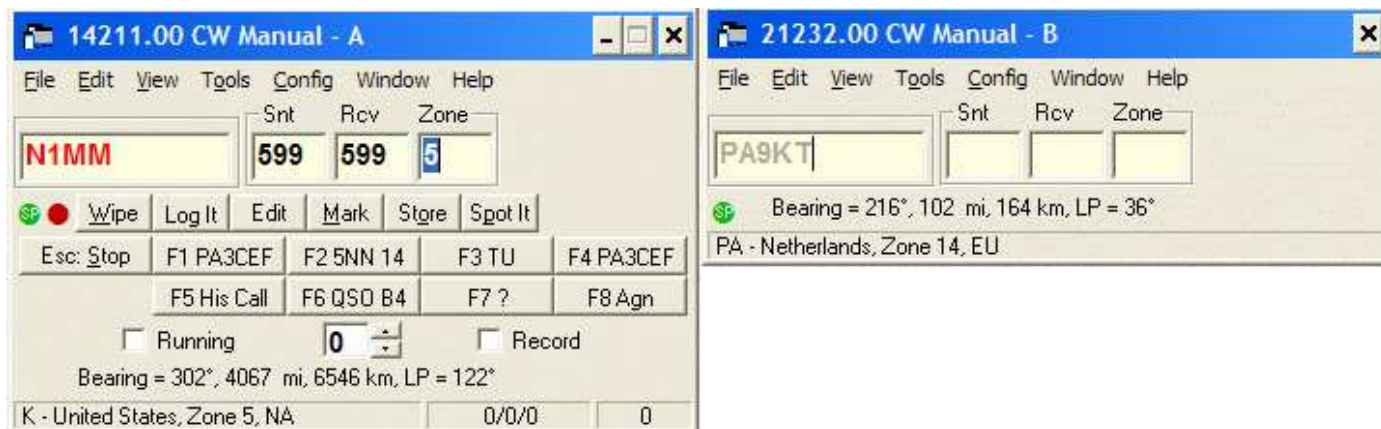
- CQ-repeat is terminated when a message is sent on the other radio
- The macro {JUMPRX} changes the receive focus to the other input window
- Supports 2 radios - No support for 3 or more radios
- Support SO2R with zero, one or two sound cards (5\$ SO2R)
- When changing band using **Ctrl+PgUp/Down** key will skip the other radio's band
  - THIS IS NOT A SUBSTITUTE FOR HARDWARE LOCKOUT!!
- The sent CW will echo in the status bar of the Entry Window (only when in SO2R)
- During VOX operation, in "\$5 SO2R" operation the TX audio should will track the TX focus all the time

There is currently no support for two networked computers for SO2R.

## 4. Entry Windows

Entry windows can be placed anywhere on the screen. Typically people will position them similar to their equipment layout i.e. if the radios are positioned left/right, the windows are arranged reflect that. For those who stack their equipment top/bottom, you can position the screens so they logically mirror that radio setup too.

Screen real estate is in short supply. To minimize screen real estate, you can shrink the Entry Windows compared to the default layout. Below is an example of the default Entry Window and a minimized version. Also the use of two monitors more screen real estate.

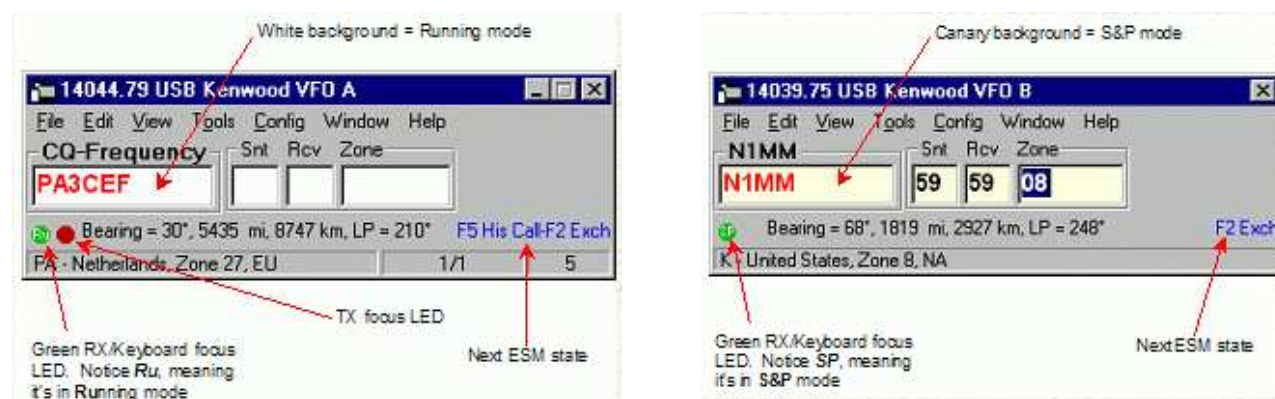


To launch the 2nd Entry Window, hit the \ button.

## 5. Typical SO2R Entry Windows

Most people who are comfortable with N1MM Logger tend to use the reduced size Entry Windows in the examples below. All of the vital information an operator needs is displayed in the smaller window. Most SO2R operators get the most efficiency while CQing on 1 radio, and S&Ping on the other. The Entry Window examples below reflect a typical setup: The left VFO (A) is now assigned

to running, and the right VFO (B) is assigned to S&P.



All of the features that are available to the single radio operator also work in SO2R/SO2V. For example, when tuning the band with the S&P VFO, spots that are in the bandmap are automatically inserted into each call frame (above the callsign in the entry window) when you tune across the frequency of the spot. Hitting the space bar will pull the callsign from the call frame into the callsign field. If a station calls you on the run radio, toggling back and forth between Entry Windows with the \ key or Ctrl Left/Right arrows will maintain the all of the information in each Entry Window until the respective stations are logged, wiped clean via **Alt+W** or **Ctrl+W**, or you QSY and the callsign is entered into the bandmap (if "QSYing wipes the call && spots QSO in bandmap" is implemented).

## 6. The SO2R dots (LEDs)

On the Entry Window a green and/or a red dot (LED) will be shown. The LEDs are visual aids that help you easily identify what is happening on each radio. This is part of N1MM's continuing philosophy of letting the operator easily know what's happening at any give time.

The green LED indicates that the VFO or radio has receive/entry focus and the red LED indicates that VFO has transmit (TX) focus. In addition, the red TX LED changes between dark red (not transmitting) and bright red (VFO/radio is transmitting). Inside the LED are letters which identify different states (see below). It is important to note, though, that when a function key is used to send a message or perform another function, the radio or VFO that has the RX/entry focus

### 6.1. Dot/LED colors used:

**Green dot/LED** - This VFO/Radio has receive (RX) and entry focus. RX and entry focus are always together.

- Inside the green dot the Ru/SP (Run/S&P) designators are shown. **Ru** means the radio or VFO is in running mode, and **SP** means it is in S&P mode
  - when clicking on the green dot it toggles between running mode (Ru) and Search & Pounce mode (SP)
- RX/keyboard focus can be toggled between the VFOs/radios by
  - using a mouse to click on a free space in one of the two Entry windows
  - pressing the \ key (backslash)
- To move both Transmit and Receive focus

- pressing **Ctrl+Left-Arrow** / **Ctrl+Right-Arrow** will move both foci to the left and right radios. Pressing Pause

**Red dot/LED** - This VFO/Radio has transmit (TX) focus. This means that the radio or VFO either is transmitting or was the last to transmit. When the other window has entry focus and you press a function key to send a stored message, the transmit focus shifts to that radio as soon as the function key is executed.

- Transmit (TX) focus can be changed between the VFOs/radios by pressing the **Alt+F10 key**
- Pressing Pause or **Ctrl+Left-Arrow** / **Ctrl+Right-Arrow** will move both foci to the left or right radios
- When transmitting the TX focus can not be changed
- Inside the red dot the **R** (Repeat) designator is shown when Repeat mode (for CQing) is active
- Inside the red dot the **D** (Dueling CQ) designator is shown when Dueling CQ is active

## 7. Key Assignments (unique to SO2R)

### "Sticky" options

The Focus Other and Ctrl+Fx settings, whether controlled through keyboard shortcuts or through the SO2R sub-menu of the Configurer, are "sticky" - that is they are remembered the next time the program is opened. This can surprise you if you don't remember having set them.

### 7.1. Entry Window Features

- **Backslash ( \ )** - Launches a second Entry Window if only one Entry window is open
  - **One radio** - Moves RX focus between the 2 VFOs on the radio
  - **Two radios** - Moves RX focus between the 2 radios
- **Ctrl+Enter** - Send next ESM state on alternate radio (assuming ESM turned on)
- **Ctrl+F1 to F8** - Send Fn message on alternate radio
- **Ctrl+Left Arrow** - In SO2R move both Transmit and Receive/Keyboard focus to left radio, or in SO2V move both TX and RX/Keyboard focus to VFO A
- **Ctrl+Right Arrow** - In SO2R move both Transmit and Receive/Keyboard focus to right radio, or in SO2V move both TX and RX/Keyboard focus to VFO B
- **Pause** - Move both TX and RX Keyboard focus to other radio (or other VFO in SO2V). If TX and RX focus are split when you hit pause, TX focus will move to where the RX focus is
- **Alt+F5** - Swap radio frequency, mode, and callsigns between VFOs (SO2V) or radios (SO2R). In SO2R, the receive focus changes to the non-active radio
- **Alt+F6** - Identical to Alt+F5 except the receive focus does not change
- **Ctrl+B** - Dueling CQ's will send CQ alternately on each radio. If Dueling CQ's is turned on, both radios become run radios. A delay can be inserted between each CQ by setting the "Set Dueling CQ Repeat Time" under the SO2R menu. Dueling SSB and CW CQ's are supported too.
- **\_\_Backquote** (grave accent or unshifted tilde key (~) - Toggle STEREO mode on/off, or toggle

Auto/PTT modes with modified DXD . Notes: On US keyboards, the key we are talking about is the key just to the left of the number 1 key.

- **Ctrl+I** - Toggle through the SO2R modes supported by the program and your sound card configuration (see below). Only operative in '\$SO2R' when N1MM logger controls the audio, not when using an external SO2R controller
- **Ctrl+PgUp/Down** - When changing band using Ctrl+PgUp/Down will skip the other radio's band
  - THIS IS NOT A SUBSTITUTE FOR HARDWARE LOCKOUT!
- **Ctrl+Shift+I** - toggle 'Advanced SO2R'
  - With Advanced SO2R on, focus will be set to sending radio's entry window when a message completes. The exception is if there is a call or partial call entered in the non-sending radio's entry window.
  - Or simply put, if you tune your S&P radio, and you aren't working someone on either radio (like calling CQ), the entry focus will go automatically to the S&P radio so you can tune aggressively without having to worry about getting the entry focus in the right place before you enter a callsign to work
- **Ctrl+Shift+N** - Adjustable delay for Advanced SO2R.
  - The user can keep focus on the run radio after sending has stopped, or turn it over to the S&P radio beforehand by this adjustable time parameter. Typically the CQ Repeat time is set to something like 3 sec and the Adjustable Delay to perhaps 2 seconds. It has been suggested that, at the beginning of a contest, this parameter be set high (LOT of callers on run) and toward the end of the contest it be dropped- all doable via **Ctrl+Shift+N**
- **Ctrl+Shift+K** - FocusOther, Another method of focus control (Focus on Other Radio), preferred by many contesters over "Advanced SO2R". When FocusOther is active, the RX focus is automatically shifted between the "Run" radio and the "S&P" radio, depending on whether the Run radio is transmitting. When the Run radio is transmitting, RX focus is shifted to the S&P radio. When the Run radio stops transmitting, RX focus shifts back to the Run radio, unless an unworked callsign has been entered in the S&P entry window. This allows a callsign to be entered in the S&P radio Entry Window while CQ is being sent on the Run radio.
  - FocusOther is mutually exclusive from Advanced SO2R and does not use adjustable time on the Run radio.
- **Ctrl+Shift+L** - This enables/disables the use of {CTRLFx} in function key macros. {CTRLFx} is a convenient way to automatically send a function key on the alternate radio. For example, by programming your S&P F4 key to "\*" {CTRLF1}", your call will be sent on the S&P radio, immediately followed by your CQ message on the Run radio.

## 7.2. Bandmap features

- **Shift+Click on frequency (SO2R only)** - Jump to that frequency on the inactive radio, without changing TX or RX focus. This allows you to be active and sending on one radio and change the frequency on the other radio without making it the active radio.
- **Shift+Click on bandmap callsign (SO2R only)** - Send the frequency to the inactive radio and place the callsign on the other radio's callsign frame, without making it the active radio.

### 7.3. Using SO2R Key Assignments

**Backslash ( \ )** - Once you have launched your second Entry Window, the \ key will likely be your most widely used key in SO2R. The \ key will move RX focus between Entry Window A & B (often referred to as Radio 1 & Radio 2 respectively). When using the \ key to control RX focus, you really don't have to worry where TX focus is. By using the \ key to control only RX focus, when you hit a Fn key or Enter (using ESM), the TX focus will move to where the RX focus is, and send the corresponding message.

Example: You are CQing on Radio 1, and S&Pping on Radio 2. Both RX and TX focus start off in your Run Entry Window (Radio 1 in this example). You are S&Pping on Radio 2, and you hear someone on the S&P radio you want to look up in your Check Window. Hit the \ key to move RX focus to the S&P Entry Window. You type in the call, and you need it, and are just waiting for a good time to send your call. If no one is answering your CQ on the Run Radio, just hit the Enter Key (assuming you are using ESM), and the TX focus will move from the Run Radio to the S&P radio (Radio 2), and send your callsign (actually the first ESM message in the S&P sequence). If the station comes back to you, then hit Enter again to send your exchange, and you just completed a S&P QSO. Now move the RX focus with the \ key to the Run radio, or just leave it in the S&P Entry Window if S&P is more productive.

Now let's assume in the middle of the S&P QSO, someone answers your CQ on Radio 1. Your exchange just happens to be sending on the S&P radio. To copy the call on the Run Radio (while your exchange is being sent on the S&P radio), hit the \ key to move RX focus to the Run Radio, and type his call in the Run Entry Window. Assuming your exchange is finished sending on Radio 2, just hit Enter again, and the TX focus will move back to the Run Radio, and the program will send his call and your exchange on the Run Radio. You now have QSOs going on both radios! Just move RX focus as needed to send/copy on what ever radio you need. This is easier said, than done during a contest !

#### Tracking TX Focus

In the above examples, you never have to control where TX focus is, since TX focus always moves automatically to where the RX focus is when Fn or Enter (ESM) is used. This should be your standard operating mode, as you only need to worry about using a single key to do most of your navigation between the two Entry Windows.

**Ctrl+Enter**, or **Ctrl+Fn** - Using these commands will send the corresponding message on the alternate radio; with the alternate radio defined as the radio that does not have RX focus. Using **Ctrl+Fn** (or **Ctrl+Enter**) will only move the TX focus to send the message - RX focus will stay in it's current location. Once the message is sent, TX focus will remain on the alternate radio. This is done by design.

The most common scenario would be if you are CQing on Radio 1, but you are not getting callers. You hit the \ key to copy a callsign on the S&P radio. Without moving the RX focus from the S&P radio, at some point you will probably want to send another CQ on the Run Radio. You do this by

hitting Ctrl+F1 or Ctrl+Enter. You will also likely use these commands if you have a QSO in progress at the same time on both the Run and S&P radio. The easiest way to send a message at the right time on the other radio is to use these commands, and leave RX focus where it is. Alternatively, you can program function keys with the {CTRLFx} macro to send messages to the other radio.

**Pause Key** - If both TX and RX focus are in the same Entry Window, hitting Pause will move both TX and RX focus to the other radio. If TX and RX focus are split between the Entry Windows, the pause key will move TX focus to where RX focus is. Mostly you will use this key in order to get your foci back in sync.

**Ctrl+Right Arrow** and **Ctrl+Left Arrow** - These commands will force both TX and RX focus to the right or left radio.

**Ctrl+B** - Enable Dueling CQ's.

**{CTRLFn}** macro - This macro allows the user to send on the other radio.

- Make sure that "Toggle {CTRLFx}" macro is checked on in the Configurer SO2R submenu (or use Ctrl-Shift-L to enable/disable the use of {CTRLFx} macros. When disabled, the {CTRLFx} macro is ignored
- Thus, a CW Button might look like: "tu EXCH{CTRLF9}" Where F9 on the other radio is set to send a CQ.
- Example: If your entry focus is on the S&P radio and you manually press **Ctrl+F1**, the program will send F1 on the OTHER radio. That's all the {CTRLFx} macro does. For a simple test, modify your S&P F4 key to read \*{CTRLF1}. Now, when you press that key, the program sends your call on the S&P radio and then sends the contents of F1 on the Run radio. In a practical situation, you would probably not want to send a full-length CQ while trying to work someone on the S&P radio, because that will nearly always require you to interrupt it before it is done. So the idea of {CTRLFx} is that you can stash a short CQ (like "N4ZR test") in, for example, Run F12. Then make S&P F4 read "\*" {CTRLF12}. Now when you press F4 on the S&P radio, it will send your call, and immediately switch to the Run radio and send F12, that very short CQ. Should help hold your frequency.
- Another way to use this: Make your S&P F2 read, for example, 5NN14{CTRLF1}. Then when you press F2 or Enter to send your exchange and/or log the S&P QSO, the program will automatically begin a CQ on the Run radio as soon as that is done

## 8. Mouse Assignments

- **Left mouse** and **Right mouse buttons**
  - On an empty space in one of the two Entry windows, these mouse buttons change the Receive focus to that radio/VFO

## 9. SO2R menu (under Config)



- **SO2R**

- **Dueling CQ's Ctrl+B** - will send CQ alternately on each radio
- **Set Dueling CQ Repeat Time**
- **Advanced SO2R**
- **Advanced SO2R Delay Time**
- **Focus on Other Radio** - A method of focus control, preferred by many contesters over "Advanced SO2R". When FocusOther is active, the RX focus is automatically shifted between the "Run" radio and the "S&P" radio, depending on whether the Run radio is transmitting. When the Run radio is transmitting, RX focus is shifted to the S&P radio. When the Run radio stops transmitting, RX focus shifts back to the Run radio, unless an unworked callsign has been entered in the S&P entry window. This allows a callsign to be entered in the S&P radio Entry Window while CQ is being sent on the Run radio.
- **FocusOther Always Swap** - Used in conjunction with Focus on Other Radio. When FocusOther Always Swap is enabled, RX focus will always shift back to the Run radio when the Run radio stops transmitting.
- **Toggle CTRLFx Macro** - This enables/disables the use of {CTRLFx} in function key macros.
- **TX Lockout** - Select a lockout item (Digital modes only)
  - **Multi-TX** - This is the default setting. Start CQ on radio A, Start CQ on radio B, both are active. (no lockout)
  - **First one wins** - Start CQ on radio A, pause, Start CQ on radio B. The radio B CQ is ignored since radio A is already active, so if you press a F-key for the second radio while radio1 is transmitting, the radio B F-key is ignored
  - **Last one wins** - Start CQ on radio A (CQ starts), pause, Start CQ on radio B. The CQ on radio A will aborted and the CQ on radio B will start so if you press a F-key for the second radio while radio A is transmitting, the radio A transmission is interrupted and radio B transmits
  - **Toggle SO2R mode Ctrl+I** - Toggle between the possible SO2R modes supported by the program. The SO2R mode is shown in the Entry window statusbar.
    - Note: Ctrl+I is only operative in '\$5 SO2R' mode when N1MM logger controls the audio, not when using an external SO2R controller.
      - **SO2R mode: Manual** - Audio is switched when moving focus between windows
      - **SO2R mode: Auto**
        - Run radio = **TX** -you hear S&P audio in both ears
        - Run radio = **RX** - left ear = left audio, right ear = right audio
      - **SO2R mode: One-Rig Auto** - Always listen to the audio of the non-TX-ing rig. This means that as soon as the running rig goes into TX, you hear the S&P audio, which goes back to the run radio's audio in both ears as soon as the CQ message is played

## 10. Software Setup

Setting up SO2R and SO2V starts in the Config menu:

- Config > "Configure Ports, Telnet Address, Other" > Hardware Tab

**Then if SO2R:**

- Set up radios
- Set up keying if necessary (LPT or Winkey)
- Click SO2R button
- Configure left/right radio in pop up box (when you click on SO2R button)
- Click OK
- Launch N1MM Logger, set up contest etc.
- If 2nd Entry Window is not shown, hit the \ key (backslash key)
- SO2R - 1 computer radio + 1 manual radio (so two radios)
- SO2V - 1 computer radio with 2 VFOs and no manual radio (so one radio)

**Then if SO2V:**

- Set up radio
- Set up keying if necessary (LPT or Winkey)
- Click SO2V button
- Click OK to close Config window
- Launch N1MM Logger, set up contest etc.
- If 2nd Entry Window is not shown, hit the \ key (backslash key)

Selected Mode	Radios Attached	Choices	Selection
SO2R	none	SO2R - Left Manual, Right Manual	Automatically selected
SO2R	1 (Kenwood)	sO2R - Left Manual, Right Kenwood Com1 SO2R - Left Kenwood Com1, Right Manual	Select one
SO2R	2 (Kenwood & FT847)	SO2R - Left Kenwood Com 1, Right FT847 Com 2 SO2R - Left FT847 Com1, Right Kenwood Com 2	Select one
SO2V	1 (Kenwood)	SO2V - Kenwood	Automatically selected

**10.1. LPT keying**

When operating SO2V, and using LPT port keying, the Radio Nr in the LPT port configuration must be set to Both.

When operating SO2R, and using a single LPT port for keying, the Radio Nr in the LPT port

configuration must be set to Both. This configuration will require an external box to switch the keying line between the two radios. The external box can be controlled using LPT pin 14.

When operating SO2R and using a separate LPT port for each radio, the Radio Nr in the LPT port configuration must be set to (Radio) 1, and 2.

## 10.2. Winkey and WinkeyUSB keying

When operating SO2R, and using Winkey, the Radio Nr in the Winkey COM port configuration must be set to Both.

When operating SO2R, and using a single Winkey port for keying, the Radio Nr in the Winkey COM port configuration must be set to Both. This configuration will require an external box to switch the keying line between the two radios. The external box can be controlled using LPT pin 14.

When operating SO2R and using Winkey's "2nd CW Output", the Radio Nr in the Winkey COM port configuration must be set to Both.

## 11. SO2R Radio Support

All supported radios will work with SO2R. N1MM Logger will allow you to use any combination of computer controlled and non-computer controlled radios. If you use a radio that is not supported or has no radio control, do not set up a radio COM port. You only set up that information when you have a computer controlled radio.

## 12. Using External SO2R controllers

N1MM Logger is compatible with most hardware SO2R controllers using the LPT port (legacy) such as the Top Ten Devices "DX Doubler", the Array Solutions (aka WX0B) "SO2R Master". These products will automatically control keying, PTT and audio lines to each radio. New products like the microHAM MK2R can be fully controlled via USB or via an LPT port (legacy). The EZmaster from Ham Radio Solutions.is only supported using the LPT port and not the USB port.

Hooking up these controllers will require a straight-through DB-25 cable from your LPT port of your computer to the input DB-25 connector on these products. For hooking up the rest of the keying and audio lines for these products, consult their respective manuals. All products use the same pin-outs on the LPT port.

DX Doubler and SO2R Master have two basic settings for software: "CT/TR/Writelog" and "NA". NA uses slightly different controls. To use N1MM Logger with these external devices, just configure the external controller for "CT/TR/Writelog".

To get N1MM Logger to correctly key and control these devices, you need to set up your keying as follows:

## 12.1. LPT Keying with external SO2R controllers using LPT port:

- Config >Configure Ports, Telnet Address, Other >Hardware tab
- Check LPT keying box - check only one LPT box
- Click on the corresponding "Set" button for the LPT port
- Click on "Radio Nr" drop down box and select "Both"
- Click on OK to set configuration

### Modifying the DX Doubler

There were a couple of errors on the DX-doubler PC board. Go to: <http://www.qth.com/topten/appnotes.htm> to see the DX Doubler modifications.

## 12.2. Using Winkey and WinkeyUSB

The original WinKey, uses a RS-232 COM port, and is not a USB device. WinKey has an internal pin 3 output, which is normally CW for 1 radio, and an internal pin 5 which is normally PTT for a single radio. Under N1MM Logger software control, pin 3 can set for Radio 1 CW output and Pin 5 can be set for Radio 2 CW output. The serial port assigned to the WinKey device should have the "Hardware" tab "Set" and WinKey checked and Radio Nr set to 'Both'. Then go to the "WinKey" tab and set Pin 5 function to "2nd CW"

The "K" output on the WinKey board goes to Radio 1 CW and the "P" output goes to Radio 2 CW. N1MM Logger takes care of all the switching provided you activate the proper radio.

The WinkeyUSB (sometimes called "Winkey 2") has separate CW and PTT outputs for each radio. The 2nd radio CW is enabled from the Winkey tab "Use 2nd Output".

## 13. SO2R Using the DX Doubler

### 13.1. Internal DXD Jumpers

Internal DX Doubler Jumpers			
Operating Mode	Jumper 1	Jumper 2	Jumper 3
Normal	1-2	4-5	8-9
Stereo	1-2	5-6	8-9

The Normal Mode is the CT/TR/WriteLog settings in the manual. N1MM uses the same convention as CT/TR/WriteLog, but the DXD manual does not reflect this.

## 13.2. DXD & STEREO Feature

The STEREO mode is for use with the Top Ten Devices DX Doubler. It will probably work with other SO2R controllers which use pin 5 on the LPT port to switch audio between radios.

The Stereo Mode was fashioned after the NA Stereo feature, i.e. use a keyboard command to toggle from the run station's audio in both ears, to one radio in the left ear and other radio in the right ear. The Stereo feature toggles pin 5 alternately high and low on the LPT port.

To use the STEREO feature with the DX Doubler, the DXD should be configured for CT/TR/Writelog with the exception of JUMPER 2. Move JUMPER 2 from PINS 4-5 to PINS 5-6. This puts the control signal from LPT-pin 5 into the logic in the DXD. Now, with the DXD AUDIO control switch set to "Auto", the unshifted tilde (variously called the backquote, grave accent or simply the ` key) will toggle the STEREO mode on and off.

### Enabling DXD's Stereo Feature



With the DXD Audio switch in PTT mode, the stereo capability is disabled and the DXD operates normally in the PTT mode.

Stereo "ON" will split the audio: Radio-A/left ear, Radio-B/right ear. Stereo "OFF" means full audio from the RUN radio in both ears.

` (backquote or unshifted tilde) Toggle	DXD Audio Mode	Run Radio	S&P Radio
"NA" mode OFF	AUTO	Both Ears (TX focus on RUN radio)	Both Ears (TX focus on S&P radio)
"NA" mode ON	AUTO	Left Ear	Right Ear
Auto/PTT OFF	PTT	Left Ear	Right Ear
Auto/PTT ON	PTT	Both Ears (TX focus on RUN radio)	Both Ears (TX focus on S&P radio)

N1MM further refined the STEREO feature by building the following macros so you can automate the process: {STEREOON} {END} {STEREOOFF}

These macros are included in the function keys (Message Buttons) to switch the audio automatically according to the operator's preference. (refer to Macros Definitions, section 36.1.1) If Stereo Macros are used, you can momentarily toggle the Stereo state if needed. Once a Fn message is sent that includes a macro, the Stereo feature will go back to its programmed state.

Example for F1 - CQ Message Button : {STEREON} CQ TEST \* \* TEST {END} {STEREOFF}

## 14. Sound Card options

Option #	Radios	Play WAV Files	Record new SSB messages	Mute mic	What is Recorded	Switch Headphones	Special CD/Aux Cable Required	Comments
1	1	Yes	Yes	Yes	Two channels heard	No	No	Normal one-radio setup
2	2	Yes	Yes	Yes	One channel for each radio	No	No	External switching required for SO2R
3	2	Yes	Yes	Yes	One channel for each radio	CW/Digi Only	Yes	External switching required for SSB SO2R
4	2	Yes	Yes	Yes	Two channels heard	All modes	Yes	\$5 SO2R

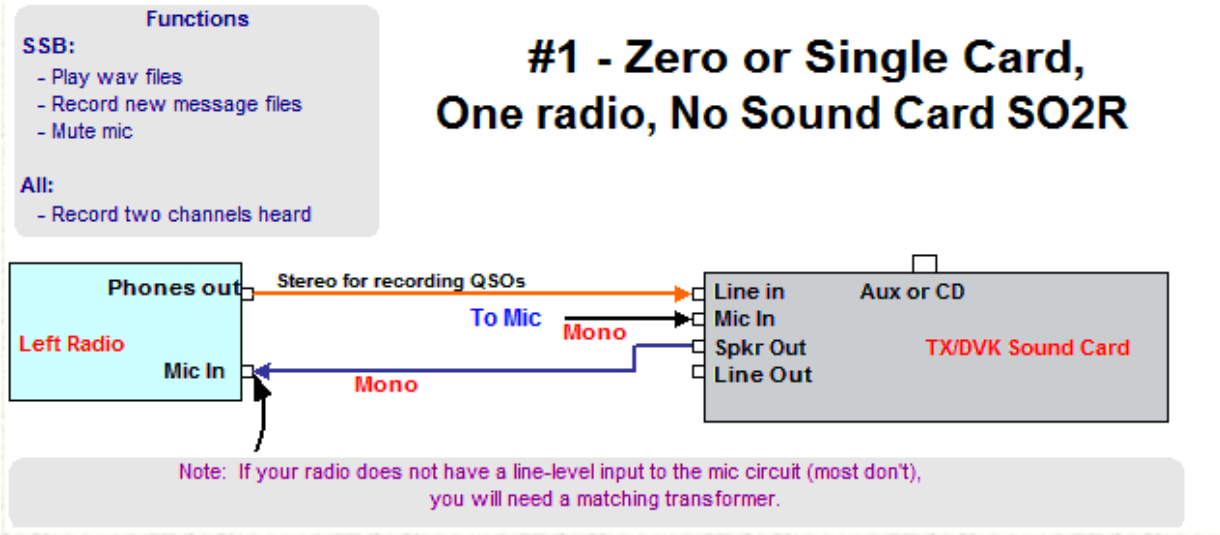
Two sound card SO2R or \$5 SO2R is a cheap way to get into SO2R. The only extra device needed to your computer is an extra \$5 soundcard and some cables to the radios. Serious competitors should probably use a hardware device that can insure lockout.

### 14.1. Sound Card Option #1: Zero or Single Card, One radio, No Sound Card SO2R

One radio and one sound card to play wav files and record new messages and mute the microphone when playing wav files.

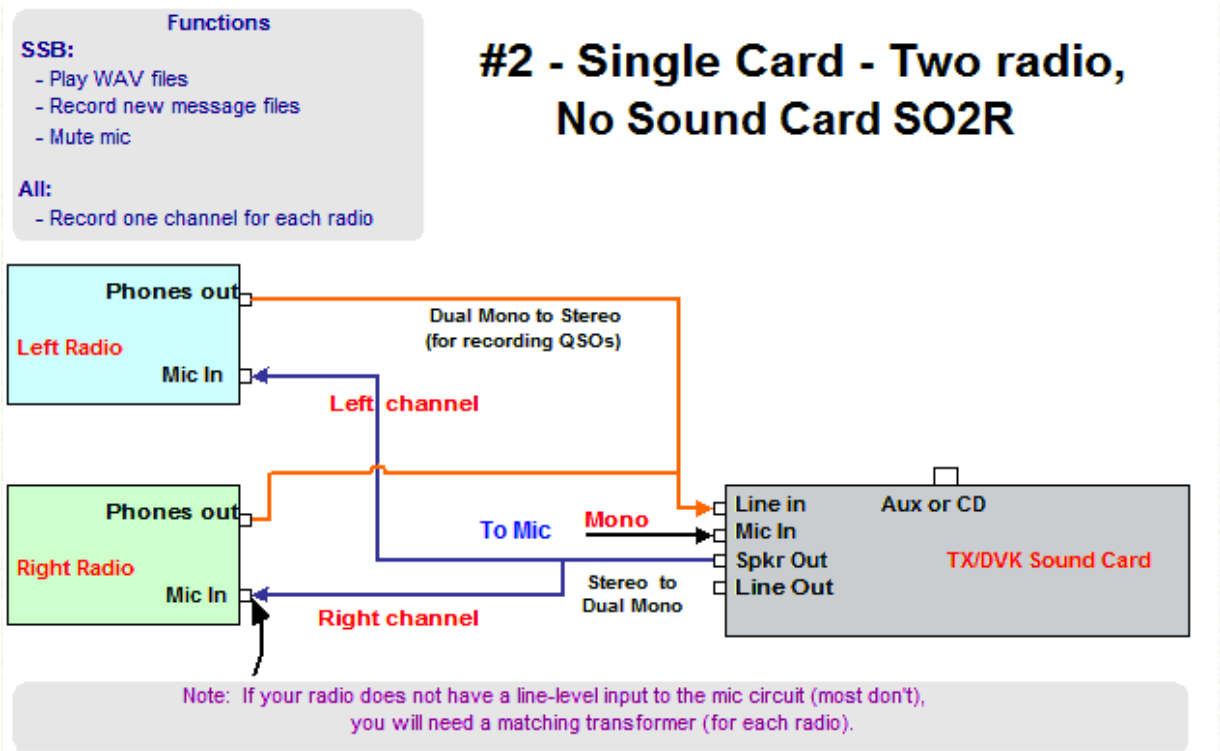
Select '1 - Single Card - One radio, No Sound Card SO2R' on the 'Audio' tab and setup the top part of this dialog.

The sound is centered rather than set to a radio channel.



### 14.2. Sound Card Option #2: Single Card - Two radio, No Sound Card SO2R

Not SO2R but two radios and one sound card to play wav files and record both radios. Select '2 - Single Card - Two radio, No Sound Card SO2R' on the 'Audio' tab and setup the top part of this dialog.



### 14.3. Sound Card Option #3: Single Card - Two radio, Sound Card SO2R, CW Only

In order to use SO2R with one sound card, CW only, you'll need to define your radios as SO2R in the Hardware tab and select '3 - Single Card - Two radio, Sound Card SO2R, CW Only' on the 'Audio' tab. Setup the top and bottom parts of this dialog.

**Functions**

**SSB:**

- Play WAV files
- Record new message files
- Mute mic

**CW:**

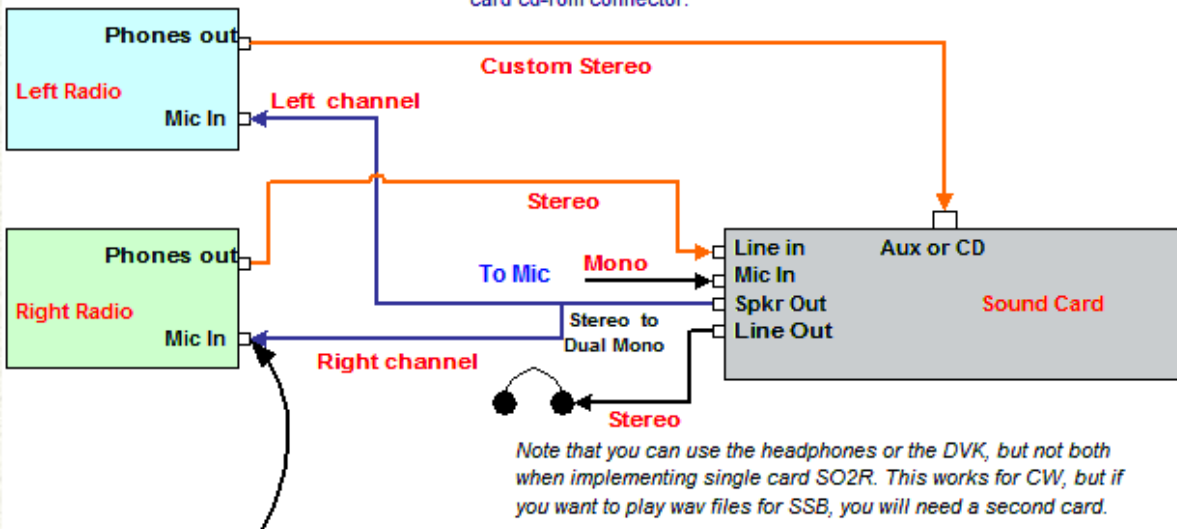
- Switch phones between radios

**All:**

- Record two channels heard

## #3 - Single Card - Two radio, Sound Card SO2R, CW Only

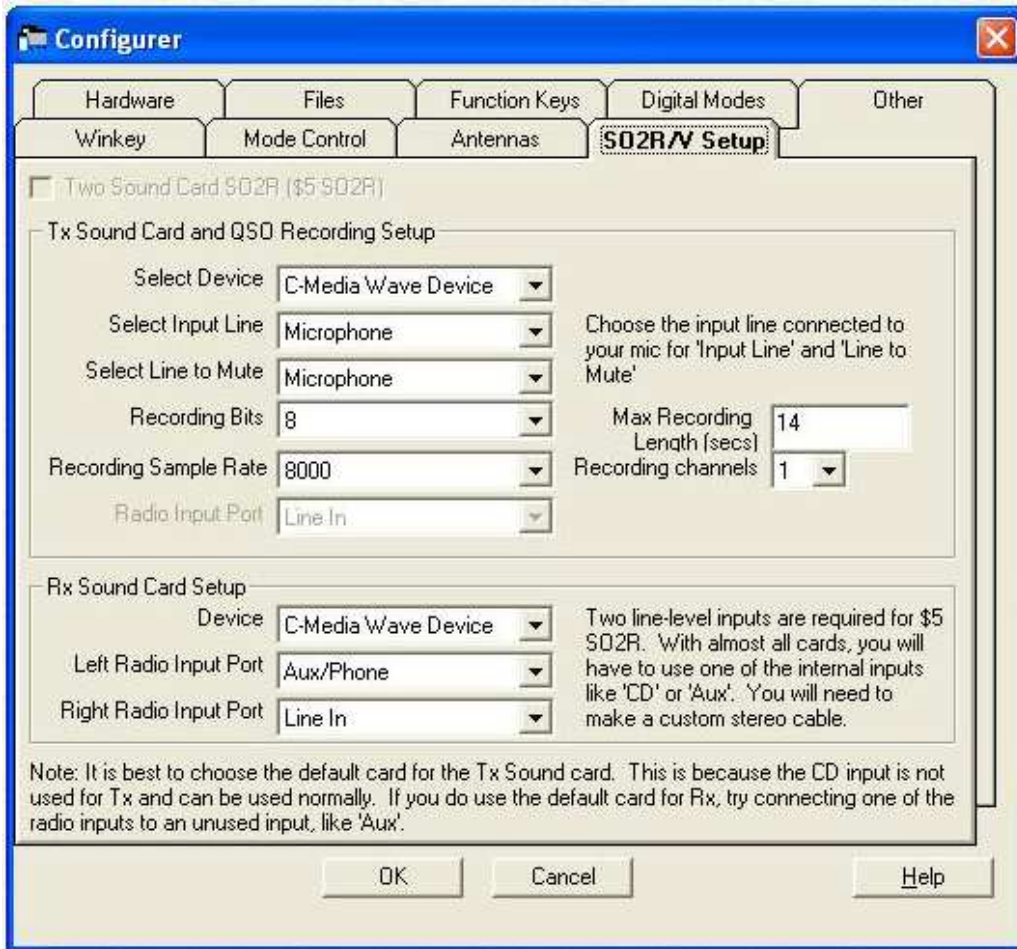
[http://www.epanorama.net/documents/pc/cdrom\\_audio\\_wire.html](http://www.epanorama.net/documents/pc/cdrom_audio_wire.html)  
has information on determining which pins are which on a sound card cd-rom connector.



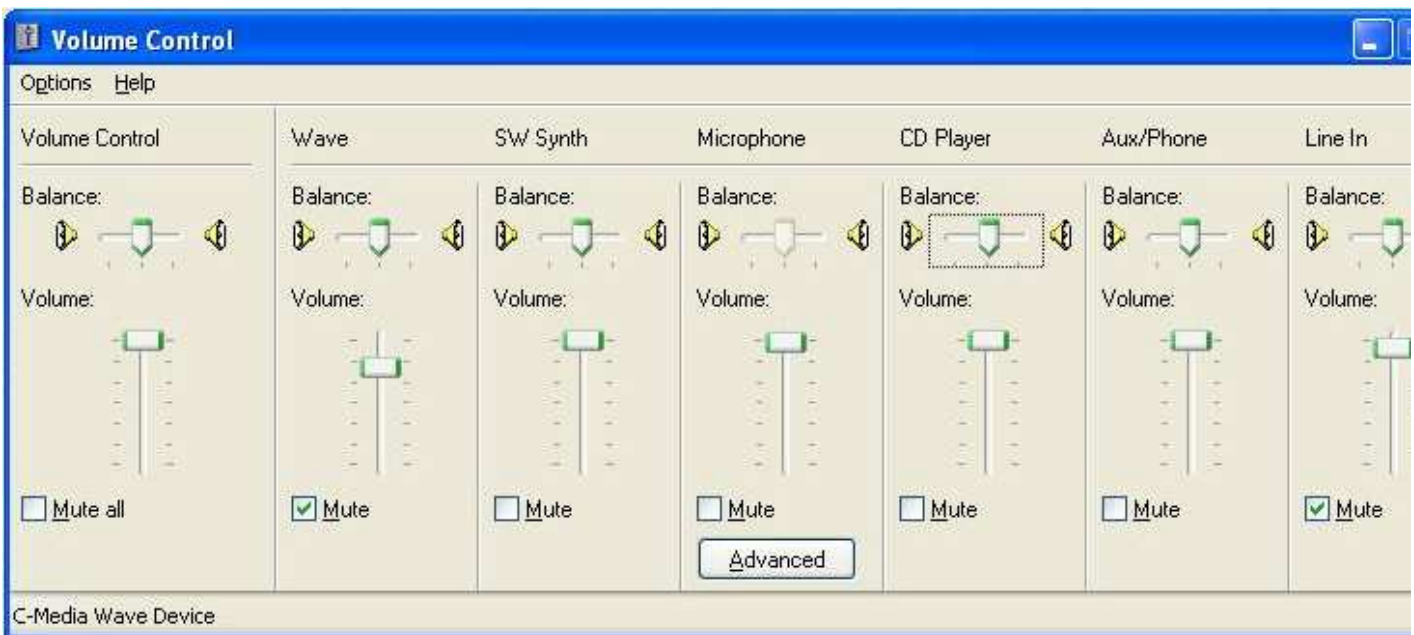
Note: If your radio does not have a line-level input to the mic circuit (most don't), you will need a matching transformer (for each radio).

SO2R with one sound card. The drawback here is that no switching of the phones is done. Note that you will have to wire a cable to the cd or aux input of a sound card in order to make use of this feature.





This is an example how to set up the configurer. Note that the top part should not matter. For #3, we are interested in the bottom frame.



This picture shows the mixer for my sound card (windows default mixer). The mute buttons and the

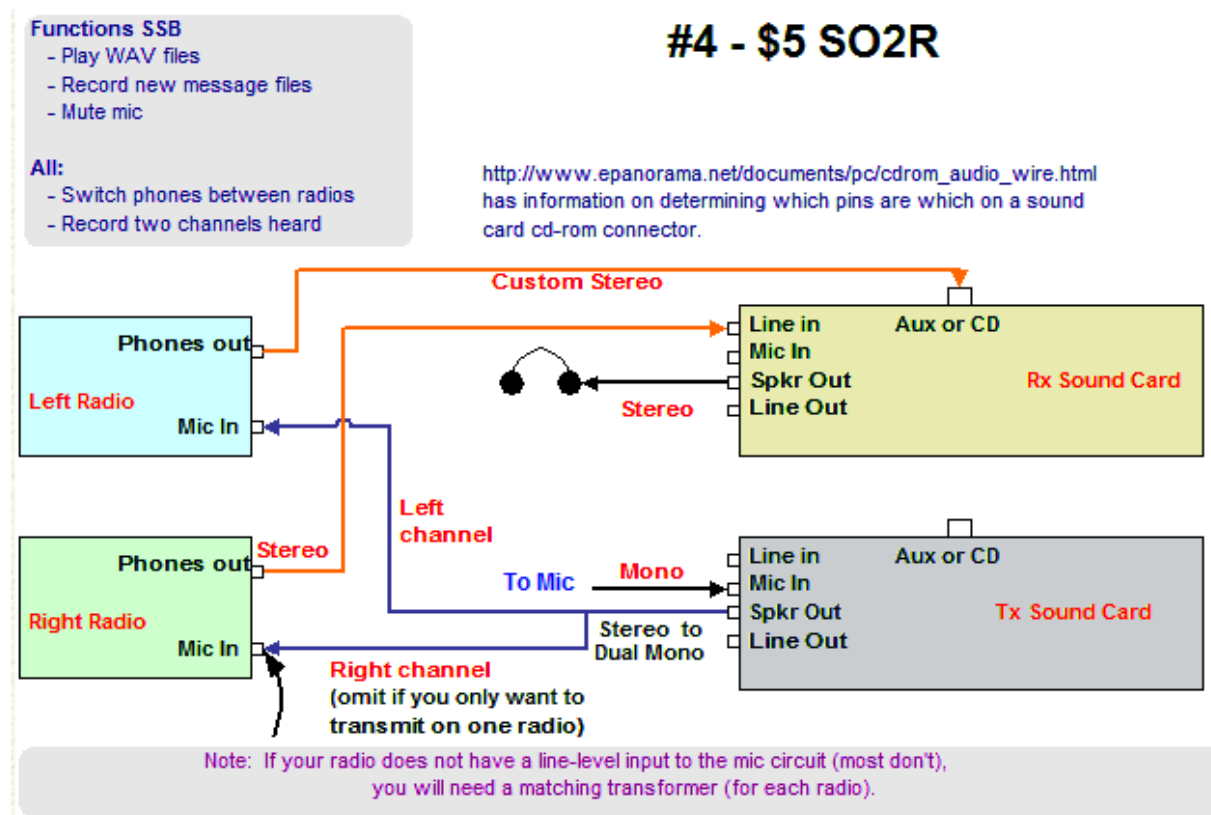
balance sliders will change while CQing, then back after the message is over.

### 14.4. Sound Card Option #4: Dual Cards - Two radio, Sound Card SO2R

Kudos to David, K1TTT for coding all the interfaces necessary to allow SO2R with two cheap sound cards. Check the pictures below and see how easy it all is. K1TTT also designed the switching rules and wiring.

Note that you will have to wire a cable to the cd or aux input of a sound card in order to make use of this feature.

In order to use SO2R with two sound cards, you'll need to define your radios as SO2R in the Hardware tab and select '4 - Dual Cards - Two radio, Sound Card SO2R' on the 'Audio' tab. Setup the top and bottom parts of this dialog.



**CW** - Yes, it will work for CW as well. The CW is not shown since you already have solutions for that. You can use separate serial, parallel or USB ports to separate the CW. You can use radio or Serial/Parallel/USB port PTT to two rigs. If you want to, you can use pin 14 and a relay to switch, but that is not necessary. The headphones work the same for either mode.

**RTTY** - We have not discussed the implications for RTTY yet.

<b>Mode</b>	<b>INPUT Keyboard Focus</b>	<b>INPUT CQ Playing</b>	<b>INPUT Dual</b>	<b>OUTPUT SndCard Left Input</b>	<b>OUTPUT SndCard Right Input</b>	<b>OUTPUT Radio Left Dual</b>	<b>OUTPUT Radio Right Dual</b>	<b>OUTPUT Audio Left Ear</b>	<b>OUTPUT Audio Right Ear</b>
Auto	Left	None	Off	Left	Right	Off	Off	L-main	R-main
-	Left	Left	Off/R-on?	Mute	Center	Off	Off/Note 1	R-main	R-main/sub?
-	Left	Right	Off/L-on?	Center	Mute	Off/Note 1	Off	L-main	L-main/sub?
-	Right	None	Off	Left	Right	Off	Off	L-main	R-main
-	Right	Left	Off/R-on?	Mute	Center	Off	Off/Note 1	R-main	R-main/sub?
-	Right	Right	Off/L-on?	Center	Mute	Off/Note 1	Off	L-main	L-main/sub?
One rig auto	Left	None	Don't care	Center	Mute	NC	NC	L-main	L-main/sub?
-	Left	Left	Don't care	Mute	Center	NC	NC	R-main	R-main/sub?
-	Left	Right	Don't care	Center	Mute	NC	NC	L-main	L-main/sub?
-	Right	None	Don't care	Mute	Center	NC	NC	R-main	R-main/sub?
-	Right	Left	Don't care	Mute	Center	NC	NC	R-main	R-main/sub?
-	Right	Right	Don't care	Center	Mute	NC	NC	L-main	L-main/sub?
Manual	Left	Don't care	Don't care	Center	Mute	NC	NC	L-main	L-main/sub?
-	Left	Don't care	Don't care	Center	Mute	NC	NC	L-main	L-main/sub?
-	Left	Don't care	Don't care	Center	Mute	NC	NC	L-main	L-main/sub?
-	Right	Don't care	Don't care	Mute	Center	NC	NC	R-main	R-main/sub?
-	Right	Don't care	Don't care	Mute	Center	NC	NC	R-main	R-main/sub?
-	Right	Don't care	Don't care	Mute	Center	NC	NC	R-main	R-main/sub?

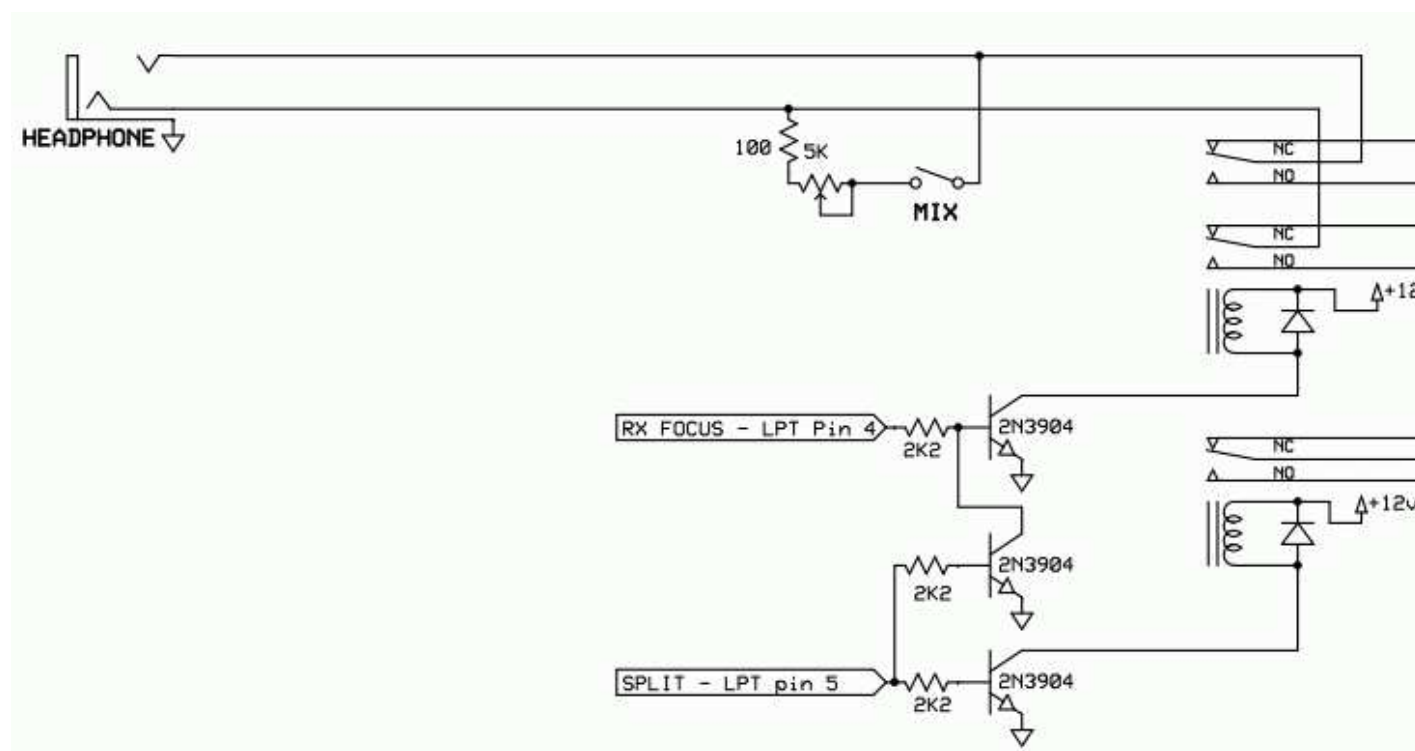
NC - no change, whatever user has set

Note 1 - could use dual on non-CQ-ing radio while cq is playing on the other one, but would have to switch off when cq stops to get back to just main for full stereo. This would mean having some way to save the dual setting for the non-cq radio and switching it on/off for each cq. Maybe useful for times when doing dueling cq on combinations like 20 and 40m where you wanted to listen on both vfo's on 40m. This is the case I would probably prohibit and always force dual off on both radios for full auto. Or if dual was on prohibit full auto and force one rig auto instead.

### 15. LPT port basic SO2R controller design

A basic SO2R controller design ... it's about as simple as there is but it works well with N1MM (or Writelog) in LPT mode. I decided to add support for CW from the LPT - the PTT relay can be replaced with a SPDT relay if CW is taken from two COM ports or WinKey USB is used (better).  
Joe, W4TV - 5/30/2009 - Revision 1.0

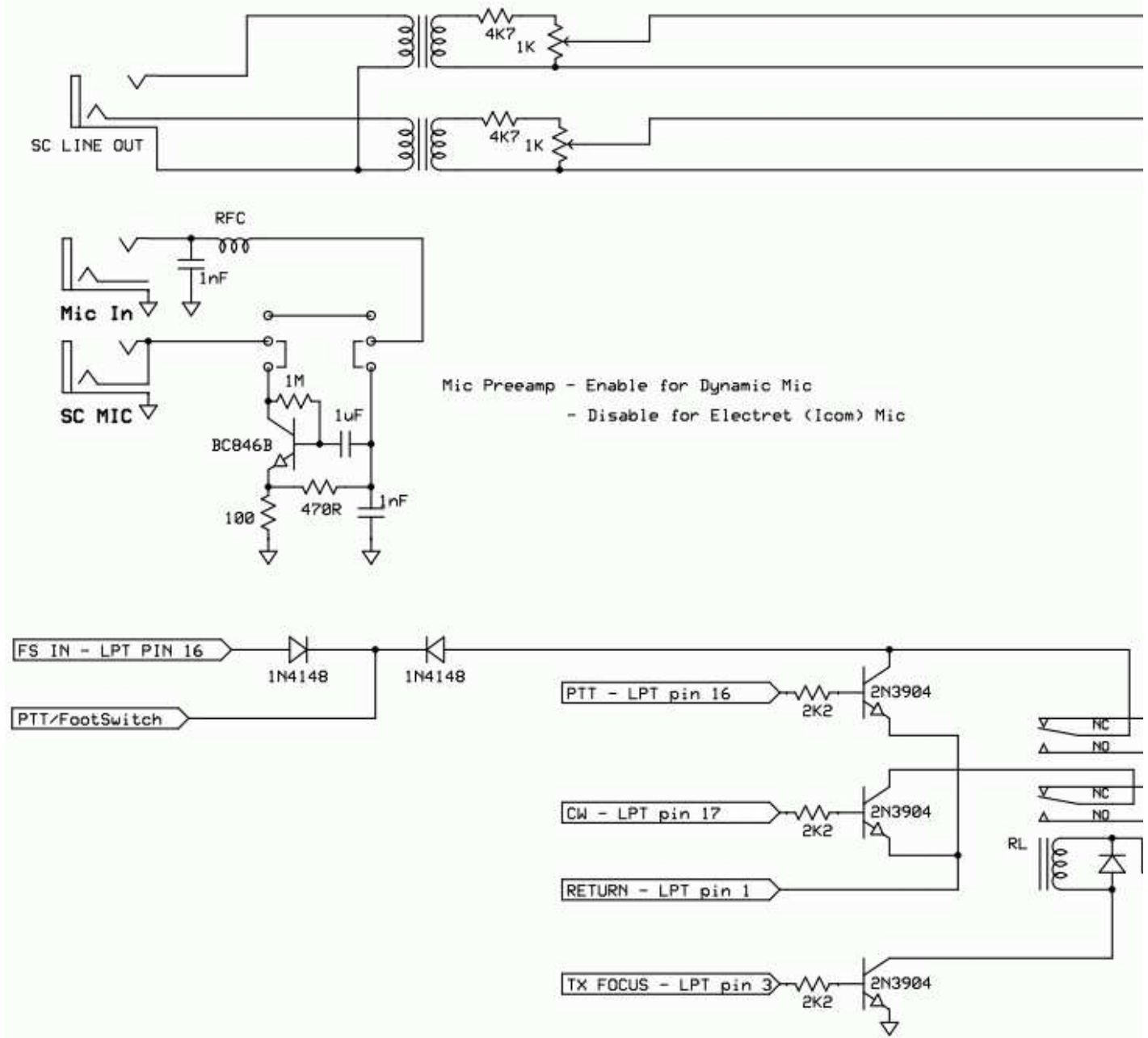
#### 15.1. Basic SO2R LPT port - Receive Interface



SO2R LPT Receive interface

#### 15.2. Basic SO2R LPT port - Transmit Interface

SO2R LPT Transmit interface



## 16. Advanced SO2R

Advanced SO2R is a powerful feature intended for SO2R operators and is totally unique to N1MM. It can be used as an alternative to the FocusOther feature. The feature automatically moves RX focus to where it logically should be for the SO2R operator. The two main scenarios Advanced SO2R addresses for SO2R are:

Tuning the S&P radio will grab RX focus (i.e. when you are looking for mults) When the Run Radio finishes sending a CQ, RX focus moves back to the Run Radio.

Advanced SO2R Rules for Moving RX Focus	
SO2R Rule	Operating Implications
<b>Advanced Rule #1</b>	Tuning either VFO/Radio will result in the RX focus moving to that VFO/Radio if, and only if, both entry windows have empty call fields
<b>Advanced Rule #2</b>	RX focus is moved to the Run/TX radio when it finishes sending CQ (or Fn) message, UNLESS there is text entered in the S&P Entry Window
<b>Focus Anti-Bounce (FaB)</b>	After CQ (or Fn) has been sent on the Run Radio and RX focus has moved to that radio, don't let tuning of S&P radio grab RX focus until 1000 ms has passed

## 16.1. Advanced SO2R Theory of Operation

Advanced SO2R will only move RX focus if there's no callsign (or partial callsigns) in either Entry Window. If there's a callsign (or partial callsign) in either Entry Window, it's assumed that the SO2R operator will want to control where RX focus should be.

**Basic Scenario:** If you are CQing on VFO/Radio A, and S&Ping on VFO/Radio B, as you tune the S&P radio, Advanced SO2R assumes the SO2R op will want RX focus on the S&P radio so he can type in a callsign to see if it's needed. At the end of a CQ on the Run radio, if there is no callsign in the S&P window, RX focus is moved back to the Run Radio in anticipation of someone answering your CQ. If no one calls on the Run Radio, and you continue to QSY on the S&P Radio, the RX focus will automatically move back to the S&P radio again after a 1000 ms delay (learn more about the 1000 ms delay in the Focus anti-Bounce paragraph below).

As you S&P during a CQ (or any sent Fn message) on the Run Radio, and you type a callsign into the S&P Entry window, at the end of a Run CQ (or Fn), RX focus will stay on the S&P radio. It's assumed if you have a callsign in (any) Entry window, that you will want RX focus to stay where it is to finish that QSO.

If someone answers your CQ on the Run radio, and there's a callsign in the S&P window, it's up to you to decide who you will work, and where RX focus should be: do you finish working the S&P QSO, or move RX focus to the Run Radio to work the new caller? If you want to answer the response to your CQ, use the \ to move RX focus from the S&P Radio to the Run Radio. Otherwise leave RX focus on the S&P radio so you can finish working the S&P QSO and then hit \ to get back to the Run radio (this can be automated by inserting the {JUMPRX} macro if desired).

Let's say that someone just answered your CQ on the Run radio (of course Advanced SO2R has already moved RX focus there from the S&P radio) and you have entered a callsign in the Run Entry Window. As you tune the S&P radio while you are working the guy on the Run Radio, RX focus will stay on the Run Entry Window. It's assumed that you will not want RX focus moved to the S&P radio during the middle of a Run QSO. After you log the Run QSO, and you continue to tune the S&P radio, RX focus will again move to the S&P radio if there's nothing in the Run Entry Window.

**Focus anti-Bounce (FaB):** was created for the serious SO2R op who's got both right and left audio listening to the S&P radio while transmitting on the Run Radio. Let's say you are CQing on the Run Radio, and tuning on the S&P radio. Many SO2R ops will not be listening to the Run radio CQ sidetone, and will only be listening to the S&P radio. If you are still tuning the S&P radio when the CQ just finished, FaB will keep RX focus on the Run radio for 1000 ms. This brief delay will let you stop tuning the S&P radio, so RX focus stays on the Run Radio. If FaB wasn't there, and you didn't realize that the CQ was over, RX focus would bounce to the Run Radio at the end of a CQ, and then bounce back to the S&P radio since you are still QSYing. Thus if someone answered your CQ, you would often type that callsign in the S&P radio/entry window!

## 16.2. Advanced SO2R Controls and Macros

SO2R Macro	Operating Implications
<b>ON/OFF Macro</b>	You can turn on/off Advanced SO2R by using macros in CW/SSB key buttons: <b>{ADVSO2RON} {ADVSO2ROFF}</b>
<b>ON/OFF Shortcut</b>	Turn on/off Advanced SO2R with <b>Ctrl+Shift+I</b>
<b>RX Focus Control (Override)</b>	The <b>backslash</b> key (\) will always move RX focus to the "opposite" vfo/radio and stays there until another action/state takes RX focus control (in case RX focus ends up where you don't want it)
<b>Focus Anti-Bounce (see above)</b>	Advanced SO2R now has an adjustable delay (called Focus Anti-bounce) set via <b>CTRL+SHIFT+N</b>

**RULE:** Tuning either VFO/Radio will result in the RX focus moving to that VFO/Radio if, and only if, both entry windows' call fields are blank.

Radio A... Callsign Field	Exchange Field	Is:	Radio B... Callsign Field	Exchange Field	Is:	Focus Does:
					Tuning VFO	Focus moves to VFOx
		Tuning VFO				Focus moves to VFOx
Filled					Tune VFO B	Focus stays where it was (VFO A)
	Filled				Tune VFO A	Focus stays where it was (VFO A)
		Tune VFO A	Filled			Focus stays where it was (VFO 😊)
		Tune VFO		Filled		Focus stays where it was (VFO 😊)

## 17. Focus on Other Radio (FocusOther)

## 18. SO2R and MMTTY

Instructions for setting up 2 copies of MMTTY for use in SO2R.

- Install MMTTY into 2 separate directories.
  - Create 2 separate directories that MMTTY will reside in. This allows you to save 2 different profiles
- Change into each of the directories and load MMTTY.
- Click Options/Setup MMTTY Once loaded select the Misc Tab .
- Change the device ID to one of the soundcard numbers (not -1)
  - Select the sound card you are using 0,1,2,3 don't select -1
- In the second copy of MMTTY you will do the above and choose your second soundcard #
  - Select the sound card you are using 0,1,2,3 don't select -1.
- Close MMTTY - This will save your info in the MMTTY profiles.
- Load N1MM and select Configure.
- In the Hardware Tab Set your ports that you will use to Digital.
- In the Digital Tab Select both Interfaces to Show MMTTY as the interface.
- In the Digital Tab set the path to each copy of MMTTY.
- Close and save the config window.
- Now when you load the Digital Interface you will see a menu selection to load the second Interface.
  - One thing to keep in mind.. The 2nd port you have marked for digital will be the PTT port for the second digital window.



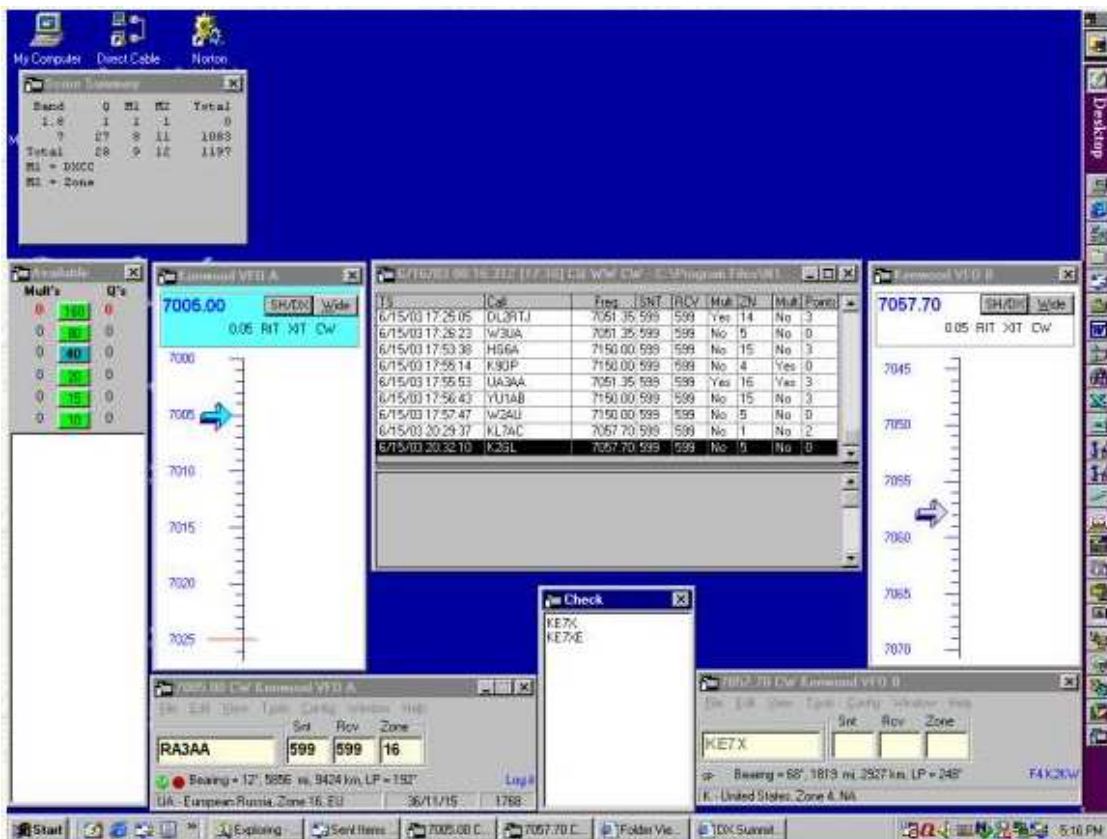
## 18.1. SO2R RTTY with 1 sound card

One sound card can do 2 channels of RTTY decode. Just set MMTTY instances to the same card but one to left the other to right channel. MMTTY seems to transmit the same AFSK audio to both channels but that's ok cause the SO2R box only routes PTT to one of the radios at a time. A special stereo Y cable has to be made so one radio goes to the left channel and the other to the right channel.

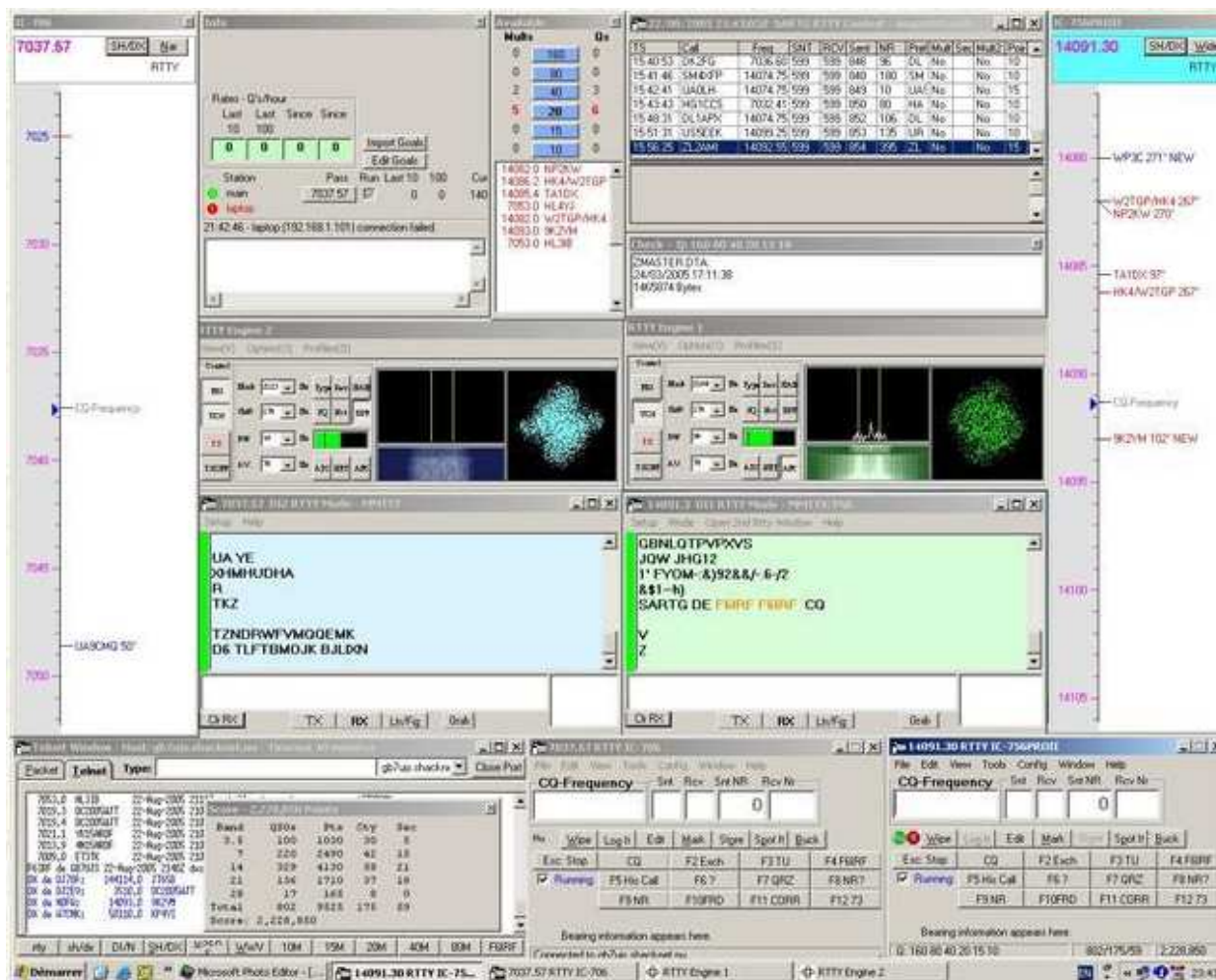
If the above works depends a lot on the used soundcard/chip. In other instances MMTTY does not seem to like addressing Left/Right separately. In that case only one (the first) digital interface will receive anything and you are out of luck....

## 19. Example screen layouts

Below two screen shots for SO2R. Notice the window symmetry for left and right VFO, as well as left and right band map. Essential information that is used by both radios was placed in the center: Check Window and Log Window. Of course other operators may have different preferences regarding window layout - but the most intuitive is to have the window layout reflect the equipment configuration.



The screen above was taken by K2KW from a 17" screen.



The screen shot above was taken by F6IRF and gives an example of a SO2R screen for RTTY.

## SO2V

### In this Section...

#### SO2V

1. Advanced SO2V for radios with separate sub-receivers
2. Approximating the capability with radios that do not have a sub-receiver

A number of N1MM users are interested in using the advanced VFO and/or subreceiver capabilities of modern transceivers to improve their scores by approximating SO2R techniques, but with a single radio. This has led to the definition of an operating mode called SO2V (Single Operator Two VFOs). This section will deal with the features of N1MM Logger that are designed for use in this mode.

### 1. Advanced SO2V for radios with separate sub-receivers

The following writeup was provided by John, K3CT, who has been responsible for many recent SO2V improvements. In the near future, the editors intend to provide introductory information and place it in context.

Version 10.3.6 introduced a new feature for SO2V operators that are using radio control with the following radios: IC-756/Pro/Pro2/Pro3, IC-7600, IC7800, Orion/2, and K3.

In a later version after 11.01.04, the following radios have been added: FT1000/D/MP/MKV /MPStepplr

Other radios with sub-receivers (currently FTdx9000, FTdx5000, FT2000) will be added as time and availability of testers permits.

In SO2V mode, the \ key changes the RX focus to the Sub receiver and enables the Sub audio if necessary (Orion). To use this feature set the CQ repeat time a little longer than normal and start a repeating CQ using VFOA (Main). If nobody answers, press the \ key to enable the Sub receiver and tune the band. Pressing \ again will change the RX focus back to VFOA and turn off the Sub if Config > Dual Rx Always On is not checked. With Icom radios that only have one VFO knob, pressing the \ key also changes the knob association to the Sub VFO.

If you do not find someone to call before the CQ timer expires, the program will call CQ again on VFOA. If you type a character into the VFOB (Sub) Entry window or press a function key, it will cancel the repeating CQ running on VFOA.

The TX focus will automatically shift to the proper VFO prior to transmitting when you call someone. Some radios switch faster because they require fewer configuration commands. If you call someone with the VFOB (Sub) Entry window and decide that the CQ repeat needs to start again on VFOA, press CTRL+CQ-Key. The program default for the CQ-key is F1 and this is set in Configurer > Function Keys tab.

If someone answers your CQ while the RX focus is on VFOB (Sub), press the \ key to change the RX focus prior to entering the callsign.

In the case of the K3 transceiver, there is special functionality associated with the Ctrl+Alt+D and Grave accent keystrokes. See the K3 section under [Supported Radios](#).

## 2. Approximating the capability with radios that do not have a sub-receiver

Again, from K3CT: I tried to implement this same SO2V functionality for all VFOA/B radios even if the radio does not have a sub-receiver.

You may find the CTRL+Shift+Up/Dn command useful. It programs VFOB with the next spot Up or Dn in the Bandmap. When you have time to listen or call the station, press the PAUSE (or Ctrl+RightArrow) key. To return to your Run frequency, press the PAUSE (or LeftArrow) key, it won't change your RUN frequency. Instead, the program will let you know that split is necessary with a

status message at the bottom of the Entry window.

See the Supported Radio section of the manual for radio specific information regarding general and SO2V operation.

## N1MM Rotator Control

### In this Section...

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#### N1MM Rotator Control

##### 1. Rotor Control Basics

###### 1.1. File Menu Selections

###### 1.2. Button and Mouse Assignments

###### 1.3. Using N1MM Rotor Stand-Alone

###### 1.4. Using N1MM Rotor with the Main N1MM Logger Program

###### 1.5. N1MM rotor running on another computer

###### 1.6. Turning a Stack

###### 1.7. Run time error: 126

##### 2. Using external hardware or software

---

Rotator control by N1MM logger is supported using

- External software
  - N1MM rotor (comes with N1MM logger)
  - LP rotor (freeware by Larry Phipps - N8LP)
- External hardware
  - ARSWIN by EA4TX

The rotor can be controlled in several different ways:

- **Entry window:**
  - by entering a beam heading in the callsign field and press Alt+J. The rotor will turn to the entered beam heading
    - Example:**234 Alt+J** will turn the rotor to 234 degrees
    - The number must be numeric,  $\geq 0$  and  $\leq 360$
  - using the menu items in the Tools menu
    - **Turn Rotor Alt+J** - Turn rotor to bearing for the callsign in the Entry window
    - **Stop Rotor Ctrl+Alt+J** - Stop turning the rotor when turning and no bearing in callsign field in Entry window
  - using the short cut keys below:
    - **Alt+J** - Turn rotor to bearing for the callsign in the Entry window or to the callsign in the callframe (when callsign field is empty)
    - **Alt+L** - Turn rotor to long path bearing for the callsign in the Entry window
    - **Ctrl+Alt+J** - Stop turning the rotor when turning and no bearing in callsign field in Entry window
- Bandmap window: by right clicking on a spot and select: 'Turn Rotor'

- Available Mult's and Q's window: by right clicking on a spot and select: 'Turn Rotor'

### Some remarks

- If there is a call of less than three characters in the callsign field in the Entry window nothing will happen.
- The status bar will show the bearing it will turn to. Example: Turning Rotor to 123°
- Normally the rotor will turn to the country bearing after a callsign is entered. This info comes from the country file and mostly is the center of the country. In grid square contests however that is mostly not practical so when a grid is entered the rotor will turn to the calculated bearing between the own grid and entered grid square.

## 1. Rotor Control Basics

N1MM rotor has the ability to control up to 16 rotors per station, and to control rotors connected to other computers on your LAN. N1MM rotor leverages the Antenna tab to define what rotors are controlled when you are on a band. N1MM rotor can even rotate a stack with one command. N1MM rotor is an external program which can be used from within N1MM logger or as a stand-alone program.



### Supported rotor types

- DCU1 - No Stop button supported.
- M2 Orion - Speed shown to bottom right of status bar.
- Prosistel
- AlfaSpid
- Yaesu
- RC2800P-A
- Rotor-EZ
- AlfaSpid ROT2
- Prosistel C

All rotors except the DCU1 support position reporting.

Upper pane: The upper pane shows the selected rotor under Tools (as entered in the Setup under Tools) and behind the @ the current rotor position.

Menu bar: Shows the File, Tools and Help menus.

The big digits indicate the current rotor position. When an antenna offset has been entered this will be shown in small digits to the right of the current rotor position.

More to the right a visual indication where the rotor is pointing.

The line in the circle can be dragged to turn the rotor for rotors that support position reporting.

The textbox is an entry field where to enter the bearing the rotor has to be turned to.

Pressing the Turn button will turn the rotor to the entered position and the Stop button will stop turning the rotor at the current position.

A reverse offset will be shown as (R) .

Status bar: Shows the speed when reported by the rotor.

The program will be brought to top when turning (unless minimized)

## 1.1. File Menu Selections

- **File**
  - **Always on Top** - Select to have the program always on top
  - **Exit** - Exit the program
- **Tools**
  - **Setup Rotors** - a dialog named 'Rotor Setup' will be displayed as shown below
  - **Set Current Antenna Offset**
    - The offset is entered on the antennas tab of the configurer, or can be entered for the selected rotor. This offset is added to the rotor position to determine the antenna position. This is useful for antennas that are mounted at 90 degrees for pattern interference reasons, or for antennas that have simply turned some in the wind over the winter
  - **Set Current Antenna Bidirectionality**
    - Bidirectional is for dipoles, or Stepplr's where the user wants to reverse the antenna rather than turn it more than 180 degrees
  - **Calibrate Rotor** - Calbrate the rotor. Only when supported by the rotor like the M2 Orion
  - **Prosistel C Config**
    - A dialog will open where you can set the rotorstop to North or South and the delay of the characters
  - **Set rotation limits**
    - This feature is for owners of rotors with brakes that jam. You may enter a number which will restrict how close the rotor will be turned to 0 or 360 degrees. If you enter 10, the limits will be 10 to 350 degrees. Note that this can only be set for all rotors handled by an instance of the program. It didn't seem worth adding it to the antenna tab
  - **A new line for every setup rotor will be shown**
    - Each line represents a rotor as entered in the Setup under Tools
- **Help**
  - **Help** - Show the help file for this window
  - **About** - Gives the version of the N1MM rotor program

## 1.2. Button and Mouse Assignments

- **Manual entry field** - Type a heading and press Enter or the Turn button to turn the rotor. The entered number is in degrees.
    - Maximum: 450 and minimum 0. An error message will appear when entered otherwise when pressing the Turn button.
  - **Turn** - Click to turn rotor to heading in textbox. Pressing Enter will also turn the rotor.
  - **Stop Alt+S** - Press to stop rotor turning. Pressing Alt+S or Escape will also stop turning the rotor.
    - This button is only shown when the rotors supports this feature.
  - **F1 - F10** - Pressing the F-keys mapped to the bearing buttons will turn the rotor to the position as shown on the button. Right click to set the heading value.
- 
- **Bearing buttons (F1 - F10)**
    - **Left mouse button click**
      - Pressing one of the bearing buttons will turn the rotor to the position as shown on the button.
      - The F-keys F1 through F10 are mapped to the 10 bearing buttons.
    - **Right mouse button click**
      - **Set Button to Current Position**
        - The heading as entered in the manual entry field will be used to set the position.
      - **Set Button to a Specific Heading**
        - A dialog will appear and a frequency can be entered which will used to set the position.

Only rotors that report position will be able to show the current position (also when rotating).

### 1.3. Using N1MM Rotor Stand-Alone

Go into the N1MM program directory with Windows Explorer and find 'N1MMRotor.exe'. This is the N1MM rotor program. A shortcut on the desktop would be an easy way to start the program. All features mentioned above can be used.

### 1.4. Using N1MM Rotor with the Main N1MM Logger Program

Start by clicking setup in N1MM rotor and setting up your rotor at the right serial port by mapping the serial port to the main program.

N1MM logger will turn the rotor by sending UDP packets to the N1MM rotor program. The rotor selected will turn.

Both in the Configurer and in the Rotor Setup the Rotor Start Port /Starting UDP port# have to be the same.

To start N1MM rotor automatically from within N1MM logger you have to select in N1MM logger 'Start

N1MM Rotor Program' in the Antennas tab of the Configurer.

The default UDP port is set to 12040 and can be changed at the same Antennas tab in the Configurer (Starting UDP Port for Rotor Program).

In N1MM rotor set up the same UDP port under the menu item 'Setup' in the Tools menu.

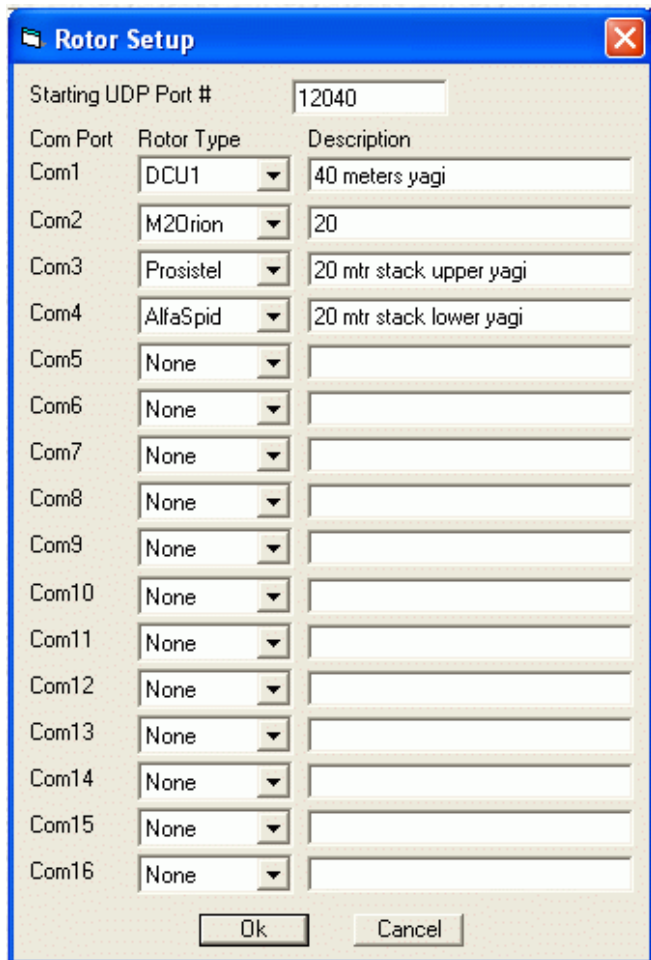
NB. As the rotor program can be on another computer this has to be set in both programs separately and identical.

**One rotor setup** - This will be the way most users use the program, as they only have one rotor. When you don't have antenna selections specified in the Antennas tab of the Configurer then just send the command to the selected rotor.

**Multiple rotor setup** - When more rotors have to be turned by the program then there is a need to map a rotor to an antenna (or antennas)

- Setup the antenna selections in the Configurer; Tab: Antennas
- Create a mapping between the 16 possible antennas and the 16 possible com ports for the selected IP-address of the rotor control.

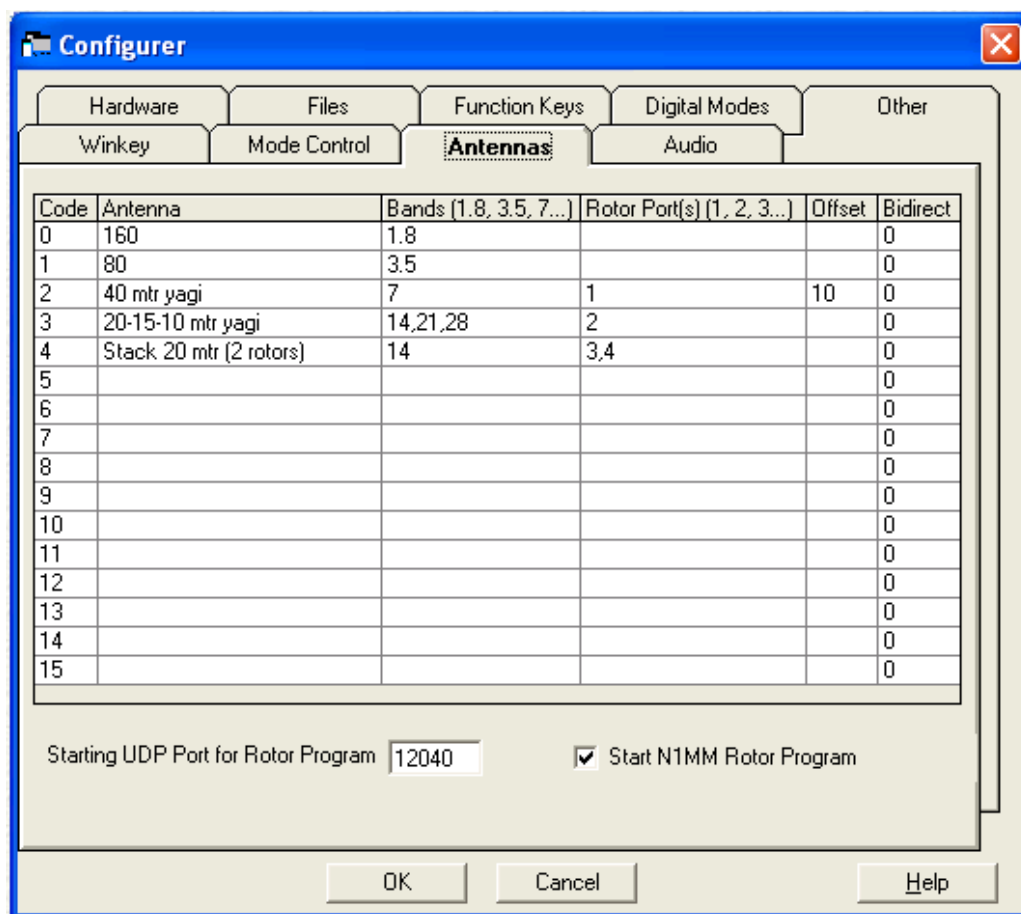
### N1MM Rotor Setup Dialog



N1MM logger setup dialog for Antennas in >Config >Configure Ports, Telenet Address, Other



>Antennas tab



I.e. you relate a com port to a particular antenna. If you specify more than one com port, you will turn both.

## 1.5. N1MM rotor running on another computer

Let's assume that N1MM rotor, the rotor control program is on a separate computer which has IP address 192.168.1.14, and your computer running N1MM logger is 192.168.1.10.

- Make sure N1MM Rotor is running on the computer that has the rotor connected to it.
- Network the computers together.
- Put this in your N1MM Logger.ini file:
  - [ExternalBroadcast](#)
  - DestinationIPs=127.0.0.1 192.168.n.m
- ExternalBroadcast should already be there. If not, add it.
  - 192.169.n.m should be your ip address for the machine that has the rotor control box connected to it. You can specify m as 255 to broadcast to all computers with 192.169.n as the high order octets. Do not substitute 255 for any octet other than the low order one (m).
- Do not start the rotor program as it does not work on the computer which does not have the rotor connected directly.

- Control the rotor by menus in the Tools menu. You put the direction or a callsign in the call textbox and press Alt+J

## 1.6. Turning a Stack

In the example picture above at the right the stack is on Com3 and Com4 and are turned at the same time when turning antenna 4 (stack).

Enter 3,4 and the heading selected will be sent to the rotor program and it will tell the rotors (of whatever type) on com3 and com4 to turn to that azimuth. If you want to control a single antenna, you will have to switch to that single antenna using the antenna toggle in the main program, press ALT+j and then toggle to the set of antennas that you want.

## 1.7. Run time error: 126

Run time error 126 could be caused by a firewall that doesn't like a UDP message sent to 127.0.0.1 to notify the rotor program of what window is active. If you ever want to use the rotor program and without getting this error, you will need to figure out what program is causing this interference. First check your firewall. If that is not it, one user found that a program called "Port Explorer" was the cause. When that was closed, the problem went away.

## 2. Using external hardware or software

Rotor control is supported directly by software from:

- ARSWIN by EA4TX
- LP rotor (freeware by Larry Phipps - N8LP)

See the links section for urls.

Start your ARSWIN or LP-Rotor software before pressing **Alt+J**, **Alt+L** or **Ctrl+Alt+L**.

## Supported Hardware

### In this Section...

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#### Supported Hardware

1. Windows and External USB Peripherals
2. Green Heron Engineering Inc. - GH Everyware (rotator control)
3. Ham Radio Solutions - EZmaster
4. K1EL - Winkey
5. microHAM - microKEYER
  - 5.1. Tentec ORION + "Mute mic on supported radios"
  - 5.2. ICOM CI-v Interfaces + Transceiver on/off Features

- 5.3. N1MM can't read the RX frequency (shows as 0) - frequency shown fine in microHam router without N1MM logger
  - 5.4. Truncation of Messages (When Using Winkey Keyer)
  - 6. microHAM - MK2R/MK2R+
    - 6.1. USB-only SO2R Support
    - 6.2. Suggested Port Setup by Joe, W4TV
    - 6.3. On-the-Fly Recording from within N1MM Logger
  - 7. RigExpert
  - 8. Top Ten Devices - Automatic Band Decoder and DX Doubler
    - 8.1. Hardware Update: 'Both Ears on the Inactive Radio' *versus* 'Both Ears on the Active (or Run) Radio' from the Keyboard
  - 9. West Mountain Radio - RIGblaster
    - 9.1. CW and Digital Setup RIGblaster Plus
    - 9.2. SSB Setup RIGblaster Plus
  - 10. Transverters
  - 11. Unsupported Hardware
    - 11.1. CW Decoders
    - 11.2. W5XD MultiKeyer
  - 12. Other Hardware Information
    - 12.1. USB Soundcards
    - 12.2. Other Soundcards
    - 12.3. External *versus* Internal Soundcards
    - 12.4. Going Back from Serial Port Numbers Greater Than Number 8
- 

## 1. Windows and External USB Peripherals

One word of caution about external (USB) sound cards ... and other USB peripherals.

Windows can only address the "USB root hub" ... they are directly connected to the internal PCI bus. Windows will process data from all "Root Hubs" in a machine in parallel. However, all of the "child" devices are like leaves on a tree, each leaf which "grows" from the same "root" receives a time slot (generally 16 msec) in turn. If you have too many "leaves" on one root, the delay can become excessive and result in communications failures (time outs) with the controlling software (logger).

This can be particularly problematical with some software that polls every 50 to 100 msec and will timeout if a response has not been received before the next poll interval. USB can easily handle the aggregate throughput (it will do something like 240 mb/sec) but the delays can be a problem if the software writer does not account for them.

Be particularly aware of this issue if you use external hubs and add many devices - particularly devices like memory sticks and "thumb drives."

73' Joe Subich, W4TV

**For much more information about specific USB to serial adapters and similar hardware, see [USB Interface Devices](#).**

## 2. Green Heron Engineering Inc. - GH Everyware (rotator control)

N1MM logger can send bearing information direct to the Green Heron GH Everyware software. N1MM logger must be configured to send rotor information over the network (using UDP packets). This can be done by editing the N1MM Logger.ini file. Information regarding this is given in the supplied documentation with the Green Heron software, which is bundled with Everyware Remote and Base hardware and not sold separately.

Please refer to the Everyware documentation for further details.

## 3. Ham Radio Solutions - EZmaster

EZ Master is an LPT port and USB Device that interfaces your PC with several devices in your shack like radios, antennas, filters switching, microphone, headphones etc. Including PHONE, CW, RTTY, DIGITAL Mode interface and internal DVK, CW Keyer and SO2R switching.

More information can be found on [the Ham Radio Solutions website](#).

## 4. K1EL - Winkey

Winkey is an external keyer chip designed by K1EL and G3WGV, which combines full electronic keyer features with a serial interface to a computer. Winkey is intended to interface with compatible Windows software and produce CW from ASCII characters sent to it, avoiding CW timing problems caused by multitasking.

N1MM Logger was one of the first Windows logging program to support Winkey, and it has become a favorite CW solution for N1MM Logger users. Serial or parallel port keying may work fine, particularly with faster computers, but using Winkey can enable you to get by with a slower machine or run other programs in conjunction with N1Mm Logger, while keeping your CW perfect. Stand-alone keyers are available, and the Winkey keyer chip is also used in multi-function interfaces such as Ham Radio Solutions EZMaster, RigExpert, and several microHAM interfaces.

More information can be found on [K1EL's website](#).

A full explanation of setting up N1MM Logger to work with Winkey is found in [the Configurer section of the N1MM Logger Manual](#).

## 5. microHAM - microKEYER

The authoritative source for information on configuring N1MM Logger to work with various microHAM products is [the microHAM web site](#) which offers a variety of "Example Configurations". These configurations are also accessible through the Help menu of the microHAM Router software, under "Document Download."

## 5.1. Tentec ORION + "Mute mic on supported radios"

In the Configuration dialogs (Other tab) make sure that "Mute mic on supported radios" is \*NOT\* checked. If that is checked, N1MM mutes the microphone and turns on the AUX input during DVK operation. By design the microKEYER routes DVK audio to the microphone input.

## 5.2. ICOM CI-v Interfaces + Transceive on/off Features

How to connect microHAM devices to N1MM logger and for example a SteppIR antenna which needs Transceive ON to know the radio frequency while N1MM logger likes to see Transceive OFF.

- connect all of the CI-V devices in parallel (tip to tip, ground to ground)
- turn off Transceive in the Icom rig
- turn ON "polling" in microHAM Router
- turn OFF "polling" in microHAM Band Decoder

The microKEYER (Router) will poll only when the logging software is not (for example, Router will poll even though N1MM logger does not). The Router polls will keep data flowing on the CI-V bus to allow the SteppIR and other similar hardware to stay "in sync."

The microHAM Band Decoder will provide antenna switching (including support for multiple antennas per band with the appropriate external switch) according to your normal programming, provide drive for bandpass filters (several brands) and can do "format conversion" which will allow a Yaesu (Quadra, FL-7000) or Icom (IC-2KL, IC-4KL, IC-PW1) solid state amplifier to work with any other (supported Yaesu, Kenwood, Icom, or TenTec) radio.

The same capability exists with non-Icom radios.

## 5.3. N1MM can't read the RX frequency (shows as 0) - frequency shown fine in microHam router without N1MM logger

N1MM polls for slightly different data than Router (VFO A and VFO B vs. "Current operating frequency") so Router "times out."

Open Router | Control | Set and uncheck "Disable router queries" .

## 5.4. Truncation of Messages (When Using Winkey Keyer)

Symptom: Sends all the macro CW messages except the last letter and then goes back to receive. The solution is to add a space or the | character (the shifted \ character) at the end of the macro message. The | character is about 1/3 of a space.

## 6. microHAM - MK2R/MK2R+

- To set up MK2R+ with N1MM using **LPT** control see: [http://www.microham.com/Downloads/MK2R\\_N1MM\\_Setup.pdf](http://www.microham.com/Downloads/MK2R_N1MM_Setup.pdf)
- For a set-up using only **USB** see "USB-only SO2R.pdf" by N4ZR in the N1MM Logger area on Yahoo (<http://groups.yahoo.com/group/N1MMLogger>).

Q. When I load N1MM logger the message shows: "Winkey v2 detected, Only Winkey v4 and higher are supported in N1MM."

A. That's a Winkey initialization error of some kind which shows when the MK2R+ is not switched on when N1MM logger is started.

Q. How many serial ports are needed by MK2R to fully work

A. In any case, one only needs five ports for a fully functioning system with N1MM (Radio 1, Radio 2, PTT 1, PTT2, and WinKey). Any other functions (Packet, rotor control, etc.) do not need to be in the "first eight." MMTTY/Digital Interface will share a port with PTT (and CW if you are not using WinKey) ... and MMVARI or MMTTY in AFSK mode does not require a port at all. Even if/when the SO2R control signals get mapped to serial handshake lines or the software adds support for the microHAM control protocol (on a virtual port) one additional port will not push most systems "over the line" - although the ability to start the block of eight other than at COM1 would provide a bit of insurance.

73, Joe, W4TV

An example setup

### **microHAM Router**

- VOICE Audio Switching for both radios: CmCmCm

FT1000MP, Proset Plus plugged to front mic jack.

### **N1MM Logger (6.10.9 or higher)**

- Configurer >Audio tab
  - 2 - Single Card - Two Radio, No sound card SO2R
  - Select Device = USB Voice CODEC
  - Select Input Line = Microphone
  - Select Line to Mute = Microphone
  - Recording bits = 16
  - Sampling rate = 22050

Ctrl+Shift+Fx to record, Fx to playback.

## **6.1. USB-only SO2R Support**

With USB-only SO2R support using the the MicroHam SO2R protocol, an LPT port to command various SO2R functions with the MK2R/MK2R+ is no longer needed.

Designate a virtual COM port as your MK2R control port in N1MM logger. To do this, check the CW/Other box for the port, click on 'Set', and check the MK2R box on the port details dialog. Then go to the SO2R tab on the MicroHam Router, select Microham SO2R protocol with the "radio button", and identify the COM port in the drop-down list just below. Finally, if you want to use program-derived band data, on the ACC tab change the Radio 1 and Radio 2 options to "SO2R protocol controlled". If you want to control band decoders for two radios, you may need to wire up a new cable to get Radio 1 data from pins 6-9 on the ACC connector, and Radio 2 data from pins 10-13.

Record-on-the fly within the program is supported using USB-only.

## 6.2. Suggested Port Setup by Joe, W4TV

"The MK2R/MK2R+ operates very well with six total ports (I will use A - F to avoid particular numbers):

<b>MK2R/MK2R+ with 6 Total Ports</b>	
<b>Port</b>	<b>Connected Device</b>
<b>COM A</b>	WinKey (it is best to assign WinKey to the "lowest" port to avoid loss of CW if another port is activated for CW)
<b>COM B</b>	Radio #1 (PTT and Footswitch is optional on this port)
<b>COM C</b>	Radio #2 (PTT and Footswitch is optional on this port)
<b>COM D</b>	Digital #1 FSK and PTT for Radio #1 (assign Radio 1)
<b>COM E</b>	Digital #2 FSK and PTT for Radio #2 (assign Radio 2)
<b>COM F</b>	MK2R (protocol port)

A user who does not choose to do FSK (uses AFSK only) can survive with FOUR virtual ports as PTT can be enabled on each of the radio ports - even with radios that normally expect "handshake" - as the MK2R does the handshaking and frees both RTS/DTR lines for control functions."

The COM D and COM E PTT settings (or the optional radio port PTTs) are necessary if you wish to use the built-in N1MM Logger "DVK" with PTT (rather than VOX). This does not mean that you have to designate COM 5 and 6 on the Ports tab as PTT - instead you can just make sure the PTT box is checked on your two FSK ports in Router. If you wish to use the MK2R's built-in DVK instead, you will need to check the "DVK" box on the port you are using for the MK2R.

## 6.3. On-the-Fly Recording from within N1MM Logger

In order to make on-the-fly recording with Ctrl+Shift+Fx work with N1MM and the MK2R+, there are a couple of unusual requirements:

- if using the MK2R SO2R protocol (USB-only), you need to use MM 7.10.9 or later
- If your computer uses the Realtek or Soundmax chips for its on-boardsound, then you will need temporarily to set the default sound device in Windows to be the USB Voice CODEC, and be sure to turn off all Windows sounds for the duration. There's a glitch in the Realtek/Soundmax drivers that doesn't let mic audio get through to the wav file from the MK2R+ unless you do this.

## 7. RigExpert

When installing drivers for RigExpert Std or Plus, it creates 4 virtual COM Ports on your computer along with USB Audio Codec (for its internal sound card).

Click on "Show Serial Ports" (ListRE program which comes with RigExpert software) and write down COM port numbers for CAT and PTT/CW for future reference.

Then run your N1MM. (Make sure you are not running other logging programs at the same time to avoid port conflict).

Go to Configure and click on Configure Ports, Telnet Address, Other. Click on Hardware. You will see a selection of COM port from COM 1 to COM 8. Select the proper COM port number for CAT (the one you memorized before), select your radio model and in Details select the proper parameters for your radio (baud rate, etc.). Then select proper COM port number for CW/PTT (check CW/PTT) and in the details set DTR to CW and RTS to PTT. If you are using RigExpert Plus, then you may also set a separate COM port for Winkey.

If you want to use RigExpert as your Sound card (for SSB messages or RTTY) you may go to Audio (under the same Configurer menu) and select USB Audio Codec as your Sound Device.

Please keep in mind that N1MM only accepts COM port number from 1 to 8. So if upon RigExpert installation you were given higher COM port number, then you should go to Windows Device Manager and change it.

Also, don't forget that you can not run two programs that using USB Interface, at the same time.

If you have older RigExpert - SD or 2.2, you still may use it with N1MM, just need to install additional driver (REAUDIO).

When RigExpert SD is used with N1MM for Voice Keying, in the Configurer's Audio select "RigExpert" as a Device. Then configure the Recorded wav file path in the "Files".

The older RigExpert models, need to have REAUDIO installed. For newer RigExpert models REAUDIO is not needed "USB Audio Codec" in the "Select Device" menu should be selected.

## 8. Top Ten Devices - Automatic Band Decoder and DX Doubler

To replicate the default Top Ten Devices behavior, you would need to set up Configurer >Antenna tab as shown in the Interfacing section.

### 8.1. Hardware Update: 'Both Ears on the Inactive Radio' versus 'Both Ears on the



## Active (or Run) Radio' from the Keyboard

I wanted to go one better and mimic the "PTT" operation of the DXD, which puts both ears on the INactive radio for aggressive S&P, but still be able to put both ears on the Active (or Run) radio from the keyboard, to help pick up weak answers to my CQs while HC8N is blasting on the S&P radio at S9 +40. You can do this manually by switching the DXD audio mode switch from PTT to Auto, but I'd rather keep my hands on the keyboard.

After corresponding with George, W2VJN and Dave, N3RD, of Top Ten, and entirely thanks to them, I have it working. I also owe a vote of thanks to Terry, N4TZ/9, whose article in September/October NCJ describes modifying the DXD to do the same trick, but with a footswitch, and got us all thinking.

First, put the DXD jumpers (2) in their CT/Writelog/TR/MM position. This has the effect of isolating pin 5 of the LPT port. Then put a 2N2222 open collector switch between pin 5 and the Auto terminal of S3 on the DXD (that's the audio mode switch). Specifically, pin 5 drives the base of the transistor through a 1K resistor connected to the high side of R22, just like the basic CW keying interface. The emitter is grounded to the ground side of R22, and the collector is wired to the switch side of R29. I mounted the transistor next to R22 with double-sided tape. Ugly but effective. That's all there is to it.

### DX Doubler on port other than LPT1

When using the DX Doubler on a port other than LPT1 check out the proper addresses.

73, Pete N4ZR

## 9. West Mountain Radio - RIGblaster

### 9.1. CW and Digital Setup RIGblaster Plus

Inside the RIGblaster Plus set the following jumpers on the P5 jumper block: D9 and D12, corresponding to RTS on PTT and DTR on KEY. Switch the port on which the RIGblaster is set from DIGITAL to OTHER. In N1MM's configuration use DTR (pin 4) set to CW and RTS (Pin 7) set to PTT. Using this configuration, everything works properly generating CW from N1MM and furthermore, this combination will allow the other soundcard related things to work (MMTTY, SSTV, PSK, Voice Key Express, etc). (by David, K1TTT)

### CW key down problem and RIGblaster Pro

When your radio in CW stays in key down position try setting DTR to CW

## 9.2. SSB Setup RIGblaster Plus

- Serial port setup (configurer)
  - Com2 (any com port will do)
  - DTR: Always OFF
  - RTS: PTT
- On the RIGblaster itself
  - Set the Tx/Auto switch to Auto.
- Sound Volume Level
  - Use your soundcards volume control

With it set up this way, it correctly mutes the microphone while transmitting a wav file and the VOX works when not transmitting a wav file.

## 10. Transverters

N1MM logger has transverter support in the form that per bandmap an offset frequency can be set. Right click menu bandmap and select Set transceiver offset frequency. Enter the transceiver offset frequency in kHz (minus is allowed). Example: 116000 when using a transverter from 28 MHz to 144 MHz ( $144000 - 28000 = 116000$ ). The same for other bands (up or down). This can be set per bandmap so when using two transceivers with transverters they can each be on a different band. The offset is saved by the program so after a restart the offset is still there.

## 11. Unsupported Hardware

### 11.1. CW Decoders

No CW decoder is built in nor any external CW decoder is supported.

### 11.2. W5XD MultiKeyer

The W5XD MultiKeyer is not supported and there are no plans to do so. SO2R support is provided by sound cards and Winkey or by other external hardware using serial and parallel ports. Winkey kits can be purchased very cheap and the logging program can do SO2R switching for CW with a single sound card. See the SO2R chapter. Scroll way down, and look for the picture of the #3 SO2R CW configuration. Two sound cards are needed for full SSB SO2R (#4 SO2R).

## 12. Other Hardware Information

All by Joe Subich, W4TV

### 12.1. USB Soundcards

The manuals for the soundcards below (in alphabetic order) indicate they have independent microphone and stereo line inputs.

- Audigy 2NX External
- Creative SoundBlaster MP3+
- Turtle Beach "Audio Advantage Roadie"

The "low price option" below does not have an on-line manual but the specs on the web site show separate mic and line jacks.

- Byterunner UA-580
  - appears to be the recommendation for those who need an external sound card (laptop, etc.).

## 12.2. Other Soundcards

- SoundBlaster Live 24 External
  - The one issue with the Live 24 External is that you cannot use the mic and line inputs at the same time (connecting the mic will disconnect the line). It will work fine for internal DVK in N1MM but you cannot "record QSOs" and use DVK at the same time if you loop the microphone through the Live! 24 External.

## 12.3. External *versus* Internal Soundcards

There are claims that External USB soundcards work substantially better (and should be used) than internal soundcards (on digital signals).

Joe, W4TV: The claimed "advantage" comes from flawed tests which fail to properly set the input level to each sound device to take maximum advantage of its dynamic range.

Except for the very worst sound cards or exceptionally noisy systems, internal sound cards have at least 60 dB of usable dynamic range (the better 16 bit cards have 80 dB of dynamic range and 24 bit cards with high level inputs can have dynamic ranges that approach 100 dB). If the audio from the transceiver is such that the receiver noise floor (no antenna) is six to ten dB above the noise floor of the sound card, the software DSP (MMTTY, etc.) will be able to operate at its full capacity. Receiver AGC, etc. will limit the receiver output to a level well below the input capacity of the soundcard. Most receivers will not vary more than 30 to 40 dB from quiet band to S9 +40 dB receive signals. Soundcard performance is not a matter of internal vs. external. It is a matter of careful attention to setting the proper level to allow the soundcard to function properly.

## 12.4. Going Back from Serial Port Numbers Greater Than Number 8

When using USB-serial converters some of them start up with serial ports numbering beyond 8. When this happens it is possible to change the serial port number to something less than Com 8. Go to Communications Port Properties, Port Settings Tab, then click on Advanced. There is a pull-down in the Advanced window that allows the setting of the port number. If all ports COM1 - COM8 are used then find out what devices are using them and reconfigure or uninstall those devices to free up the ports. Windows will "reserve" COM ports for devices that are disconnected so it will take some detective work.

## Supported Contests

### In this Section...

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#### Supported Contests

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  2. [Supported HF CW and SSB Contests](#)
  3. [QSO Parties \(CW/SSB\)](#)
    - 3.1. [United States](#)
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  4. [Supported VHF CW/SSB Contests](#)
  5. [Supported RTTY/PSK Contests](#)
  6. [My Contest Isn't Here. What Can I Do?](#)
  7. [User Defined Contests](#)
    - 7.1. [The UDC Editor](#)
    - 7.2. [Editing Tips](#)
    - 7.3. [Running a User-Defined Contest](#)
    - 7.4. [The UDC File](#)
      - 7.4.1. [File Format with Explanations](#)
- 













### 1. General Contest Logging (all modes)

Contest	Log Type & Setup Link	Remarks
DX (General log)	<a href="#">DX log</a>	Sent RST, Received RST fields, Name and Comment field
DXPEDITION	<a href="#">DXpedition</a>	Only has Sent and Received RST fields
DXSERIAL	<a href="#">DXSERIAL</a>	Sent and received RST, Nr fields and a Comment field for Generic Serial number contests. Default multipliers and points.
DXSATELLIT	<a href="#">DX satellite</a>	Only three fields: Call, Grid and Satellite
VHFDX	<a href="#">VHFDX</a>	Sent RST, Received RST fields, Grid and Comment field

Contest	Log Type & Setup Link	Remarks
VHFSERIAL	<a href="#">VHFSERIAL</a>	Sent and received RST, Nr fields and Grid fields. For generic VHF serial number contests. Comments possible.











## 2. Supported HF CW and SSB Contests

All contests are supported 'both' sides unless specifically mentioned.

















Contest Name and Website Link	Setup Link	Remarks
<a href="#">9A CW contest</a> 	<a href="#">9ACW</a>	CW only; 3rd full weekend in December
<a href="#">AGCW Happy New Year</a> 	<a href="#">AGCW</a>	Happy New Year
<a href="#">All Asian DX contest CW / SSB</a> 	<a href="#">ALLASIASSB</a> <a href="#">ALLASIACW</a>	CW - Third Saturday of June (48 hours) SSB - First Saturday of September (48 hours)
<a href="#">Asian Pacific Sprint</a> 	<a href="#">APSCW</a> <a href="#">APSSSB</a>	In Spring, Summer, Fall (2 hours)
<a href="#">ARCI QRP Contests</a> 	<a href="#">ARCI</a>	This contest supports 7 ARCI QRP contests
<a href="#">ARI International DX Contest</a> 	<a href="#">ARIDX</a>	Per version 4.0.63
<a href="#">ARRL 10 Meter contest</a> 	<a href="#">ARRL10M</a>	
<a href="#">ARRL 160 Meter contest</a> 	<a href="#">ARRL160M</a>	
<a href="#">ARRL Field Day contest</a> 	<a href="#">FD</a>	See ARRL Field Day Setup instructions.
<a href="#">ARRL International DX contest CW /Phone</a> 	<a href="#">ARRLDXCW</a> <a href="#">ARRLDXSSB</a>	
<a href="#">ARRL November Sweep Stakes CW / SSB</a> 	<a href="#">SSCW</a> <a href="#">SSSSB</a>	
<a href="#">ARRL Rookie Roundup</a> 	<a href="#">RRSSB</a> <a href="#">RRRTTY</a> <a href="#">RRCW</a>	SSB in April, RTTY in August, CW in December


















<b>Contest Name and Website Link</b>	<b>Setup Link</b>	<b>Remarks</b>
<a href="#">Asia-Pacific Sprint Contest CW / SSB</a>	<b>APSCW</b>	
<a href="#">Baltic contest</a>	<b>BALTIC</b>	Every year the next to last weekend in May - one week before WPX CW Contest
<a href="#">BFRR CW/SSB Championship</a>	<b>BFRRCW/BFRRSSB</b>	For Belarus stations only
<a href="#">Black Sea Cup International</a>	<b>BSCI</b>	First full weekend in February
<a href="#">CIS DX contest</a>	<b>CISDXCW CISDXSSB</b>	Commonwealth of Independent States
<a href="#">CNCW Spanish contest</a>	<b>CNCW</b>	Local Spanish CW contest
<a href="#">CQ-M International DX contest</a>	<b>CQM</b>	Second weekend of May.
<a href="#">CQ World-Wide 160 Meter DX Contest - CW / Phone</a>	<b>CQ160CW CQ160SSB</b>	
<a href="#">CQ World Wide DX contest - CW / SSB</a>	<b>CQWWCW CQWWSSB</b>	CW - Last full weekend of November (48 hours) SSB - Last full weekend of October (48 hours)
<a href="#">CQ World Wide WPX contest - CW / Phone</a>	<b>CQWPXCW CQWPXSSB</b>	
<a href="#">CQSA SSB Contest</a>	<b>CQSASSB</b>	Second full weekend in October
<a href="#">Cup of the Russian Federation - SSB</a>	<b>RFCCW RFCSSB</b>	Internal Russian contest in January
<a href="#">Cup of the Russian Federation - CW</a>	<b>RFCCW RFCSSB</b>	Internal Russian contest in January - see also RTTY version below
<a href="#">CWops Mini-CWT Test</a>	<b>CWOPS</b>	Second Wednesday of each month
<a href="#">DARC 10 meter contest</a>	<b>DARC10M</b>	2nd full weekend in January
<a href="#">DARC Weihnachtswettbewerb - XMAS contest</a>	<b>XMAS</b>	December 26
<a href="#">European Sprint</a>	<b>EUSCW EUSSSB</b>	In April and October, both modes, 4 hours
<a href="#">DIG contest - CW / Phone</a>	<b>DIGCW DIGSSB</b>	SSB: Second weekend in March CW: Second weekend in April

Contest Name and Website Link	Setup Link	Remarks
		Also for short contests in June and October
<a href="#">Elecraft QSO Party</a>	<b>EQSO</b>	Despite the name, handled as a separate contest
<a href="#">EU HF Championship</a>	<b>EUHFC</b>	First Saturday in August (12:00 - 23:59 UTC)
<a href="#">FOC Marathon</a>	<b>FOCCW</b>	First full weekend in February
<a href="#">Gagarin Cup</a>	<b>GCUP</b>	April; CW, HF plus satellites
<a href="#">GACW WWSA CW DX contest</a>	<b>GACW</b>	Second weekend in June. CW only
<a href="#">HA DX contest</a>	<b>HADX</b>	3rd full weekend in January
<a href="#">Helvetia Contest</a>	<b>HELVETIA</b>	
<a href="#">High Speed CW Contest -HSC CW</a>	<b>HSCCW</b>	
<a href="#">Holyland contest</a>	<b>HOLYLAND</b>	
<a href="#">IARU HF Contest</a>	<b>IARU</b>	
<a href="#">ARU Region 1 Field Day</a>	<b>FDREG1</b>	Varying rules for Belgium, Germany, United Kingdom (SSB and CW), Netherlands, Switzerland, Ireland (only CW), Italy, Slovenia (S5) and Russia (UA, UA2, UA9)
<a href="http://www.rsgbiota.org">http://www.rsgbiota.org</a> IOTA - Islands On The Air Contest	<b>IOTA</b>	
<a href="#">International Naval Contest</a>	<b>NAVAL</b>	
JA-domestic	<b>JADOMESTIC</b>	Generic support for Japanese domestic contests
<a href="#">JIDX Contest</a>	<b>JIDXCW JIDXSSB</b>	CW: 2nd full weekend of April PH: 2nd full weekend of November Sat. 0700 UTC - Sun. 1300 UTC
<a href="#">JT DX Contest</a>	<b>JTDX</b>	Third weekend in November, CW or SSB (pick one)

Contest Name and Website Link	Setup Link	Remarks
King of Spain contest 	<a href="#">KINGEACW</a> <a href="#">KINGEASSB</a>	
LOTW 	<a href="#">LOTWCW</a> <a href="#">LOTWSSB</a>	
LZ DX contest 	<a href="#">LZDX</a>	The weekend before the last full weekend of November (weekend before CQWW CW)
LZ Open and LZ Sprint contests 	<a href="#">LZOPEN</a>	For all three contests. LZ Open and both sprint contests (40/80 meter)
Manchester Mineira All America 	<a href="#">CWJFMM</a>	South and North American CW only contest by CWJF
Michigan QRP Contest 	<a href="#">ARCI</a>	This contest supports 4 Michigan QRP contests. Select ARCI contest (same rules)
NA Sprint - CW / SSB 	<a href="#">SPRINTCW</a> <a href="#">SPRINTSSB</a>	CW: First Sunday in February SSB: Sunday of first full weekend in February CW: Sunday following first Monday in September SSB: Second Sunday following first Monday in September
NS Sprint and Sprint Ladder 	<a href="#">SPRINTNS</a> <a href="#">SPRINTLADD</a>	Weekly, CW only, identical except for dupe rules, which may change on short notice; SPRINTLADD allows no in-band dupes, while NSSPRINT allows dupes with one intervening QSO.
Minitest CW Test 	<a href="#">MINITESTCW</a>	CW: Almost every Wednesday 1800-1900Z
North American QSO Parties - CW / SSB 	<a href="#">NAQPCW</a> <a href="#">NAQPSSB</a>	CW: Second full weekend in January. First full weekend in August SSB: Third full weekend in January. Third full weekend in August



<b>Contest Name and Website Link</b>	<b>Setup Link</b>	<b>Remarks</b>	
<a href="#">NRAU-Baltic contest</a> 	<a href="#">NRAUCW</a> <a href="#">NRAUSSB</a>	2nd full weekend in January	
<a href="#">Oceania contest CW / SSB</a> 	<a href="#">OCEANIA CW/SSB</a>	SSB: First weekend in October CW: Second weekend in October	
<a href="#">OK-OM DX contest</a> 	<a href="#">OKOMDX</a>	Second full weekend in November	
<a href="#">PA-beker CW / SSB contest</a> 	<a href="#">PABEKERCW</a> <a href="#">PABEKERSSB</a>	Second full weekend in November Local Dutch CW and SSB contest	
<a href="#">PACC contest</a> 	<a href="#">PACC</a>	First full weekend of February	
<a href="#">Portugal Day Contest</a> 	<a href="#">PORTUGAL</a>	Second Saturday of June	
<a href="#">QCWA QSO Party</a> 	<a href="#">QCWAQSO</a>	Despite the name, treated as a separate contest	
QSO parties (US and Canada)	<a href="#">QSOPARTY</a>	See next chapter/section	
<a href="#">RAC Canada Day, Contest RAC Canada Winter Contest</a> 	<a href="#">RAC</a>	Both contests have the same rules	
<a href="#">RAEM Contest</a> 	E.T.Krenkel contest)	<a href="#">RAEM</a>	Fourth full weekend of December
<a href="#">REF DX contest</a> 	<a href="#">REFCW</a> <a href="#">REFSSB</a>	CW: last weekend of January SSB: last weekend of February	
<a href="#">RF Championship</a> 	<a href="#">RFCHAMP</a>	For English text select on top "Translate to English"	
<a href="#">RSGB 160 Meter CW contests</a> 	<a href="#">RSGB160CW</a>	CW only. In February and November	
<a href="#">RSGB 21/28 MHz contest</a> 	<a href="#">RSGB2128</a>		
<a href="#">RSGB 80 Meter Club Championship</a> 	<a href="#">RSGB80MCC</a>		
<a href="#">RSGB Affiliated Societies Team Contests</a> 	<a href="#">RSGBAFS-C</a> <a href="#">RSGBAFS-S</a>		
<a href="#">RSGB Club Calls contest</a> 	<a href="#">RSGBCLUB</a>		

<b>Contest Name and Website Link</b>	<b>Setup Link</b>	<b>Remarks</b>
<a href="#">RSGB Commonwealth Contest</a> 	<b>RSGBBERU</b>	British Commonwealth stations only
<a href="#">RSGB National Field Day, RSGB SSB Field Day</a> 	<b>FDREG1</b>	According rules for Belgium, Germany, United Kingdom (SSB and CW), Netherlands, Switzerland, Ireland (only CW), Slovenia (S5) and Russia (UA, UA2, UA9).
<a href="#">RSGB Low Power Field Day</a> 	<b>RSGBLP</b>	
<a href="#">RSGB ROPOCO</a> 	<b>ROPOCO</b>	Internal RSGB contest
<a href="#">Russian District Award Contest</a> 	<b>RDAC</b>	
<a href="#">Russian DX</a> 	<b>RUSSIANDX</b>	
<a href="#">Russian Radiosport Team Championship</a> 	<b>RRTC</b> <b>RRTCT</b>	Third Saturday in July
<a href="#">Russian YL/OM contest</a> 	<b>RUSYLOM</b>	in Russian
<a href="#">SAC</a> 	<b>SACCW</b> <b>SACSSB</b>	
<a href="#">SYLRA contest</a> 	<b>SYLRA</b>	
<a href="#">Spanish Towns contest</a> 	<b>CME</b>	
<a href="#">SP DX contest</a> 	<b>SPDX</b>	First full weekend of April (15:00-15:00 GMT)
<a href="#">Stew Perry Topband Distance Challenge</a> 	<b>STEWPERRY</b>	Last full weekend of December
<a href="#">TRC DX Contest</a> 	Contest Setup Instructions	
<a href="#">UA1DZ Memorial Cup</a> 	<b>DZCUP</b>	For English text select on top "Translate to English"
<a href="#">UBA DX Contest CW/SSB</a> 	<b>UBACW</b> <b>UBASSB</b>	SSB: last weekend of January CW: last weekend of February
<a href="#">UBA ON contest</a> 	<b>UBAON</b>	Last Sunday September: 6 m Phone/CW First Sunday October: HF - 80 m SSB Second Sunday October: HF - 80 m CW

Contest Name and Website Link	Setup Link	Remarks
		Third Sunday October: 2 m Phone/CW
<a href="#">UBA Low Band Winter Contest</a>	<a href="#">UBAWINTER</a>	160, 80 and 40 meters
<a href="#">UBA Spring</a>	<a href="#">UBASPRING</a>	Second Sunday March: HF - 80m CW Third Sunday March: VHF-6m Phone/CW Fourth Sunday March: VHF-2m Phone/CW First Sunday April: HF - 80m SSB
<a href="#">Ukrainian Championship</a>	<a href="#">UKRCHCW</a> <a href="#">UKRCHSSB</a>	
<a href="#">Ukrainian DX contest</a>	<a href="#">UKRAINDX</a>	First full weekend of November
<a href="#">UK DX Contest - CW/SSB</a>	<a href="#">UKDXCW</a> <a href="#">UKDXSSB</a>	
<a href="#">UN DX contest</a>	<a href="#">UNDX</a>	Open Kazakhstan Championship
<a href="#">WAEDC-Contest</a>	<a href="#">WAE CW</a> <a href="#">WAE SSB</a>	The starter for the new Contest season.
<a href="#">Worked All Germany contest</a>	<a href="#">WAG</a>	October, third full weekend
<a href="#">World Wide Peace Messenger Contest</a>	<a href="#">WWPMC</a>	1200UTC Saturday to 1200 UTC Sunday, every first weekend of February
<a href="#">World Radiosport Team Championship</a>	<a href="#">WRTC</a>	for on-site participants in World Radiosport Team Championship held every 4 years - others use IARU
<a href="#">YO DX HF contest</a>	<a href="#">YOHFDX</a>	Last weekend in August
<a href="#">YU DX Contest</a>	<a href="#">YUDX</a>	Third full weekend in April
<a href="#">Independence of Venezuela Contest</a>	<a href="#">YV</a>	First full weekend in July

### 3. QSO Parties (CW/SSB)

The QSO parties listed below are supported by NM1MM Logger.

Select: QSOPARTY and select the correct state in the dropdown box which will appear.

The QSO parties use a configuration file named 'QSOparty.sec' with the used sections per QSO party.

See the [Contest Setup Instructions](#) for more information on QSO parties in general and some specifics. There are some scoring anomalies with (some of) the QSO parties.

### 3.1. United States














State and Website Link	Setup Link
<a href="#">Alabama - AL</a>	
<a href="#">Alaska - AK</a>	
<a href="#">Arkansas - AR</a>	
<a href="#">Arizona - AZ</a>	
<a href="#">California - CA</a>	
<a href="#">Colorado - CO</a>	
<a href="#">Connecticut - CT</a>	
<a href="#">Delaware - DE</a>	
<a href="#">Florida - FL</a>	<a href="#">Contest Setup Instructions</a>
<a href="#">Georgia - GA</a>	
<a href="#">Hawaii - HI</a>	
<a href="#">Idaho - ID</a>	
<a href="#">Indiana - IN</a>	<a href="#">four QSO Parties, one weekend</a>
<a href="#">Illinois - IL</a>	
<a href="#">Iowa - IA</a>	
<a href="#">Kansas - KS</a>	
<a href="#">Kentucky - KY</a>	
<a href="#">Louisiana - LA</a>	
<a href="#">MARAC - county hunters</a>	<a href="#">Contest Setup Instructions</a>
<a href="#">Maryland DC - MD</a>	
<a href="#">Michigan - MI</a>	
<a href="#">Minnesota - MN</a>	
<a href="#">Missouri - MO</a>	
<a href="#">Montana - MT</a>	
<a href="#">Nebraska - NE</a>	
<a href="#">New England - NEWE</a>	<a href="#">four QSO Parties, one weekend</a>

State and Website Link	Setup Link
<a href="#">New Mexico - NM</a>	
<a href="#">New Hampshire - NH</a>	
<a href="#">New Jersey - NJ</a>	
<a href="#">New York - NY</a>	
<a href="#">North Carolina - NC</a>	
<a href="#">North Dakota - ND</a>	
<a href="#">Nevada - NV</a>	
<a href="#">Ohio - OH</a>	
<a href="#">Oklahoma - OK</a>	
<a href="#">Oregon - OR</a>	
<a href="#">Pennsylvania - PA</a>	<a href="#">Contest Setup Instructions</a>
<a href="#">South Carolina - SC</a>	
<a href="#">South Dakota - SD</a>	
<a href="#">Tennessee - TN</a>	
<a href="#">Texas - TX</a>	
<a href="#">Vermont - VT</a>	
<a href="#">Virginia - VA</a>	
<a href="#">Wisconsin - WI</a>	
<a href="#">Washington Salmon Run - WA</a>	
<a href="#">West Virginia - WV</a>	
<a href="#">Zeroland - ZQP</a>	four QSO Parties, one weekend
<a href="#">7th Call Area - 7QP</a>	<a href="#">four QSO Parties, one weekend</a>
<a href="#">IN7QPNE</a>	For users that are "out-of-state" for the IN, NEWE, ZQP, or 7QP QSO parties. Log all contests in one log and send the same cabrillo file to all sponsors.

### 3.2. Canada




Province and Website Link	Setup Link
<a href="#">British Columbia - BC</a>	<a href="#">BC</a>
<a href="#">Maritime QSO Party</a>	<a href="#">MCC</a> First running June 2011
<a href="#">Ontario</a>	<a href="#">ON qsop</a>

## 4. Supported VHF CW/SSB Contests

Contest Name and Website Link	Log Type & Setup Link	Remarks
<a href="#">ARRL January VHF Sweepstakes</a> 	<a href="#">ARRLVHFJAN</a>	January
<a href="#">ARRL June VHF QSO Party</a> 	<a href="#">ARRLVHFJUN</a>	June
<a href="#">ARRL August UHF Contest</a> 	<a href="#">K3TUF</a>	August
<a href="#">ARRL September VHF QSO Party</a> 	<a href="#">ARRLVHFSEP</a>	September
<a href="#">IARU Region 1 50 MHz contest</a>	<a href="#">VHFREG1</a>	Only 50 MHz - June
<a href="#">IARU Region 1 144 MHz September</a> 	<a href="#">VHFREG1</a>	Only 144 MHz - September
<a href="#">IARU Region 1 UHF/Microwaves October</a> 	<a href="#">VHFREG1</a>	UHF and Microwaves - October
<a href="#">Other Region 1 VHF and up contests</a>	<a href="#">VHFREG1</a>	VHF and up - March, May, July
<a href="#">Marconi CW contest 144 MHz / 50 MHz</a> 	<a href="#">VHFREG1</a>	
<a href="#">NRAU Activity Contest</a> 	<a href="#">VHFNAC</a>	
<a href="#">REF Departments contest 50 MHz</a> 	<a href="#">DDFM50</a>	Only 50 MHz
<a href="#">VHF/UHF Helvetia 26 contest</a> 	<a href="#">VHFHELV26</a>	Swiss VHF and up contest
<a href="#">VHF HG OB contest</a>	<a href="#">VHFHGOB</a>	Hungarian VHF contest
<a href="#">VHF UA1DZ Cup</a> 	<a href="#">VHFDZCUP</a>	Russian VHF contest
<a href="#">VRZA - Nederlandse Locator Contest</a> 	<a href="#">REGIOVHF</a>	WANLC - Dutch contest, every month NB selecteer: REGIOVHF
<a href="#">UKSMG sporadic-E competition</a> 	<a href="#">UKSMG</a>	

## 5. Supported RTTY/PSK Contests

All contests are supported 'both' sides unless specifically mentioned.

Contest Name and Website Link	Log Type & Setup Link	Remarks
<a href="#">ANARTS WW RTTY contest</a> 	<a href="#">ANARTSRTTY</a>	Replaced by DCRG Long Distance Contest
<a href="#">Anatolian RTTY contest</a> 	<a href="#">ANATOLRTTY</a>	Third full weekend in May
<a href="#">ARRL RTTY Roundup</a> 	<a href="#">ARRLRTTY</a>	First full weekend of January (not on January 1)

<b>Contest Name and Website Link</b>	<b>Log Type &amp; Setup Link</b>	<b>Remarks</b>
<a href="#">BARTG Spring RTTY contest</a>	<a href="#">BARTGSRTTY</a>	Third full weekend in March
<a href="#">BARTG RTTY Sprint contest</a>	<a href="#">BARTGRTTYS</a>	End of January
<a href="#">BARTG Sprint75 contest</a>	<a href="#">BARTGRTTYS</a>	75 baud RTTY. April, September (4 hours each)
<a href="#">CQ World Wide DX - RTTY</a>	<a href="#">CQWWRTTY</a>	Last full weekend of September (48 hours)
<a href="#">CQ World Wide WPX - RTTY</a>	<a href="#">CQWPXRTTY</a>	Second full weekend of February
<a href="#">CIS DX RTTY contest</a>	<a href="#">CISDXRTTY</a>	QPSK63 in 2009/2010. Third full weekend of September
<a href="#">Cup of the Russian Federation RTTY</a>	<a href="#">RUCUPRTTY</a>	For Russians only. Second weekend of September
<a href="#">DCRG Long Distance RTTY</a>	<a href="#">DLDCRTTY</a>	Second full weekend of June
<a href="#">DL-DX RTTY contest</a>	<a href="#">DLDXRTTY</a>	First full weekend of July
<a href="#">DMC RTTY</a>	<a href="#">DMCRTTY</a>	Third full weekend of July
<a href="#">EA PSK31 contest</a>	<a href="#">EAPSK</a>	Second full weekend of March
<a href="#">EA RTTY contest</a>	<a href="#">EARTTY</a>	First full weekend of April
<a href="#">EPC PSK World Wide DX</a>	<a href="#">EPCWWDX</a>	PSK63. First weekend in February
<a href="#">EPC RU DX Contest</a>	<a href="#">EPCRUDX</a>	March BPSK63
<a href="#">EPC PSK63 QSO party</a>	<a href="#">EPCPSK63QP</a>	PSK63. Third full weekend of November
<a href="#">EU PSK DX contest</a>	<a href="#">EUPSKDX</a>	PSK63. Third full weekend of May
<a href="#">JARTS WW RTTY contest</a>	<a href="#">JARTSWWRTY</a>	Third full weekend in October
<a href="#">JT RTTY DX Contest</a>	<a href="#">JTDXRTTY</a>	Second full weekend in January
<a href="#">LOTW RTTY contest</a>	<a href="#">LOTWRRTTY</a>	
<a href="#">Makrothen RTTY contest</a>	<a href="#">MAKRORTTY</a>	Second full weekend in October
<a href="#">NA Sprint - RTTY</a>	<a href="#">SPRINTRTTY</a>	Sunday of second full weekend in March. Sunday of second full weekend in October
<a href="#">North American QSO Parties (NAQP) - RTTY</a>	<a href="#">NAQPRTTY</a>	Last full weekend in February. Third full weekend in August
<a href="#">OK DX RTTY contest</a>	<a href="#">OKDXRTTY</a>	Third full weekend in December
<a href="#">Quick PSK63 contest</a>	<a href="#">SARTGRTTY</a>	PSK63. Uses SARTG rules. First Saturday of September
<a href="#">Russian PSK DX Contest</a>	<a href="#">RUSDXPSK</a>	PSK63. Fourth full weekend of August
<a href="#">Russian DX RTTY contest</a>	<a href="#">RUSDXRTTY</a>	RTTY. First Saturday of September
<a href="#">SARTG New Year RTTY</a>	<a href="#">SARTGNYRTY</a>	January 1st
<a href="#">SARTG WW RTTY contest</a>	<a href="#">SARTGRTTY</a>	Third weekend in August
<a href="#">SCC RTTY Championship</a>	<a href="#">SCCRTTY</a>	Last full weekend in August

Contest Name and Website Link	Log Type & Setup Link	Remarks
<a href="#">SP DX RTTY contest</a>	<a href="#">SPDXRTTY</a>	4th full weekend of April
<a href="#">TARA Grid Dip contest</a>	<a href="#">TARAGRID</a>	RTTY and PSK. First Saturday of August
<a href="#">TARA PSK Rumble</a>	<a href="#">TARAPSK</a>	PSK31. First Saturday of October
<a href="#">TARA RTTY Melee</a>	<a href="#">TARARTTY</a>	RTTY. First Saturday of December
<a href="#">Ukrainian RTTY Championship</a>	<a href="#">UKRCHRTTY</a>	For Ukrainian stations only. Third weekend of April
<a href="#">Ukrainian DX RTTY contest</a>	<a href="#">UKRAINRTTY</a>	First full weekend of November
<a href="#">Ukraine Open RTTY Championship</a>	<a href="#">UKRTTYOPEN</a>	First full weekend of March
<a href="#">Ukraine DX DIGI contest</a>	<a href="#">UKRAINDIGI</a>	RTTY 75 baud, PSK63. Fourth full weekend of June
<a href="#">UK DX Contest - RTTY</a>	<a href="#">UKDXRTTY</a>	Second full weekend of July
<a href="#">Volta RTTY contest</a>	<a href="#">VOLTARTTY</a>	Second full weekend in May
<a href="#">WAEDC RTTY contest</a>	<a href="#">WAERTTY</a>	Second full weekend in November
<a href="#">XE RTTY contest</a>	<a href="#">XERTTY</a>	First full weekend of February

## 6. My Contest Isn't Here. What Can I Do?

If the contest is not currently supported by the program there are four options:

- Use the 'User Defined Contest' capability introduced in version 10.3.4 to create a new contest template.
  - This capability is still under development and may undergo further change. See the section below.
- Find another contest with a similar exchange and similar rules. If the only difference is in the scoring, you can run the contest and create the Cabrillo file, then edit the Cabrillo file to change the contest name. You can either score the contest manually after the contest, or enter a claimed score of zero and let the contest sponsor calculate the multipliers and points
- Use a 'general' contest like DXSERIAL, DX, etc. Run the contest and do the log creation after the contest using Notepad or a similar text editor. When Cabrillo is the log requested, create the Cabrillo log and update the header. The contest sponsor will calculate the multipliers and points. This is the easy way to go for many small, mostly local, contests
- Request that the contest become one of the supported contests
  - Whenever someone requests support for a particular contest, it would be good to have an indication of the number of entries the contest received during the previous year's running. This is not to suggest that there is a threshold below which contests will not be supported, but that knowing this is helpful in prioritizing for the people who do the work. In the past we have had requests to support contests that had fewer than 10 entries the previous year




- Since the programmers do not have unlimited time to respond to last-minute requests, set yourself a target date (for example, a minimum of three months prior to the next running of the contest) to allow time for programming and proper testing
- It is part of the nature of the N1MM Logger project that users, and particularly those users requesting support for a particular contest, are the people who are relied upon to test and be sure the contest module does what it is supposed to do. It is particularly important to test far enough in advance of the running of a contest so that any problems can be identified and fixed. Users will do well to check each contest as it is coming up, to make sure that any rule changes are reported to the programmers in time for changes to be made.

If you identify bugs or propose contest-specific features **during the running of a contest**, don't expect an immediate response. Contest-specific things are on a calendar to be addressed before the next running. Of course, defects in Cabrillo output are an exception, since they need to be fixed in time for score submission and can be done in the weeks after the contest.

## 7. User Defined Contests

Enabling users of a contest logger to define their own contests has always been a very difficult thing to do. With the proliferation of contests, often with (ahem) innovative rules, it has gotten harder in recent years. Normally, it requires someone with knowledge of the programming language to create a contest "module", and even then the rules may defy incorporation.

In an effort to help with this problem, Nick, NA3M has written a very clever User Defined Contest (UDC) Editor, which is found in a new folder in the N1MM Logger program file, beginning with Version 10.3.4. The same description of how to use this editor is found both here and in a Help file, also in that folder, which contains information in different languages selectable from the UDC File Editor. The Help file can be opened from the UDC File Editor by clicking its HELP button or by double-clicking a specific contest parameter line. Notepad will automatically start and display the Help file. Resize windows so you can see both the UDC editor window and the Notepad window at the same time. **Double-clicking on a parameter is particularly useful because Notepad then goes directly to that parameter in the Help file.** The first time you call for help during an editing session, you will be asked to select the language. This selection stays in memory until you close the editor. If the wrong language was selected, you will have to close and restart the UDC Editor.

If you have developed and thoroughly tested a UDC for a particular contest, please share it with other users by uploading it to the UDC folder in [the Files Section of the N1MMLogger group on Yahoo](#) 

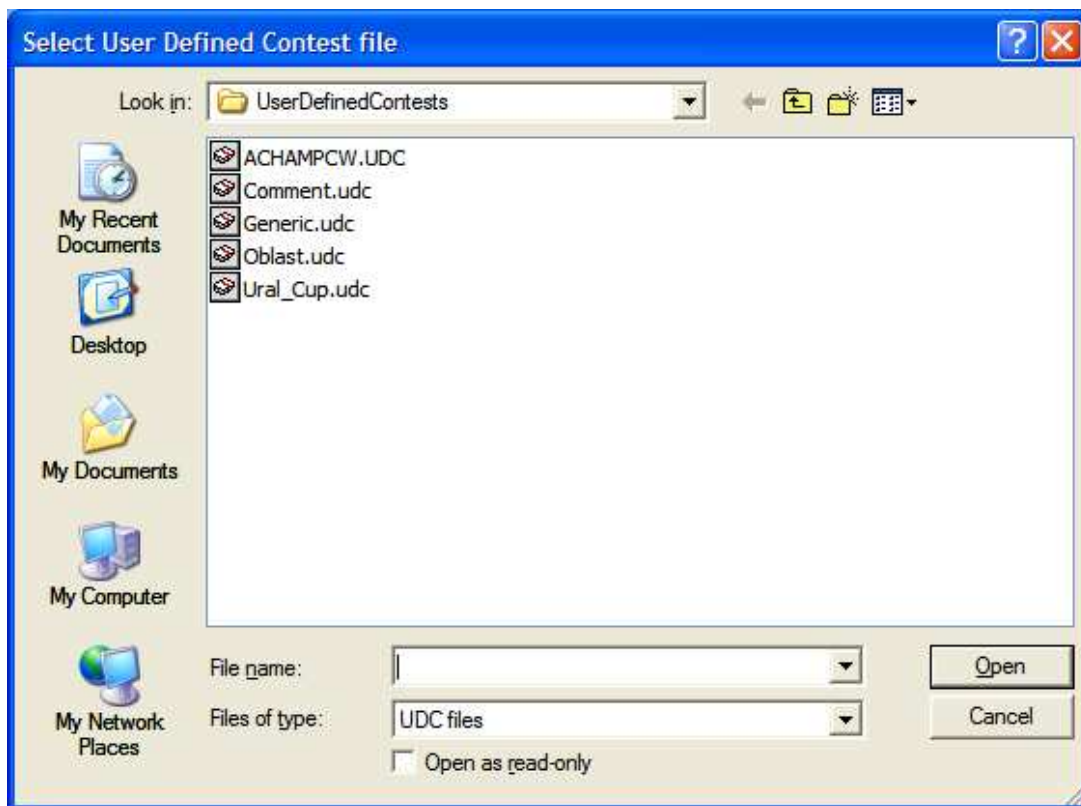
### Limitations



While the UDC Editor gives a user extensive options for adapting N1MM Logger to the rules of many contests, it cannot provide the same control that a programmer has, or that may be required to fully implement them. For example, a contest defined with the UDC Editor can only give a fixed number of points per QSO. Many contests (WPX is a good example) are more complicated. Also, in many contests the rules are different for contestants from one area than for those from another - a good example is QSO parties with different rules for in-state and out of state participants. In those cases, it may make sense to create two UDC contests, for use by in-area and out-of-area contestants .

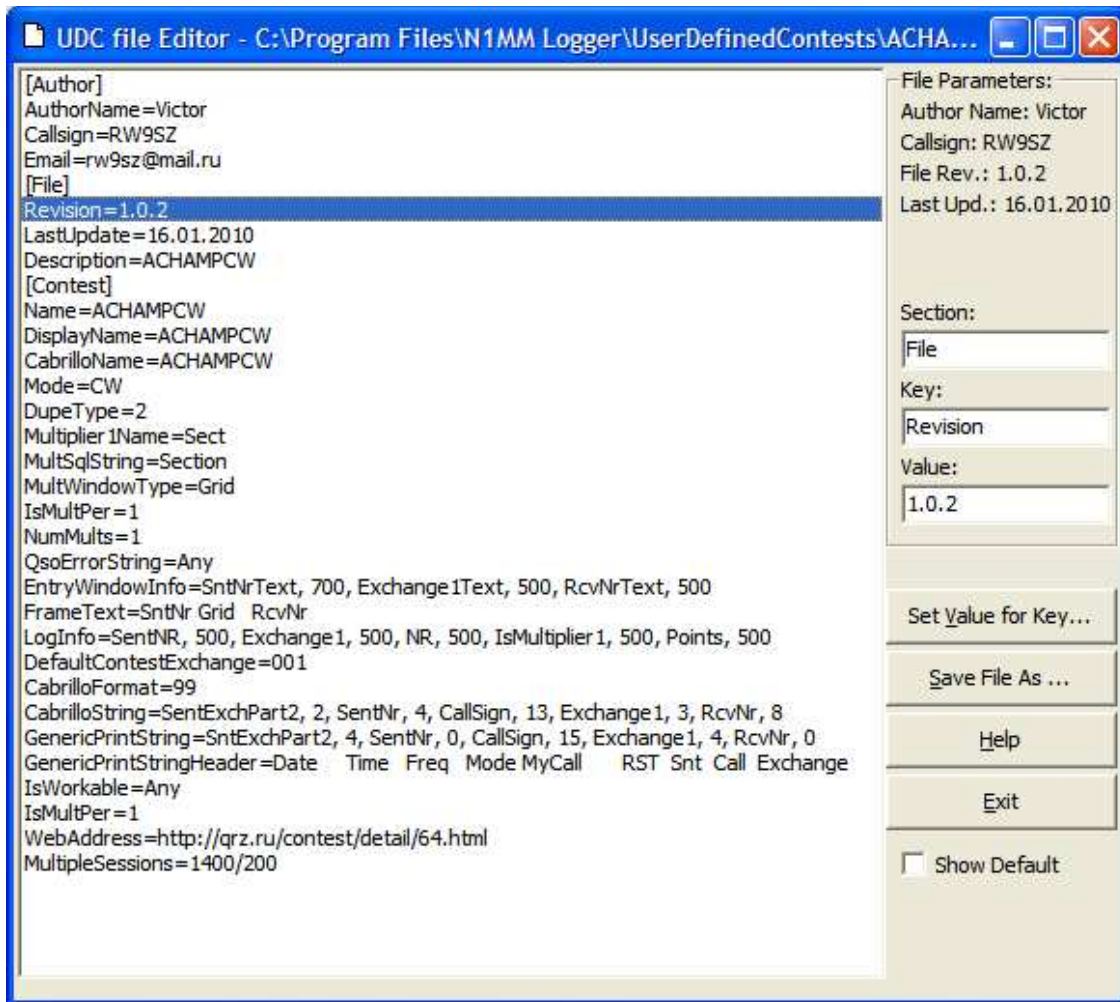
## 7.1. The UDC Editor

The UDC Editor is quite simple. When you open the Editor, you will first be asked to select a User Defined Contest file. You'll note that these files all have the extension ".udc"), and are stored in the UserDefinedContests sub-folder in the N1MM Logger folder.



When you open an existing contest file, you will be warned to do a "Save As..." unless you intend to edit the file you have opened. This is because any changes are saved immediately to the file you have opened. You have to be careful not to damage the existing User Defined Contest file that you are going to use as a starting point for your new contest file.

Here is an example of a contest created by a user during testing, as viewed in the UDC Editor.



To change a contest parameter, click once on it. You'll note that the parameter and its value appear in the gray pane to the right. Change the value in the Value field. Click on Set Value for Key to save it. This will save it in the file immediately. That is why the Editor does not have a Save button. When you are done editing a contest just exit, and your contest file will have all changes saved.

Once the new (or modified) .udc file is ready to test, save it one last time into the "N1MM logger/UserDefinedContests" folder and start N1MM Logger. Go to File > New Contest in Database, and you should be able to see your new contest in the list of available contests. Test it to make sure everything works as you planned. If there is something wrong, you can edit the .udc file even while it is loaded in N1MM Logger. To test any changes, just go to the Entry Window of N1MM Logger, click on the File menu, and reload the contest from the drop-down list of recent contests.

If you want to help with this project and add one more language - simply add your translation to an empty [Language...](#) section in the USC help file and send the file to [na3m@arrl.net](mailto:na3m@arrl.net), Please use UNICODE encoding when saving the file.

## 7.2. Editing Tips

The UDC Editor will not allow you to delete parameter names but you can erase or omit the value in the gray pane, in which case the default value will be used (these are marked with \* in the list of values for each parameter). You should only use values mentioned below. At the moment, there is no check for correctness of the value supplied for a parameter. The wrong value may cause unpredictable N1MM Logger behavior, such as display of warning messages with the name of the wrong parameter.

By default, the UDC editor does not show "empty" parameters, for which N1MM Logger will be using default values. You can see the full list of parameters by clicking on the "Show Default" check box, and edit them by assigning a non-default value. Do not attempt to remove "empty" parameters - they may be needed in case this file is later used as a template for another contest.

Keep your .udc files in the "N1MM logger/UserDefinedContests" folder. If you define a UDC and store it in the database, but subsequently remove its .udc file from the folder, then the next time you try to open that contest, a warning message will be displayed and the contest will not work.

#### **Don't worry about messing up**

One of the nice things about the UDC Editor is that you can't do much damage if you mess up. The only thing you are editing is the .udc file, and if it doesn't work and you can't fix it, you can always just delete it from the UDC folder and start over.

### **7.3. Running a User-Defined Contest**

User-defined contests appear in the drop-down list of contests in the Select Contest dialog, just like those programmed at the factory.

### **7.4. The UDC File**

Note: it is not recommended to use any language other than English for contest parameters. Take a look at the sample UDC files using a text editor, if you want to understand the file format, but we recommend you use the UDC Editor to edit or create a new file.

#### **7.4.1. File Format with Explanations**

This is the full list of parameters that can be set with the UDC Editor (asterisks are default values). Over time, new parameters will continue to be added. For example, new parameters "CabrilloVersion =", "BonusPoints2 =" and "DoNotCountMeAsMult =", which were added in Version 10.11.0, can be added to the end of existing .udc files with any text editor like NotePad.

## [Author] section

/AuthorName/ = your name

Put your name here. Users should know who will be able to help them with this contest file.

/Callsign/= your callsign

/Email/= your email address

## [File] section

/Revision/ = 1.0.0 It is recommended to increment this number every time you change the .udc file.

/LastUpdate/ = 12/30/09

Will be automatically filled with current date if you create new file (using Save File As...) or edit current file.

/Description/ = Short description of the contest type (one line).

## [Contest] section

/Name/ =SAMPLETEST

10 characters maximum, capital letters only (if not it will be changed to all capitals), no spaces allowed. Example: ARRLDXCW

This name will show up in the Contest Selection window and a new folder with this name will be created if recording is enabled.

### Labeling RTTY and VHF contests

RTTY contests need to have RTTY somewhere in the Name (e.g., BARTGRTTYS), and the same goes for VHF contests (all those currently defined have VHF at the beginning of their Name, so it probably makes sense to continue to follow this convention). This is required because the program uses the presence of these markers to set parameters that are unique to these types of contests.

/DisplayName/ = SAMPLE USER TEST

Spaces allowed Example: ARRL DX CW

/CabrilloName/ = SAMPLE-USER-TEST

Free to choose, no spaces allowed, but dashes OK Example: ARRL-DX-CW Maximum of 15 characters.

This name will be used in the Cabrillo file, and typically is specified by the contest organizer - be sure to check.

/CabrilloVersion/ = 2.0\*

When set to 3.0 the log file will be saved using version 3.0 of Cabrillo format. Also new fields will show up in the contest configuration window. Any other value or no value will turn on (the default) version 2.0

/Mode/ = CW (the default value)

Valid modes are: CW\* SSB BOTH RTTY

/DupeType/ = 2

1 = All bands 2\* = Each band (common) 3 = Each band & Mode 4= no check

Dupe Type defines what combination of band, mode and callsign constitute a duplicate call-sign.

1 = All bands Stations may be worked only once, regardless of band

2 = Each band (common) Stations may be worked once on every band (mode independent)

3 = Each band & mode Stations may be worked once on every band/mode combination (e.g 20CW, 20SSB, 20RTTY)

4 = no check Stations may be worked multiple times per band/mode and mode

Also used in MultByBand window to show modes (when 2 or 3) in Section window.

/Multiplier1Name/ = N/A\*

See list below

/Multiplier2Name/ = N/A

See list below (mostly N/A if only one multiplier type is used)

/Multiplier3Name/ = N/A

See list below (mostly N/A if only one or two mult types are used)

Value	Explanation
CountryPrefix	Each country is a multiplier Example: DL, PA etc (uses WL_CTY.DAT)
WPXprefix	Each Prefix is a multiplier (WPX rules)
Sect	Each Section is a multiplier (Used for contests with multipliers such as ARRL sections, provinces, or oblasts. A .sec file must be loaded with the button "Import Section File" in the Contest Selection window. The /MultWindowType/ below should match the name of .sec file)
ZN	Each CQ Zone is a multiplier (max. 40)
MiscText	Each misc.
Continent	Each continent is a multiplier
GridSquare	Each Grid Square is a multiplier
Comment	Each Comment is a multiplier
N/A*	There is NO multiplier (mostly only IsMultiplier2 and/or IsMultiplier3)

/Period/ = 2

1 2\* How many days is the contest (not used at the moment)

/PointsPerContact/ = 1\*

any integer - default value for every contact (Points per QSO); several parameters in one line: OH, 5, SM, 5, SameContinent, 2, OtherContinent, 3 (NOTE: country prefixes should match those that are in wl\_cty.dat file and be the first in this line if used);  
 SSB, 2, CW, 3 - 2 points for SSB and 3 points for CW QSO;  
 160m, 5, 80m, 4, 40m, 3 - 5 points for QSO on 160m, 4 on 80m and so on;

Allowed bands: 160m, 80m, 40m, 20m, 15m, 10m, 6m, 4m, 2m, 1.25m, 70cm, 33cm, 23cm, 13cm, 9cm. The values for this parameter can be mixed, but if the QSO meets two or more settings then priority will be: band, mode (CW/SSB), Continent, Country.

/ShowMyCountryStations/ = True

True\* Yes show My Country stations in the bandmap (normal)

False No don't show them in the bandmap

/ShowWarcBands/ = False

True Yes show the WARC bands (only for general logging (DX))

False\* No don't show them (all contests)

/ZoneType/ = CQ

CQ\* CQ type zones should be shown (for most contests)

IARU IARU type zones should be shown

/MultWindowType/ = Section

Value	Explanation
State	US states
StateProvince	US states and Canadian Provinces are both valid entries
Province	Canadian Provinces (or 13P)
Section*	ARRL sections (or 48S14P, 48SDC14P, 49S8P, 50S8P, 50S10P, 50S13P, 50S13PCY0, 50S14P, 50SDC14P, 50SDC10P, 71SEC13WB, 50SDC13P, 50S13RAC, 50S9P, 50S11P, 50SNOLAB)
Province	Netherlands Provinces (for PACC Contest)
DOK	DOK letters letters: A to Z except Q for WAG contest
UBA	ON contest
RFC	GRIDs RFC contest
Oblast	Russian oblasts
AnyName	Prepare AnyName.sec file with the list of sections (look at any *.sec file for an example)

/CQZoneMultContest/ = False

True Contest uses CQ zones as a second multiplier e.g. CQWW

False\* CQ Zones not used

/NumMults/ = 1

0 for Field Day or other contest with no multiplier

1\* for most contests

2 for CQWW (i.e. Country and Zone)

/BonusPoints2/ = 5, BonusPoints.txt

This allows using the file with large number of Callsigns that should give bonus points.

Parameter format: BonusPoints2 = 5, BonusPoints.txt (points, file name); File name can be any name like \*.txt but the file has to be in the main logger folder ...\\N1MM Logger\\. Every callsign in the file should have comma at the end:

<file starts>Call1, Call2, Call3, ..., LastCall,<file ends>

or

<file starts>

Call1,

Call2,

Call3,

...

LastCall,

<file ends>

Parameter BonusPoints2 extends BonusPoints but has higher priority, in other words if the callsign will be found in BonusPoints string and also in the file BonusPoints.txt then bonus point assigned for BonusPoints2 will be used. NOTE: do not try to put too many callsigns into BonusPoints.txt file because this may cause some delays in logging the contact.

/MultSqlString/ = Country, Band (example only)

There are 5 possible combinations:

1. MultSqlString = Country (new country will be counted as multiplier, same country later on any other band will not)
2. MultSqlString = Country, Band (new country on each band will be counted as multiplier)
3. MultSqlString = Section (new section will be counted as multiplier, same section later on any other band will not)
4. MultSqlString = Section, Band (new section on each band will be counted as multiplier)
5. MultSqlString = N/A\* (no multipliers)

/MultSqlString2/ = N/A

Country (, Band) or Section (, Band) or N/A, i.e. no multipliers. See details above.

/MultSqlString3/ = N/A

Country (, Band) or Section (, Band) or N/A, i.e. no multipliers. See details above.

/QsoErrorString/ = Any (This defines what the program expects in the exchange field; if, for example, you specify Numeric and your entry contains a letter, then you'll be warned and the QSO



will not be logged unless you use Ctrl+Alt+Enter to force it)

Numeric - only numbers allowed (like serial number) 12 characters max

Any\* - both numbers and letters allowed (12 characters max)

Grid - Grid Square Text, 4 or 6 characters

/LogInfo/ = SentReport, 500, SentNR, 500, ReceiveReport, 500, NR, 500, Points, 500 (adjust the field names and default column widths for the Log Window by adding/deleting relevant name and spacing, delimited by commas. Only the names listed below are allowed. Note that the "width" value is specified in very tiny increments.

Possible field names: SentReport, SentNR, ReceiveReport, NR, IsMultiplier1, IsMultiplier2, CountryPrefix, GridSquare, Exchange1, MiscText, Points, opname, Comment

### What are those tiny increments?



They are called Twips. By default, all Visual Basic movement, sizing, and graphical-drawing statements use a unit of one twip. A twip is 1/20 of a printer's point (1,440 twips equal one inch, and 567 twips equal one centimeter). These measurements designate the size an object will be when printed. Actual physical distances on the screen vary according to the monitor size. Aren't you glad you asked?

/FrameText/ = SntRpt SntNR RcvRpt NR

These are the names displayed on top of each field of Entry Window, except for the callsign. Adjust the field names and spacing for the frame text by adding/deleting spaces in this line. Any names allowed, but your choices will affect the minimum possible width of the Entry Window.

/EntryWindowInfo/ = SNTText, 500, SntNrText, 700, RCVText, 500, Exchange1Text, 500 (adjust the field names and default column widths for the Log Window by adding/deleting relevant name and spacing, delimited by commas (only names below are allowed)

SNTText, SntNrText, RCVText, RcvNrText, GridSquareText, Exchange1Text, CommentText, NameText

Following is a list of Possible EntryWindow Items, followed by the width normally used and the maximum length (in characters):

Name	Width	Max. Length	Comment
SNTText	450	10	Sent exchange field
RCVText	450	15	Received exchange field (default 59 or 599)
NameText	855	20	Name field, only letters allowed
CommentText	1695	60	Comment field, space allowed so SPACE as tab does not work here!!
SntNrText	625	5	Sent following number field, autonumber by program
RcvNrText	625	5	Received following number field, only numbers are allowed!!
Exchange1Text	615	12	Exchange field, both numbers and letters allowed.
GridSquareText	600	6	textbox for Grid squares

Name	Width	Max. Length	Comment
MiscText	600	15	Misc textbox

/DefaultContestExchange/ = 001\*

this will show up in the contest selection window for editing. It may have two parts like this: "001 Prov", "001 NA123". If the first part is 001 the logger will generate serial number for every QSO and the second part will be send with the number unchanged (button F2)

/CabrilloFormat/ = 99

1\*= standard (use 0 if Cabrillo is not supported)

2 = NAQP format

3 = NASPRINT format

4 = SS (SweepStakes)

5 = RFC contest

99 = handcoded, uses CabrilloString (see below)

/CabrilloString/ = SNT, 4, SentNR, 4, CallSign, 13, RCV, 4, RcvNr, 4, Comment, 40

Format: value1 name, value1 width, value2 name, value2 width, ...

Will work with: SNT, SentNr, CallSign, RCV, RcvNr, Comment, GridSquare, Exchange1, Name, SentExchPart1, SentExchPart2

/IsWorkable/ = ExceptMyCountry

Any\*, MyCountryOnly, ExceptMyCountry, list of countries (prefixes) separated by comma: UA2, UA1, UA0.

In the last case, make sure you are using correct prefixes

/SpecialInstructions/ =Special Instructions...

Any text terminated by CR/LF

This message will show up after Cabrillo file was generated - use it for a reminder. Leave it empty if not needed.

/DupeSqlString/ = 0

Select clause that will uniquely identify a dupe: 0\*- turns it off, 1 - use Section, 2 - use whatever is in ExchangeText

This is needed for QSO parties where you can have mobile stations in different counties

/StartOfContest/ = 7, 1.5 (example only, no default)

First number - day of week (Sunday=1, Monday=2,....., Saturday=7)

Second number - offset in hours (1.5 = 1 hour and 30 minutes) relative to GMT(e.g., if the contest starts at 00.00 GMT the offset should be 0. This will be used to calculate OFF times.

/EndOfContest/ = 1, 1.5 (example only, no default)

Same format as for StartOfContest. This will be used to calculate OFF times

/IsMultPer/ = 2

NoMults = 0\*, OncePerBand = 1, Oncepermode = 2, OncePerBandAndMode = 3, OncePerContest

= 4

/MinimumOffTime/ = 30\*

Min. Off time in minutes

/UsesWAECountries/ = False\*

Answer whether this contest uses countries with '\*' in cty.dat (e.g. for CQWW it should be True)

/SetSentTimeForContact/ = False\*

Used to set Sent Time in contests that require it. See CBARGT for use

/ScoreSummaryMultNames/ = "Mult"

Used to set Mult Headings in Score Summary Window

/WebAddress/ = http://www.srr.ru/CONTEST/cup\_raem\_engl\_08.php

web address for the contest rules

/GenericPrintString/ = SNT, 4, SentNr, 0, CallSign, 15, RCV, 4, RcvNr, 0, Comment, 12

Format: value1 name, value1 width, value2 name, value2 width, ...

Will work with: SNT, SentNr, CallSign, RCV, RcvNr, Comment, GridSquare, Exchange1, Name, Points, SentExchPart1, SentExchPart2. This will configure Generic file that can be used instead of Cabrillo

/GenericPrintStringHeader/ = Date Time Freq Mode MyCall RST Snt Call RST Rcvd Comment

Adjust the names and number of spaces here according to the values in GenericPrintString (above)

/MultiplierBands/ =2

1\*= All HF Contest Bands

2 = All HF Bands

3 = All HF Contest Bands plus 6 meters and 2 meters

4 = All VHF Bands

/ResetMultsEverySession/ = 0\*

When MultipleSessions is used, this parameter will allow multipliers reset in the beginning of every new time session if set to 1.

/DigitalModeSqlString/ = False\*

Used to merge RTTY and PSK into one digital contest mode

/MultipleSessions/ =

\*Leave it empty if the contest time is not broken into sessions

0000/30 - starting at 00:00 UTC, sessions = 30 minutes

0000/60 - starting at 00:00 UTC, sessions = 60 minutes

0000/200 - starting at 00:00 UTC, sessions = 2.00 hours

It is OK to use 0000 for contest start time if it starts in the beginning of any other hour and sessions are < or = 60 minutes. Dupes will be allowed when new session starts and the Multipliers window will be cleared when the first contact is made logged in the new session.

/DoNotCountMeAsMult/ = False

True Do not count Multiplier1 for my Country, Section or WPX prefix (depends on what was set as MultSqlString)  
False\* Count Multiplier1 for my Country, Section or WPX prefix.

/DoNotCountMeAsMult2/ = False

True Do not count Multiplier2 for my Country, Section or WPX prefix (depends on what was set as MultSqlString2)  
False\* Count Multiplier2 for my Country, Section or WPX prefix.

/DoNotCountMeAsMult3/ = False

True Do not count Multiplier3 for my Country, Section or WPX prefix (depends on what was set as MultSqlString3)  
False\* Count Multiplier3 for my Country, Section or WPX prefix.

These parameters simply block counting your Country, Section or WPX prefix as a multiplier.  
NOTE: they will not be removed from the Multipliers window.

## Contest Setup Instructions

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  - 7.40. WAEDC contest
  - 7.41. XE RTTY Contest
- 

## 1. General

When a contest has a specific mode (SSB, CW or RTTY) then the Mode Category is automatically changed to that mode. So when you select CQWWSSB for the CQ World Wide SSB contest the Mode Category will be set by the program to SSB. You can change this but that will give wrong Cabrillo output and maybe even erroneous behavior of the program, so don't!!

If the selected contest doesn't have a specific mode the program will set the Mode Category to MIXED.

Also the radio will be set on all bands to the mode set. The frequency though is not being changed to the CW/SSB/RTTY section of the band.

This is a contest program but for general logging you can use DX as the selected contest if you want. Dupes are allowed and an exchange is not necessary.

To import a contest into your regular logging program use ADIF export (and ADIF import in your general logging program).

When going through the possible contests you will see a "contest" DELETEDQS.

This is not a contest but deleted QSOs will be put in here by the program, this is especially for multi-user support. Deleted QSOs in this contest can be exported.

The maximum receive number is 99999 (for serial number contests). Check out info about the serial number server in the chapter [Advanced Functions](#) .

### **Read the Contest Instructions!**

Always read the instructions from the contest committee prior to the contest. Then you know how to set up the program, what exchange to give and what to expect in return, which hours to operate etc.

## 2. General contest logging

### 2.1. DX log



Window: Select Log type

- Log Type: DX
- Mode Category: MIXED If you want to have the possibility of making SSB and CW contacts

For general or DX logging.

- Entered QSOs in General log (or DX log) don't need to have an exchange
- Dupes are shown by the word **Dupe!** but the qso can be logged

## 2.2. DXpedition

Window: Select Log type

- Log Type: DXPEDITION
- Mode Category: *MIXED* If you want to have the capability of logging SSB and CW contacts

For DXpedition logging

- Entered QSOs in the DXPEDITION log don't need to have an exchange
- Dupes are shown by the word **Dupe!** but the QSO can be logged

## 2.3. DXSERIAL

Window: Select Log type

- Log Type: DX SERIAL
- Mode Category: MIXED If you want to have the possibility of making SSB and CW contacts.

For general Serial Number contest logging

- Entered QSOs in DXSERIAL don't need to have an comment
- Dupes are shown by the word **Dupe!** but the QSO can be logged
- 'Standard' points calculation; 1 point per qso, DXCC countries are counted
  - All other kind of multiplier and point calculations have to be done by hand
  - This for all not supported serial number contests

## 2.4. DX satellite

Window: Select Log type

- Log Type: DXSATELLIT
- Mode Category: *MIXED* If you want the capability of logging SSB and CW contacts

For Satellite logging.

- Entered QSOs in the DXSATELLIT log don't have an exchange and don't need to have a grid
- When a grid is entered it needs to be 4 or 6 characters long
- Dupes are shown by the word **Dupe!** but the QSO can be logged

## 2.5. VHFDX

Window: Select Log type

- Log Type: VHFDX
- Mode Category: *MIXED* If you want to log both SSB and CW contacts

For VHF and up logging.

- Entered QSOs in VHFDX don't need to have a grid
- When a grid is entered it needs to be 4 or 6 characters long
- Dupes are shown by the word **Dupe!** but the qso can be logged
- Bearing info is shown in the log window and saved in the Misc field
- Distance info is shown in km in the log window and saved in the Points field

## 2.6. VHF SERIAL

Window: Select Log type

- Log Type: VHF SERIAL
- Mode Category: *MIXED* If you want to log both SSB and CW contacts

Comments needs to be added using **Ctrl+N**. There is no room left in the Entry Window to add a separate field for it. Comments will be shown in the log window and added to the Cabrillo and generic output reports

For VHF and up logging

- Entered QSOs in VHF SERIAL don't need to have a grid
- When a grid is entered it needs to be 4 or 6 characters long
- Dupes are shown by the word **Dupe!** but the QSO can be logged
- Bearing info is shown in the log window and saved in the Misc field
- Distance info is shown in km in the log window and saved in the Points field

### 3. Deleted QSOs

#### DELETEDQS "contest"

QSOs which are deleted from other logs using 'Edit Contact' are moved to this 'contest'. This is especially important for multi-user support. The moved QSOs can be exported.

### 4. HF CW/SSB contests

#### 4.1. 9A CW contest

The 9A (Croatian) CW contest is a CW only contest.

- Window: Select Log type
  - Log Type: 9ACW
  - Mode Category: CW
  - Sent Exchange: 001

#### 4.2. AGCW

CW-only, on New Year's Day

- Window: Select Log Type
  - Log Type: AGCW
  - Mode Category: CW
  - Sent Exchange: 001

#### 4.3. All Asian CW / SSB

The All Asian contest can be used by Asian stations and DX stations.

- Window: Select Log type
  - **CW**
    - Log Type: ALLASIACW
    - Sent Exchange: Your age Example: 34
      - XYL and YL stations may give 00
  - **SSB**
    - Log Type: ALLASIASSB
    - Sent Exchange: Your age Example: 34

- XYL and YL stations may give 00

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an Asian station or a non-Asian station.

#### 4.4. Asia Pacific Sprint CW / SSB

The Asia-Pacific Sprint contest can be used by Asia-Pacific stations and DX stations.

- Window: Select Log type
  - **CW**
    - Log Type: APSCW
    - Sent Exchange:001
  - **SSB**
    - Log Type: APSSSB
    - Sent Exchange:001

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an Asia-Pacific station or a DX station.

#### 4.5. ARCI QRP Contests & Michigan QRP Contest

The ARCI contest supports 7 ARCI QRP Contests. The Michigan QRP Contest almost has the same rules. Several other QRP contests use the same exchange type, although the scoring may be different.

- Window: Select Log type
  - Log Type: ARCI
  - Mode Category:
    - **CW**
      - for Spring QSO party ; HootOwl Sprint ; Summer Homebrew Sprint ; Fall Qso Party ; Holiday Spirits ; Michigan QRP Contest
    - **SSB**
      - for Winter Fireside
    - **MIXED**
      - for Topband Sprint
  - Sent Exchange:
    - First Part
      - State abbreviation for USA stations. Example: CT
      - Province abbreviation for VE stations. Example: ONT
      - Country abbreviation for non US or VE stations. Example: DL
    - Second Part
      - ARCI number for ARCI members
      - Send power for non-ARCI members

- Log Window: Mult = DXCC Mult2 = Section (State or Province) Example: CT
- Power is recognized being a non numeric number. Example: 100W is power, 100 is a member number
- There is a check on provinces and states, no check on countries. The program will give a proposal for the country prefix if non VE or K
- No calculations made for power multi or Bonus Points, this has to be done by the operator after the contest on the summary sheets
- Select CW, SSB or MIXED as 'mode Category 'to have the multiplier window work correct
- It is allowed by the program that stations work each other in the contests in both modes even when only CW or SSB is allowed according the rules. I assume the operator knows the rules...

#### 4.6. ARI International DX Contest

The ARI International DX contest can be configured for Italian stations and DX stations.

- Window: Select Log type
  - Log Type: ARIDX
  - Sent Exchange:
    - 001 for non-Italian stations
    - Your Province for Italian stations

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an Italian station or a DX station.

#### 4.7. ARRL 10 Meter contest

The ARRL 10M contest can be used by K/VE stations and DX stations.

- Window: Select Log type
  - Log Type: ARRL10M
  - Sent Exchange:
    - Your state/province - for K/VE stations Example: NY
    - 001 - for DX stations (non K/VE)

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX station or a W, KH6, KL7, VE station.

All non-28 MHz spots are marked as unworkable.

#### 4.8. ARRL 160 Meter contest

The ARRL 160M contest can be used by K/VE stations and DX stations.

- Window: Select Log type
  - Log Type: ARRL160 (not ARRL160M if shown)
  - Mode Category: CW
  - Sent Exchange:
    - ARRL/RAC section - for ARRL/RAC stations Example: VI
    - <nothing> - DX stations don't need to enter anything here (non K/VE), DX stations only send a report, no further exchange.

The callsign in the Station Information dialog (>Config >Change Your Station Data >Call) determines if you are a DX station or an ARRL/RAC station.

The ARRL/RAC stations can be found at <http://www.arrl.org/contests/sections.abv.html>

The contest module accepts for /MM and /AM stations as ITU zones: R1, R2 or R3.

All non-160 meter spots are marked as unworkable.

#### 4.9. ARRL Field Day contest

The ARRL Field Day contest can only be used by US (K, KL and KH) & Canada stations (i.e. there are more FD contests outside the US & Canada which are not supported).

- Window: Select Log type
  - Log Type: FD
  - Sent Exchange:
    - Your Class Your section

Here is word from Dan Henderson from the ARRL contest branch on using Cabrillo for your log submission.

Field Day is not included in the Cabrillo format. It has no way to mark/indicate power sources, GOTA station callsigns, bonus points, NTS traffic messages, etc. Also, Field Day only requires Dupe Sheets, not full logs. It is perfectly acceptable to include the Cabrillo log in lieu of the Dupe Sheets, but Field Day must have a completely filled out Summary sheet that includes all necessary information. This can be done with a "reasonable facsimile" electronically. However, since "proofs of bonus" (i.e. copies of letters to newspapers, visitor logs, photos, etc) are abundantly provided, most people find it easier to do Field Day via the regular mail - and use a combined system of part-electronic added to the paper summaries. Anything received electronically for Field Day will be receipted but we may have to manually follow up if we can't get the basic required information from the email.

73' Dan Henderson, N1ND

Here are some logging tips from Jim, VE7FO

Q: I always have a problem with the FD GOTA log. Besides just logging the QSO, I also need to ID the operator, the operators age and the GOTA coach. This has always been difficult to reconstruct after the fact. Any body else seen this?

A: Just give the GOTA coach the following responsibilities: When a new op comes on have him hit CTRL-O and enter his call or name followed by his a space and his age. This gets 2 of the vital pieces of info into the log. Require the coach to keep a log of his on and off times at the GOTA position; or you could add the coach's call at the end of the CTRL-O stuff too. You'll have to increase the width of the operator column in the log.

#### 4.10. ARRL International DX contest CW / SSB

- Window: Select Log type
  - **CW**
    - Log Type:ARRLDXCW
    - Mode Category: CW
    - Sent Exchange: Your state/province - for K/VE stations Example: NY
    - Sent Exchange: Power - for DX stations (non K/VE) Example: 200
  - **SSB**
    - Log Type:ARRLDXSSB
    - Mode Category: SSB
  
    - Sent Exchange: Your state/province - for K/VE stations Example: NY
    - Sent Exchange: Power - for DX stations (non K/VE) Example: 200

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX stations or a W/VE station.&&&

The default power for DX stations is:

- 100 Watts - Default
- 200 Watts - For the following countries: UA, UA2, UA9, UK, UN, UR, R1FJ, R1MV
- 400 Watts - For the following countries: G, GM, GI, GD, GM, GM/s, GW
- 500 Watts - For the following countries: I, IS, IT9

Give 'Space' when the cursor is in the callsign field to have the 'Power' field filled with the default power. The default power will only be entered when the Power filed is empty. If you type another power level, it will replace the default power that the program put in there.

Some stations give K or KW for 1000 watts. You don't have to enter 1000, just type K. The log checking software from the contest committee will understand.

**Call History for DX stations:** When Call History is selected and a file is imported with US callsigns and States, the bandmap will be checked against the log and the callhistory and colored for mults when needed. So incoming spots will be colored when they are a qso, dupe or mult and found in

the log or callhistory.

## 4.11. ARRL November Sweep Stakes CW / SSB

- Window: Select Log type
  - **CW**
    - Log Type: SSCW
    - Mode Category: CW
    - Sent Exchange: Precedence Year first licensed ARRL/RAC section Example: B 70 EMA (and in this order!)
      - **F5** key: !
      - **F2** key: Right click on the CW message buttons and change F2 to: # B 70 EMA.

If you have separate run & S&P buttons, you may have to do it twice.

- **SSB**
  - Log Type: SSSSB
  - Mode Category: SSB
  - Sent Exchange: Precedence Year first licensed ARRL/RAC section Example: B 70 EMA (and in this order!)
    - **F5** key: !
    - **F2** key: Normally, you can plan on voicing callsigns and serial numbers and **then** pressing F2 for the rest of a pre-recorded exchange message, beginning with your precedence. with practice, this sounds very smooth.

### Don't put a serial number in your Sent Exchange

Sweepstakes is unlike other serial number contests in that it does not require you to enter "001" in the Sent Exchange. In fact, you **must** not do that. Instead, use the # macro in F2 on CW, and nothing about the serial number in the Sent Exchange.

We do not recommend using voicing of serial numbers in SSB contests, because experience has shown that serial numbers enunciated as "one two three one", no matter how skillfully recorded, are never as easily understood as "one thousand two hundred thirty one." If you want to explore voicing of serial numbers or callsigns, click [here](#).

### 4.11.1. Entering Exchanges

Entering the exchange in Sweepstakes is different than for any other contest because SS uses a



five part exchange (call, nr, prec, ck, section). After you enter the call and move to the Exchange window (either by ESM or by pressing the Space Bar) you will enter all five in one window, and the program will do its best to interpret what you enter

If you use a Call History file in Sweepstakes (don't forget to check Call History Lookup on the Config menu), when you enter a callsign that is in the file, it will pre-fill the Check (CK) and Section (SEC) for you and position the cursor one space behind the pre-filled information. All you need to do, then, is type the Serial Number and Precedence as you copy them. They look like they are in the wrong order, but look above the Exchange textbox for the line of small black type. You'll see it in the correct order, as it will be entered in your log.

You do not need to type the call again unless you had it wrong the first time, in which case you'll see the program magically correct it (again in the small black type. If the program thinks there may be a problem, it tries to signal that by changing the type color to blue, so be aware of that. If something is screwed up, we recommend backspacing to the point where the exchange (or part of one) looks right again, and then re-entering the information. You should never have to wipe, or highlight and hit Delete.

There are a couple of important rules. You **must** always enter the Serial Number and Precedence as a single element - e.g. "23B" not "23 B". This helps the program tell a check from a serial number. Otherwise, you should put a space between elements, although you **may** copy Check and Section together. It is probably a good habit to get into, because when you need to correct something you have copied (see below) you'll need to do this.

### Example of playing WAV files using ESM.

Put a single space in the message column of the F5 line of the SSB function key table.

Speak the callsign of the station you're working and press Enter. Your exchange.wav file should be something like "Bravo, N1MM, Check 61 Connecticut"

#### 4.11.1.1. Correcting what you copied

This is where N1MM Logger gives you a real advantage in Sweepstakes. The basic idea is that you never have to tab or space back to the Callsign field, or to space back in the Exchange field, to make corrections. The basic rule is simply to type your correction at the **end** of the Exchange string you have already copied. This includes callsigns.

There are a couple of constraints, which we hope to get rid of, but probably not before SS SSB. Here are easy rules you can apply to help with proper parsing:

- When you are correcting a Callsign in the Exchange field - make sure you set it off with spaces.
- However, the best way to enter other data, whether initially or as corrections, is in what N2IC (our resident SS champion and guru) christened "couplets". If you need to enter or correct a Serial Number, enter it with the Precedence, **without** a space between - e.g "99B", not "99B".

Similarly, enter the Check and Section as another "couplet" - e.g., "54WV", not "54 WV". If you do this, we don't think you will be able to make the parser get it wrong.

Give it a try before you get into the heat of battle, and see if you can break it. If you can, please let us know.

## 4.12. ARRL Rookie Roundup

Rookies (operators licensed 3 years or less) work everyone; non-rookies work only rookies. Rookie status is determined by the 2-digit licensing year as entered in the Sent Exchange field of the Contest Setup Window (reached by File > New Log in Database or Open Log in Database). BOB 08 WV in the Sent Exchange field tells the program Bob's a rookie; BOB 54 WV tells it he's not.

You do not need any special suffix on rookie calls (do not use /ROK. This is a rule change since the first running). Rookies are encouraged to call "CQ Rookie Roundup" on phone and "CQ RR" on CW and digital modes. Non-rookies should call "CQ Rookies" on phone and "CQ R" on CW or digital modes. A sample CW function key definition (macro) file is [here](#). The macros are set for Rookies, non-rookies will need to change the **CQ RR** to **CQ R**.

Log the exchange in order — name, 2-digit year, and state. Check the space immediately above the exchange field, where the program will indicate how it has "parsed" the exchange, and correct if necessary. 4-digit years should not be sent or logged - it will only cause confusion

Score summaries are due within 72 hours of the end of the contest - 2359 Wednesday evening UTC, or 1859 EST. Use the [score form on the ARRL website](#). ARRL says logs are not required or accepted.

- Window: Contest Setup
  - **Make sure that you have entered your 2-digit licensing year in the Sent Exchange field.**
- Select Log Type
  - Log Type: RRSSB, RRRTTY, RRCW (pick the appropriate one)
  - Sent Exchange: Name, two-digit check (year first licensed), and State or Canadian Province, Mexican call area (XE1-4), or DC (examples: PETE 54 WV, BOB 67 XE1, MARY 09 NU, ANN 10 DX)

## 4.13. Asia Pacific Sprint Contest CW / SSB

- Window: Select Log type
  - **CW**
    - Log Type: APSCW
    - Mode Category: CW (spring and fall)
    - Sent Exchange: 001
  - **SSB**

- Log Type: APSSSB
- Mode Category: SSB (summer)
- Sent Exchange: 001

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX stations or an Asia-Pacific station.

#### **4.14. Baltic contest**

The Baltic contest can be configured for stations from the Baltic countries (ES, YL, LY) and DX stations.

- Window: Select Log type
  - Log Type: BALTIC
  - Sent Exchange: 001

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX station or a Baltic station.

#### **4.15. Black Sea Cup International**

- Window: Select Log type
  - Log Type: BSCI
  - Mode Category: MIXED
  - Sent Exchange: ITU Zone
    - HQ stations: IARU society abbreviation
    - BSCC members: membership number, e.g. BS17

#### **4.16. CNCW Spanish contest**

The CNCW contest (EA CW NATIONAL CONTEST) is only for Spanish stations operating inside the national territory.

- Window: Select Log type
  - Log Type: CNCW
  - Mode Category: CW
  - Sent Exchange: Spanish Province letters Example: SG

#### 4.17. CQ M International DX contest

- Window: Select Log type
  - Log Type: CQM
  - Mode Category: Select what category you enter (SSB, CW or Mixed)
  - Sent Exchange: 001

#### 4.18. CQSA SSB Contest

- This contest uses the Cabrillo 3.0 log file format so be careful to check the Contest Setup Window (File > Open Contest) to make sure you have filled in appropriate entry class, etc.

#### 4.19. CQ 160 Meter DX contest CW / SSB

- Window: Select Log type
  - **CW**
    - Log Type: CQ160CW
    - Mode Category: CW
  - **SSB**
    - Log Type: CQ160SSB
    - Mode Category: SSB
    - Sent Exchange:
      - Your state/province - for K/VE stations Example: NY
      - Your country abbreviation - for DX stations (non K/VE)

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX stations or a W/VE station.

All non-160 meter spots are marked as unworkable. Spots are marked with state from call history lookup as mults (if needed) in Bandmap and Available windows.

#### 4.20. CQ World Wide DX contest CW / SSB

- Window: Select Log type
  - **CW**
    - Log Type: CQWWCW
    - Mode Category: CW
    - Sent Exchange: Your zone Example: 14
  - **SSB**
    - Log Type: CQWWSSB
    - Mode Category: SSB

- Sent Exchange: Your zone Example: 14
- The default zone values for US (K,N,W,A) stations are
  - Zone 3 - If number in callsign is 6 or 7
  - Zone 4 - If number in callsign is 5 or 8 or 9 or 0
  - Zone 5 - If number in callsign is 1 or 2 or 3 or 4
- The default zone values for Canadian (VE) stations are
  - Zone 1 - If callsign starts with: VY1
  - Zone 2 - If callsign starts with: VE2, VO2
  - Zone 3 - If callsign starts with: VE7, VC7
  - Zone 4 - If callsign starts with: VE3, VE4, VE5, VE6, VA3
  - Zone 5 - If callsign starts with: VO1, VE1, XJ1, VY2
- Give 'Space' when the cursor is in the 'Callsign' field to have the 'Zone' field filled with the default value
- The default zone will be selected, so that if you type another zone, it will replace the numbers that the program put in there
- For US users, Ctrl+Up/Ctrl+Dn doesn't stop at US stations
- US spots are not grayed out for Canadian users
- Don't show and count own countries as workable in the Bandmaps and the Available window
- A new zone will be shown in red in the Entry window
- Band changes
  - The allowed band changes are 8 for all CQ Contests
  - The band change counter is reset to 0 on first contact after the top of the hour
- The program will look up the zone if the call has been changed, provided no zone was typed by the user

#### 4.21. CQ World Wide WPX contest CW / SSB

- Window: Select Log type
  - **CW**
    - Log Type: CQWPXCW
    - Mode Category: CW
    - Sent Exchange: 001 i.e Serial number Example: 001
  - **SSB**
    - Log Type: CQWPXSSB
    - Mode Category: SSB
    - Sent Exchange: 001 i.e Serialnumber Example: 001
- Leading zeros are being forced on sent & received serial numbers
- Multi-Single and Multi-Two entries have a single set of serial numbers across all bands; per the rules, in multi-single a single sequence of serial numbers is generated regardless of band.
- Band changes (per hour)
  - The allowed band changes are 8 for all CQ Contests
  - The band change counter is reset to 0 on first contact after the top of the hour

#### 4.22. CIS contest - CW / SSB

The Commonwealth of Independent States Contest where everybody can work everybody for QSO and multiplier credit.

- Window: Select Log type
  - Log Type:
    - CW: CISCW
    - SSB: CISSSB
  - Sent Exchange:
    - CIS stations: CIS area code Example for Moscow City: RU11
    - Non-CIS stations: 001

#### 4.23. Cup of the Russian federation RFC contest CW / SSB

The RFC Contest is an internal Russian contest only between Russian stations.

- Window: Select Log type
  - Log Type:
    - **CW**: RFCCW
    - **SSB**: RFCSSB
  - Sent Exchange: Grid Example: 115

#### 4.24. CWops Mini CWT

Monthly mini-contests

- Window: Select Log type
  - Log Type: CWOPS
  - Mode Category: CW
  - Sent Exchange:
    - Name and membership no. (members)
    - Name and state/province/country (non-members)

#### 4.25. DARC 10 meter contest

- Window: Select Log type
  - Log Type: DARC10M
  - Mode Category: MIXED or CW (depends on the entry class)
  - Sent Exchange:
    - DL stations: DOK Example: A12
    - non DL stations: empty

Call history lookup for DOK's is supported. Make a text file with Call and DOK and import this in the program. See the chapter Before the Contest for information how to use Call History and how to create the text file. During the contest "Call History Lookup" has to be enabled under the Config menu. When a station (which is in the Callhistory lookup table) is entered, pressing SPACE when the cursor is in the callsign field will enter the DOK in the section field.

The contest manager from the DARC 10 meter contest approved and will accept the files made by N1MM logger and likes to receive:

File	How to make...	Exported
Log file	>File >Export >Export to File (Generic) >Generic File Output sorted by time	[callsign].txt
Summary sheet	>File >Export >Print Score Summary to File	[callsign].sum

- Send the "Generic File Output sorted by time" as a txt-File named with your call like DL8WAA.TXT
- Don't forget your used own call, category and if you are a DL station: own sent DOK. This can be put in the Email or sent in the Cabrillo file.

#### 4.26. DARC Weihnachtswettbewerb XMAS contest

The DARC Weihnachtswettbewerb is a contest on December 26 from 08.30-10.59 UTC between any station on 40 and 80 meters.

The DARC contest manager for the Xmas contest accepts the standard generic file as log together with the summary sheet..

- Window: Select Log type
  - Log Type: XMAS
  - Mode Category: MIXED
  - Sent Exchange:
    - DL stations: Serial number + DOK Example: 001 A12
    - Non-DL stations: Serial number Example: 001

During the contest info about suspicious DOK's are shown in the info bar and written to the Notes filed.&&&

After the contest check >View >Notes for the following situations:

- "DL station non DARC member" - no DOK is given (DL station who is not a DARC member)
- "DL station with DOK length 1" - DOK length is only one
- "DOK with only numbers" - no letters in DOK

## 4.27. DIG contest CW / Phone

- Window: Select Log type
  - Log Type:
    - CW: DIGCW
    - SSB: DIGSSB
    - Sent Exchange: anything as it is not being used (DIG members could enter their DIG number here)

## 4.28. Elecraft QSO Party

- Window: Select Log type
  - Log Type: EQSO
  - Mode Category: Mixed
  - Exchange: State/Province/Country, Rig code + Rig serial number, or Power (non-elecraft rigs)
    - e.g. K3 serial #1234 would send 31234

## 4.29. European Sprint CW/ SSB

- Window: Select Log type
  - **CW**
    - Log Type: EUSCW
    - Mode Category: CW
    - Sent Exchange: Serialnumber & Operator name Example: 001 Tom
  - **SSB**
    - Log Type: EUSSSB
    - Mode Category: SSB
    - Sent Exchange: Serialnumber & Operator name Example: 001 Tom

Example: The Exchange key (**F2**) can look like this: de \* # {Exch} where "#" is current QSO Number and "{Exch}" is the Operator name.

## 4.30. EU HF Championship

- Window: Select Log type
  - Log Type: EUHFC
  - Sent Exchange: Last two digits of the year of operator's first official amateur radio license  
Example: 82 (for 1982)



### 4.31. Field Day Region 1

The Region I field day contest can be configured for Region 1 stations and DX stations. Supported are the rules for stations in Belgium, Germany, United Kingdom (\*\*), Netherlands, Switzerland, Ireland (only CW), Italy, Slovenia (S5) and Russia (UA, UA2, UA9).

- Window: Select Log type
  - Log Type: FDREG1
  - Sent Exchange: 001

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call) determines if you are a Region 1 supported station or not and if you are /P etc. or not..

N1MM Logger checks whether the callsign used is a portable or a fixed station by checking the callsign in the Station dialog under config! So using a /P, /M etc there could make a difference in scoring!

**United Kingdom:** The ModeCategory selects the CW or the SSB version of the contest. The rules between the CW and the SSB version are very different.

### 4.32. FOC marathon

- Window: Select Log type
  - Log Type: FOCCW
  - Sent Exchange:membership number

The calculation of bonus points for working the same station on 5 (10 additional points) or on 6 bands (an extra 5 points) is not supported by the program.

Martin/OK1RR and John/G3WGV have posted contest routines to rescore the contest from a Cabrillo file to a fully correct (including the 5/6 band bonuses).

### 4.33. GACW WWSA CW DX contest

The GACW WWSA CW DX contest can be used by South American stations and DX stations.

- Window: Select Log type
  - Log Type: GACW
  - Mode Category: CW
  - Sent Exchange: Your zone Example: 14
- The rules are almost equal to the CQWW contests.
- Default zones for US (K,N,W,A) and Canadian (VE) stations apply

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a SA station or a DX station.

#### 4.34. Gagarin Cup

- Window: Select Log Type
  - Log Type: GCUP
  - Mode Category: CW
  - Sent Exchange: Your ITU zone (not CQ zone e.g., 8 rather than 5 for eastern USA)

#### 4.35. HA DX Contest

The Hungarian DX Contest can be configured for HA stations and DX stations.

- Window: Select Log type
  - Log Type: HADX
  - Sent Exchange:
    - non-HA stations: 001
    - HA stations
      - HADXC members: HADXC membership number Example: 101
      - Other HA stations: two letters county code. Example: GY

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a HA station or a DX station.

#### 4.36. Helvetia Contest

The Helvetia Contest can be configured for HB stations and DX stations.

- Window: Select Log type
  - Log Type: HELVETIA
  - Sent Exchange:
    - 001 for non-HB stations
    - 001 Your Canton Example: ZH for HB-station

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX station or a HB station.

#### 4.37. High Speed CW Contest

The HSC CW contest can be configured for members and non-members.

- Window: Select Log type
  - Log Type: HSCCW
  - Mode Category: CW
  - Sent Exchange:
    - Non-members: NM
    - Members: HSC-Membershipnumber

#### 4.38. Holyland Contest

The Holyland Contest can be configured for 4X stations and DX stations.

- Window: Select Log type
  - Log Type: HOLYLAND
  - Sent Exchange:
    - 001 for non-4X stations
    - Your Area Example: E15RH

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX station or a 4X station.

#### 4.39. IARU Radiosporting contest HF

- Window: Select Log type
  - Log Type: IARU
  - Mode Category: CW or SSB or MIXED
  - Sent Exchange: IARU member society abbreviation for IARU member society HQ stations and IARU International Secretariat club station
    - AC for IARU Administrative Council
    - "R1," "R2," and "R3" for the three IARU regional Executive committees
    - ITU zone for all other stations Example: 27

The zone is prefilled while typing the callsign to allow multipliers to be shown while typing the callsign.

Call history lookup for HQ multipliers is supported. Correct format is: W1AW,,,ARRL,,,

#### 4.40. IOTA Islands On The Air Contest

- Window: Select Log type
  - Log Type: IOTA
  - Sent Exchange:001 NA123 (default exchange)
    - Where the own IOTA reference has to be in the form XXYYY where XX = letters

and YYY = numbers.

NB. The syntax for an IOTA reference has to be in the form XYYYY where XX = letters and YYY = numbers. Example: 001 EU001 and not 001 EUTT1 or 001 EU1

If not the program can not determine the own IOTA reference and give correct points!

- The received IOTA reference does not need the dash (-) when logged. Example: Enter EU123 in the IOTA field not EU-123. The Cabrillo output will automatically have the - added
- The IOTA has many multipliers and therefor the program will only show worked IOTA references and add a new IOTA reference when a new multiplier is worked. In the Multiplier window, choose the tab "Sect"
- When only an IOTA reference is entered the color of the IOTA reference and the color of the Available buttons for new island are updated, even if no callsign specified

#### 4.41. International Naval Contest

- Window: Select Log type
  - Log Type: NAVAL
  - Sent Exchange:
    - Club+Membership number for Naval Club member, e.g. PN007
    - 001 for non-Naval Club member

2009 contest rules: [are here](#) .

2010 dates: 8 / 9 May - CW and SSB, 15/16 May - PSK and RTTY;

#### 4.42. JA domestic contests

This is a general contest class for Japanese domestic contests and only for use by JA stations.

- Window: Select Log type
  - Log Type: JAdomestic
  - Sent Exchange: Section + class Example: 25M or 10L

General rules:

- Japanese stations may only work Japanese stations
- Example exchange numbers in ALL JA contest with assuming as follows.
  - I am in Osaka with 100W output and another party is in Tokyo with 10W.' send:59925M  
receive:59910L

- I am in Okinawa with 1KW output and another party is in Sapporo in JA8 with 50W.  
send:59947H receive:599106M
- Dupe and multiplier examples
  - 20 mtr JE1CKA 10H SSB 1 point + multiplier
  - 20 mtr JE1CKA 10H CW 0 points dupe, no multiplier
  - 20 mtr JE1CKA 10H SSB 0 points dupe, no multiplier
- Same station should counts for 1 point only once on each band regardless of mode.
- The multiplier counts once on each band regardless of mode.
- When the SentExchange does not end on H, L, M or P then there is no Powercode check.

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a JA station.

#### 4.43. JIDX contest

This JIDX contest can be configured for Japanese stations and DX stations.

- Window: Select Log type
- **CW**
  - Log Type: JIDXCW
  - Mode Category: CW
  - Sent Exchange:
    - non-JA stations: CQ Zone number Example: 14 (01 to 40)
    - JA stations: Your Prefecture Example: 34 (01 to 50)
- **SSB**
  - Log Type: JIDXSSB
  - Mode Category: SSB
  - Sent Exchange:
    - non-JA stations: CQ Zone number Example: 14 (01 to 40)
    - JA stations: Your Prefecture Example: 34 (01 to 50)

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a JA or a DX station.

#### 4.44. JT DX Contest

- Window: Select Log Type
  - Log Type: JTDX
  - Mode Category: CW or SSB, select one only
  - Sent Exchange: CQ Zone (e.g., 5, 14, 23, etc.)

#### 4.45. King of Spain Contest

The King of Spain contest can be configured for EA stations and DX stations.

- Window: Select Log type
  - **CW**
    - Log Type: KINGEACW
    - Mode Category: CW
    - Sent Exchange:
      - non-EA stations: 001
      - EA stations:Your Province Example: AV
  - **SSB**
    - Log Type: KINGEASSB
    - Mode Category: SSB
    - Sent Exchange:
      - non-EA stations: 001
      - EA stations:Your Province Example: AV

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX station or a EA station.

#### 4.46. Logbook of the World Contest CW / SSB

- Window: Select Log type
  - Log Type:
    - **CW**: LOTWCW for the Digital part of the contest (LOTWRTTY)
    - **SSB**: LOTWSSB
  - Sent Exchange:
    - For North American stations: State/Province abbreviation Example: CT
    - For non North American stations: Countryprefix

#### 4.47. LZ DX Contest

The LZDX contest can be configured for LZ stations and DX stations.

- Window: Select Log type
  - Log Type: LZDX
  - Sent Exchange:
    - non-LZ stations: ITU zone
    - LZ stations:Your District abbreviation Example: BU

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX station or a LZ station.

## 4.48. LZ Open and LZ Sprint Contests

Supports all three versions of the contest (LZ Open contest, LZ Open 40 meter Sprint contest and LZ Open 80 meter Sprint contest)

- Window: Select Log type
  - Log Type: LZOPEN
  - Sent Exchange: 001
  - Select LZOPEN contest. The Sent Exchange in the "contest selection window" is 001 or #.
  - Your F2 exchange message should be: {EXCH}{LASTEXCH} or #{LASTEXCH}
  - Since it is required, the program will always send leading zeros for this contest. Unchecking the leading zeros box in Configurer will have no effect
  - When a callsign is in the Entry Window, the Info Window displays the time since you last worked the station
  - If you have a radio interface enabled, the bandmap colors of the callsigns will update when you can work the station again for points
    - Set the Bandmap Packet Spot Timeout greater than 30 minutes
  - Do not enter received cut letters into the exchange box. They will not be converted to numbers
  - Read the contest rules
  - Submit the contest results with the Cabrillo output

The 30 minute time period is computed per the organizers instructions. That is to ignore the seconds of the logged QSO when computing the 30 minute interval. The 30 minute interval is computed from the last QSO on the current band so it is not recommended to log a contact that will not produce any points.

LZ Open and LZ Sprint contests display the sent exchange on the Entry Window status line. This addition expects that the {LASTEXCH} macro is used as required by these contests.

## 4.49. Manchester Mineira Contest

The 'Manchester Mineira Contest by CWJF is the major CW contest in South America. Only South American stations are allowed to work each other.

- Window: Select Log type
  - Log Type: CWJFMM
  - Mode Category: CW
  - Sent Exchange: M, YL, QRP or Space (not empty)

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a South American station.

## 4.50. Michigan QRP Contest

See the [ARCI contest](#) which uses almost the same rules.

Supported are: January CW Contest ; Memorial Day CW Sprint ; July 4th CW Sprint ; Labor Day CW Sprint

#### 4.51. MiniTest CW Test

Almost every week on Wednesday at 18 GMT and lasts only one hour. It has 6 time periods (10 minute each). Band: 3520 - 3570 kHz, mode: CW, exchange: RST+serial.

Every QSO gives 1 point, multiplier: the number of unique calls during this hour of the contest.

Classes: 1- club station, 2 - SO, A- power > 100 W, B - power <= 100 W, 3 - SWL. The results can be submitted at 19.00 GMT on 3720 KHz (SSB) or on 3541 KHz (CW).

The submitted information (QSO number, multiplier, class) will look like this: "125 36 A". The results are published here:

<http://www.minitest.narod.ru/2009/2009.htm>

#### 4.52. NA Sprint CW / SSB

- Window: Select Log type
  - Log Type:
    - **CW**: SPRINTCW
    - **SSB**: SPRINTSSB
  - Sent Exchange: 001 Tom CT
    - Serial number, your name and your location (state, province or country) Example: PA1M DE N1MM 123 TOM CT K

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a North American station or a non-North American station.

- Example function keys can be found in the [Example Function Keys](#) chapter
- Check out the [Macros](#) chapter. Great for Sprint are the macros {PGUP} and {PGDN}.
  - By Tom - W4BQF: Open config - Configure Ports.... - Other. Under the 'Other' tab, look at the right-most column, where you will see "CW Up/Down Arrow" and "PgUp/PgDown". These can be configured to QSY. Configure the Up/Down Arrow keys to QSY, say 2 kHz each time you press your keyboard up or down arrow keys. Configure PgUp/Down to QSY 'x' kHz, and then use {PGUP} or {PGDN} as a macro assigned to any of the function keys. Example: F10 Freq UP, {PGDN} {run} F11 Freq DN, {PGUP}{run} In my case "PgUp/Down" will move my frequency 5.5 kHz and the "CW UP/Down Arrow" keys set to QSY 1.5 kHz. A little tricky because {PGDN} actually moves you UP in frequency, but it works very well.



I thought I would share what I have learned about customizing N1MM Logger for this contest.

I'm not going to try to explain how to operate the Sprint - for this, there is an excellent writeup at:

<http://n6tr.jzap.com/sprint.html>

What I will do is describe how to get the most out of N1MM Logger in the Sprint. My operation is SO2R, and my configuration is optimized for that mode. However, I'm sure you SO1R guys will pick up a few tricks from what I have done for SO2R.

The most important thing is to get your options, windows and function keys set up correctly before the Sprint starts.

The Options...

Start up N1MM Logger using version 10.9.2 or later, and create a new SPRINTCW contest.

I assume that your radio(s) are interfaced to N1MM Logger, so that N1MM Logger will automatically track the frequency of each radio. If you do not have interfaced radios, this configuration and function key assignment will not work correctly for the Sprint.

In the Config menu, select the following options:

- Enter sends message (ESM)
- QSYing wipes the call & spots QSO in bandmap
- Do not run on CQ frequency
- Show non-workable spots
- SO2R->Toggle CTRLFX Macro

The "Toggle CTRLFX Macro" can also be toggled using Ctrl+Shift+L. This is handy if you need to turn off {CTRLFX} during the contest.

The Windows...

These are the only windows I have on my screen:

- Entry Window (one for each radio)
- Visible Dupesheet (one for each radio)
- Info
- Log
- Score Summary

They all fit nicely on my small monitor. My screen layout is shown at <http://www.kkn.net/~n2ic/sprint.bmp> .

The Visible Dupesheet is really nice once you get used to it. To see if a station is a dupe, you just scan the dupesheet with your eyes, rather than frantically type a call into the Entry Window.

Open a Bandmap window. Right click and select "Packet Spot Timeout". Change the packet spot timeout to 1 minute. That's right....1 minute. Hit OK. Now close the Bandmap window. Don't reopen it. It is of no value in Sprint, but it is important to change the packet spot timeout value to 1 minute. (Side note: This option should really be called "Bandmap Timeout" not "Packet Spot Timeout". It controls how long calls stay on the bandmap and the appearance of calls in the "on deck" frame of the Entry Window. We're obviously not using packet in the Sprint.)

Notice that I do NOT have the "Available Mults & Q's" nor the Bandmap windows open.

Function Keys ....

Here are my function key definitions. I'll explain a few that aren't obvious.

F1 CQ,cq na cq na \* na

F2 Exch,\* # steve nm

F3 TU,{CLEARRRIT}{END}{CONDJUMP}{STOPTX}

F4 {MYCALL},\*

F5 Call,!

F6 QSO B4,qso b4 \*

F7 Other Short,~{CTRLF10}

F8 Other Long,~{CTRLF11}

F9 GoS&&P,{S&P}

F10,cq na \* \* na {RUN}

F11 Long CQ,cq na cq na \* \* na {RUN}

F12,~{STOPTX}{CTRLF4}

F1 S&&P CQ,cq na cq na \* na

F2 S&&P Exch,! # steve nm \* {RUN}

F3 S&&P tu,tu

F4 S&&P,\*

F5 S&&P his call,!

F6 S&&P,-

F7 S&&P Other Short,~{CTRLF10}

F8 S&&P Other Long,~{CTRLF11}

F9 GoRun,{RUN}

F10,cq na \* \* na {RUN}

F11 Long CQ,cq na cq na \* \* na {RUN}

F12,~{STOPTX}{CTRLF4}

-----

Important note: All function keys that start with {CTRLFx} or {STOPTX}, such as F7 above, must have a leading half-space character (~).

With the Run F3 key, my "thank you" message is sent. When you QSY, you will automatically be changed to S&P mode. Do not include the {S&P} macro here - it will cause the last station worked to get "stuck" in the on-call frame of the Entry Window.

With the S&P F2 key, as soon as I send my exchange, it immediate switches to Run mode.

I can also force myself into Run and S&P modes with the F9 key.

The F7 and F8 keys send CQ's on the "other" radio. This is very useful when the other station is sending his exchange, and you are going to lose the frequency (i.e. it will become "his" frequency). You can send a CQ on the other radio, while he is sending his exchange. Then, when he finishes sending his exchange and you need to send your "thank you" message to finish the QSO, all you have to do is hit Enter, which will stop the CQ on the other radio, and send your Run F3 message on the active radio. After the "thank you" message is sent, the {CONDJUMP} macro in the Run F3 message will move your entry focus to the "other" radio, so that you will be ready to copy a new caller on the radio you were CQing on.

When I'm CQing on the active radio, but simultaneously doing S&P on the other radio, and hear a new station, I can hit the F12 key. This will stop the CQ, and send my call on the other radio. Notice that there is a half-space (~) before the F12 {STOPTX} macro. Yes, you need this half-space - don't leave it out, or this feature won't work. To make this work even smoother, use AutoHotKey to create this script:

NumpadEnter::F12

With this script, you can use the Enter key on the far right side of the keyboard instead of hunting for the F12 key.

One thing you need to do is keep an eye on where your transmit and receive focus is (the red and green dots on the Entry Window). When you're doing SO2R in the Sprint, there will be times where your focus is not where you might expect it, or want it. Always be ready with the \ and Pause keys to jump between radios. Yes, this takes lots of practice, and you will make mistakes. The Thursday night NCCC Sprints are good practice for this.

### **NA Sprint CW by Kenny, K2KW**

North American Sprint CW is just a few hours away, and thought I would take a moment to help others get their CW messages ready. Your messages may differ slightly from mine, but I just wanted to highlight what's happening on the F2 and F3 messages which are the key setup items for Sprint. The F2 exchange is set up to give you the correct sequence for this contest using ESM, and the exchange sequence varies based on if you are Calling CQ, or you answered someone while S&P. F3 is used to confirm the message, and change your state from S&P to Running, or Running to S&P. The {RUN} and S&P} macros are inserted at the end of the F3 message, and will automatically change your state, and thus exchange sequence.

I have also changed the Up/Down Arrow to move 1.5 kHz, giving you an "instant QSY" per the rules. You may choose to use a wider QSY increment, but the goal was to offer you an idea for QSYing so you can abide by the rules.

If you are not aware of the uniqueness of the Sprint exchange and QSY rule, check out: <http://n6tr.jzap.com/sprint.html> and <http://www.ncjweb.com/sprintrules.php>

73 and CU in the contest,

- Set the Exchange:
  - >File >Choose Which Contest to Log >Sent Exchange
    - # yourname yourstate
    - Example: **# KEN CA**
- Set QSY distance:
  - In the >Config >Configurer >Other window, change the CW Up/Down Arrow Incr = 1.5
    - That gives me an instant QSY somewhat greater than the minimum QSY required after you leave a frequency. Any value over 1 kHz is recommended

### **4.53. NSSprint and Sprint Ladder**

Window: Contest Setup

These contests are identical except for the dupe rule that is incorporated

- Log Type:
  - SPRINTLADD. SPRINTNS

- Sent Exchange: 001 Tom CT
  - Serial number, your name and your location (state, province or country) Example: PA1M DE N1MM 123 TOM CT K

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a North American station or a non-North American station.

See NA Sprint above for more information (rules for the NS Sprint and Sprint Ladder are derived from but slightly different NA Sprint, so be advised!).

#### 4.54. NAQP North American QSO Parties CW / SSB

- Window: Select Log type
  - CW
    - Log Type: NAQPCW
    - Operator Category: SINGLE-OP or MULTI-TWO
      - For Multi-Two see the extra info below!
    - Mode Category: CW
    - Sent Exchange:
      - For North American stations - Operator name and station location (state, province, or country) Example: Tom CT
      - For non-North American stations - Operator name only Example: Thomas
  - SSB
    - Log Type: NAQPSSB
    - Operator Category: SINGLE-OP or MULTI-TWO
      - For Multi-Two see the extra info below!
    - Mode Category: SSB
    - Sent Exchange:
      - For North American stations - Operator name and station location (state, province, or country) Example: Tom CT
      - For non-North American stations - Operator name only Example: Thomas

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a North American station or a non-North American station.

MULTI-TWO operating: When changing operator you have to use Ctrl+O to set the NAME (not Call) of the operator. This name set with Ctrl+O will be used in the Cabrillo file. So from the Sent Exchange only the state is being used but the name is needed. (Example: Tom CT). The macro {OPERATOR} can be used to automatically switch WAV files (in SSB), for more info see the Macro section.

#### 4.55. NRAU Baltic Contest

This contest is only for stations from the following countries: ES, JW, JX, LA, LY, OH, OH0, OX, OY, OZ, SM, TF, and YL

- Window: Select Log type
  - Log Type:
    - CW: NRAUCW
    - SSB: NRAUSSB
  - Sent Exchange: Section Example: AA

When a station is logged the following checks are made:

- Is the logged station from a valid country ( ES, JW, JX, LA, LY, OH, OH0, OX, OY, OZ, SM, TF, and YL)
- Is the entered section a valid section (from NRAU.sec)
- A warning is given when a qso is made on another band than 7 or 3,5 MHz. A note is made with the logged qso.

#### 4.56. Oceania Contest

Supported are the CW and SSB version of the contest

- Window: Select Log type
  - Log Type:
    - CW: OCEANIACW
    - SSB: OCEANIASSB
  - Sent Exchange: 001

Note: The rules have special instructions for not complete portable callsigns so a prefix can not be deduced normally. Adding numbers like the rules state is not supported and should be done by editing the log file (afterwards). Example: N8BJQ/PA would be PA but is not a valid prefix and should become PA0 (add the zero).

#### 4.57. OK OM DX contest

The OK-OM DX contest can be configured for OK/OM stations and DX stations.

- Window: Select Log type
  - Log Type: OKOMDX
  - Mode Category: CW (it is a CW only contest)
  - Sent Exchange:
    - Non-OK/OM stations: 001
    - OK/OM stations: district abbreviation Example: BPZ

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an OK/OM station or a DX station.

## 4.58. PA beker contest

The PA-beker contest is a local Dutch contest on 40 and 80 meters. The text below is in Dutch.

- Window: Select Log type
  - Log Type:
    - CW: PABEKERCW
    - SSB: PABEKERSSB
  - Sent Exchange:
    - QSL regio Voorbeeld: 27 (en niet R27)
  
- QSL regio ingeven en invoeren zonder R dus 27 en geen R27
- Log, Entry en Score summary geven de juiste scores.
- De multiplier window (Ctrl+J) geeft onder 'Sect' de gewerkte QSL regio's alleen daar wordt de eigen regio wel getoond indien gewerkt.
- Er zit geen beperking op banden (dus let op dat je op 40 en 80 meter logt).
- In te zenden log bestanden:

File	How to Make...	Exported
<b>Log file</b>	>File >Export >Export to File (Generic)	[callsign].txt
<b>Summary sheet</b>	>File >Export >Print Score Summary to File	[callsign].sum

## 4.59. PACC contest

The PACC contest can be configured for PA stations and DX stations.

- Window: Select Log type
  - Log Type: PACC
  - Sent Exchange:
    - 001 for non-PA stations
    - Your province Example for PA-stations: DR

PA stations have to import an adapted CTY.DAT file for the PACC contest so the right multipliers will be used. In the 'Entry window' go to 'Tools', and select 'Import country list from downloaded file'. This adapted country file can be downloaded from the N1MM website, under 'Downloads', select in the menu: 'Other Files'. Don't forget importing the original CTY.DAT file again when entering other after the PACC contests.

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX station or a PA station.

The PACC contest committee approved and will accept the files made by N1MM logger and likes to receive:

File	How to Make...	Exported
<b>Log file</b>	>File >Export >Export to File (Generic)	[callsign].txt
<b>Summary sheet</b>	>File >Export >Print Score Summary to File	[callsign].sum

Note icon PA stations: Vergeet niet op het **summarysheet** te vermelden de **klasse** waarin je mee doet en de **afdeling** voor het afdelingsklassement!

Note icon PA stations kunnen tijdens de PACC contest op 160 meter gelijktijdig meedoen aan de RSGB 1.8 MHz CW contest in de avonduren. N1MM acepeteert na het volgnummer ook de districtscode. Voorbeeld: 599 123AA (NB, geen spatie tussen het ontvangen volgnummer en de district code)

#### 4.60. Portugal Day Contest

The Portugal Day contest can be used for Portuguese stations (CT, CT3 or CU) and DX stations.

- Window: Select Log type
  - Log Type: PORTUGAL
  - Exchange:
    - District or Autonome Region for Portuguese stations
    - 001 for DX stations (serialnumber)

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a Portuguese station or DX.

#### 4.61. QCWA QSO Party

- Window: Select Log type
  - Log Type: QCWAQSO
  - Mode Category: Mixed
  - Exchange: Year licensed, Name, Chapter (or state/province/country)

#### 4.62. RAC Canada Day Contest / RAC Canada Winter Contest

With the same set of rules both contests are supported. These RAC contests can be used for VE stations and DX stations.



- Window: Select Log type
  - Log Type: RAC
  - Exchange:
    - Province or territory for stations in Canada
    - 001 for VE0 stations and stations outside Canada (serialnumber)

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are from Canada, VE0 or outside Canada.

#### 4.63. RAEM CW contest

The RAEM Contest is CW only and has no multipliers, only points. These points are calculated based on QSO points and distance between the stations (based on exchanged coordinates). Extra points are added for polar stations. Extra bonus points for RAEM memorial stations are not added because the call RAEM has no number is will not be accepted by the program. Use RAEM99 or so and update the log and score (300 additional points) after the contest. 10 band changes per hour are permitted, and a band change counter is activated when this contest is selected.

- Window: Select Log type
  - Log Type: RAEM
  - Mode Category: CW (it is a CW only contest)
  - Sent Exchange: 001 & Coordinates Example: 001 53N6O
    - The own coordinates is the **second** token in Sent Exchange **without spaces** (one 'word')

Coordinate rules: These rules apply for the 'Sent Exchange' and also when entering a coordinate in the Entry Window.

- Own coordinates: Second token in Sent Exchange **without spaces** (one 'word')
- First part is the Longitude with at the end N or S Example: 53N
- Second part is the Latitude with at the end W or O (not E) Example: 6O
- As a total this makes: 53N6O

**Log and rescore:** To generate the log use the Generic log file and the Score summary. Always rescore and check the log. If a qso has 1 point then the Received exchange is not correct. If there are QSOs who have gotten 2 points then your Sent Exchange is not correct. Update your Sent Exchange in the contest setup and rescore. Check again.

**Call History:** The call history can be used but... the coordinates have to be entered in the Name field of the Call History table. This is the only field which is capable of handling all different coordinates 1N2W but also 67N169O

#### 4.64. REF contest CW / SSB

The REFContest can be configured for stations in REF countries and DX stations.

- Window: Select Log type
  - Log Type:
    - CW: REFCW
    - SSB: REFSSB
  - Sent Exchange:
    - For DX stations: 001
    - For stations in REF countries - Department (F and TK) or Prefix (all other REF countries)

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX station or a station in a REF country.

#### 4.65. RF Championship

The RF Championship is a contest for stations of the Russian Federation only.

- Window: Select Log type
  - Log Type: RFCHAMP
  - Mode Category: Select mode used in contest (CW, SSB)
  - Sent Exchange: 001

Please add the zone to sent in the Function keys. The points are calculated based on your callsign and the callsign received.

#### 4.66. RSGB 160 Meter CW Contests

The RSGB 1.8MHz CW Contests can be configured for RSGB stations and DX stations.

- Window: Select Log type
  - Log Type: RSGB160CW
  - Mode Category: CW (it is a CW only contest)
  - Sent Exchange:
    - For DX stations: 001
    - For stations in the UK - 001 & District Example: 001 ZE

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are in the UK or not.

Serial numbers must be logged from UK stations.

There is no check by the program if a serial number is entered for non-UK stations. This because there are often several other EU contests going on at the same time and an entrant in those may not sent a serial number just an area code like DR (PACC) or a French department like 78. If a non

UK station sends a serial number it must be logged in the received serial nr field, if it sends a code like DR is must be logged in the districts field.

#### **4.67. RSGB 21/28 MHz contest**

The RSGB 21/28 MHz CW Contests can be configured for RSGB stations and DX stations

- Window: Select Log type
  - Log Type: RSGB2128
  - Sent Exchange: 001

#### **4.68. RSGB 80 Meter Club Championship**

The RSGB 80 Meter Club Championship can be configured for RSGB stations and DX stations

- Window: Select Log type
  - Log Type: RSGB80MCC
  - Sent Exchange: 001

#### **4.69. RSGB Affiliated Societies Team Contests AFS**

The RSGB Affiliated Societies Team Contests can be configured for RSGB stations and DX stations

- Window: Select Log type
  - Log Type:
    - CW: RSGBAFS-C
    - SSB: RSGBAFS-S
  - Sent Exchange: 001

#### **4.70. RSGB Club Calls contest**

The RSGB Club Calls contest can be configured for RSGB stations and DX stations

- Window: Select Log type
  - Log Type: RSGBCLUB
  - Sent Exchange: 001

#### **4.71. RSGB Commonwealth contest**

- Window: Select Log type
  - Log Type: RSGBBERU
  - Exchange: 001 (HQ stations enter 001 HQ in this box)

This contest is for British Commonwealth stations only. The callsign in the Station Information dialog (Config >Change Your Station Data >Call) determines whether you are in the Commonwealth or not.

There are no multipliers in this contest. Contacts with Commonwealth stations outside your own Commonwealth Call Area (CCA) are worth 5 points; contacts within your own call area or with non-Commonwealth stations are worth zero points. There are bonus points for the first 3 contacts on each band in each CCA (25 points instead of 5 points). HQ stations send HQ after the serial number in the exchange (enter HQ in the HQ block in the entry window when you work one of these), and are also worth 25 points. You can work one HQ station plus 3 bonus stations in each CCA on each band for 25 points each; any additional contacts in that CCA are worth 5 points. You can work the HQ station in your own call area for bonus points. HQ stations can work all CCAs including their own.

Bonus stations (first three contacts in a CCA and HQ stations) are shown in red in the Entry window; other Commonwealth stations are in blue. Non-Commonwealth stations and stations in your own CCA are shown in grey (including the HQ station in your CCA until the HQ box in the Entry window is filled in). If you wish to work and log a zero-point QSO, use Ctrl+Alt+Enter to force-log the contact.

To have the Multiplier window show only Commonwealth Call Areas, go to the Files > Additional Support Files on this web site and download file cty-BERU-20100315.dat into your N1MM Logger program folder, then use the Logger's Tools > Import country list from downloaded file menu item to import this list into the database. You will have to close and reopen the Multiplier window for this change to take effect. The Multiplier window only shows whether one station has been worked in that CCA; to see whether a station would score bonus points on other bands, see the next paragraph. **Remember to reload the normal wl\_cty.dat file into the database after the contest is over and your log has been exported!**

If you have the Available Mults and Qs window and the Check window both open, the Check window's title bar will indicate the QSO and Bonus status of stations on all bands as they are entered in the Entry window. For example, MUL: 160 80 10 Q: 40 would indicate that the station in the Entry window would be a bonus station (25 points - first three QSOs in a CCA) on 80m and 10m, a new QSO (5 points) on 40m, and it has already been worked on 20m and 15m. The Available window does not need to be visible, i.e. it can be hidden behind another window, but the Check window title bar must be visible to make use of this feature.

Call History Lookup should be turned off in this contest to prevent state/section information for other contests from prefilling the HQ box.

HQ stations are recorded in the "Sect" column in the log. Call areas are recorded in the "Exch" column. In the Score Summary window, the "Cty" column indicates the number of bonus-point

QSOs (first three QSOs in a CCA), and the "Sec" column indicates the number of HQ stations worked.

### **Contest Type**

Note: The old RSGBJUBILE log type that was formerly used for this contest has been discontinued as of Logger version 10.3.0 - use RSGBERU instead.

## **4.72. RSGB SSB Field Day & RSGB National Field Day**

The Region I field day contest can be configured for RSGB and DX stations.

- Window: Select Log type
- - Log Type: FDREG1 <----
  - Mode Category: The ModeCategory selects the CW or the SSB version of the contest. The rules between the CW and the SSB version are very different..
    - CW for the CW Field day contest
    - SSB for the SSB Field day contest
  - Sent Exchange: 001

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a RSGB station or not and if you are /P etc. or not..

N1MM Logger checks whether the callsign used is a portable or a fixed station by checking the callsign in the Station dialog under config ! So using a /P, /M etc there could make a difference in scoring!

## **4.73. RSGB Low Power Field Day**

The RSGB Low Power Field Day can be configured for RSGB stations and DX stations

- Window: Select Log type
  - Log Type: RSGBLP
  - Mode Category: CW (it is a CW only contest)
  - Sent Exchange: 001 Power Example: 001 2W5

## **4.74. RSGB ROPOCO**

The RSGB ROPOCO is an internal RSGB contest and only available for G ,GD ,GI ,GJ ,GM ,GU and GW stations.

- Window: Select Log type
  - Log Type: ROPOCO

- Mode Category: CW (it is a CW only contest)
- Sent Exchange: Your postcode (taken from station info)

NB. Use the macro {LASTEXCH} to sent the postcode from the previous qso. Example F2 key:  
<<<5nn>>{LASTEXCH}

#### 4.75. Russian District Award contest

The Russian District Award contest can be configured for Russian stations and DX stations.

- Window: Select Log type
  - Log Type: RDAC
  - Sent Exchange:
    - Non-Russian stations: 001
    - Russian stations: District code by RDA list (for example TB02)

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a Russian station or a DX station.

#### 4.76. Russian DX contest

The Russian DX contest can be configured for Russian stations and DX stations.

- Window: Select Log type
  - Log Type: RUSSIANDX
  - Sent Exchange:
    - Non-Russian stations: 001
    - Russian stations: Your oblast code (two letters)

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a Russian station or a DX station.

Example: Default RU1A would have SP, in the call hisotry RU1A could be added so it will give the corerct exception LO.

When a station is found in Call history it will use the section/oblast from it. If not found in Call history it will use the default oblast.

Example Call history

RA1AR,,, LO

RU1A,,,LO

RU6FA,,,KM

Log submission notes:

'CATEGORY-OVERLAY'. In the RDXC you can submit one log and have it scored as two single band entries. Like operating 10m during day time and 160m at night. Now, this is particular to this contest and you need to submit your log like this:

CATEGORY-OVERLAY: [operator-cat](#) [band-cat](#) [power-cat](#) [mode-cat](#) The category overlay of the log submission when appropriate. In RDXC, two single band entries are allowed from one participant. In this case, one entry must be listed under CATEGORY tag, the other one under CATEGORY-OVERLAY, such as:

- CATEGORY: SINGLE-OP 80M HIGH MIXED
- CATEGORY-OVERLAY: SINGLE-OP 15M HIGH MIXED

#### 4.77. Russian Radiosport Team Championship

- Window: Select Log type
  - Log Type:
    - RRTCT (invited teams)
    - RRTC (everyone else)
  - Sent Exchange:
    - three-letter code (teams)
    - ITU zone (others)

#### 4.78. Russian YL/OM contest

- Window: Select Log type
  - Log Type: RUSYLOM
  - Sent Exchange:
    - 73 for male stations (OM)
    - 88 for female stations (YL)

YL stations (female) may only work OM stations (male) and vice versa.

#### 4.79. SAC contest CW / SSB

The Scandinavian Activity Contest can be configured for Scandinavian stations and DX stations.

- Window: Select Log type
  - CW
    - Log Type: SACCW
    - Sent Exchange: 001

- SSB
  - Log Type: SACSSB
  - Sent Exchange: 001

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a Scandinavian station or a DX station.

#### **4.80. Spanish Towns contest**

The Spanish Towns contest can be configured for EA stations and DX stations.

- Window: Select Log type
  - Log Type: CME
  - Mode Category: SSB
  - Sent Exchange:
    - non-EA stations: 001
    - EA stations: Your INE code Example: 18145

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX station or a EA station.

#### **4.81. SPDX contest**

The SPDX contest can be configured for Polish stations and DX stations.

- Window: Select Log type
  - Log Type: SPDX
  - Sent Exchange:
    - 001 for non-SP stations
    - Your province Example: B for Lubuskie

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a Polish station or a DX station.

#### **4.82. Stew Perry Topband Distance Challenge**

The Stew Perry contest is CW only.

- Window: Select Log type
  - Log Type: STEWPERRY
  - Power category:
    - HIGH when > 100 Watt
    - LOW when 10 - 100 Watt



- QRP when less than 10 Watt
- Sent Exchange:
  - Your four character grid Example: JO33

The point calculation in the log is multiplied by a power multiplier for each qso point value. This factor depends on the selected Power category chosen. HIGH is multiplied by a factor 1, LOW by a factor 2 and QRP by a factor 4.

#### **4.83. Scandinavian Young Ladies Radio Association SYLRA**

- Window: Select Log Type
  - Log Type:SYLRA
  - Mode: Mixed+Dig
  - Sent Exchange: 88 for YLs, 73 for OMs

#### **4.84. UA1DZ Memorial Cup**

The UA1DZ Memorial Cup can be used by St.-Petersburg and Leningrad region stations and DX stations.

- Window: Select Log type
  - Log Type: DZCUP
  - Mode Category: Select mode used (CW, Mixed, SSB)
  - Sent Exchange:
    - For non-St.-Petersburg and Leningrad region stations: 001
    - For St.-Petersburg and Leningrad region stations: RDA (administrative area)


#### **4.85. UBA contest CW / SSB**

The UBA DX Contest can be configured for ON stations and DX stations.

- Window: Select Log type
  - Log Type:
    - CW: UBACW
    - SSB: UBASSB
  - Mode Category: CW
  - Sent Exchange:
    - For non-ON stations:001
    - For ON stations: 001 + Your province Example: 001 OV

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an ON station or a DX station.

Log submitting for non Belgian stations:

Before submitting your log look at the page from Franki, ON5ZO at <http://users.pandora.be/on5zo/n1mmlogger.htm> 

The information tells in English, Dutch and French how to update the category in the Cabrillo file so you are placed in the right category.

The UBA contest manager approved and will accept the Cabrillo output made by N1MMLogger.

IMPORTANT NOTE quoted from the rules as found on the UBA website, regarding log submission:

Log submission info from UBA: The UBA likes to receive a Cabrillo file

Special Setup for Belgian participants:

How to include your province abbreviation in the Cabrillo output?

This MUST be done for both SSB and CW contests! Go to Config > Change your Station Data > State field: fill in the abbreviation for your province (OV, VB etc). It is VERY IMPORTANT to do this, as it will determine what you have sent in the log (Cabrillo output), and it is needed by the UBA Contest Team. The official abbreviation (2 letters) for the Belgian Provinces is to be found on the UBA site, under the rules for HF contests.

Non-Belgian participants can leave this field 'as is', it is only used for Belgian testers.

How to send your province abbreviation after the serial number in CW?

When you have selected to begin a new log for the UBA DX CW contest, you must change the F2 button message to send your province.

This is done like this; go to: Config > Change Packet /CW/SSB/Digital Message buttons > Change CW buttons In the right column, second row, there is: <<<5nn>>{EXCH} This means the incrementing serial number. Now you have to add your province abbreviation, preceded by a slash (/). It should look like this: <<<5nn >>{EXCH}/OV or <<<5nn >>{EXCH}/AN

WARNING: Never change the '001' as the Sent Exchange value in the Select Log Type window, as the software will no longer send serial numbers!!!

## 4.86. UBA ON contest

The UBA ON Contests (4 in total) can be configured for ON stations and DX stations.

- Window: Select Log type
  - Log Type: UBAON
  - Mode Category: Select mode used (CW, Mixed, SSB)
  - Sent Exchange:
    - For non-ON stations:001
    - For ON stations - Serial + Your UBA gewest Example: 001 AAA

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an ON station or a DX station.

#### 4.87. UBA Spring

The UBA Spring contest (4 in total) can be configured for ON stations and DX stations.

- Window: Select Log type
  - Log Type: UBASPRING
  - Mode Category: Select mode used (CW, Mixed, SSB)
  - Sent Exchange:
    - For non-ON stations: 001
    - For ON stations - Serial + Your UBA gewest Example: 001 AAA

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an ON station or a DX station.

#### 4.88. UBA Low Band Winter

The UBA Low Band Winter contest (4 in total) can be configured for ON stations and DX stations.

- Window: Select Log type
  - Log Type: UBAWINTER
  - Mode Category: Select mode used (CW, Mixed, SSB)
  - Sent Exchange:
    - For non-ON stations:001
    - For ON stations - Your UBA gewest Example: AAA

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an ON station or a DX station.

#### 4.89. Ukrainian Championship

The Ukrainian Championship is run on CW, SSB and RTTY.(for Ukrainian stations only)

- Window: Select Log Type
  - Log Type: UKRCHCW, UKRCHSSB, UKRCHRTTY
  - Sent Exchange: two-letter district designator, plus serial number - e.g., KV 001

#### 4.90. Ukrainian DX contest

The Ukrainian DX contest can be configured for Ukrainian stations and non-Ukrainian stations.

- Window: Select Log type
  - Log Type: UKRAINDX
  - Mode Category: MIXED
  - Sent Exchange:
    - Oblast for Ukrainian stations Example: CH
    - 001 for non-Ukrainian stations

Note: Countries are counted per band for SSB, CW and RTTY, because RTTY is in a separate contest module they won't be counted correct when a station makes next to SSB and CW also RTTY q's or the other way around...

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an Ukrainian station or a non-Ukrainian station.

#### **4.91. UK DX contest CW / SSB**

The UK DX contest can be configured for UK stations and non-UK stations.

- Window: Select Log type
  - Log Type:
    - CW: UKDXCW
    - SSB: UKDXSSB
  - Sent Exchange:
    - Area code for UK stations Example: BS
    - 001 for non-UK stations

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an UK station or a non-UK station.

#### **4.92. UN DX Contest**

Kazakhstan Open Championship

- Window: Select log type
  - Log Type: UNDX
  - Mode Category: Mixed
  - Sent Exchange:
    - District code for Kazakhstan stations Example: L17
    - 001 for non-Kazakhstan stations

#### **4.93. Independence of Venezuela Contest**

- Window: Select Log type
  - Log Type: YV
  - Sent Exchange: 001

The YV call areas are shown in the Multiplier window, choose the tab "Sect".

#### **4.94. WAEDC contest CW / SSB**

The WAEDC Contest can be configured for European stations and non-European stations.

- Window: Select Log type
  - Log Type:
    - CW: WAECW
    - SSB: WAESSB
  - Sent Exchange: 001

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a European station or a non-European station.

This contest has QTC Traffic: A QTC contains time, call sign and serial number of the reported QSO. Example: "1307/DA1AA/431" means that DA1AA was worked at 1307 UTC and sent serial number 431

The QTC Status bar shows the number of QTC Exchanged with current callsign / Number left to send to that callsign / Total number of QTC left to be sent.

#### **WAE DX CW / SSB by Franki, ON5ZO**

##### **1. Introduction**

The main character of Worked All Europe (WAE), sponsored by the DARC is that Europe works non-Europe ('DX'), and stations outside of Europe work all countries on the WAE-list. So far, this is not an unusual contest. However, WAE has something no other contest has, that you'll either love or hate, being 'QTC'. What is a QTC? Well, the WAE rules give the following definition: A QTC is the report of a contest QSO back to a European station.

Let's clear this up a bit. A QTC is a piece of traffic that can only be sent from outside EU ('DX') to EU ('WAE'). DX stations can offer to send them, EU stations will beg to get them. Why? Simply because for both sides each QTC is added to the QSO total. If N1MM makes a QSO with ON5ZO, then they both get 1 point for the QSO. If they decide to exchange 10 QTCs during this QSO, they both have 11 points, being 1 QSO + 10 QTCs. If after the contest, ON5ZO made 300 QSOs, during which he got 500 QTCs, the total score will be 800, to be multiplied with the amount of multipliers. Hence the popularity of the QTCs.

Now, what does a QTC look like? It has three main parts, being time, call and serial. When exchanging QSOs, the DX station will send the QSOs that are already in his log. He will transmit the three parts of the QSO that make up the QTC. Suppose that N1MM logged ON5ZO at 0123UTC, and ON5ZO gave '012' as his serial to N1MM. Later on in the contest, N1MM runs into

9A7P, who asks for a QTC. N1MM kindly willing to transmit a QTC, sends the following to 9A7P: 0123 ON5ZO 012 So, in other words, N1MM says to 9A7P that at 0123UTC, he logged ON5ZO who gave him 012. So the serial in the QTC is the number given by the EU station to the DX station in their earlier QSO!

The rules say that a DX station can only send 10 QTCs to a EU station, and it is forbidden for the DX to send a QTC featuring a previous QSO with the same EU station he is currently giving QTCs to. No worries, the software takes care of that. Furthermore, each QSO can only be sent once as a QTC, so a DX station can never have more QTCs sent than QSOs logged. A EU station however, can have much more QTCs than QSOs, as each QSO can raise up to 10 QTCs. A DX station can choose to send 10 QTCs at once during a QSO, or if he has, let's say 100 QSOs in the log, of which 95 have already been sent once as a QTC, he can send 5 QTCs. The EU station can ask for another 5 QTCs later on in the contest, after another QSO on another band - or on the same band! More on this later.

The maximum of 10 QTCs can be reached with only 1 QSO, or with 5 QSOs on (5 bands), with each time 2 QTCs. You see, everything is possible. You don't even need to make a QSO to get QTCs. Suppose that early in the contest, ON5ZO is running, and N1MM calls on 20m. They have a regular QSO and exchange serial numbers. ON5ZO asks 'QTC?' but N1MM does want to make some QSOs first and wait to send QTCs towards the end of the contest. 40 hours later, N1MM is running on 20m and ON5ZO comes across, ON5ZO sees that N1MM is a dupe because they QSO'd in the beginning of the contests. However, they didn't exchange QTCs, so ON5ZO asks 'QTC? de ON5ZO'. N1MM sees that they have worked but indeed: there were no QTCs exchanged in the first hours of the contests, and N1MM is now eager to send all his QSOs as QTCs. N1MM says 'QTC OK' and they exchange QTCs, but no serial number for the QSO - because there is no QSO anymore, only the exchange of QTCs.

But there is more. A series of QTC is to be numbered. The sending station (DX) will initiate the series of QTCs with a number like 'QTC xx/yy'. This means that the DX stations is sending QTCs for the xx'th time, and this will be a series containing yy QTCs. Suppose N1MM sends 'QTC 45/8', this means that it's the 45th time he's sending a series of QTCs, and this particular series will contain 8 QTCs.

Now that we know what a QTC is, what it looks like and why it is sent, let's look at a real situation using the software. If you start a new contest using the WAE-module, it looks like a normal contest. You set it up with the usual parameters, like Power, Category etc. Don't forget to fill in '001' for the exchange!

When this is done, you'll see that you have both entry windows. You can use these like you normally would, both in run mode and in S&P.

## 2. WAE from EU-side

This is what a WAE-QSO could look like including some QTCs, with ON5ZO running:

CQ TEST ON5ZO

N1MM

N1MM 5NN 012

R 5NN 48

QTC?

R QTC 12/5 QRV?

QRV

0123 PA1M 12

R

0124 G4BUO 03

R

0124 F6BEE 56

R

0125 DL6RAI 89

R

0126 9A7P 102

R TU

How does it work? After entering the normal QSO, where both stations exchange serial numbers, ON5ZO goes into QTC mode by pressing Ctrl+Z. This triggers the program to send the 'QTC?' message to ask N1MM if he wants to give QTCs. At the same time, you'll notice that the entry window changes a bit, and the cursor will be blinking the 'N/N' window. N1MM answers and gives the 'N/N' part, so ON5ZO logs '12/5'. Hitting spacebar moves to the next window, and you'll send 'QRV' (with your paddle, for the time being), so the DX knows you're ready to copy the QTCs. Each time you copy a part of the QTC and want to move to the next field, you press the spacebar. When you have a complete QTC, i.e. time/call/serial, you hit Enter and the program sends a confirming 'R', so the DX knows you got it OK and he can start transmitting the next QTC. If the series of QTCs is copied and you're done with this calling station, you press F3, which is the Thank You message, the program will send this TU message and close the QTC-mode, returning to normal QSO mode. Remark: Sometimes DX stations don't repeat the two digits representing the hour in the time part of the QTC. They just type the minutes, because the hour is the same for a bunch of QSOs that were logged in a short time span. When copying QTCs at 36WPM or faster, you don't have the time to think things over so you just type what you copy. If you hear that after two numbers, the next character is a letter, you press space and begin typing the callsign. The software will automatically add the two digits of the hour.

In S&P mode, the same keystroke, Ctrl+Z, activates QTC-mode here. There is little or no difference in the procedure. Only advice is to try everything well BEFORE the contest and report bugs ASAP!

### 3. WAE from DX-side

From the other side of the contest, the 'DX' side, the main keystroke to activate QTC-mode is also Ctrl+Z. You will then have a pop-up window, asking you how many QTCs you want to send to the EU-station. Hitting Enter will send the 'QTC xx/yy' message, the 'yy' part being the number of QTCs you agreed to send in the pop-up message. Once the EU-station has accepted this message, hit Enter again to send and log the first QTC. For each new QTC, hit Enter once more.

The second most important keystroke is Alt+Enter. This will repeat the last QTC sent, or if you're still in the 'N/N' stage, it'll resend this information. It will occur more than once that a EU station does not copy the first time you transmit, due to QRM, 'cockpit errors' or simply because you send too fast! So Alt+Enter will repeat the last part sent, should the EU station ask 'AGN' or something similar.

On the bottom of the Entry window, you will see a message, indicating how many QTCs have already been sent to a given station.

#### WAEDC Keyboard Assignments

Ctrl+Z - activate QTC-mode and sends: QTC? and log QSOs if nr is greater than 0.

Alt+Enter - resend last QTC or it will resend QTC n/n if that was the last message sent.

Alt+W - when used in a QTC leaves the sender's call and N/N so only wipes the 3 parts of the QTC

= (equal sign) - resend sent QTC info

#### Step-by-Step instructions

- After you make a contact, first log the contact
- If you want to send QTCs use Ctrl+Z, the log window will change to QTC mode
- You get a screen asking how many QTCs you want to send. Enter a number of just hit Enter and the QTC count will go away.
  - At the bottom of the logging area the QTC number will be indicated, i.e. 12/10, meaning the 12 QTC series and 10 QTCs
- After you hit Enter again the first QTC will show up with the time call and number
- After the station acknowledges the QTC hit Enter and the next QTC will show up
  - Continue this until all QTCs have been sent
- Then do Ctrl+Z to return to normal logging

#### Other info

- If only two digits of time are entered the program adds the first two hour digits from prior QTC
- The status line in the Entry window shows the total QTC Sent and Received from the station being worked
- The number of the QTC in the series sent is shown. Example: 5 from 10
- When reediting a QTC the program will go back to QSO mode after editing
- When in QTC mode the letters "QTC" will be shown in big red letters where normally the dupe



label goes

- Want to know how many QSOs and QTCs you have by band?
  - Try View/Statistics. Then use either Band by Exchange1 or Exchange1 by Band

#### 4.95. WAG contest

The WAG contest is for German stations and non German stations.

- Window: Select Log type
  - Log Type: WAG
  - Sent Exchange:
    - non-DL stations: 001
    - DL stations:
      - DARC member:DOK (example: V11)
      - non-DARC member:001

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a German station or a non-German station.

Non DL stations may only give a number.

DL stations give a DOK (DARC members) or a number (non DARC members)

For stations not giving an exchange put 000 in the exchange field

- minimal DOK length is 2
- 0 is allowed to be entered

Note: When updating a DOK in the log window you have to update not only the Exchange but also the Section by hand....only when the qso is in the Entry window the program strips the Section (V) from the Exchange (V11) automatically.

#### 4.96. World Wide Peace Messenger Contest

The Peace Messenger Contest can be configured for Peace Messenger Contest stations and non Peace Messengerstations

- Window: Select Log type
  - Log Type: WWPMC
  - Mode Category: CW, SSB or Mixed
  - Sent Exchange PMC station: 001 PMC abbreviation Example: 001 ABI
  - Sent Exchange non PMC station: 001 NON Example: 001 NON

#### 4.97. WRTC contest

The World Radiosport Team Championship (WRTC) contest is fully supported for use by on-site participant teams

- Window: Select Log type
  - Log Type: WRTC
  - Sent Exchange: 001 i.e Serialnumber Example: 001

The WRTC follows the rules for the WPX contest (please check above) with some additional WRTC specific changes below.

- Check Partial is disabled from master.dta for this contest only.
- Displaying "Unique" is disabled in the Check Partial window for this contest only.

#### 4.98. YO HF DX contest

The YO HF DX contest can be used by Romanian stations and non Romanian stations.

- Window: Select Log type
  - Log Type: YOHFDX
  - Sent Exchange:
    - non-YO stations: 001
    - YO stations: Romanian county abbreviation (two letters) Example: AR

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a Romanian station or a non-Romanian station.

### 5. QSO Parties

The program supports many US and Canadian QSO parties. Depending on the complexity of the rules, there may be minor scoring anomalies.

- It is **very** important for proper operation of the program in QSO parties that the program "know" whether you are an in-area (state or province) or out-of-area participant. All QSO parties require different program operation and scoring rules for in-area and out-of-area participants.

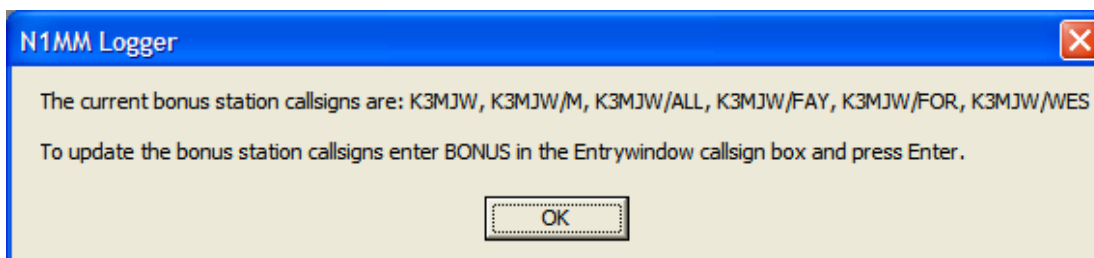
The program determines which you are from the ARRL Section that you have entered in the Station Data dialog (under the Config menu). When creating a new log for a QSO party, a message box will inform you whether the program thinks you are an in-state, or out-of-state participant, based on your ARRL section, so that you can correct things if anything is wrong.

Non-US/VE stations should enter "DX" in the ARRL SECTION field. If you enter an ARRL section with a non-US/VE callsign, you will be warned to correct your Station Data before continuing.

- Window: Select Log type
  - Log Type: QSOPARTY
    - After selecting QSO Party, a list box shows up in the right-hand part of the contest selection dialog box, with buttons below it for importing and editing the section list. Click on the down arrow to choose the QSO Party you want (example image shows Hawaii HI) . When in doubt, do the import, to make sure you pick up any changes in the official abbreviations since the last running.
    - Example: The entry in the list of QSO Parties for the New England QSO Party is "NEWE" ("NE" is for the Nebraska QSO Party). Most of the entries in this list are states or provinces, except for the NEWE (New England) and MAQP (Mid-Atlantic) entries.



- Mode Category: MIXED
  - Sent Exchange:
    - The exchange depends on the QSO party. Most use county for in-area participants and state for those out of the area. Some use serial numbers as well.
    - Inside the selected State/Province - See contest instructions
    - Outside the selected State/Province - See contest instructions
    - if you need to send a serial number, enter 001 and the abbreviation for your location in the Sent Exchange field, to automatically increment the serial number for each QSO.
- QSO Party Bonus Station Support - A few state QSO parties have "bonus stations", which you can work for extra point credit. When the state party has bonus station(s), the program will display the bonus station callsign list on program start and upon exiting the contest dialog.



This list of bonus stations can be modified by the user by entering the command BONUS + Enter in the Entry Window callsign box. This will pop up a window where you can enter a revised list.

**Each** callsign, and each variation (CALL, CALL/M, CALL/CTY) must be on the list in order to get credit for the bonus station(s).

Note: The program does not store bonus station callsign changes, so if there are changes, you will need to re-enter the complete list each time you re-start the program or change logs to that QSO party. You can't simply enter the changes.

To view the QSO's logged, enter the bonus station callsign in the Entry window and look at the lower portion of the Log window. To view the number of bonus stations counted in the score, export the Score Summary to a file.

#### **Help Keep Your Favorite QSO Party up to Date**

You can help keep N1MM Logger up to date for your favorite QSO Party by notifying the N1MM team of and changes in scoring, bonus stations, etc. Just post the changes in the N1MM Reflector, or send a Feature Request. Obviously, earlier is better.

- Rover Support - N1MM Logger supports Rover and Mobile operations for QSO parties. Check the chapter [Advanced Functions](#) for the details.
- County Line Stations - Some QSO parties allow operation from county boundaries, giving multiplier credit for both counties. When working these county line stations, you will need to log one QSO for each county. Entering all counties in one QSO will not work. It is easy to do this in S&P mode, if you have enabled the Show Non-workable Spots option. Log the first QSO, and station just worked will appear in grey (as a potential dupe) in the call-frame above the Callsign. Press Space to repopulate the Entry window with the previous callsign and exchange, change the county exchange (backspace is not needed), log the contact. When in RUN mode, the callsign needs to be typed.
- Simple Call History Procedure - The steps for generating a Call History file from a previous QSO party are as follows:
  - Using program version 10.9.5 or newer, open last years QSO party contest log.
  - Click Tools, Clear Call History then Update with Current Log
  - Click File, Export Call History and export the data into a file.
  - Open the new QSO party contest log for the current year. Associating the saved call history file with this state party is possible using the Associated Files tab. Alternately, click on File, Import Call History after the contest is open.
  - Click on Config and place a checkmark in front of Call History Lookup.
  - The call history data is stored in the database. If you open a different contest and have Call History Lookup enabled, the program will use this data. So uncheck this option after the contest. Users can combine exported call history files from several years. The recommended editor is NotePad. Some editors place non-ASCII characters in the file

and this will cause import issues. Place the oldest contest at the top of the merged file. The import routine will merge the data and deal with duplicate entries. You can look at the result by exporting the call history and viewing it with NotePad.

### **5.1. Same weekend: 7QP, Indiana QSO Party, New England QSO Party, and Zeroland QSO Party**

Four QSO parties - the 7QP (7th Call Area QSO Party), Indiana QSO Party, New England QSO Party, and the Zeroland QSO Party - are all on the same weekend. Since 2010, the program software allows users to log stations active in all four QSO parties and automatically determine the state multiplier from the received exchange (other contest county exchange). Log the exact exchange that is receive and send the same Cabrillo output to all four contest sponsors. If you are an "in-state" user of one of these QSO parties, select the appropriate state party option in the QSO party contest selector. If you are "out-of-state" for all contests this weekend, select the IN7QPNE option in the dropdown state selector. The instructions are the same, log the exchange that you receive and send the same Cabrillo file without editing to all four sponsors. All sponsors re-calculate the score of all submissions.

### **5.2. FL QSO party**

Florida multiplier work around.

Florida stations get a FL state multiplier for their first Florida QSO. Florida stations get no multipliers for Florida counties but get QSO point for Florida QSOs. To get the right multiplier change the exchange of the first Florida QSO to FLA, it forces the FL multiplier credit.

### **5.3. PA QSO party**

For in-state stations, the first EPA and WPA county worked will count both the county and the section multiplier in the score. Likewise, the first DXCC station worked counts as the single DX multiplier. See the information in the general section above for working bonus stations and county line stations. It is not necessary to include a Dupe Sheet with the contest submission when N1MM Logger is used for the PA QSO Party logging.

### **5.4. MARAC QSO Party**

Since this QSO party uses all 3077 US counties as multipliers, N1MM Logger uses a 6-character naming convention - enter a standard postal 2-letter abbreviation for the state and a four-letter abbreviation for the county. See [the MARAC web site](#) for a list of the valid county abbreviations for your state. While N1MM Logger will recognize some "aliases" and substitutes the standard abbreviation in your log, it is good practice in all county-based QSO parties to send the recognized form of abbreviation for that particular event.

## 5.5. Updating and importing the QSO party sections

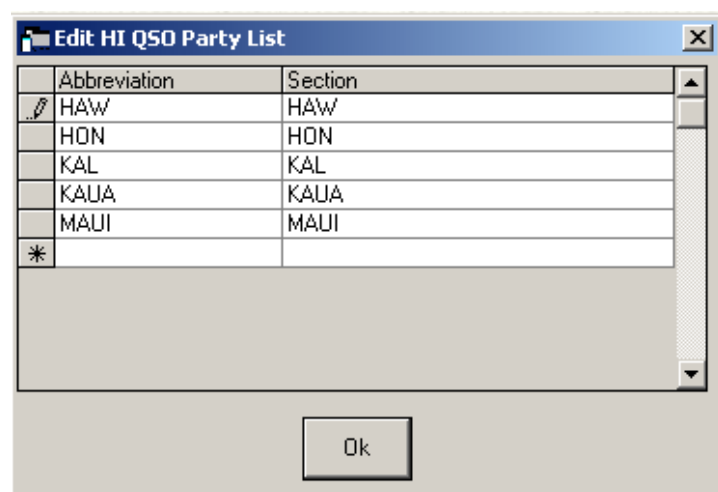
- Always try first on a test database.
- The 'QSOparty.sec' file located in the program directory has listed all the sections per QSO party.
- Importing is done automatically at the start of the program when the database has no QSO party section information (checked at startup).
- If the 'QSOparty.sec' file has been changed (updated) after automatically been imported by the program it has to be imported into the database manually so the made changes are imported.
- The load process deletes all the counties for a state before loading them.
- The maximum length for a section is 5 characters.

### How it works

If you want abbreviations for counties e.g. Tolland = TOLL then, Edit the Sections list, and TOLLAND in the abbreviation, and TOLL in the key. When you log Tolland, the program will substitute TOLL.

### Test the change

- Open a TEST database
- Create a new QSOPARTY contest
- Choose Import (See image above)
- Specify the location where you saved the attached file and "QSOparty.sec"
- Import need only be done once (after an update/change).
- You should now see 20+ states/provinces in the combo box.
- Choose one and test....



## 6. VHF and Up contests

In VHF and up contest it is the norm to give accurate signal reports. Use the Tab to go from the

callsign filed to the signal report fields. You will note that it highlights the strength to allow quick modification of that.

#### **Feature**



When a grid is entered but no call, all QSOs with that grid will show in the lower part of log window

## 6.1. ARRL January VHF Sweepstakes

- Window: Select Log type
  - Log Type: ARRLVHFJAN
  - Sent Exchange: Your four character grid Example: JO33

Exchange of signal report is optional. Foreign stations work W/VE amateurs only.

Stations can be logged more than once from a different grid without being a dupe (for Rover stations).

Dupe check on first 4 characters of grid.

The score for Rover stations is not being calculated by the program!

## 6.2. ARRL June VHF QSO Party

- Window: Select Log type
  - Log Type: ARRLVHFJUN
  - Sent Exchange: Your four character grid Example: JO33

Exchange of signal report is optional. Foreign stations work W/VE amateurs only.

Stations can be logged more than once from a different grid without being a dupe (for Rover stations).

Dupe check on first 4 characters of grid.

The score for Rover stations is not being calculated by the program!

## 6.3. ARRL September VHF QSO Party

- Window: Select Log type

- Log Type: ARRLVHFSEP
- Sent Exchange: Your four character grid Example: JO33

Exchange of signal report is optional. Foreign stations work W/VE amateurs only.

Stations can be logged more than once from a different grid without being a dupe (for Rover stations).

Dupe check on first 4 characters of grid.

The score for Rover stations is not being calculated by the program!

#### 6.4. IARU Region 1 contesting - 50 MHz, VHF, UHF/Microwaves

Region 1 contesting uses a serial number and gridsquare as exchange. The points per qso is the calculated distance between your sent gridsquare and the received gridsquare.

- Station Information ('Config | Change Your Station data')
  - Grid Square: <gridsquare> Example: JO33fd
    - This grid square is used in calculating the distance between the stations (and is part of the exchange)
- Window: Select Log type ('File | Choose Which Contest to Log')
  - Log Type: VHFREG1
  - Sent Exchange: 001 <gridsquare>
    - Example: 001 JO33fd
    - The sent exchange is not used by this specific contest otherwise the use in the macros for the function keys.

This contest type has the possibility to use the CallHist table in which information can be stored which can be easy to have during a qso like name and gridsquares used in previous contests. This specific contest type uses the Name, Locator1 and Locator2 fields from the CallHist table. Entering any information in this table is not necessary for the contest module to work but can be very handy. For this to work information has to be imported in the Call History table ('File | Import | Import Call History'), also this feature has to be enabled to work ('Config | Call History Lookup').

- When a callsign is entered and the SPACE or TAB key is pressed the program will check next to the normal things like dupe check the following:
  - Check the log if the callsign is known and if already worked the gridsquare is entered from the log in the Entry Window grid square exchange field.
  - If not found in the log file it will check the CallHist table. If the callsign is found it will place the content from Locator1 in the Entry Window grid square exchange field. The callsign is 'normalized' before searching in the CallHist table which means that /P, /A, /2 etc. will be removed before searching. Information in the CallHist table should be in its normalized form.
- Information from the CallHist table i.e. Locator1, Locator2 and the name field will be shown



below the function keys.

- Normally this feature is not turned on (it gives a very short delay while searching the table), to turn it on select: 'Config | Call History Lookup'
- Note: Any information already typed in the grid square exchange will not be overwritten by the log file or CallHist table search. So first entering a grid square and afterwards a callsign is possible without overwriting the already entered grid square information. A callsign already worked will be shown in the bottom pane of the log window and marked with the dupe message. If the station is not worked before and is present in the CallHist table, this information will always be shown below the function keys.
- More information about importing information in the CallHist table can be found in chapter VHF and Up contesting. A zip file with an import file for the 'Call history' lookup function and a ready master file with known calls can be downloaded from the N1MM website, select 'Other Files' under 'Downloads'. Don't forget to turn on the lookup function under 'Config | Call History Lookup'
- More information about VHF related contesting and features can be found in chapter VHF and Up contesting

### **A QSO can not be entered when**

- The serial number is missing
  - Warning: "Missing Serial Number!"
- The grid length is not 6
  - Warning: - "6 character grid required!"
- The grid format is not correct.
  - Warning: - "Wrong format grid. Format = AA##AA"

These checks will (only) be done: when trying to log the qso (mostly by pressing Enter)

### **How VHFREG1 looks for a known grid square**

- Look in the log if the station has been worked before (on any band)
  - If found show the grid and calculate distance and bearing
- If not found look for the call sign in the 'call history' table including any /P /3 etc when applicable.
  - If found show the grid and calculate distance and bearing
- If not found look for the call sign in the 'call history' table with the /P /3 etc removed (normalized callsign)
  - If found show the grid and calculate distance and bearing
- If not found add the 'big grid' from the country when known by VHFREG1
  - If found show 'big grid' (no calculations done)
  - If not show nothing in grid square field
- The check will (only) be done: When space is pressed and the cursor is in Callsign field

### **Bearing and distance calculations**

- When space is pressed and the cursor is in Callsign field

- When trying to log the qso (mostly by pressing Enter)
- The grid square length has to be 4 or 6 digits.
- Bearing info is shown in the log window and saved in the Misc field.
- Distance info is shown in km in the log window and saved in the Points field.
- Use Rescore to have the bearing and distance (re)calculated.

### Check Grid with country

- When a grid is entered the program will check if the 'big grid' is a possible grid for the entered callsign.
  - Example: A Dutch station is always in JO.
- When the callsign is entered with /MM the check will not be done.
- The check will (only) be done:
  - When space is pressed and the cursor is in Callsign field
  - When trying to log the qso (mostly by pressing Enter)

### Add 'big grid' to 4 digit grid (if last 4 digits entered)

- When a 4 digit grid is entered the program checks if these are the last four characters from a 6 digit grid. If so it will add the 'big grid' from the country (for a Dutch station it will add JO).
- The check will (only) be done:
  - When space is pressed and the cursor is in Callsign field
  - When trying to log the qso (mostly by pressing Enter)

### Add 'big grid' when no grid is found (from log or 'call history' table)

When a station is entered in the callsign pressing SPACE will search the 'call history' table. When the entered callsign is not found the program will try to add the 'big grid' who belongs to that country. If more grids are possible it uses the grid which occupies the most space in the country (IO in England) or is the easiest workable grid from Western Europe (JP for Norway, most south grid). The Netherlands will always give JO because this is the only grid possible for PA.

- The check will (only) be done:
  - When space is pressed and the cursor is in Callsign field

**For DL stations:** The German contest manager hat informiert dass er die Logeinsendungen von N1MM gerne akzeptiert. Wie immer akzeptiert er den postalischen Versand des Logs, jedoch auch Email ist möglich, lediglich müssen die Daten druckfähig sein.

Vorab also einige Hinweis:

1. Jedes Log muß mit dem Generic-File-Output als TXT-Format sortiert nach Zeit abgespeichert werden und als Bezeichnung "CALLBAND.TXT" lauten. Also DH5HV2m.txt zum Beispiel für einen Contest unter DH5HV auf 2m.
2. Bei der Einsendung mehrerer Bänder sollte man diesbezüglich den Generic-File erstellen mit "sorted by Band" und dann mit einem Editor kurz bearbeiten, sodass man als Beispiel eine

2m-Datei, eine 70cm-Datei, eine 23cm-Datei, etc. hat. Auch hier natürlich dann DH5HV2m.txt und DH5HV70cm.txt und DH5HV23cm.txt erstellen bzw. benennen.

3. Und wie bisher auch üblich wird für jedes Band ein separates Deckblatt benötigt, was nur komplett ausgefüllt gewertet werden kann. Man findet dies unter <http://www.darc.de/referate/ukw-funksport/index.html> ganz unten als PDF- oder DOC-File.

## 6.5. Marconi CW contest

The Marconi CW contest is CW only. For settings see the **VHF Region 1** contest.

- Window: Select Log type
  - Select: Log Type: VHFREG1

## 6.6. NAC Activity Contest

As there is no serial number needed in the NAC contest exchange serial numbers are not shown and not added to the EDI output (opposed to VHFREG1).

In the EDI output the scoring, bonus and multipliers are calculated. The grid locator from the station information is used in the calculations. Also the antennas, heights etc. are taken from this dialog. For more settings and possibilities see the VHF Region 1 contest.

- Window: Select Log type
  - Select: Log Type: VHFNAC
  - Sent Exchange: Nothing specific needed but the 6 digit grid would be fine to use it in the Sent Exchange macros.

## 6.7. REF Departments contest 50 Mhz

- Window: Select Log type
  - Log Type: DDFM50
  - Sent Exchange: Serial Number + Your four character grid Example: 001 JO33

## 6.8. VHF/UHF Helvetia 26 contest

- Window: Select Log type
  - Log Type: VHFHELV26
  - Sent Exchange: 001

Local Swiss VHF/UHF and up contest. Uses almost the same rules as VHFREG1 but with an added field for Swiss stations for exchanging Cantons which are also multipliers for the contest All features mentioned above for VHFREG1 can be used in this contest. Use in the Multiplier sheet the Sect tab to view the worked Cantons (select VHF and auto).

## 6.9. VHF HG OB contest

- Window: Select Log type
  - Log Type: VHFHGOB
  - Sent Exchange: 001

Local Hungarian VHF contest. Uses almost the same rules as VHFREG1 but dupes per mode CW or FM/SSB (station may be worked twice per band). All features mentioned above for VHFREG1 can be used in this contest.

## 6.10. VHF UA1DZ Cup

- Window: Select Log type
  - Log Type: VHDZCUP
  - Sent Exchange: 001 gridsquare Example: 001 KO94BD

Russian VHF contest. Exchange is RST + serial number + grid square.

## 6.11. VRZA - Nederlandse Locator Contest - WANLC

- Window: Select Log type
  - Log Type: REGIOVHF (is dus nu de WANLC contest)
  - Sent Exchange: 001

Only for Dutch stations.

Noot: Deze contest kent een aantal mogelijkheden om extra multipliers te halen middels een soort 'Rover' stations. Dit wordt niet ondersteund door het programma en deze stations worden een DUPE! Ofwel: De multipliers en punten voor /M en /P stations gewerkt voor een tweede keer worden NIET door het programma automatisch bepaald. Deze dupes dus WEL loggen en achteraf de score en multiplier aanpassen op 'generic log' en de 'summery sheet'.

Cabrillo output wordt ondersteund (File, Export, Cabrillo).

Voor stations in de secties B en J (Single Operator / Mixed mode)

- Selecteer SINGLE-OP-ASSISTED (onder File, Choose Which Contest to Log, Operator Category) voor een doorlopende nummering over de banden heen!

## 6.12. YU DX Contest

- Window: Select Log Type
  - Log Type: YUDX
  - Sent Exchange: your ITU zone. (remember also to put RST in your exchange messages)

## 6.13. UKSMG sporadic-E competition

- Window: Select Log type
  - Log Type: UKSMG
  - Sent Exchange: Your four character grid Example: JO33

Only the 6 meter band is shown in the Multiplier window.  
A 4 digit grid is required and 6 digit grid is allowed to enter.

## 7. Digital contests - RTTY/PSK31

When doing RTTY and PSK contests always check the Mode tab in Configurer for correct settings!

### {TIME2} - how it works

The time will be set if

- You have a call sign in the Entry Window
- The contents of the database field that holds the time is empty for that callsign, **and** one of the following conditions is met:
  - F2 is pressed or sent
  - Insert is pressed and the code that is run from the insert key sends the contents of the F2 macro
  - {TIME2} is contained in the macro string that is sent

If you do not have a call in the Entry Window or the database field is not empty, the {TIME2} macro will be replaced by the Last Sent Time. So if you have not sent the time and you are trying the macro out you will see 0000 printed on the screen. But if 0512 was the last time sent then that is what the {TIME2} macro will send. {TIME2} stays locked until the contact is logged or the callsign wiped.

### 7.1. ANARTS WW RTTY contest

The last running of this contest was in June 2009. It has been replaced by the DCRG Long Distance contest (DLDCRTTY).

- Window: Select Log Type
  - Log Type: ANARTSRTTY
  - Sent Exchange: Zone Example: 14

## 7.2. ANATOLIAN RTTY contest

- Window: Select Log Type
  - Log Type: ANATOLRTTY
  - Sent Exchange: 001

## 7.3. ARRL RTTY Roundup

The ARRL RTTY Roundup can be used by K/VE stations and DX stations.

- Window: Select Log Type
  - Log Type: ARRLRTTY
  - Sent Exchange:
    - Your state/province - for K/VE stations Example: NY
    - 001 - for DX stations (non K/VE)

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a DX stations or a W/VE station.

NB. US stations who work US "/MM" stations are also allowed to log serial numbers.

## 7.4. BARTG Spring RTTY contest

- Window: Select Log type
  - Log Type: BARTGSRTTY
  - Sent Exchange in the Contest setup:001

The actual sent exchange includes a signal report, serial number and the UTC time. Program this into your Exchange messages using the {TIME2} macro, e.g.: {TX} 599 {EXCH} {TIME2} {RX}, or {TX} 599 # {TIME2} {RX}.

Needed W,VE,JA,VK call area mults in bandmap and available window are highlighted. Added EXPERT to list of overlay categories choices. The EXPERT overlay category must be

selected for the 5 minute band change counter to not be active for SINGLE-OP

## 7.5. BARTG RTTY Sprint contest

- Window: Select Log type
  - Log Type: BARTGRTTYS
  - Sent Exchange:001

Be careful not to confuse this contest with the BARTG Spring RTTY contest.

Note that there is no signal report in the sent exchange, just a serial number.

Needed W,VE,JA,VK call area mults in bandmap and available window are highlighted. Added EXPERT to list of overlay categories choices. The EXPERT overlay category must be selected for the 5 minute band change counter to not be active for SINGLE-OP.

This contest type is also used for the BARTG 75 baud sprints in April and September. For information on setting up MMTTY and N1MM Logger for 75 baud RTTY, see the section on [Using MMTTY for 75 baud RTTY](#) in the manual's Digital modes chapter.

## 7.6. CQ World Wide DX contest - RTTY

- Window: Select Log type
  - Log Type: CQWWRTTY
  - Mode Category: RTTY
  - Sent Exchange:
    - North American/Canadian stations - Your zone plus the STATE or AREA Example: 05 NY
      - NB For cabrillo log submission the order must be: **Zone first, then state (or province)**.

with no leading spaces, and ONLY ONE space between the zone and the state.

- Other stations - Your zone Example: 14

The default zone values for US (A,K,N,W) stations are

- Zone 3 - If number in callsign is 6 or 7
- Zone 4 - If number in callsign is 5 or 8 or 9 or 0
- Zone 5 - If number in callsign is 1 or 2 or 3 or 4

The default zone values for Canadian (VE) stations are

- Zone 1 - If callsign starts with: VY1
- Zone 2 - If callsign starts with: VE2, VO2

- Zone 3 - If callsign starts with: VE7, VC7
- Zone 4 - If callsign starts with: VE3, VE4, VE5, VE6, VA3
- Zone 5 - If callsign starts with: VO1, VE1, XJ1, VY2

The default section values for Canadian (VE) stations are

- VE - If callsign starts with: VE1, VE2, VE3, VE4, VE5, VE6, VE7, VE8, VO1, VO2, VY
- Give 'Space' when the cursor is in the 'Callsign' field to have the 'Zone' field filled with the default value.
- The default zone will be selected, so that if you type another zone, it will replace the numbers that the program put in there.
- Abbreviations for Canadian regions are allowed
- When typing the section and the entered section is new it will be shown in **RED**. The Available window will also show if a section multiplier is needed on other bands
- When pressing Space and the entered callsign is not US or VE, the cursor will skip the state/section field.
- When submitting your log to the contest robot make sure you have in the Sent Exchange the correct order: Zone first, then state (or province).

#### Cabrillo output

The Cabrillo file must be in the order zone, state because that's how the official Cabrillo template for CQ WW RTTY is defined. However, this has \*nothing\* to do with how you operate during the contest, it only applies to the post-contest log submission. During the contest, you can send in either order; all the rules say is you must send both. A lot of people seem to send zone, state.

However, the order state, zone is easier for people using N1MM because that's the order in the entry window. It's also easier for people using software that calculates the zone from the state (like N1MM logger does).

So: put zone, state in the contest setup dialog to ensure your Cabrillo file is OK, but you can please yourself about the order in your exchange macros; state, zone (e.g. 599 ON ON 04-04) will make it easier for fellow N1MM users, so it's the recommended order on this reflector!

### 7.7. CQ World Wide WPX contest - RTTY

- Window: Select Log type
  - Log Type: CQWPXRTTY
  - Mode Category: RTTY
  - Sent Exchange: Serialnumber Example: 001

Leading zeros are being forced on sent & received serial numbers.



## 7.8. CIS contest - RTTY

The Commonwealth of Independent States Contest where everybody can work everybody for QSO and multiplier credit.

- Window: Select Log type
  - Log Type: CISDXRTTY
  - Sent Exchange:
    - CIS stations: CIS area code Example for Moscow City: RU11
    - Non-CIS stations: 001

## 7.9. DCRG Long Distance RTTY contest

This contest has replaced the ANARTS RTTY contest.

- Window: Select Log type
  - Log Type: DLDCRTTY
  - Mode Category: RTTY
  - Sent Exchange: Zone Example: 14

The actual sent exchange includes a signal report, the UTC time and your CQ zone. Program this into your Exchange messages using the {TIME2} macro, e.g.: {TX} 599 {TIME2} {EXCH} {RX}.

## 7.10. DL DX RTTY contest

- Window: Select Log type
  - Log Type: DLDXRTTY
  - Mode Category: RTTY
  - Sent Exchange: 001

Note that PSK31 and/or PSK63 may also be used in this contest.

## 7.11. DMC RTTY contest

- Window: Select Log type
  - Log Type: DMCRTTY
  - Mode Category: RTTY

- Sent Exchange: 001

## 7.12. EA PSK31 contest

- Window: Select Log type
  - Log Type: EAPSK
  - Mode Category: PSK
  - Sent Exchange:
    - For Spanish stations - Province Example: AL
    - For non-Spanish stations - Serialnumber Example: 0001

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a Spanish station or a non-Spanish station.

## 7.13. EA RTTY contest

- Window: Select Log type
  - Log Type: EARTTY
  - Mode Category: RTTY
  - Sent Exchange:
    - For Spanish stations - Province Example: AL
    - For non-Spanish stations - Serialnumber Example: 0001

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a Spanish station or a non-Spanish station.

## 7.14. EPC PSK63 QSO party

1. Window: Select Log type

- Log Type: EPCPSK63QP
- Sent Exchange:
  - EPC member stations: EPC membership number Example: EPC0001
  - Non-EPC member stations: 001

## 7.15. EPC PSK World Wide DX contest

1. Window: Select Log type

- Log Type: EPCWWDX
- Sent Exchange:
  - EPC member stations: EPC membership number Example: EPC0001
  - Non-EPC member stations:

### 7.16. EU PSK DX contest

- Window: Select Log type
  - Log Type: EUPSKDX
  - Sent Exchange: 001

### 7.17. JARTS WW RTTY contest

- Window: Select Log type
  - Log Type: JARTSWWRTY
  - Sent Exchange: Your age Example: 34
    - XYL and YL stations may give 00
    - Multi-operator stations must send 99 as a operator age.

### 7.18. JT RTTY DX Contest

- Window: Select Log Type
  - Log Type: JTDXRRTY
  - Mode Category: RTTY
  - Sent Exchange: CQ Zone (e.g., 5, 14, 23, etc.)

### 7.19. Makrothen RTTY Contest

- Window: Select Log type
  - Log Type: MAKRORRTY
  - Mode Category: RTTY
  - Sent Exchange: 4 digit grid Example: JO33

## 7.20. Logbook of the World Contest - RTTY/Digital

- Window: Select Log type
  - Log Type:
    - LOTWRTTY
  - Sent Exchange:
    - For North American stations: State/Province abbreviation Example: CT
    - For non North American stations: Countryprefix

## 7.21. NA Sprint RTTY

- Window: Select Log type
  - Log Type: SPRINTRTTY
  - Mode Category: RTTY
  - Sent Exchange: 001 Tom CT
    - Serial number, your name and your location (state, province or country) Example: PA1M DE N1MM 123 TOM CT K

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a North American station or a non-North American station.

## 7.22. North American QSO Parties RTTY - NAQP

- Window: Select Log type
  - Log Type: NAQPRTTY
  - Operator Category: SINGLE-OP or MULTI-TWO
    - For Multi-Two see the extra info below!
  - Mode Category: RTTY
  - Sent Exchange:
    - For North American stations - Operator name and station location (state, province, or country) Example: Tom CT
    - For non-North American stations - Operator name only Example: Thomas

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a North American station or a non-North American station.

**MULTI-TWO operating:** When changing operator you have to use Ctrl+O to set the NAME (not Call) of the operator. This name set with Ctrl+O will be used in the Cabrillo file. So from the Sent Exchange only the state is being used but the name is needed. (Example: Tom CT). The macro {OPERATOR} can be used to automatically switch WAV files (in SSB), for more info see the Macro section.

### 7.23. OK DX RTTY Contest

- Window: Select Log type
  - Log Type: OKDXRTTY
  - Mode Category: RTTY
  - Sent Exchange: CQ zone

### 7.24. Quick PSK63 Contest

The contest uses the same rules as the SARTG WW RTTY contest so select that contest (SARTGRTTY).

After the contest the Cabrillo output has to be updated (take SARTG WW out and replace with Quick PSK63)

### 7.25. Russian PSK DX Contest

- Window: Select Log type
  - Log Type: RUSDXPSK
  - Mode Category: PSK
  - Exchange:
    - Russian EPC members: EPC membership number, e.g. EPCR0262
    - Others: Grid square, e.g. KO95

### 7.26. Russian DX RTTY contest

- Window: Select Log type
  - Log Type: RUSDXRTTY
  - Mode Category: RTTY
  - Sent Exchange:
    - Non-Russian stations: WAZ zone Example: 14 for Western Europe
    - Russian stations: Your oblast code (two letters)

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a Russian station or a DX station.

### 7.27. Russian Cup RTTY contest

- Window: Select Log type
  - Log Type: RUCUPRTTY
  - Mode Category: RTTY
  - Sent Exchange: 001

This contest is for Russians only.

## 7.28. SARTG New Year RTTY Contest

- Window: Select Log type
  - Log Type: SARTGNYRTY
  - Mode Category: RTTY
  - Sent Exchange: 001 + name + "Happy New Year" in your native language

## 7.29. SARTG WW RTTY Contest

- Window: Select Log type
  - Log Type: SARTGRTTY
  - Mode Category: RTTY
  - Sent Exchange: 001

## 7.30. SCC RTTY Championship

- Window: Select Log type
  - Log Type: SCCRTTY
  - Mode Category: RTTY
  - Sent Exchange: four-digit number of the year the amateur radio license was FIRST officially issued (e.g. 1983) to the operator.

The score Summary window only shows your total score and the number of mults you have worked per band. There is no breakdown by points. In SCC there is one extra column of mults but that had to be there as the way things are setup to calculate the first multiplier (different years). Thus the name of the second mult is "N/A" . The only way to do a breakdown on points is to go thru your log and manually do it.

## 7.31. SP DX RTTY contest

- Window: Select Log type
  - Log Type: SPDVRTTY
  - Mode Category: RTTY
  - Sent Exchange:
    - 001 for non-SP stations
    - Your province Example: B for Lubuskie

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a Polish station or a DX station.

### **7.32. TARA Grid Dip contest**

- Window: Select Log type
  - Log Type: TARAGRID
  - Mode Category: RTTY or PSK
  - Sent Exchange: name + 4 digit grid locator Example: Tom FN12

### **7.33. TARA PSK Rumble**

- Window: Select Log type
  - Log Type: TARAPSK
  - Mode Category: PSK
  - Sent Exchange: Name and Location Example: Tom CT

### **7.34. TARA RTTY Melee**

- Window: Select Log type
  - Log Type: TARARTTY
  - Mode Category: RTTY
  - Sent Exchange:
    - State for USA stations Example: CT
    - Province for Canadian stations Example: NB
    - 001 for all other stations (serial number)

### **7.35. Ukraine Open RTTY Contest**

- Window: Select Log type
  - Log Type: UKRRTTYOPEN
  - Mode Category: RTTY
  - Exchange: 2-letter province code + 3-digit serial number

### 7.36. Ukrainian RTTY contest

- The Ukrainian DX contest can be configured for Ukrainian stations and non-Ukrainian stations.
  - Window: Select Log type
    - Log Type: UKRAINRTTY
    - Mode Category: RTTY
    - Sent Exchange:
      - Oblast for Ukrainian stations Example: CH
      - 001 for non-Ukrainian stations

#### Country Count

Countries are counted per band for SSB, CW and RTTY, because RTTY is in a separate contest module they won't be counted correct when a station makes next to SSB and CW also RTTY q's or the other way around.

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an Ukrainian station or a non-Ukrainian station.

### 7.37. UR DX DIGI Contest

75 baud RTTY and PSK63 modes

- Window: Select Log type
  - Log Type: UKRAINDIGI
  - Sent Exchange:
    - Oblast for Ukrainian stations Example: CH
    - 001 for non-Ukrainian stations

### 7.38. UK DX contest RTTY

The UK DX contest can be configured for UK stations and non-UK stations.



- Window: Select Log type
  - Log Type: UKDXRTTY
  - Sent Exchange:
    - Area code for UK stations Example: BS
    - 001 for non-UK stations

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an UK station or a non-UK station.

### 7.39. VOLTA RTTY Contest

- Window: Select Log type
  - Log Type: VOLTARTTY
  - Mode Category: RTTY
  - Sent Exchange: QSO number + Your CQ Zone. Example: 001 15

The four Band Multiplier count for this contest is displayed on info window.

### 7.40. WAEDC contest

The WAEDC Contest can be configured for European stations and non-European stations.

- Window: Select Log type
  - Log Type: WAERTTY
  - Sent Exchange: 001

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are an European station or a non-European station.

Making QSOs in WAE RTTY by Rich, VE3KI.

To start with, a QSO in WAE is just like a QSO in CQ WPX or SARTG, and I would suggest using the same function-key set.

In CW and SSB WAE, QTCs can only be sent from non-EU to EU, but in RTTY there are many more possibilities. QTCs can be sent in either direction between any two continents (not with a station in the same continent). This makes WAE RTTY quite a bit more complex than WAE CW.

First, let's suppose you are CQing. If you have a good run going you probably will not want to break your rhythm for QTCs. As long as there are people waiting to work you when you CQ, you are probably best off just adding to your QSO count.

However, if your rate drops off, you might want to pick up your score with some QTCs. First, let's look at the case where you do not have many unsent QTCs to send (that's previous QSOs that you have not already sent as QTCs). In this case, if you work someone who has a good clear signal and

you have not yet exchanged QTCs with him, you may want to receive some. You can see how many QTCs you have exchanged with him and how many unsent QTCs are remaining in your log near the bottom of the entry window while the cursor is in the exchange (Nr) field.

Start by asking him if he has any QTCs for you ("QSL TNX. ANY QTCS FOR ME?"). If he says yes, press Ctrl+Z once. That gets you to the RQTC window for receiving QTCs (it's in the right half of the digital interface window). After you tell him you are ready with RX Ready, he will send you a message whose first line is something like "QTC: 22/10 QTC: 22/10". The first number is the group number (the 22nd group he has sent), the second is the number of QTCs in the group (maximum 10, and especially in RTTY it is most efficient to send only large groups). If you click on this in the RX window, it should transfer to the RQTC window.

The heart of his message will be a set of 10 QTCs. Each QTC contains three elements: the time, the call sign, and the serial number. Each time you receive a QTC, left-click on it and the entire QTC should transfer into the corresponding panes in the RQTC window. You can also enter or edit elements by hand, or you can right-click on a single element and then left-click in the box where you want it to go. After you have received all 10 QTCs, it may help to click on the green bar at the left of the RX window so you can freeze the RX window, scroll back and complete or fix any missing or garbled elements. Remember to click on the yellow bar when you are done so you can receive again.

There are buttons in the RQTC window for asking for repeats for individual QTCs or for the whole series. Once you have them all, press Save QTC which will send an acknowledgement message to him and log the QTCs, and then you can start CQing again.

Suppose instead that you do have a bunch of unsent QTCs ready to go. Then what you may want to do at the end of a QSO with a station with a good clear signal (if you have trouble copying someone's signal, you will not want to try QTCs with him) is to ask if he wants to receive QTCs ("QSL TNX. DO YOU WANT QTCS?"). If he says yes, press Ctrl+Z twice to get to the SQTC window. The buttons in this window should be self-explanatory; the main one is Send All, but if he asks for a repeat of #3, 7 and 9 you can resend them by pressing Snd #3, Snd #7 and Snd #9. Once he acknowledges them all, press Save QTC and go back to CQing.

If you get into the wrong QTC window by mistake, you can either press Cancel or just keep pressing Ctrl+Z until you get back to the normal digital interface receive window.

S&Ping works the same, except usually it is better to let the running station decide if he wants to do QTCs or not, depending on how well his run is going. If he wants to send QTCs to you, you can either reply "SRI QRU" (not quite right, but he will get the message) or you can press Ctrl+Z once to get the RQTC window and press the RX Ready button to tell him you are ready, then receive QTCs the same as described above.

If he asks you whether you have QTCs for him, you have three options: press Ctrl+Z twice and press the R U QRV button to give him the cue to get ready; send "SRI QRU"; or send a message telling him you don't have any but are willing to receive some ("SRI QRU. ANY QTCS FOR ME?").

Most of the QTC messages are sent by buttons in the SQTC and RQTC windows. You can program the messages in these buttons from the Setup -> Settings menu in the digital interface window, under the third tab ("WAE RTTY Configuration").

There are a few additional messages you will want to program into the buttons at the bottom of the digital interface window, such as:

{TX} QSL TNX. GOT ANY QTCS FOR ME? {RX}  
{TX} QSL TNX. DO YOU WANT QTCS? {RX}  
{TX} SRI QRU {RX}  
{TX} SRI QRU. ANY QTCS FOR ME? {RX}

You may think of more - that's OK, there are up to 24 message buttons in the digital interface window. I often find myself changing them on the fly during a contest. You can get to the programming window by right-clicking on the button you want to change. Hope that helps.

73, Rich VE3IAY

NB. The QTC window for the RTTY contest is in the Digital Interface window. During the QTC send/receive process for WAE RTTY you should not be looking at the Entry window.

The first time you press Ctrl+Z the Receive QTC window opens up in the right side of the Digital Interface. Down the right side you will see buttons labeled RX Ready, All AGN, AGN #1, AGN #2, ..., AGN #10, and across the bottom are Cancel, Save QTC and Clear buttons.

If you want to send QTCs instead of receiving them, just press Ctrl+Z again and the Send QTC window takes the place of the Receive QTC window. The top two buttons change to R U QRV and Send All, and the rest stay the same. The data windows are automatically filled from your log.

If you have used up your QTC quota with the station whose call sign is in the entry window, pressing Ctrl+Z the first time leaves you in QSO mode and does not open the QTC window. If you have not used up your quota with him but you do not have any QTCs ready to be sent, then pressing Ctrl+Z the first time displays the Receive QTCs window, and pressing it the second time returns you directly to QSO mode.

- QTC Lines on the frame are broken up into separate boxes. This was done to allow error checking of any data that is input by hand and clicking on data in RX window.
- If you click on data or enter data in the QTC windows if the routines detect bad data it will flag that data in red. So when you are receiving QTCs and you get one that is garbled, Click on it anyway and it will get placed into the QTC area. The boxes for that QTC will turn red.
- Upon completion of the sending QTC's all you have to do is look at the QTC window and it will tell you by the red colors what QTC you need to RX again. You press the AGN # button and it sends your message out. At the same time your message is going out the QTC line is cleared. Now when the station sends the repeat of the QTC you requested and you click on it and it will then be placed into that blank line that was just cleared.
- When saving QTC if any of the data still hasn't been corrected it will send the received ok message but if there is an error in the Time or the Callsign the program will let you save the QTC and not care about it. But if there is an error in the serial number (If it contains anything besides a number) it will not let you save it. The reason for this is in the program the serial number needs to be a certain type of variable(numeric) and if it is not a numeric variable it will not save it. So the flow of it if there is an error in the serial section and you press save is:

A. Sends the confirm string you have setup

B. Tells you on the entry window there is a Format error

C. Waits for you to fix it.

D. So now you would have to scroll back to see what was sent of take out the extra letter your finger hit then hit save.

By doing it this way you are not slowing down the other station.....

- The program will not save info into the log until the bad data is fixed. Once fixed just click save again and it will save the data without sending the received message. A warning message is given in the Entry window status bar.
- To select whole lines of received QTC just place the cursor over the line and left click.
- To select individual QTC sections place the cursor over the item you want to select and right click on it. After the data is selected place the cursor over the text box you want the data to go into and left click it will be placed into it.
- When pressing Ctrl+Z to switch modes the program will display the total QTC sent and received from the station being worked. When the QTC frame opens on the DI only the Needed amount of QTC boxes will be enabled. Example(if I have worked UT5XXX and received 5 QTCs from him, the next time I work him and I open up the Receive QTC frame only 5 QTC lines will be enabled to reach maximum QTC amount .
- When pressing Ctrl+Z to switch modes if you have reached the MAX amount of QTC the QTC frame will close and give a warning message in Entry windows status bar.
- When left clicking on a Received QTC line will split data on " ", "/", "-" separators if the routines can't split the data it will not copy the data over. You will have to click each item separate or hand type it in.
- Selecting of individual QTC items can be done by right clicking on item. Left clicking on the box where the data to be placed places text.
- Ctrl+Z cycles through QSO, receive QTC and send QTC modes. After you enter a callsign in the entry window pressing Ctrl+Z will cycle through the RQCT and SQTC modes. If you are receiving QTC press Ctrl+Z once and as the QTC appears in the digital window just click on it one time and it will transfer over to the QTC entry window. To send a QTC press Ctrl+Z one more time and it will show you all the QTCs you have available to send.
- The status line in the Info window shows the total QTC Sent and Received from the station being worked.
- Upon entering a callsign in the entry window and pressing the spacebar. The number of total QTC's exchanged with that callsign and the Total of all unsent QTC is displayed on the entry window so you should be able to keep track easier of what your QTC numbers are.
- If you work a station that is on your same continent and try to send them QTC or try to receive QTC from them the program will tell you you can not do that. Press enter and move on.....
- On the WAE Tab located in the settings area will allow you to set the maximum number of QTC you want to send. Whatever this setting is set to is the number that will send unless you do not have that many QTC to send. This defaults to 10.
- An error message is displayed when the serial number is blank when logging a contact
- The total unsent QTC's is displayed along with # of QTC's exchanged with current callsign on the Entry window
- Continent is checked when sending and receiving QTC's
- Default number of QTC to send can be entered on the Tab WAE RTTY configuration under Settings in the menu from the DI interface.
- The number of QTC sent and total QTC available ois shown in the Entry window upon Entering Callsign
- Hover mode if disabled if the QTC window is open

- The number of CR's between QTC's sent is configurable (Setup QTC)
- Placing a QTC into the QTC window is possible by clicking in line of QTC boxes where you want QTC to be placed into.
- When tuning in the bandmap the Entry Window will show the QTC status of the tuned callsign.
- A warning message is shown when a received number is not entered

For more information look at WAEDC for SSB/CW. However, there are 2 fundamental differences between the RTTY and the SSB/CW version of the contest:

1. Everyone can work everyone, so DX can work DX and EU can work EU
2. Everyone can both send and receive QTCs, however they can only be exchanged between stations in a different continent

### **How do I know how much QTC I can receive from a station or how do I know the number to send to them?**

The program will do all this for you in a number of ways...

- The first number that is displayed on the entry window by the QTCs title is the total number of QTC's you have exchanged with that station. If it says 8 then you can either receive or send 2 more
- When you press Ctrl+Z to switch to RQTC mode the program already knows how many QTC you can receive and will only enable that many entry points on the QTC frame
- When you press Ctrl+Z to switch to SQTC mode the program will either set the maximum number you want to send or however many QTC's you are still allowed to send to that station. (Whichever is smaller)

## **7.41. XE RTTY Contest**

- Window: Select Log type
  - Log Type: XERTTY
  - Mode Category: RTTY
  - Sent Exchange:
    - Mexico: State. Example: AGS
    - Non-Mexico: 001

The callsign in the Station Information dialog ( >Config >Change Your Station Data >Call ) determines if you are a Mexican station or a non-Mexican station.

## **Supported Radios**

### **In this Section...**

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## Supported Radios

1. General Information
2. Manual mode
3. Digital Information
4. Alinco
5. Elecraft
  - 5.1. K2
  - 5.2. K3
6. FlexRadio
7. Icom
  - 7.1. General Icom information
  - 7.2. IC-271 / IC-471 / IC-1271
  - 7.3. IC-275A/E/H using address 10 hex and 9600 bps.
  - 7.4. IC-375 / IC-575 (all versions)
  - 7.5. IC-475A/E/H using address 14 hex and 9600 bps.
  - 7.6. IC-703 using address 68 hex and 19200 bps.
  - 7.7. IC-706 using address 48 hex and 19200 bps.
  - 7.8. IC-706MKII using address 4E hex and 19200 bps.
  - 7.9. IC-706MKIIG using address 58 hex and 19200 bps.
  - 7.10. IC-718 using address 5E hex and 19200 bps.
  - 7.11. IC-725 using address 28 hex and 9600 bps.
  - 7.12. IC-728 using address 38 hex and 9600 bps.
  - 7.13. IC-729 using address 3A hex and 9600 bps.
  - 7.14. IC-735 using address 04 hex and 9600 bps.
  - 7.15. IC-736 using address 40 hex and 9600 bps.
  - 7.16. IC-737/737A using address 3C hex and 9600 bps.
  - 7.17. IC-738 using address 44 hex and 9600 bps.
  - 7.18. IC-746 using address 56 hex and 19200 bps.
  - 7.19. IC-746 PRO using address 66 hex and 19200 bps.
  - 7.20. IC-751/751A using address 1C hex and 9600 bps
  - 7.21. IC-756 using address 50 hex and 19200 bps.
  - 7.22. IC-756 PRO using address 5C hex and 19200 bps.
  - 7.23. IC-756 PRO II using address 64 hex and 19200 bps.
  - 7.24. IC-756 PRO III using address 6E hex and 19200 bps.
  - 7.25. IC-761 using address 1E hex and 9600 bps
  - 7.26. IC-765 using address 2C hex and 9600 bps.
  - 7.27. IC-775/775DSP using address 46 hex and 19200 bps.
  - 7.28. IC-781 using address 26 hex and 9600 bps.
  - 7.29. IC-910H using address 60 hex and select the correct baud rate.
  - 7.30. IC-1275A/E using address 18 hex and 9600 bps.
  - 7.31. IC-7000 using address 70 hex and 19200 bps.
  - 7.32. IC-7200 using address 76 hex and 19200 bps.
  - 7.33. IC-7400 (identical to the IC-746 Pro)
  - 7.34. IC-7600 using address 7A hex and 19200 bps
  - 7.35. IC-7700 using address 74 hex and 19200 bps.
  - 7.36. IC-7800 using address 6A hex and 9600 bps.
8. Kenwood

- 8.1. General Kenwood information
- 8.2. TS-480
- 8.3. TS-570
- 8.4. TS-590
- 8.5. TS-850
- 8.6. TS-870
- 8.7. TS-950sdx
- 8.8. TS-50, TS-140, TS-440, TS-680,TS-711,TS-790,TS-811,TS-940
- 8.9. TS-2000
- 8.10. N1MM logger loses communication with the radio (TS-850, TS-950 etc.)
- 9. TenTec
  - 9.1. General TenTec information
  - 9.2. ARGONAUT V
  - 9.3. JUPITER
  - 9.4. OMNI-VI
  - 9.5. OMNI-VII
  - 9.6. Orion
- 10. Yaesu
  - 10.1. General Yaesu information
  - 10.2. FT-80C
  - 10.3. FT-100(D)
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  - 10.5. FT-450
  - 10.6. FT-747GX
  - 10.7. FT-757
  - 10.8. FT-757GXII
  - 10.9. FT-817
  - 10.10. FT-840
  - 10.11. FT-847
  - 10.12. FT-857
  - 10.13. FT-890
  - 10.14. FT-897
  - 10.15. FT-900
  - 10.16. FT-920
  - 10.17. FT-950
  - 10.18. FT-990
  - 10.19. FT-1000(D)
  - 10.20. FT-1000MP (Mark-V)(Field) (Not for use with SteppIR antenna controller)
  - 10.21. FT-1000MPSteppIR
  - 10.22. FT-1000 series, FT-990 and FT-920 Setting filters
  - 10.23. FT-2000
  - 10.24. FTDX-5000
  - 10.25. FTDX-9000

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Note: Known settings for specific transceivers, as well as program features that they do not support are mentioned below as far as we know them. Please advise us of any corrections or needed changes.

## 1. General Information

- When using a home-brew self-powered interface set the handshaking to:
  - DTR - Always On
  - RTS - Always On
  - Like when using ICOM clone cables
- All radios: Band change is not allowed while transmitting
- All radios: Timeout for all radios is default set to 10 seconds (user settable).
  - Some radios require initialization commands for configuration. These are sent to the radio when the program starts. Users should have the radio and interface powered prior to starting the program so this can occur. If the radio needs to be power cycled after the program has initialized, right click in the Bandmap and select Reset Radio to perform this initialization again
  - A warning message will be displayed when no response received from the radio and the radio will be changed to a manual radio by the program.
  - To get the radio working again select in the right-click menu from the bandmap "Reset radios"
  - When the radio control gives a warning 10 seconds after you start the logger, then you never had radio control at all, and you should check your hardware, and serial port settings. Consult the manual from your radio and also read below. Some radios require initialization commands for configuration. These are sent to the radio when the program starts. Users should have the radio and interface powered prior to starting the program so this can occur. If the radio needs to be power cycled after the program has initialized, right click in the Bandmap and select Reset Radio to perform this initialization again
- Polling of radios while sending CW is supported for all radio except for FT-1000.
- It may appear that the Up Arrow, Down Arrow, Page Up or Page Down are not working when incrementing or decrementing the current frequency with these keys.
  - The VFO frequency will not change if the incremented/decremented amount is smaller than the frequency deltas supported by your rig. This is not always well documented by the manufacturer. Icom 751 rigs for example do support 10 Hz steps but only show 100 Hz steps on the display.
  - The keys mentioned above have to be set higher than the minimum step size supported by the radio.
  - It's easy to test if it is the keys are working. Check the frequency while pressing the keys mentioned above. If the frequency moves nothing has to be changed.
  - The default increment/decrement for CW is 10 Hz. If this doesn't work, try changing it to 100 Hz, under the Configurer, Other tab.
  - This only applies to the keys that increment/decrement the current frequency.
- Kenwood, Orion, Icom, FT-1000MP - Code has been added that requires new band changes to be received twice from the radio before changing band. This change is to improve the reliability of frequencies displayed/used.
  - NB: This will make band changes made from the radio twice as slow to appear as band changes made from the program.
- Memory mode - most modern radios (100mp, TS2000) have a kind of memory mode. In this mode the radio will normally not function with the program. Use VFO mode instead.



- When SO1V mode is selected, VFOB is not defined for receiving. The user should close the second Bandmap and Entry window.

## **2. Manual mode**

In manual mode no radio is selected and attached to the program. If possible always connect a radio using the CAT interface or serial port. Older radios (or very new not supported radios) can still be used with the program by selecting Manual but many functions in the program will not work as easy as they could or will not work at all. When a radio is not configured, it is the user's responsibility to make sure the mode and band are correct when logging contacts. When no radios are selected in Configurer, the program will attempt to set the initial operating mode and frequency in single mode contests when the program starts or a new contest is opened. The program uses information from the contest selection and the mode tab settings in Configurer.

## **3. Digital Information**

Below information by Rick, N2AMG and John, K3CT regarding supported Digital configurations by N1MM logger.

<b>Radio Modes Corresponding to N1MM Logger Digital Mode Designations</b>						
<b>Column Headings = Mode names used in N1MM Logger</b>						
<b>Radio</b>	<b>RTTY</b>	<b>RTTY-R</b>	<b>AFSK</b>	<b>AFSK-R</b>	<b>PSK</b>	<b>PSK-R</b>
<b>FT990/1000/1000MP</b>	RTTY-L	RTTY-U	PKT-LSB	(4)		
<b>FT100</b>			Dig(3)			
<b>FT950/2000 /5000/9000</b>	FSK(RTTY-LSB)	FSK-R(RTTY-USB)	PKT-LSB	PKT-USB		
<b>FT450</b>	RTTY-L	RTTY-U	User-L	User-U		
<b>FT817/857/897</b>			Dig(3)			
<b>FT920</b>	Data-LSB(2)	Data-USB(2)				
<b>IC7600/7700/7800</b>	RTTY	RTTY-R	LSB-D1	USB-D1	PSK	PSK-R
<b>IC746Pro/756ProII /756ProIII/7200</b>	RTTY	RTTY-R	LSB-D	USB-D		
<b>Other Icom</b>	RTTY	RTTY-R				
<b>Orion/OmniVI /OmniVII</b>	FSK					
<b>K2</b>			RTTY	RTTY-R		
<b>K3</b>	FSK D	FSK D-R	AFSK A	AFSK A-R	DATA A	DATA A-R
<b>TS2000</b>	FSK	(1)				
<b>Kenwood</b>	FSK	FSK-R				
<b>TS440</b>	AFSK					

(1) = radio menu selection

(2) = FSK/AFSK selected by a rear panel switch

(3) = Radio menu programmable for RTTY, RTTY-R, PKT-L, PKT-U

(4) = FT990/1000/1000MP selection does not support PKT-USB

If your radio does not have an entry under AFSK or PSK, use LSB or USB (e.g. Argonaut/Jupiter /FT840/847/890/900/757GXII). If there is an entry under AFSK-R but not under PSK, try using AFSK-R for PSK31 and other digital modes.

#### 4. Alinco

- DX-77 - supported!

## 5. Elecraft

- Elecraft USB-serial converter issues and N1MM logger
  - Situation: Setting up Elecraft K3 to work with N1MM logger and simply key CW with DTR line of CAT port.
  - Results: CAT works fine, but every time I try to send CW there appears an error window "CommPortDev\_OnComm 4 - 2147417856"
    - N1MM is totally blocked and has to be killed using task manager.
  - Solution: The Elecraft USB-serial converter uses a Proflic chip, and the (Win2K) Proflic driver doesn't work correct for CAT and DTR-CW-keying using the same port.
    - A USB-serial converter using a FTDI-chip and the FTDI drive is working fine, CAT ok, fast CW keying, ESC immediatly interrupts message ...
    - All ufb now :- Tnx Thomas DK3DUA

### 5.1. K2

- Uses Kenwood-style commands but has its own radio selection. Only the KY command which is Elecraft specific is not supported.
- Use default Kenwood parameters but sometimes one (1) stopbit only works (contrary to the K2 KPA100 manual saying that 2 stop bits should also work).
- N1MM Logger does not support the K2 "virtual keying" feature using commands sent to the K2 serial port.
- Setting the "Wide" and "Narrow" filter codes.
  - Remember to set the filter codes for both VFOs. Get the appropriate N1MM Logger screen menu prompt by left clicking when your cursor is over the active VFO window.
  - Substitute this code for the complete Kenwood "FL" code that comes up by default: K22;FW99991;K0; (no spaces, all caps, include the ";"s) This will set the filter to "FL1" on the K2. If you put this code in the SSB "Wide" section for the filter code, it will give you FL1 for SSB - if you put this in the CW "Wide" section, it will give you FL1 for CW. Remember that the actual bandwidth of the filter will depend on how you have set FL1 on your K2. The same is true when you substitute this string for the "Narrow" settings. If you want a filter other than FL1 in either mode, just change the "1" after the 9999 to the number of the filter you want to invoke ie: 1,2,3 or 4. As an example, K22;FW99993;K0; placed in the code section for CW "Narrow" would invoke FL3 when the switch is set to "Narrow" and you are on CW.
  - Briefly, "K22" tells the K2 that this is an "extended command mode" - the ";" tells the K2 that this command is finished - the "FW" tells the K2 that this is a command to set the filter width - the 9999 number is ignored in the string but is necessary to include (it can be any set of four numbers between 0 and 9999 - I just picked 9999) - the "1" is the number of the filter to invoke (1 - 4) - the "K0" (that is "K" zero) tells the K2 to go back to the "normal command mode."

- Use the same technique to set the RTTY filters as well. Have fun es 73, Don N4HH
- Please check out the feature which works great with the K2 and TS850 etc that don't have RIT clear IF you are Running (doesn't work for S&P). Put the rig into split, and use VFO B as your "RIT". Then go into Config, and turn on "Reset RX Freq when Running Split". Using VFO B for RIT, tune in a caller off freq, work him, and at the end of the QSO VFO B will be set to VFO A freq. Neat feature, and specifically designed for this situation.

## 5.2. K3

- When using program version 10.3.6 or newer, the radio firmware must be version 3.46 or newer for proper operation.
- Radio control issues have been reported when running other K3 utility software in conjunction with N1MM Logger. Please test with only N1MM Logger running before reporting a radio control issue.
- A single receiver K3 can be used in SO1V or SO2R mode. A dual receiver K3 can be used in all program modes, including SO2V
- ALT+F12 toggles Sub on and off. It is identical to pressing the SUB radio button. To leave SUB on all the time, select **Configurer>Dual RX always on**
  - If you have selected Diversity mode on the radio, toggling Sub off and on via ALT+F12 will turn Diversity mode off
  - Logger preserves diversity reception on the K3 unless RX Focus changes to vfoB at which time the subrx will switch to vfoB
- K3 Subrx ON/OFF control by Logger
  - Independent of the state of Dual RX Always On:
    - changing RX Focus to vfoB turns the subrx ON
    - Ctrl+Shift+Up/Dn does not change the state of the subrx
    - Alt+F12 toggles subrx ON/OFF if RX Focus is on vfoA (action disabled if RX Focus on vfoB)
  - Dual RX Always On checked:
    - clicking any vfo bandmap/avail. window spot or Ctrl+Up/Dn turns the subrx ON
    - changing RX Focus turns the subrx ON
    - if dual rx always on was unchecked and the user checks it, subrx is turned ON
  - Dual RX Always On unchecked:
    - If the TX & RX Focus is on VFOB and the RX Focus changes to VFOA ( \ keystroke), the subrx stays ON
    - If the TX & RX Focus is initially on VFOB and then RX & TX Focus is on VFOA (PAUSE, CTRL+Left or vfoA Bandmap/Available window spot click ), the subrx is turned OFF

- if dual rx always on was checked and the user unchecks it, subrx is turned OFF
- Ctrl+Alt+D command action:
  - If "Dual RX always on" is ON and the Sub RX is ON, turn "Dual RX Always On" to OFF and leave the Sub RX ON
  - If "Dual RX always on" is ON and the Sub RX is OFF, turn "Dual RX Always On" to OFF and leave the Sub RX OFF
  - If "Dual RX always on" is OFF and the Sub RX is ON, turn "Dual RX Always On" to ON and leave the Sub RX ON
  - If "Dual RX always on" is OFF and the Sub RX is OFF, turn both ON
- Stereo (grave accent) command action:
  - If the subrx is OFF - check "Dual RX always on" and turn the subrx ON
  - If the subrx is ON - uncheck "Dual RX always on" and turn the subrx OFF unless RX Focus is on vfoB
- Digital radio modes FSK D, AFSK A and DATA A are supported
  - FSK D, AFSK A and DATA A are displayed in N1MM as RTTY, AFSK and PSK respectively
  - PSK D is not supported by N1MM
  - Adjust audio levels in AFSK A and DATA A to give 4-5 bars on the K3's ALC meter. This allows the K3's firmware ALC to control power without clipping peaks and causing IMD. In PSK31 and other digital modes requiring high linearity, keep the requested power setting below 60 watts (AFSK RTTY can be safely used at 100 watts)
- RIT control - When in RUN mode, the Up/Dn arrow keys change the RIT frequency (if the K3's RIT is turned on). When in S&P mode the radio frequency is changed
- Using the program as a voice keyer with a K3 on SSB:
  - Option 1
    - Connect your microphone to the mic input of the sound card and the Line Out of the sound card to the Line In on the back of the K3
    - Set soundcard program to drive Line In
    - Select LINE IN with MENU:MIC SEL
    - Command Tx (or PTT or...) and adjust the MIC GAIN (which is now LINE IN gain) for proper audio level
  - Option 2
    - Connect microphone to desired microphone connection on the K3
    - Select MIC with MENU:MIC SEL
    - PTT and set Mic Gain
    - Connect sound card as described under Option 1
    - Now, if you set MIC+LINE ON then both audio sources will drive the K3. The MIC GAIN control will control the MIC GAIN only. LINE IN GAIN must be set when LINE IN is the selected source via MENU:MIC SEL
- The K3 can accept PTT switching from several sources, including: a keying circuit from a serial or parallel port to the K3's PTT IN; PTT from a Winkey; RTS (pin 7) on the radio control port; or using "Radio PTT via command"
  - Do NOT use multiple methods of PTT control in parallel; in some cases doing so can leave the K3 stuck in transmit at the end of function-key messages. In particular, do NOT check "Radio PTT via command" if you are using RTS on the

- radio control port, or any other hardware PTT connection, to control PTT. **Using "Radio PTT via command" together with hardware PTT control can cause the K3 to get hung up in transmit, so don't do it!**
- Procedure for configuring RTS on the radio control port: Start with the K3's CONFIG:PTT-KEY set to OFF-OFF; configure N1MM to control PTT from RTS on the radio control port (Port setup); set the K3's CONFIG:PTT-KEY to RTS-OFF
  - Warning: leaving RTS set to Always on with the K3's CONFIG:PTT-KEY set to RTS-OFF or RTS-DTR will cause the K3 to be permanently in transmit
  - The K3 accepts CW keying on DTR (pin 4) of the same COM port you're using to control the K3. This method can be used when other methods (e.g. Winkey or a keying circuit on a separate COM or LPT port) are not available
    - CW and radio control on the same COM port do NOT work in SO2R mode
    - CW on DTR does NOT work with some USB-to-serial adapters (e.g. Prolific chipset)
    - CW on DTR may be missing some capabilities and may have other undesired side effects - use at your own risk
    - Procedure: Start with the K3's CONFIG:PTT-KEY set to OFF-OFF; check the CW/Other box beside the radio control port in the Configurer and configure N1MM to use DTR for CW on that port; set the K3's CONFIG:PTT-KEY to OFF-DTR
    - Warning: leaving DTR set to Always on with the K3's CONFIG:PTT-KEY set to OFF-DTR or RTS-DTR will cause a permanent "key-down" condition

## 6. FlexRadio

- SDR-1000 and SDR-5000A (using Kenwood settings)
  - By: Rob AB7CF
  - Some setup details are not really needed but are included for completeness. One thing I notice different is in PowerSDR Cat setup I use ID as: "PowerSDR" though it shouldn't make a difference. Probably the most common Vcom mistake is a failure to click Update Driver and following the procedure after making a change in Vcom configuration..
  - Example: using VCom configurator using ports 4-5 defines and VAC
  - Check your VCom configurator to make sure you have a check box in the COM4 - COM5 pair and you have clicked Save Configuration. MAKE SURE you click the Update Driver and follow the instructions. Close VCom configurator. Click on Window's Start Button, Click on ControlPanel, Click System, Click on the Hardware Tab, Click on Device manager.
  - In Device manager make sure there ISN'T a yellow question mark on the entry labeled "Multi-port serial adapters." If there is no yellow question mark your Vcom virtual cable should be working properly. If there is an yellow question mark there is a problem with your Vcom installation which needs attention. Assuming no problem, Close ControlPanel.
  - Now check PowerSDR. Open PowerSDR Setup and click on the CAT Control tab. In CAT Control make sure Enable CAT is checked. Under PTT make sure Port 4 is selected and

RTS and DTR are unchecked. Select ID as: PowerSDR. Click Apply. Close PowerSDR Setup.

- Now check N1MM. Click Config. Select "Configure Ports, Telnet Address, Other" Under Com-5 select Kenwood. Make sure CW/PTT is unchecked. Now click Set. In the popup box the settings should be: Speed 4800, Parity: N DataBits: 8, Stop Bits: 1 DTR (pin 4) = Handshake. RTS (pin 7) = Handshake, 1 selected in Radio/VFO. Leave the "Radio PTT via command" check box UNCHECKED. Check the "Allow external interrupts" check box. Click Okay (twice) to back out.
- Now you should be communicating with your SDR. Check that clicking a new frequency in the Panadapter changes frequency in N1MM. With the focus in N1MM check that the keyboard up and down arrows change the PowerSDR frequency.

## 7. Icom

### 7.1. General Icom information

\*

- Almost every Icom rig requires an ICOM CT-17 CI-V interface or compatible. If your Icom radio has a USB computer interface (IC-7200, IC-7600, etc), install the latest driver for the virtual COM port and audio codec.
- Icom rigs use software handshaking. That means they do not use DTR and RTS. However, interfaces that get their power from the RS232 port require you to set DTR and/or RTS to "Always On" to supply power to the interface. Check your interface manual to see how DTR and RTS must be set.
- Set N1MM Logger and the rig to:
  - Address - see specific rig information below
  - Baud Rate - 9600 or 19200 (see specific rig maximum rates below)
  - Data Bits - 8 bits
  - Parity - None
  - Stop Bits - 1 bit
- On your rig, set:
  - "CI-V Transceive" to OFF - this is very important. If CI-V is set incorrectly the Bandmaps will not update as the VFO is turned. If the VFO is turned continuously, the program may produce a stack overflow and halt.
  - "CI-V with 731/735" to OFF. On some rigs this is referred to "4 or 5 Byte Data" or "Frequency Data Length". You want your rig to use 5 data bytes for the frequency. A few rigs noted below do not have this option.
- Due to the limited Icom radio control, the user needs to control the radio from the keyboard. This means that the user can not press these buttons on the radio: SPLIT, DUALWATCH, CHANGE, VFO/MEMO, A=B, A<>B, or MAIN/SUB. Icom radios only report the VFO frequency of the active VFO. Because of this, the program will select each VFO to read the frequency at initialization.

- To set and clear split use ALT+F7 or one of the other keyboard commands. Split will be correctly set/cleared when clicking in the Bandmap or Available windows. To select VFOB (SO2V mode only), use the PAUSE or CTRL+Right/Left Arrow keys. In SO2V mode, the VFO is also selected with a Right or Left click on the band buttons in the Available window.
  - Frequencies > 2 GHz are ignored and not sent to the radio.
  - To do CW with an ICOM radio a cable is needed between the radio and the serial or parallel port with an appropriate interface.
    - The CI-V cable or serial cable to the radio alone is not enough to do CW but needed to have radio support (frequency, mode readout/settings etc.).
  - The ALT+F10 swap VFO frequency command is disabled during SO2R for Icom radios that lack a swap VFO CAT command. This is because the program is unaware of Icom VFO B frequency in SO2R mode.
- 
- The models below are supported:

## **7.2. IC-271 / IC-471 / IC-1271**

- Select IC-706 and set the radio address to hex 48 or program the default radio address in the program setup window. Please report on program functionality.
- There are several limitations caused by the lack of several CI-V commands. VFO select and split commands are not supported. This will prevent the program from controlling the radio split and reading or programming VFOB frequency. SO2V mode should not be attempted and VFOB's Bandmap and Entry windows can be closed.

## **7.3. IC-275A/E/H using address 10 hex and 9600 bps.**

- The CI-V command set lacks split ON/OFF commands. This prevents the program from controlling the radio split.

## **7.4. IC-375 / IC-575 (all versions)**

- Select IC-706 and set the radio address to hex 48 or program the default radio address in the program setup window. Please report on program functionality.
- The CI-V command set lacks split ON/OFF commands. This prevents the program from controlling the radio split.

## **7.5. IC-475A/E/H using address 14 hex and 9600 bps.**

- The CI-V command set lacks split ON/OFF commands. This prevents the program from controlling the radio split.



**7.6. IC-703 using address 68 hex and 19200 bps.**

**7.7. IC-706 using address 48 hex and 19200 bps.**

**7.8. IC-706MKII using address 4E hex and 19200 bps.**

**7.9. IC-706MKIIG using address 58 hex and 19200 bps.**

**7.10. IC-718 using address 5E hex and 19200 bps.**

- Set N1MM Logger to 19200 bps and the radio to "AT" (AuTo).

**7.11. IC-725 using address 28 hex and 9600 bps.**

**7.12. IC-728 using address 38 hex and 9600 bps.**

**7.13. IC-729 using address 3A hex and 9600 bps.**

**7.14. IC-735 using address 04 hex and 9600 bps.**

- The CI-V command set lacks split ON/OFF commands. This prevents the program from controlling the radio split.
- When the IC-735 is used with factory settings (1200 baud, transceive ON), the bandmap response of N1MM is extremely slow. Jumpers J22 located on the PL-unit board (upper side under PA unit) allow baud-rate, address and CI-V transceive to be changed. But.. the jumpers are not labeled and not in the order as stated in the Service manual. In fact transceive ON/OFF is the last one (front panel toward you, starting from left) this one should be removed to turn transceive OFF. The 2 first ones set the baud-rate (move the second one to the first position to switch from 1200 to 9600 baud) the 3 remaining ones are the CI-V address - default 04; is with last the last one of this group of 3 - ON.

Jumper J22 settings for 9600 baud, transceive OFF and default address 04 - from left to right with front panel toward you...

1	2	3	4	5	6
ON	OFF	OFF	OFF	ON	OFF
Baud rate	Baud Rate	Address	Address	Address	CI-V transceive

These settings make the 735 operable with N1MM (trx IC735 / baud rate 9600 / 8 data bits / no parity / 1 stop bit). DTR and/or RTS are not used by the Icom CI-V (no handshake) so does not matter. However, they should be turned to "always ON" if using an interface powered through those

pins. Alternatively, they can be used for CW and PTT, for example if you are limited by the number of COM-ports on your machine. 73' Patrick F6IRF

### **7.15. IC-736 using address 40 hex and 9600 bps.**

### **7.16. IC-737/737A using address 3C hex and 9600 bps.**

- The CI-V command set lacks split ON/OFF commands. This prevents the program from controlling the radio split.

### **7.17. IC-738 using address 44 hex and 9600 bps.**

### **7.18. IC-746 using address 56 hex and 19200 bps.**

- VFO-B is a virtual VFO as long it isn't activated. The scale is not controlled by the VFO-B of the transceiver. It becomes an active VFO when it is activated. The IC-746 is switched to VFO-B and set to the frequency shown in the VFO-B bandmap.

### **7.19. IC-746 PRO using address 66 hex and 19200 bps.**

- USB-D / LSB-D digital modes supported.

### **7.20. IC-751/751A using address 1C hex and 9600 bps**

- There are several limitations caused by the lack of some CI-V commands. VFO select and split commands are not supported. This will prevent the program from controlling the radio split and reading or programming VFOB frequency. SO2V mode should not be attempted and VFOB's Bandmap and Entry windows can be closed.

To communicate with the radio, the baud rate, CI-V Transceive, and number of bytes of frequency data must be set correctly. This is set via a DIP switch on the Icom UX-14 interface board. Using the DIP switch S1 location in the beginning of the manual (page 11 has the DIP switch positions reversed) set S1 to the following:

1-----6

On - Off - Off - Off - Off - On

This will set the baud rate to 9600, the length of the frequency information to 5 bytes, and turn CI-V Transceive OFF.

If the radio contains the Piexx UX-14 CI-V board, set the DIP switches per the Piexx manual for the same configuration

### **7.21. IC-756 using address 50 hex and 19200 bps.**

- Please see also Key Assignments (Alt+F12) and the setting 'Dual Rx always on' in the Config menu.

### **7.22. IC-756 PRO using address 5C hex and 19200 bps.**

- Please see also Key Assignments (Alt+F12) and the setting 'Dual Rx always on' in the Config menu.

### **7.23. IC-756 PRO II using address 64 hex and 19200 bps.**

- Please see also Key Assignments (Alt+F12) and the setting 'Dual Rx always on' in the Config menu.
- USB-D / LSB-D digital modes supported.

### **7.24. IC-756 PRO III using address 6E hex and 19200 bps.**

- Please see also Key Assignments (Alt+F12) and the setting 'Dual Rx always on' in the Config menu.
- USB-D / LSB-D digital modes supported.

### **7.25. IC-761 using address 1E hex and 9600 bps**

- There are several limitations caused by the lack of some CI-V commands. VFO select and split commands are not supported. This will prevent the program from controlling the radio split and reading or programming VFOB frequency. SO2V mode should not be attempted and VFOB's Bandmap and Entry windows can be closed.

To communicate with the radio, the baud rate, CI-V Transceive, and number of bytes of frequency data must be set correctly. This is set via a DIP switch inside the radio. Set the baud rate to 9600, the length of the frequency information to 5 bytes, and turn CI-V Transceive OFF.

The manual lacks the details but it is suspected that DIP S1 should be set to the following:

1-----6

On - Off - Off - Off - Off - On

If the radio contains the Piexx UX-14 CI-V board, set the DIP switches per the Piexx manual for the same configuration.

### **7.26. IC-765 using address 2C hex and 9600 bps.**

### **7.27. IC-775/775DSP using address 46 hex and 19200 bps.**

- Please see also Key Assignments (Alt+F12) and the setting 'Dual Rx always on' in the Config menu.

### **7.28. IC-781 using address 26 hex and 9600 bps.**

- Please see also Key Assignments (Alt+F12) and the setting 'Dual Rx always on' in the Config menu.

### **7.29. IC-910H using address 60 hex and select the correct baud rate.**

- The ALT+F12 radio specific command swaps MAIN and SUB using the CAT radio command.


The ALT+F10 command swaps the VFOA/B frequency and mode only in SO1V and SO2V program modes.

### **7.30. IC-1275A/E using address 18 hex and 9600 bps.**

- The CI-V command set lacks split ON/OFF commands. This prevents the program from controlling the radio split.

### **7.31. IC-7000 using address 70 hex and 19200 bps.**

### **7.32. IC-7200 using address 76 hex and 19200 bps.**

- Radio control via USB with Icom driver or CI-V interface.
- The IC-7200 USB codec is supported. IC-7200 users can use the USB cable with the Icom drivers for radio control, AFSK RTTY, PSK, voice message playback, and recording QSOs. IC-7200 users can not record messages on the fly. In CW, only the received portion of the QSO is recorded. This is a radio limitation.
- Detailed instructions for setting up USB communications with this radio may be found in [the File Gallery](#). 


### **7.33. IC-7400 (identical to the IC-746 Pro)**

- Select the IC-746 PRO as radio

### **7.34. IC-7600 using address 7A hex and 19200 bps**

- Radio control via USB with Icom driver or CI-V interface.
- USB-D / LSB-D digital modes supported.
- The IC-7600 audio codec is supported. IC-7600 users with the Icom drivers can use the USB cable for radio control, AFSK RTTY, PSK, recording voice messages on

the fly, voice message playback, and recording QSOs. In CW, only the received portion of the QSO is recorded. This is a radio limitation.

- Detailed instructions for setting up USB communications with these radios may be found in [the File Gallery](#). 

### 7.35. IC-7700 using address 74 hex and 19200 bps.

- USB-D / LSB-D digital modes supported.

### 7.36. IC-7800 using address 6A hex and 9600 bps.

- Please see also Key Assignments (Alt+F12) and the setting 'Dual Rx always on' in the Config menu.
- USB-D / LSB-D digital modes supported.

## 8. Kenwood

### 8.1. General Kenwood information

- All models are supported
  - Newer models connect directly via a serial port cable.
  - Older models need the Kenwood IF-10 and/or the IF-232C interface (or compatible). Please check the radio's manual.
    - Almost any of the earlier generation Kenwood radios need some sort of level conversion, and at least some also come without the necessary chip set. Radios like the TS-940S, TS-440S, TS-811, TS-711 need both a chip and a level converter.
    - PIEXX ([www.piexx.com](http://www.piexx.com)) makes a combined level converter and chip set replacement for the TS-940, as well as a complete replacement microprocessor for the TS-930 to provide communications.
- Hardware handshaking is mostly being used. This means that DTR= Always on or handshake and RTS = Always on or handshake.
  - Unless you make up a special loop back cable for it so you can use DTR and RTS for CW and PTT.
- The stock Kenwood interfaces (IF-232 for the older -x40 and -x50 series transceivers) and a bare RS-232 cable for the more recent TS-480/570/870/2000 require handshake. Except for the TS-570. the solution is to install a jumper between CTS/RTS pins at the RS-232 input of the Kenwood interface (in the case of the -40 and -50 transceivers) or transceiver (TS-480/870/2000). The TS-570 can lock-up if RTS is connected to CTS and requires RTS=always high to be reliable.
- Using the jumper ("fake handshake") will free RTS for PTT in addition to DTR for CW.

The alternative to "fake hand- shake" is to set RTS=Always On and use DTR for PTT or CW as necessary (DTR is not connected in the radio/interface).

- RX/TX information from the radio is ignored while sending is in progress to avoid glitches in sending.
- Kenwood uses by default:
  - Speed: 4800 Baud; Parity: N ;Databits: 8; Stopbits: 2 (!) and "handshaking" which means RTS and DTR should be set to "Handshake".
  - When setting split both VFOs are forced in the same mode.
- The models below are supported:
  - Kenwood
    - Probably the choice to use for all modern Kenwood radios. Other possible selections are Kenwood-Slow or TS-2000

## 8.2. TS-480

- Select: Kenwood. Note that handshaking options may vary - check your manual
- "PTT via radio command" is not supported when using "AFSK" via the data jack. TS-480 owners have two options:
  - Use hardware PTT (RTS) from the digital port connected to pin 3 (DTR) of the DATA port for digital PTT. Configure MMTTY and/or MMVARI interfaces to activate DTR for PTT.
  - Use the microphone input for AFSK/PSK. This will allow the use of "PTT via radio command".

## 8.3. TS-570

- Select: Kenwood
- When using the ACC2 port on the back, you must send both the audio signal and the PTT signal to the ACC jack.
- You can't use the normal PTT connection from the MIC jack if you are inputting audio into the ACC jack.
- SO2V: 9600,N,8,1,handshake,handshake,radio/VFO=1

## 8.4. TS-590

- Select: Kenwood
- Follow the Owners Manual for port speed, parity, number of databits, and stopbits

## 8.5. TS-850

- Select: Kenwood
- Turn off AI on init

- Speed: 4800 Baud; Parity: N ;Databits: 8; Stopbits: 2 (!)
- Check out the possible communications issue below with this radio.

## 8.6. TS-870

- Reportedly works well; further information on setup would be welcome

## 8.7. TS-950sdx

- Select: Kenwood
- Some (older) TS-950sdx radios drop power when polled by a logging program. It's pretty obvious on either CW or SSB.
  - The problem is not the program but the ROM firmware chip. The big one on the digital board of the 950sdx.
  - Just replace the chip, the problem should go away. Costs about \$27.00 - and very easy to install (about 10 minutes)
  - Order a battery if you haven't replaced it already - it's right next to the chip on the same board....
  - Speed: 4800 Baud; Parity: N ;Databits: 8; Stopbits: 2 (!)
  - Check out the possible communications issue below with this radio.

## 8.8. TS-50, TS-140, TS-440, TS-680,TS-711,TS-790,TS-811,TS-940

To avoid Kenwood EPROM issues with these radios, select Kenwood-Slow rather than LKenwood.

## 8.9. TS-2000

- Select: TS-2000 - There is a separate radio entry for TS-2000 to allow control of RX antenna input.
  - Uses default 9600 Baud; Parity: N ;Databits: 8; and 1 stopbits. DTR= Handshake and RTS = Handshake
  - When using 4800 baud, 2 stopbits must be used!
  - With menu item 56 the speed can be changed.
  - Also works for frequencies above 100 MHz
  - Do not use the radio function called "auto-mode". This function automatically changes the radio mode.
    - This overrules the (fixed) radio mode set by N1MM logger under the mode tab in Configurer.
    - NB.This could give AFSK RTTY (LSB) problems when changing between the higher (USB) and lower (LSB) bands.
  - Do not use the radio in memory mode, use VFO mode. The program will not function when in memory mode with the program.

## 8.10. N1MM logger loses communication with the radio (TS-850, TS-950 etc.)

The problem is based in the radio's microprocessor. Some older Kenwood radio are not capable of communicating with the computer while the tuning knob is being turned. If you turn the knob smoothly and continuously, no matter how slowly, the radio will not be able to receive or respond to polls and the link will time out. Try using Kenwood-Slow as selected Radio. if this does not help please try to increase the 'transceiver timeout time' (right-click menu in the bandmap) in N1MM Logger, for example to 120 seconds. You can also try tuning the radio in bursts instead of smoothly, i.e. stop turning the tuning knob every few seconds to let the link catch up.

## 9. TenTec

### 9.1. General TenTec information

- The models below are supported, other models are not supported.

### 9.2. ARGONAUT V

### 9.3. JUPITER

- Uses 1 stopbit and DTR and RTS 'Always on'. Do NOT check the CW check box on the port setup screen for this com port.

### 9.4. OMNI-VI

- On the Omni VI+ the "Cde" item under menu 2 should be set to "off". Otherwise there will be collisions between the data sent from the rig when N1MM polls for

data and the data that is being continuously sent by the radio which will cause erratic behavior.

### 9.5. OMNI-VII

- The Omni-VII does not support antenna switching in "radio" mode. It is only possible in "remote" mode. So owners of the Omni-VII can not use the antenna switch macros.
- Alt+F10 (exchange VFO) and CW-Reverse operation supported
- The Omni-VII can not receive on VFOB.

### 9.6. Orion

- Uses default 56000 Baud and 1 stopbit and hardware handshaking.
- Firmware version 1.363 or greater needed.
- Note that the Orion does not support PTT on CW via computer command. This



does work on SSB, but on CW, you need to set a parallel or serial port to assert PTT for that radio. Then use a cable from that adapter to pin three (PTT) of the aux port on the Orion. This is the black RCA Phono connector on the aux cable. By use of a Y connector, you can parallel your footswitch and this CW PTT cable.

- When using PTT and CW lines off a serial or parallel port. Be sure to go into the Orion CW menu and set "PTT in CW as" to the value "Mox".
- Defaults bandwidths: CW: 300/800; SSB: 2000/2800; RTTY 250/400
- CW on main receiver is LCW.
- Supports Digital Voice Keying (DVK) via the AUX port. Audio should be fed to the AUX port and NOT the microphone.
  - When no DVK is specified the front microphone gain will normally set to 0
    - Microkeyer users: check out the Supported Hardware chapter regarding muting of the ORION microphone audio input.
  - When a DVK is specified for that radio the microphone gain will not change (mostly fed to the front microphone).
- When up/down pressed, turn on RIT if in S&P, turn off RIT if in running mode.
- Clear RIT by setting to 1 Hz not 0. Avoids turning off RIT.
- Narrow SSB bandwidth set to 1990 Hz to force the use of 2.4 kHz filter in auto mode.
- RIT can be changed using the up/down keys if RIT on. Note that you must turn on RIT from within the program!
- Swap VFOs using Alt+F10. This will replace the contents of memories 199 and 200
- Example Setup FSK/CW/SSB
  - In FSK or SSB mode the program uses the PTT input to key the rig.
  - In CW mode the program uses the PTT as the CW key.
    - Digital setup and MMTTY.
      - N1MM Config / Config Ports / Hardware Tab.
        - Set the CW menu choice for the interface com port to DTR (Pin 4).
      - MMTTY Setup / Setup MMTTY / TX Tab / Radio command button.
        - Checked the PTT button under DTR/RTS.
- Interface information
  - LINE OUT (74) is fixed level output (RCA connector)
    - Should be fed to LINE IN on the soundcard.
    - Yellow phono plug on Pin 4 of the AUX I/O cable assembly
    - NB this is a combined output for both receivers, use the AUX I/O port for separated outputs (pin 4 and 6)
  - AUX I/O port (80): AUX IN (pin 1) for transmit audio from the soundcard
    - Should be fed to LINE OUT on the Soundcard.
    - The AUX gain can be set under the SSB menu
    - Set the AUX gain to 65 and use the computer audio setting to drive the rig to 100 watts for RTTY.
  - AUX port: PTT (pin 3)
    - A transistor switch is needed from a serial or parallel port.
  - Works fine for digital modes but also for recording and the voice keyer.
  - Switch between MIKE and AUX via the menu.

This is a summary of the SO2V features for the Orion.

- ALT+F12 toggles Sub audio On and Off. To leave SUB audio selected all the time, select **Configurer>Dual RX always on**
  - If you are using Diversity mode on the radio, toggling Sub off and on via Alt+F12 will turn Diversity mode off
  - Logger preserves diversity reception unless RX Focus changes to vfoB at which time the subrx will switch to vfoB
- Subrx ON/OFF control by Logger
  - Independent of the state of Dual RX Always On:
    - changing RX Focus to vfoB turns the subrx ON
    - Ctrl+Shift+Up/Dn does not change the state of the subrx
    - Alt+F12 toggles subrx ON/OFF if RX Focus is on vfoA (action disabled if RX Focus on vfoB)
  - Dual RX Always On checked:
    - clicking any vfo bandmap/avail. window spot or Ctrl+Up/Dn turns the subrx ON
    - changing RX Focus turns the subrx ON
    - if dual rx always on was unchecked and the user checks it, subrx is turned ON
  - Dual RX Always On unchecked:
    - If the TX & RX Focus is on VFOB and the RX Focus changes to VFOA ( \ keystroke), the subrx stays ON
    - If the TX & RX Focus is initially on VFOB and then RX & TX Focus is on VFOA (PAUSE, CTRL+Left or vfoA Bandmap/Available window spot click ), the subrx is turned OFF
    - if dual rx always on was checked and the user unchecks it, subrx is turned OFF
- Ctrl+Alt+D command action:
  - If "Dual RX always on" is ON and the Sub RX is ON, turn "Dual RX Always On" to OFF and leave the Sub RX ON
  - If "Dual RX always on" is ON and the Sub RX is OFF, turn "Dual RX Always On" to OFF and leave the Sub RX OFF
  - If "Dual RX always on" is OFF and the Sub RX is ON, turn "Dual RX Always On" to ON and leave the Sub RX ON
  - If "Dual RX always on" is OFF and the Sub RX is OFF, turn both ON
- Stereo (grave accent) command action:
  - If the subrx is OFF - check "Dual RX always on" and turn the subrx ON
  - If the subrx is ON - uncheck "Dual RX always on" and turn the subrx OFF unless RX Focus is on vfoB

## 10. Yaesu

### 10.1. General Yaesu information

- The models below are supported, other models are not supported.
- Required interfaces

- Newer models connect directly via a serial port cable.
- Older models need the Yaesu FIF-232C CAT interface (or compatible).
- Software handshaking is being used for all models.
- Yaesu uses by default:
  - Speed: 4800 Baud Parity: N Databits: 8 Stopbits: 2

## 10.2. FT-80C

- It has been reported that this radio will not transmit key CW or MIC audio while it is sending the radio polling data to the computer. The radio polling string is fixed by the radio firmware and it requires over 800ms to send the data to the computer at 4800 baud. This radio should only be used without radio control. This operation just isn't practical for contesting.

## 10.3. FT-100(D)

- The FT-100D has an internal jumper for either CAT/TUNER or LINEAR. This should be set for CAT/TUNER.
- Configure the radio as FT-100, 4800, N, 8, 2, Handshake, Tx=1, DTR=Always on or off, RTS=Always on or off.
- Needs a standard FT-100 CAT cable (CT-62).

## 10.4. FT-736

- Not supported and probably never will be. It seems that once the radio is controlled by CAT it can't be controlled by hand anymore.

## 10.5. FT-450

- When using a 3 wire cable (TX, RX and ground) set CAT RTS=disable on radio (default is enable). This cable does not have DTR or RTS connected. The radio settings CAT TOT should be set to 1000 and CAT RATE must match the program configuration. A three wire cable should also work with USB serial adapters.

## 10.6. FT-747GX

- It has been reported that this radio will not transmit key CW or MIC audio while it is sending the radio polling data to the computer. The radio polling string is fixed by the radio firmware and it requires over 800ms to send the data to the computer at 4800 baud. This radio should only be used without radio control. This operation just isn't practical for contesting.

## 10.7. FT-757

- Select FT-757GXII as radio and disable the radio communications timeout via the bandmap menu option (set it to 0).
- The FT-757GX does NOT send anything to the computer and the radio mode can not be set by the program so the radio control functionality will be limited.

## 10.8. FT-757GXII

- Supported

## 10.9. FT-817

- 19200, N, 8, 1, Handshake, Handshake. FT-817 CI-V Baud "Hi". When using a USB/Serial adapter set DTR to 'Always on' and RTS 'Always off'.
- Bandwidth button in the bandmap is not supported (and not shown).
- There are some limitations in the available CAT Codes provided by Yaesu with the FT-817, FT-857 and FT-897.
  - The best way to understand what is possible is to take few minutes and review the available CAT Commands on page 72 (FT-817) 62 (FT-897) 115 (FT-857) of your operating manual.
  - VFO A/B : It is only possible to switch from one VFO to the other but there is no way to know by the program if the radio is on VFO A or VFO B.
  - Narrow CW Filter : There is no CAT Command to set Filters on the radios.

## 10.10. FT-840

- Supported

## 10.11. FT-847

- Split Operation does not work, because it is not supported via the CAT-connection. So it has to be done manually by the operator.
- RIT and XIT in the bandmaps are not working, because this is not supported by the FT-847.
- Also working for frequencies above 100 MHz.
- CW-R mode supported.

## 10.12. FT-857

- The FT-857 and FT-897 computer control lacks the ability to select VFOs which makes it difficult for N1MM Logger to function as well as other radios.

### 10.13. FT-890

- Supported

### 10.14. FT-897

- Supported
- Bandwidth button in the bandmap is not supported (and not shown).
- The FT-857 and FT-897 computer control lacks the ability to select VFOs which makes it difficult for N1MM Logger to function as well as other radios.

### 10.15. FT-900

- Supported

### 10.16. FT-920

- PTT via CAT supported.
- For filter settings see below.

### 10.17. FT-950

- When using a 3 wire cable (TX, RX and ground) set CAT RTS=disable on radio (default is enable). This cable does not have DTR or RTS connected. The radio settings CAT TOT should be set to 1000 and CAT RATE must match the program configuration. A three wire cable should also work with USB serial adapters.

### 10.18. FT-990

- FT-990 and early FT-1000 had a design problem in the CAT interface. It used an open emitter transistor on the serial out line. That worked fine for TTL HIGH (+5 V) but some TTL to RS232 interfaces did not have enough load to cause the output to go low ... the interface would "float" in the undefined logic state between .3 and 3.5 volts. The solution is to add a 1.5K Ohm resistor from "serial out" to ground. When using the ARRL handbook design the 1.5k resistor needs to be added between pin 1 of the 7417 (which is pin 2 of the DIN) to ground.
- For filter settings see below.

### 10.19. FT-1000(D)

- Cat control will not work with FT-1000D internal software version lower than v6....most older ft1000d's have version v5.8... you need an update!

- Older versions do have a CAT control problem. Check out the information with the FT-990 (above).
- If the bandmap/frequency is not updating, the radio probably is in Mem/Tune mode. Deselect using the VFO/MEM switch.
  - The program forces the radio at startup from Mem/Tune mode in VFO mode to avoid this problem.
  - For filter settings see below
- ALT+F12 toggles Sub on and off. It is identical to pressing the SUB radio button. To leave SUB on all the time, select **Configurer>Dual RX always on**
- Subrx ON/OFF control by Logger (SO2V mode)
  - Independent of the state of Dual RX Always On:
    - Changing RX Focus to VFOB turns the subrx ON
    - Alt+F12 toggles subrx ON/OFF if RX Focus is on VFOA (action disabled if RX Focus on VFOB)
  - Dual RX Always On Checked:
    - Clicking any vfo bandmap/avail. window spot or Ctrl+Up/Dn turns the subrx ON
    - Changing RX Focus turns the subrx ON
    - If dual rx always on was unchecked and the user checks it, subrx is turned ON
  - Dual RX Always On Unchecked:
    - If the TX & RX Focus is on VFOB and the RX Focus changes to VFOA ( \ keystroke), the subrx stays ON
    - If the TX & RX Focus is initially on VFOB and then RX & TX Focus is on VFOA (PAUSE, CTRL+Left or VFOA Bandmap/Available window spot click ), the subrx is turned OFF
    - If dual rx always on was checked and the user unchecks it, subrx is turned OFF
- Ctrl+Alt+D command action:
  - If "Dual RX always on" is ON and the Sub RX is ON, turn "Dual RX Always On" to OFF and leave the Sub RX ON
  - If "Dual RX always on" is ON and the Sub RX is OFF, turn "Dual RX Always On" to OFF and leave the Sub RX OFF
  - If "Dual RX always on" is OFF and the Sub RX is ON, turn "Dual RX Always On" to ON and leave the Sub RX ON
  - If "Dual RX always on" is OFF and the Sub RX is OFF, turn both ON
- Stereo (grave accent) command action (on non-US keyboards the key is mapped to another key):
  - If the subrx is OFF - check "Dual RX always on" and turn the subrx ON
  - If the subrx is ON - uncheck "Dual RX always on" and turn the subrx OFF unless RX Focus is on VFOB

## 10.20. FT-1000MP (Mark-V)(Field) (Not for use with SteppIR antenna controller)

- The program can't send CW via the MP's serial cable. See the help for how to build a CW interface
- If the bandmap/frequency is not updating, the radio probably is in Mem/Tune

- mode. Deselect using the VFO/MEM switch.
  - The program forces the radio at startup from Mem/Tune mode in VFO mode to avoid this problem.
  - The indicator should show VFO.
- Use a straight serial cable
- 4800,N,8,2 and DTR and RTS set to "Always Off"
- A big issue with the FT-1000MP is that you cannot set the radio to split with VFO-B as the RX. Well, you can, but you cannot control whether you are listening dual, or just VFO-B from the computer. You can detect it, but not set it. The user will have to press the main RX button to turn off the main receiver when split from VFO-B. Note that Alt+F10 will swap VFO A & B frequencies. That is very useful in this case.
- Optimum configuration for those who wish to operate AFSK and/or PSK. There will be an 85 Hz display offset between RTTY and PSK but that is minor.
- PKT is LSB with the frequency display shifted by 2.125 KHz (or other user defined offset at menu 6-4). It also selects audio input from the PACKET jack on the rear of the radio, disables the processor and mutes the microphone. Finally, it offsets the filters so the narrow filters are properly placed (centered as specified in menu 6-5).
- Using QMB memories
  - When doing a QMB RCLI press M>A until it transfers the QMB frequency to the VFO. After this it should work as normal, but you lose the original frequency that was in VFO-A.
- For filter settings see below
- ALT+F12 toggles Sub on and off. It is identical to pressing the SUB radio button. To leave SUB on all the time, select **Configurer>Dual RX always on**
- Subrx ON/OFF control by Logger (SO2V mode)
  - Independent of the state of Dual RX Always On:
    - Changing RX Focus to VFOB turns the subrx ON
    - Alt+F12 toggles subrx ON/OFF if RX Focus is on VFOA (action disabled if RX Focus on VFOB)
  - Dual RX Always On Checked:
    - Clicking any vfo bandmap/avail. window spot or Ctrl+Up/Dn turns the subrx ON
    - Changing RX Focus turns the subrx ON
    - If dual rx always on was unchecked and the user checks it, subrx is turned ON
  - Dual RX Always On Unchecked:
    - If the TX & RX Focus is on VFOB and the RX Focus changes to VFOA ( \ keystroke), the subrx stays ON
    - If the TX & RX Focus is initially on VFOB and then RX & TX Focus is on VFOA (PAUSE, CTRL+Left or VFOA Bandmap/Available window spot click ), the subrx is turned OFF
    - If dual rx always on was checked and the user unchecks it, subrx is turned OFF
- Ctrl+Alt+D command action:
  - If "Dual RX always on" is ON and the Sub RX is ON, turn "Dual RX Always On" to OFF and leave the Sub RX ON

- If "Dual RX always on" is ON and the Sub RX is OFF, turn "Dual RX Always On" to OFF and leave the Sub RX OFF
- If "Dual RX always on" is OFF and the Sub RX is ON, turn "Dual RX Always On" to ON and leave the Sub RX ON
- If "Dual RX always on" is OFF and the Sub RX is OFF, turn both ON
- Stereo (grave accent) command action (on non-US keyboards the key is mapped to another key):
  - If the subrx is OFF - check "Dual RX always on" and turn the subrx ON
  - If the subrx is ON - uncheck "Dual RX always on" and turn the subrx OFF unless RX Focus is on VFOB

**10.21. FT-1000MPSteppIR**

- Select this FT1000mp when using a SteppIR antenna.
- This selection is optimized for the combination of an FT1000MP and the SteppIR antenna. It sends radio commands one at a time, paced with the command delay. Otherwise, it is identical to the FT-1000MP

**10.22. FT-1000 series, FT-990 and FT-920 Setting filters**

Simply right-click on the bandmap and you will get a menu which includes "Set transceiver filter codes" ... there are six submenus: CW Wide, CW Narrow, SSB Wide, SSB Narrow, Digi Wide and Digi Narrow. In my case the commands for SO2V are:

- The settings below will work for the FT-1000, FT-1000D, the FT-1000MP, the FT-1000MP/MKV and the FT-1000MP/MKV Field (or any combination of two FT-1000 "family" of rigs in SO2R).

BandWidth	VFO-A (main)	VFO-B (sub)	Filter	Remarks
2.4 kHz	0 0 0 0 140	0 0 0 128 140	SSB Wide or Digi Wide	—
2.0 KHz	0 0 0 1 140	0 0 0 129 140	SSB Narrow or Digi Narrow	will use 2.4 kHz on VFO-B
500 Hz	0 0 0 2 140	0 0 0 130 140	CW Wide or Digi Wide	—
250 Hz	0 0 0 3 140	0 0 0 131 140	CW Narrow or Digi Narrow	will use 500 Hz on VFO-B
6.0 KHz (thru)	0 0 0 4 140	0 0 0 132 140	—	--



- The VFO-B (sub) only supports bandwidths of 6.0 KHz, 2.4 KHz and 500 Hz.
- For SO2R (two rigs) configure the two bandmaps the same.
- Some notes:
  - "Duplicates default filter settings" is appropriate to the FT-1000 MK/V and Field only. The FT-1000/D/MP permit more flexible filter selection.
  - The FT-920 does not support 2.0 KHz and 250 Hz filters ... it might make more sense to revise CW and Digi settings for 2.4/500 Hz (0 0 0 0 140 and 0 0 0 2 140) filters.
  - Even though the FT-920 lacks the second receiver, the FT-920 permits selecting different bandwidths for each VFO. The CAT commands are the same as those for the second receiver in the "1000" series: 0 0 0 130 140 selects 500 Hz and 0 0 0 128 140 selects 2.4 KHz.
  - The FT-990 commands are the same as those for VFO A in the "1000" series of radios.

### 10.23. FT-2000

- Defaults to: 4800 baud, 8 bits, no parity, 2 stop bits. Set DTR to always off and RTS to Always on. If this does not work, try to set DTR to Always On.
- When using a 3 wire cable (TX, RX and ground) set CAT RTS=disable on radio (default is enable). This cable does not have DTR or RTS connected. The radio settings CAT TOT should be set to 1000 and CAT RATE must match the program configuration. A three wire cable should also work with USB serial adapters.

### 10.24. FTDX-5000

- When using a 3 wire cable (TX, RX and ground) set CAT RTS=disable on radio (default is enable). This cable does not have DTR or RTS connected. The radio settings CAT TOT should be set to 1000 and CAT RATE must match the program configuration. A three wire cable should also work with USB serial adapters.

### 10.25. FTDX-9000

- When using a 3 wire cable (TX, RX and ground) set CAT RTS=disable on radio (default is enable). This cable does not have DTR or RTS connected. The radio settings CAT TOT should be set to 1000 and CAT RATE must match the program configuration. A three wire cable should also work with USB serial adapters.

### Other brands

- No other brands are supported yet.

## Third Party Software

### In this Section...

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#### Third Party Software

1. [Integration with other programs](#)
  2. [Athena \(by Carel, PC5M\)](#)
  3. [Thucydides \(by Carel, PC5M\)](#)
  4. [AB\\_Switcher \(for SO2R without using an LPT-port\)](#)
  5. [I8NHJ web interface](#)
  6. [AutoHotkey](#)
  7. [AR Cluster User](#)
- 

All programs below are freeware programs !

### 1. Integration with other programs

For future releases N1MM logger will use the UDP interface a lot for loose integration of other applications. It offers an easy way for other programs to send data to and receive data from the logging program. What is nice about it is that the two participants need not be on the same computer, they only need to be on the same LAN.

The software does automatically upload scores with the N1MM logger, or can be used manually if you log with anything else.

### 2. Athena (by Carel, PC5M)

Athena provides the following features:

- Display of real-time contest statistics
- Graphs will show hourly rate, cumulative totals and goal
- Graphs selectable for number of QSO's and multipliers, points or score
- Graphs per operator and band
- All band numerical statistics with indication on how many minutes/qso's a new multiplier will be "worth"
- Goal data can be imported from previous (n1mmlogger) contests and is text file based
- Goals can easy manipulated to fit into current contest view

Athena was developed to provide a (near) real-time insight in how the contest is progressing; How many qso's, multipliers have been worked and what the current score is. This data is presented per band and/or as a total view for all bands. Operator specific data can be shown to see how your operators are doing individually. In addition goal data can be added to the band graphics to get a feeling how thing are going. This goal can be imported from previous contest or build up from scratch. Goal data can be easily saved and read back as requested. Due to the fact that the current goal implementation of n1mmlogger is rudimentary the goal data of n1mmlogger is not used.

Athena will only read data from n1mmlogger and will not make any alteration to any n1mmlogger file, including the precious database file (.mdb). Statistics will be calculated on the fly and stored in between. Only the created goal data will be stored on the file system in a XML file format. Athena user setting (a.o. last contest, or if operator data is enabled) will be stored per (windows) user in the user data application directory.



### 3. Thucydides (by Carel, PC5M)

Always would like to update the history file with real contest QSOs ? Have an optimized history file for every contest? Alkl that is possible with Thucydides by Carel, PC5M.

Thucydides is a separate program developed to connect to N1MM Logger and history files. With this manager it is possible to update a current history file with the information gathered during logging contest qso's. History file can be used to verify and fill in automatically specific information when logging new contacts (gridsquare, state, CK, etc).

The user can build up a separate (ms-access) database with imported history information from actual logged QSOs (with n1mm logger) and/or other history text files. Exporting the information to a dedicated history.txt file for a specific contest. Users can manipulate in great extend the behavior of the program (which fields to import or which fields to export) by updating a normal Excel configuration file.



Thucydides provides the following features:

- Creation of contest specific and optimized history files
- Updating history files with logging information
- Database views of selected contest and history file
- Supported contests are all contests supported by N1MM Logger

Please check the manual how to use the program. Check out the the N1MM website using the url in the [Links](#) chapter.

#### 4. AB\_Switcher (for SO2R without using an LPT-port)

AB\_Switcher is a program to allow radio a/b switching on a comport without the use of a parallel port on the host computer. Basically this program monitors that sound card mixer output levels and switches the DTR on the chosen comport to reflect the current radio TX focus.

The program supports switching of the Receive Focus as well as the Transmit focus. This works under N1MM when in the \$5S02R mode. A second com port is used to output on DTR and RTS the necessary data to switch external S02R box's that support Receive Focus switching.

It also can monitor a second sound card and output on a second comport information about the state of the RX focus. (Left/Right/Split). It does the by watching the sound card mute controls for the selected inputs. AB Switcher Version 2 can provide any combination of the three SO2R control signals. If only two of the three signals are needed, AB Switcher requires only a single "serial port" and can use a port above COM8.

With Dan's driver, it is now possible to effectively use the microHAM MK2R/MK2R+ SO2R controllers with N1MM Logger and a "USB Only" computer. The SW Synth and CD Audio inputs on the second codec (USB Audio CODEC) in MK2R+ can be used as the Left/Right audio sources for

"\$5 SO2R" without effecting any of the other options making USB Audio CODEC an ideal "target" for \$5 SO2R.

Check out the the N1MM website using the url in the [Links](#) chapter.

NB. It is hoped that AB\_Switcher will be an interim solution until the various contest programs make the SO2R control signals (TX Focus, RX Focus and Stereo) as options for the serial port DTR and RTS lines. 73, Joe, W4TV

## 5. I8NHJ web interface

I8NHJ has created a very nice web Interface to the N1MM Logger Database. This interface gives statistics about the contest, worked stations and much all in real time when needed. See the file WebInterface\_Howto.txt in the zip file for installation instructions. Tested on Windows NT/W2K/XP. You'll need MS Office and MS Access 2000. MS Office is not needed to run N1MM Logger only needed for the web interface!

### From the HowTo.txt file and additional info from Max, I8NHJ

This program was designed to allow an easy, powerful and versatile interface to the log generated by the N1MM Logger during a contest or DXpedition. It is distributed AS IS, under the GNU license terms. It can be freely used and distributed but please leave in place the references to me (I8NHJ) and to the programmer (AGO) who helped in developing the code. Version 1.0, November 2002

The Web Interface is written using in-deep ASP techniques and it needs a full-asp support. This means that some investigation should be made to find a good ASP support for other platforms than Microsoft. Here we strongly use Linux but so far we still haven't found any working support for ASP and, moreover, this kind of solution could become too complex for the average user.

To get the full functionality from the tool, the Microsoft Office package must be installed on the Server side. Ms Access is not really needed but some graphical features are performed by components from Excel and Word.

To generate the graphics you need MS Office on the server side. If you haven't it, the Web Interface runs anyway but you will not get charts. NB.

### Below an explanation from Franki, ON5ZO

Max I8NHJ has made an interface to go with the N1MMLogger software and it's database (\*.mdb files).

Max kindly offered this tool to us, the N1MM Logger users. You can download the program from the [N1MM logger web site](#) under 'Downloads', select in the menu: 'Other Files'. The file name is 'webinterface1-x.zip'. This is not a program that can run on its own. In fact, it is some kind of web site/web page (without getting into details). This requires that you run a web server on your own Windows PC at home. There are several possibilities:

1. You know all about servers and ASP, and have an ASP capable server running. You're on your own, you're smarter than I am...

2. You are running Windows 2000 / NT / XP Pro > there's this thing called IIS that you need to install by inserting the CD, and run Windows Setup > Add components (The names may vary according to what Windows version you are using).

3. Win XP Home: too bad, IIS does not come with the 'light' version, so either you

- Mess with XP Home, some did with success, others like me without any luck go to: <http://www.15seconds.com/issue/020118.htm>
- install a FREE non-Microsoft server and add ASP support. (See information below from Dave, G3VGR)

4. You run Windows 98 (and maybe this is good for Windows 95 too, did not test this): go to: <http://coveryourasp.com/PWS.asp>. Follow steps 1 to 7 (included)

When you finished option 1 or 2 or 3 or 4 successfully, and the server (IIS or PWS) is up and running, follow Max his guidelines in the ZIP-file.

73' Franki

### **Below some additional information from Dave, G3VGR**

I've just successfully implemented the I8NHJ interface, using the freeware Abyss Web Server from <http://www.aprelium.com/>

ASP support needs to be added using the freeware ActiveHTML software from seliSoft.

<http://www.selisoft.com/en/ahtml/>

The Aprelium web site gives a blow-by-blow account on how to add this support

<http://www.aprelium.com/abyssws/asp.html>

I only started using Logger today, so have only used a very small test log to verify all this.

73, Dave

### **Below some additional information from Uffe, PA5DD**

I recently re-installed my whole system to Windows 2000 (same goes for XP etc.). It all works fine until I want to use the I8NHJ Web interface when the Logger has the same .mdb database file open. Then access is refused. Reason is that the Logger opens the database file "exclusively". This is a question of access rights. After installation of the Web interface, Internet user access rights has to be awarded to the directory where the Web interface is, as well as the Logger directory. To see how, use the link: <http://www.aspemporium.com/aspemporium/tutorials/permdenied.asp>

The Web server should have default.asp in its Default Document list. Alternatively you could address the page directly: <http://localhost/logger/default.asp>

73 Uffe PA5DD

### **Personal Web server**

If you have Windows 95 installed on your computer, you can install the Microsoft Personal Web Server from the Windows NT 4.0 Option Pack. You can download the Option Pack from the

Microsoft Web site. Microsoft Personal Web Server can also be found in the "Add-on\pws" directory on the Win98SE install CD (at least on this Win98SE upgrade CD, US version).

### **Below some additional PWS information from Frans, PA5CA**

I installed the PWS software for win98se, please note to install (over write) one of the dll files before executing the install. It took me some time before I got the ASP statistics to work, now I'm quit happy. I used the following links...

<http://support.microsoft.com:80/support/kb/articles/Q246/0/81.ASP> 

<http://support.microsoft.com/default.aspx?scid=fh;NL;w98> 

73' Frans PA5CA

## **6. AutoHotkey**

AutoHotkey can create hotkeys for keyboard, joystick, and mouse. Remap keys and buttons on your keyboard, joystick, and mouse and has many more features. Virtually any key, button, or combination can become a hotkey.

Once you have AutoHotkey installed, you create a script file in notepad, name it with an .ahk extension, and double-click it. Windows knows that you want to run AHK, so an AHK logo for the script appears in the system tray, and stays there until you actually exit from it. You can edit the script, read the help file, and reload the script from right-clicks on that logo. One thing it took me a while to figure out is that each time you edit the script you need to reload it - also through the right-click on the logo.

Model for N1MM Logger for any use of one key to send a multi-key combination:

Script	Description
#UseHook	
SetNumlockState, AlwaysOn	Num Lock always on
Numpad7::Send !{F9}	Numeric key 7 - toggle antennas for a band
Numpad8::Send ^+i	Numeric key 8 - toggle Advanced SO2R
Numpad4::Send ^b	Numeric key 4 - toggle dueling CQs
Numpad9::Send !r	Numeric key 9 - toggle repeat CQs
Numpad5::Send ^{F1}	Numeric key 5 - send CQ on radio that does not have entry focus
Numpad6::Send !w	Numeric key 6 - wipe
Numpad0::Send {ESC}\`	Numeric key 0 - return from S&P to work station calling on run radio
Numpad1::Send \``	Numeric key 1 - go back to S&P on opposite radio
Return	

Example AutoHotkey implementation for grabbing multipliers to VFO A and B:

Script	Description
#UseHook	
SetNumlockState, AlwaysOn	Num Lock always on
Numpad7::Send ^!{Up}	Numeric key 7 - VFO A Go to next multiplier up the bandmap
Numpad1::Send ^!{Down}	Numeric key 1 - VFO A Go to next multiplier down the bandmap
Numpad9::Send ^+!{Up}	Numeric key 9 - VFO B Go to next multiplier up the bandmap
Numpad3::Send ^+!{Down}	Numeric key 3 - VFO B Go to next multiplier down the bandmap
Return	

Example AutoHotkey implementation to send CW using a hotkey:

Script	Description
Numpad1::Send ^k testing?^k	Send a CW message from a designated hotkey (Numeric key 1 in the example). You'll see the Ctrl+K keyboard window appear and quickly disappear, but now the CW continues to be sent until it is done (unless you hit ESC to interrupt it)



A program which can do the same or maybe even more is 'Autolt' version 3. Check out the [Links](#) chapter for both urls.

Or use the wheel of the wheelmouse.

WheelUp::Send {Up}

WheelDown::Send {Down}

## 7. AR Cluster User

AR Cluster User by Lee, VE7CC is a full featured Telnet and TNC program for use with AR Cluster or DX Spider Nodes.

It has telnet and RS-232 outputs for logging and contest programs like N1MM logger. Runs under Windows 95 to Windows XP and can auto reconnect and automatically gets missed spots. It can be used with telnet and TNC's.

The program can receive spots both in connected and unconnected modes, this means it also recognizes spots when NOT connected to any packet node, just monitoring the RF channel where other users are receiving spots is good enough.

### Setting up AR User with N1MM logger

- Settings AR cluster
  - Connect to your packet node with AR User
  - Go to onfiguration - Ports/Logger Program
  - Check "Telnet" Logging Program Connection, Apply for both the Node Connection and the Logging Program Connection
- Open N1MM Logger
  - Go to Config - Change Telnet Cluster List
    - If there isn't already an entry, add AR User
    - Use 127.0.0.1:7300 if AR User and N1MM are on the same computer

Check the website how to achieve this when using more computers

- Open the Telnet Window and connect to AR User
- You should see spots flow into N1MM Logger from AR User

Check out the the AR Cluster User website using the url in the [Links](#) chapter.

## Frequently Asked Questions

Access the Frequently Asked Questions by selecting [Frequently Asked Questions \(FAQs\)](#) 

## N1MM Logger Appendices

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## Example Function Keys

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#### Example Function Keys

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#### Note 1



There may not be any 'holes' in the function keys lines with skipped function keys. ALL preceding Function keys must at least have a line in the table. Example: You'd like to have a different S&P F3 key than the Run F3 key. First you have to add the 12 Run lines in the table, after that the S&P lines for F1 + F2 +F3 which you liked to change for S&P. So at least 15 lines in total have to be in the function key table (12 run + 3 S&P).

#### Note 2



The text F1 (etc.) in the left column is only text and has no intelligence/meaning for the program. You could remove it and change it to any text you like, which will show on the Function key in the Entry window. The order of lines determines what the key will do. Examples: line 5 is Run F5 , line 11 is Run F11, line 17 is S&P F5 (17-12=5) etc.

#### Note 3



When you load a function key definition file into the current database, that table of definitions, including any changes that you make during the current session, is saved in the database. That means that if you restart the program and, for instance, start a new contest log, you will discover that the program still uses the function key definitions set for the previous contest.

Each N1MM Logger database has single, separate tables for CW, SSB and RTTY function key definitions. Once these have been created or loaded from a file (File > Import > Import function keys from file), they remain until replaced. The correct way to manage this is to specify a file for each relevant mode (on the Associated Files tab of the Contest Setup dialog) when you set up a new contest, so that the right function key definitions will be loaded. If you don't specify a file, or clear the Associated Files notation, the most recent set of definitions stored in the database will come up each time you open or reopen the log.

## 1. SSB

The .wav files can be anywhere on your computer as long as the filename in the FKey setup includes the path. If in the wav folder, than it should read C:\Program Files\N1MM logger\wav [filename](#). If in another, for example ARRL DX, it would read arrldx[filename](#).

### 1.1. WPX SSB example

Here is an excerpt from my macro list that I used in WPX SSB with ESM. Note again that the first 12 lines are for Run mode, and the last 12 for S&P. I was voicing both serial numbers and the other station's callsign. Note also that I used a brief pause.wav file (finite length but no sound) to get a pause between his call and the serial number.

This is tricky because it requires mixing macros and WAV filenames. Pay close attention to the details - there are no doubt other syntaxes that work, but I know this does, with no spaces, commas or other punctuation in the right column.

Button Caption	WAV File
F1 CQ	C:\Program Files\N1MM logger\wav\cq general.wav
F2 Exch	C:\Program Files\N1MM logger\wav\59.wav#
F3 TU	C:\Program Files\N1MM logger\wav\tnx.wav
F4 {MYCALL}	C:\Program Files\N1MM logger\wav\mycall.wav
F5 His Call	!C:\Program Files\N1MM logger\wav\pause.wav
F6 Rpt Exch	C:\Program Files\N1MM logger\wav\number.wav#
F7	

F8	
F9	
F10	
F11	
F12	
F1	C:\Program Files\N1MM logger\wav\mycall.wav
F2 Exch	
F3 TU	
F4{MYCALL}	
F5 His Call	
F6 Rpt Exch	
F7	
F8	
F9	
F10	
F11	
F12	

## 2. CW

### 2.1. CW program default

Below are the default function keys as set up in the program. The F3 to F12 keys under S&P are not filled in. If you press these keys in S&P mode, the Run mode S&P messages will be sent.

Button caption	CW message
F1 CQ	cq~test~de~*
F2 {Exch}	<<<5nn >>>{EXCH}
F3 TU	TU de *
F4 {MYCALL}	*
F5 His Call	!
F6 QSO B4	QSO B4 de *
F7 ?	?

F8 Agn	Agn
F9	
F10	
F11	
F12	
F1 {MYCALL}	*
F2 5NN {EXCH}	<<<<5nn>>>>{EXCH}
F3	
F4	
F5	
F6	
F7	
F8	
F9	
F10	
F11	
F12	

## 2.2. Sprint CW examples

### 2.2.1. Example 1

This Function key set is based on a set posted by Kenny, K2KW

Button caption	CW message
F1 CQ	* * <<<NA>>>
F2 Exch	* {EXCH}
F3 TU	EE{S&P}
F4 {MYCALL}	*

F5 His Call	!
F6 QSO B4	B4 E E
F7 ?	?
F8 Agn	AGN
F9	
F10	
F11	
F12	
F1 CQ	**<<<NA>>>
F2 Exch	! {EXCH} *
F3 TU	EE{RUN}
F4{MYCALL}	*
F5 His Call	!
F6 QSO B4	B4 E E
F7 ?	?
F8 Agn	AGN
F9	
F10	
F11	
F12	

### Running Message Notes

- For F2, there is a space before the \*; E.G. "<space> \* {EXCH}"
- For F3, "EE" is there to confirm the QSO. You could easily use "TU".
- After the "EE" is sent on the F3 message, the {S&P} macro puts you into the S&P mode. Then just hit your UP/DOWN arrow to QSY.
- Personally I have F6 programmed as {EXCH} to send a repeat on the exchange

### S&P Message Notes

- Note the difference in the sequence for the F2 message compared to the Running F2 message
- For the F3 message, the {RUN} macro puts you in the running mode, ready to work a tail ender and send him the correct QSO sequence
- Personally I have F6 programmed as {EXCH} to send a repeat on the exchange

## 2.2.2. Example 2

This function key set is based on one posted by Pete, N4ZR and modified by Rich, VE3KI.

Button caption	CW message
F1CQ	* * NA{CLEARRRIT}
F2 Exch	* {EXCH}
F3 TU	E~E {CLEARRRIT}
F4 {MYCALL}	*
F5 His Call	!
F6 QSO B4	B4 *
F7 Rpt Exch	{EXCH}
F8 ?	?
F9	
F10	
F11	
F12	
F1 CQ	* * NA{CLEARRRIT}
F2 Exch	! {EXCH} * {RUN}
F3 NR	#
F4 {MYCALL}	*
F5 His Call	!
F6 Name	PETE
F7 State	WV
F8 ?	?
F9	
F10	
F11	
F12	

Note two things about this set:

1. The {RUN} macro is in S&P F2, not F3. This worked great for me - when I pressed Enter to send the S&P exchange, the exchange was sent, the QSO was logged, and the mode changed to {RUN} with the cursor in the call sign box. Therefore I did not have to press F3 to get from S&P to Run. The main problem with this is that if anyone asks for a repeat of the serial number, the Run keys are already active, so you have to either remember how to get the serial number from the S&P set

(Shift+F3), or else just use the paddle, which is what I did.

2. There is no {S&P} macro in this set. At the end of a Run QSO, you switch to S&P mode by just QSYing. This also worked OK for me; since you are going to have to QSY anyway, there seems to be no real need to force a change to S&P mode. I also had the "QSYing wipes the call & spots QSO in bandmap" option selected, which may have helped ensure that the cursor was in the right place after QSYing by wiping the entry window. Of course I did not actually have the band map open, and I just ignored any call signs that showed up in the frame in the entry window.

It would be a nice touch if the final Enter in Run mode would not only log the QSO, send the acknowledgment (E E or R) and switch to S&P, but also QSY the radio by 1.5 kHz; but as far as I am aware there is no {QSY:+1.5} macro to do this. I think you have to either turn the radio dial or press the up/down arrow or PgUp/PgDn key (depending on what increments you have these keys set for). I just turned the dial. Next time, if I remember, I will set PgUp and PgDn to 1.5 kHz and try to use them more.

73, Rich VE3KI

### 2.2.3. Example 3

This function key set is an example how to use the Single Operator Call Stacking macros in CW. Posted by John, K3CT.

Button Caption	CW Message (sic)
F9 Stack	{SOCALLSTACK}
F10 Log Pop	{LOGTHENPOP} TU NW {F5}{F2}
F11	
F12 Wipe	{WIPE}

DX4Win uses F12 for Wipe so I use the same key for casual operating and contesting. Colored stickers with a message on the key tops helps me find the important keys.

### 2.2.4. Example 4

#### Customizing N1MM Logger for the North American CW Sprint by Steve, N2IC

I'm not going to try to explain how to operate the Sprint - for this, there is an excellent writeup at: <http://n6tr.jzap.com/sprint.html>

What I will do is describe how to get the most out of N1MM Logger in the Sprint. My operation is SO2R, and my configuration is optimized for that mode. However, I'm sure you SO1R guys will pick



up a few tricks from what I have done for SO2R. The most important thing is to get your options, windows and function keys setup correctly before the Sprint starts.

### **The Options...**

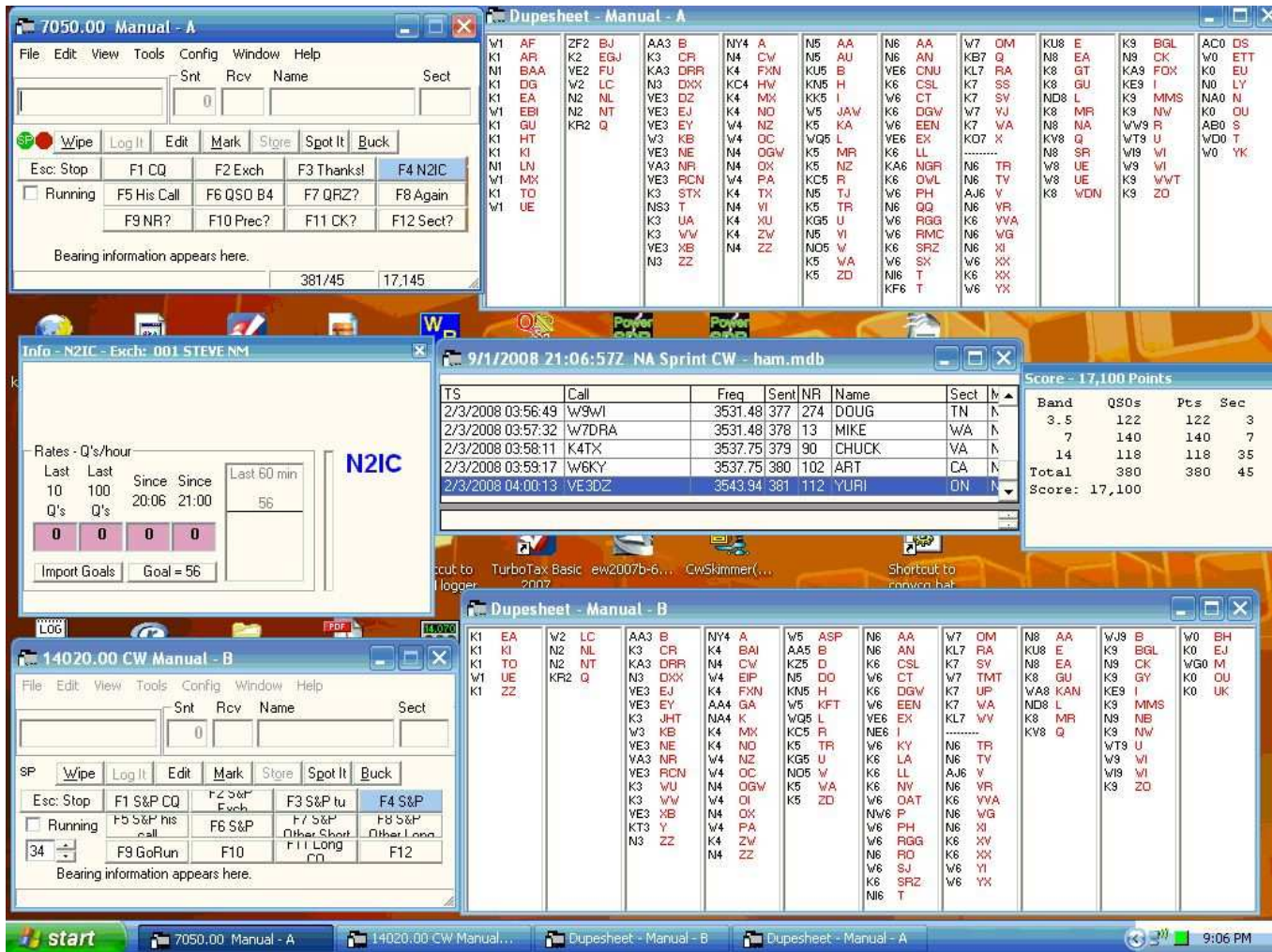
Start up N1MM Logger using version 8.9.0 or later, and create a new SPRINTCW contest.

In the Config menu, select the following options:

- Enter sends message (ESM)
- QSYing wipes the call & spots QSO in bandmap
- Do not run on CQ frequency
- Show non-workable spots

The Windows...these are the only windows I have on my screen and all fit nicely on my small monitor

- Entry Window (one for each radio)
- Visible Dupesheet (one for each radio)
- Info
- Log
- Score Summary



The Visible Dupesheet is really nice once you get used to it. To see if a station is a dupe, you just scan the dupesheet with your eyes, rather than frantically type a call into the Entry Window. Notice that I do NOT have the "Available Mults & Q's" nor the Bandmap windows open.

Now, I'm about to temporarily contradict myself. Open a Bandmap window. Right click and select "Packet Spot Timeout". Change the packet spot timeout to 1 minute. That's right....1 minute. Hit OK. Now close the Bandmap window. Don't reopen it. It is of no value in Sprint, but it is important to change the packet spot timeout value to 1 minute. (Side note: This option should really be called "Bandmap Timeout" not "Packet Spot Timeout". It controls how long calls stay on the bandmap and the appearance of calls in the "on deck" frame of the Entry Window. We're obviously not using packet in the Sprint.)

Function Keys ....

Here are my function key definitions. I'll explain a few that aren't obvious.

Button caption	CW Message
F1 CQ	cq na cq na * na
F2 Exch	* # steve nm
F3 TU	{CLEARRRIT}T{S&P}

F4 (MYCALL}	*
F5 His Call	!
F6 QSO B4	QSO B4 *
F7 Other Short	{CTRLF10}
F8 Other Long	{CTRLF11}
F9 Go S&&P	{S&P}
F10 CQ	CQ NA * * NA
F11 Long CQ	CQ NA CQ NA * * NA
F12 STOP	{STOPTX}{CTRLF4}
F1 S&&P CQ	CQ NA CQ NA * NA
F2 S&&P Exch	! # STEVE NM {RUN}
F3 S&&P TU	TU
F4 S&&P{MYCALL}	*
F5 S&&P His Call	!
F6 S&&P Name	-
F7 S&&P Other Short	{CTRLF10}
F8 S&&P Other Long	{CTRLF11}
F9 Go Run	{RUN}
F10 CQ	CQ NA * * NA
F11 Long CQ	CQ NA CQ NA * * NA
F12 STOP	{STOPTX}{CTRLF4}

With the CQ F3 key, my "thank you" message is sent, and it immediately switches to S&P mode. With the S&P F2 key, as soon as I send my exchange, it immediately switches to Run mode. I can also force myself into Run and S&P modes with the F9 key.

The F7 and F8 keys send CQ's on the "other" radio. This is very useful when the other station is sending his exchange, and you are going to lose the frequency (i.e. it will become "his" frequency). You can send a CQ on the other radio, while he is sending his exchange. Then, when he finishes sending his exchange and you need to send your "thank you" message to finish the QSO, all you have to do is hit Enter, which will stop the CQ on the other radio, and send your CQ F3 message on the active radio. However, you had better be ready to copy a new caller on the "other" radio. You also need to be sharp with the Pause key to jump between the two radios when this happens.

The F12 keys are used in conjunction with this AutoHotKey script: **NumpadEnter::F12**

When I'm CQing on the active radio, but simultaneously doing S&P on the other radio, and hear a new station, I can just hit the enter key on the far right side of the keyboard (no fumbling 🚨). This will stop the CQ, and send my call on the other radio. Notice that there is a space before the F12 {STOPTX} macro. Yes, you need this space - don't leave it out, or this feature won't work.

One thing you need to do is keep an eye on where your transmit and receive focus is (the red and green dots on the Entry Window). When you're doing SO2R in the Sprint, there will be times where your focus is not where you might expect it, or want it. Always be ready with the \ and Pause keys to jump between radios. Yes, this takes lots of practice, and you will make mistakes. The Thursday night Sprints are good practice for this.

73 and see you in the Sprint !  
Steve, N2IC

### 3. RTTY

#### 3.1. General RTTY example

The way the keys below are designed, they will work in many RTTY contests without any changes. Whether these particular ones suit your situation will depend on your antennas, your power, QTH, etc.; but maybe these will give you some ideas to work with.

Button Caption	Message sent
F1 CQ	{TX} CQ TEST DE * * CQ {RX}
F2 EXCH	599{EXCH} ! BK {RX}
F3 TU	{TX}{ENTERLF} ! TU DE * QRZ? {RX}
F4 {MYCALL}	{TX} DE * K {RX}
F5 His Call	{TX}{ENTERLF}
F6 QSO B4	{TX} B4 DE * CQ {RX}
F7 Rpt Exch	{TX} {EXCH} {EXCH} {EXCH} {EXCH} K {RX}
F8	{TX} AGN AGN DE * K {RX}
F9	
F10	
F11	
F12	
F1 CQ	{TX} CQ TEST DE * * CQ {RX}
F2 EXCH	{TX}{ENTERLF} DE * TU 599 {EXCH} {EXCH} BK {RX}
F3 TU	{TX} ! TU {RX}
F4 Call Him	{TX} DE * * * K {RX}
F5 1x1	{TX} ! DE * K {RX}
F6 0x1	{TX} DE * K {RX}
F4 Call Him	{TX} DE * * * K {RX}

F5 1x1	{TX} ! DE * K {RX}
F6 0x1	{TX} DE * K {RX}
F7 Rpt Exch	{TX} {EXCH} {EXCH} {EXCH} {EXCH} {EXCH} BK {RX}
F8 Agn	{TX} AGN AGN de * K {RX}
F9	
F10	
F11	
F12	

When using the above keys it is assumed that ESM is on. The Run mode keys F5, F6 and F7 are not very useful when you are S&P'ing, this is why I put those keys to better use by programming them differently from the Run mode keys.

Note also that you can use up to 24 additional buttons (mouse only, no keyboard access) on the digital interface window. For example, you can set up 0x1, 0x2, 0x3 and 0x4 calls, single, double and triple exchanges, separate requests for his zone and state and repeats for your zone only and for your state only, and so on.

73, Rich VE3KI

### 3.2. Example RTTY where the time is part of the exchange (like ANARTS).

In the following table only the keys that are different from the general example above are shown

Button Caption	Text sent
<b>RUN and S&amp;P</b>	
F2 Exch	{TX}599 {TIME2} {TIME2} {EXCH} ! KN {RX}
F7 Rpt Exch	{TX} 599 {TIME2} {TIME2} {TIME2} {EXCH} {EXCH} K{RX}

73, Rich VE3KI

## Call Checking

### In this Section...

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[Call Checking](#)

1. Updating the pattern file
2. The Pattern File
3. Components
4. Examples
5. What are we trying to match?

Dave Robbins, K1TTT's call checking code has been implemented in the program. When a callsign is entered it is checked against a pattern file to see if the callsign entered is a possible callsign. A warning will be given when this is not true. The messages appears in the **check window**.



This feature can really help our UBN rates if we get good rules!

#### **Only for HF**

Note that the call checking function only works for HF (no WARC) and CW/SSB and only when nothing is found in the CHECK window. So not for RTTY etc. and not on VHF and up!

#### **Warning**

Do not assume that if the program gives a warning that the callsign is not possible and has to be removed from the log. Some of these rules could already be outdated due to countries changing callsign sequences or issuing special contest calls.

## 1. Updating the pattern file

Unfortunately many countries have changed their callsign assignment process over the last years and many will change the coming years. Because of this the rules may not be valid. The rules are in the callsign.pat file in the program directory. The rules need constant updating, so if you have any rules or find broken rules for your country, please post them.

Note the following:

- Lines that start with ! are comments and are ignored by the program
- Lines alternate, first there is a text message that would be displayed for the user and should

basically state what the problem is

- After the text message is a cryptic line that is the machine readable part of the rule

When reviewing the rules please look mostly at the text messages, these should give you a basic explanation of what the rule is. When you send updates please give a short description of what the rule is, similar to the text messages already in. Write longer explanations if needed to explain all the nuances of a particular callsign rule. If you can't make up the code part for the particular callsign scheme just send it in and we will help. If a rule in the file now is no longer valid please include both lines from the file in your message and an explanation or example of why it is no longer a bad call pattern.

At present the rule file is limited to 200 rules, but can easily be expanded.

 **Share your knowledge**



Please do not to make up rules just for yourself. This is a golden opportunity to give back to the group with your knowledge of your home country's call sign standards.

## 2. The Pattern File

A rule 'pattern' describes a bad callsign character by character. As long as the call matches the pattern the procedure continues. If the pattern runs out before the end of the callsign then the rest is assumed to match. If the callsign runs out of characters first then it doesn't match and the call is passes as good.

## 3. Components

The components that make up a 'rule' are:

### Single characters:

Single characters	Match single characters
<b>A</b>	match the letter 'A'
<b>1</b>	match the number '1'
etc.	

Repetition flags	These must be followed by a character type specifier		To make up phrases like	
: Match one	<b>N</b>	match any character (A-Z, 0-9)	<b>:D</b>	match one of any digit
+ Match one or more	<b>A</b>	match any letter(A-Z)	<b>+A</b>	match one of any digit
* Match zero or more	<b>D</b>	match any digit (0-9)	<b>*N</b>	match zero or more letters or digits
- Optional match			<b>-D</b>	optionally match one digit

Groups of characters to match		Which can make up phrases like	
<b>[ ]</b>	match	<b>[ABCDXZ]</b>	match a,b,c,f,x, or z
<b>!</b>	match any characters not in list	<b>[!ABC]</b>	match anything other than a,b, or c
<b>-</b>	match a range of characters	<b>[!A-R]</b>	match anything other than letters a to r

More info is given below like checking bands and modes.

## 4. Examples

The following are some simple examples of patterns and what they match or don't match.

Pattern	Pattern matches	Pattern doesn't match
<b>:A:D</b>	A1 Z0 Q8	AA 19 1A
<b>+A:D</b>	A1 AA1 ABC1	AA 19 1A
<b>*A:D</b>	1 19 A1 AA1 ABC1	AA 1A
<b>F:D</b>	F1 F2 F9	A1 Z0 1A
<b>[ABC]B:D</b>	AB1 CB1 BB9	AC1 DB9 CZ0
<b>[!ABC]B:D</b>	ZB1 DB9 QB0	AC1 AB1 CB1 BB9 CZ0

## 5. What are we trying to match?

First, what do we do with a match?? Well, if a callsign matches one of the patterns a message appears in the **check window**. Therefore we make up rules that specify what a 'bad' call is, like:

1. Calls that start with 3 letters
2. Calls with first letter B with prefix other than BT, BV, BY, BZ
3. French calls with a 1 or 6 that don't have 3 letter suffix
4. East German calls that don't end in A to O (East Germany does not exist anymore but is still



in as a nice matching example)

Then we try to make a pattern that will match only calls fitting that rule.

Unfortunately some countries have made the job a bit harder by restricting certain types of calls to certain bands and modes. I.E. the HJ prefix is only used on CW or 40m and 80m SSB. So we need some way to specify rules for those calls. So what I do is append the band and mode information to the end of the callsign before it goes through the pattern matcher. What it looks like then is this: "BY1AA=4S" where the '=' is added at the end of the call, followed by the band number (1=160m, 2=80m, ... 6=10m) and the mode (S=SSB, C=CW, O=Other modes). Now we can make rules that apply to specific bands and not have another mechanism to remember. This also helps us by marking the end of the call with the '=' sign, so now we can sort out calls that have to have specific lengths.

This means the following combinations can be made to specify bands and modes:

**=3C** match a '3' (40meters) followed by "C" for CW, call would be bad on 40m CW

**=4** match just a '4' for 20m either mode, call would be bad on 20m any mode

**=:DS** match any band, but only for SSB, call would be bad on SSB on any band

Which for our rule that is valid only on CW or 40/80 SSB means that it is bad on any other band or on SSB so we could do: **=[1456]S** which means the call is bad on 160, 20, 15, or 10m SSB.

Also, before a call is sent through the pattern matcher any portable part of the call is removed. This way a /QRP, /A, /MM, /CT3 etc. does not affect the checking of the basic callsign.

Now, back to some of the cases mentioned earlier and how to make up rules for them.

### 1. Calls that start with 3 letters

This is fairly easy, all we need is a rule that will 'match' if the first 3 characters are letters. Since the :A phrase says to match any one letter we can use that to get the rule: **:A:A:A**. Notice, that since we are only worried about the first 3 characters of the call we don't have to go past that in the rule. This makes use of the property that says if the rule runs out before the callsign does the rest is assumed to match.

### 2. Call with first letter B with prefix other than BT, BV, BY, BZ

This is a bit harder, but at least we only have to deal with the first 2 characters of the call. First, we only want this to apply to calls that start with a 'B'. Then if the second character is not one of the group 'TVYZ' we want it to 'match'. So we get the rule: **B![TVYZ]**. This is the same as above, if we match the 'B', and then the next character is not one of the set "TVYZ" we don't care what the rest of the call might be.

### 3. French calls with a 1 or 6 that don't have 3 character suffix

Now this is a real test of the capability of the rules and how well you understand them. First we need calls that start with 'F', followed by a '1' or '6'. Then we need to match one or two character suffixes to reject suffixes that are too short. For this we will use one of the 'optional' matches for the second letter of the suffix to get: **F[16]:A-A=**

Note how we have the ":A-A" which will match one letter, then optionally another letter. We can not use "+A" in this case because that would also match 3 letters. Then the '=' will anchor the end of the rule so that if there was a third letter in suffix it would not match the '=' and the call would pass as good. Unfortunately the French also use other prefixes like FB, FD, FE, FF that follow the same rule. But this can not be combined because of other calls that also start with F and don't necessarily have 3 letter suffixes. Calls like FR, FS, FJ, FC, FT may not fit the 3 letter rule. This means we need a second rule to finish this problem to specify the other French prefixes we want to check for 3 letter suffixes. To cover this we get the rule: **F[BDEF]16:A-A=**. Which will match French 2 letter prefixes followed by a '1' or '6' with only 1 or 2 letter suffixes.

#### 4. East German calls that don't end in A to O

Now here is the killer. Fortunately all these calls have been replaced, but it is still a good example and will probably be very similar to some of the Russian rules for suffixes. First we want to match calls that start with 'Y', followed by a digit from 2 to 9, followed by another digit from 0 to 9, then there could be one, two, or in rare cases three letter suffix that must end with a letter in the range of 'A' to 'O'. With all this in mind we get the rules:

**Y[2-9]:D[!A-O]=** for single letter suffix

**Y[2-9]:D:A[!A-O]=** for 2 letter suffix

**Y[2-9]:D:A:A[!A-O]=** for rare 3 letter suffix

Again we ended up with multiple rules, in this case because if we had used a '+A' or '\*A' it would have also matched the last letter that we wanted to check specifically.

Now if you look in the file CALLSIGN.PAT you will see all the rules that I have come up with. Each rule also has a line giving the explanation for it. This explanation is shown as a messages in the **check window**. You will note that some of them are not hard rules, only that the call is rarely used.

Now you should all be experts at making rules for bad callsigns. When you come up with a new pattern you can test it by entering the callsign in the callsign field.

It is possible to come up with rules that you can't get to in the file. For instance a call like "HI500ABC" would always be rejected by the "CALL TOO LONG" rule near the top of the file, so if you tried to come up with a specific rule saying that HI500 calls only have 2 letter suffixes you would not get to it unless you put it before the rule for maximum callsign length.

Some of the 'Generic' rules will reject calls that may be good. The special calls using extra long numbers, like the "HI500ABC" above may very well be a legal call. But since these should be relatively few, especially during a contest, I feel it is better to have them shown in the check window and let the operator determine if they are correct than to try to come up with rules that may only be

used once.

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  - 5.10. Sound Mixer (freeware from PA1ARE)

- 5.11. Audiograbber (freeware)
  - 5.12. AutoHotKey (freeware)
  - 5.13. Autolt version 3 (freeware)
  - 5.14. KeyTweak (freeware)
  - 5.15. AR Cluster User (freeware from Lee, VE7CC)
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    - 7.4. Jim's Gazette
- 

## 1. N1MM Links

### 1.1. N1MM Free Contest Logger Home Page

<http://pages.ctime.net/n1mm> 

- An overview with all the latest information on the program
- View and download Help files / Manuals (many languages)
- Report bugs and request features
- Testimonials
- more

### 1.2. N1MM logger General discussion group

<http://groups.yahoo.com/group/N1MMLogger> 

<http://groups.yahoo.com/group/N1MMLogger/join> 

- This group discusses features, bugs, and ideas for the N1MM Free Contest Logger regarding general program issues including CW and SSB contests.
  - Do you have questions/remarks
  - Here you want to go

- To discuss the general program issues you have to join first:

### 1.3. N1MM logger Digital discussion group

<http://groups.yahoo.com/group/n1mmlogger-Digital> 

<http://groups.yahoo.com/group/n1mmlogger-Digital/join> 

- This group discusses features, bugs, and ideas for the N1MM Free Contest Logger regarding Digital modes issues including digital mode contests.
  - Do you have questions/remarks
  - Here you want to go.
- To discuss the digital program issues you have to join first:





### 1.4. Download

<http://pages.cthome.net/n1mm/html/English/Installation.htm> 

- Program (base install) - N1MM-FullInstaller.exe
  - Includes Serial, parallel and USB port support for 32 bit Operating Systems - PORT95NT.EXE
- Program Updates - N1MM-NewexeVx.x.xxx.exe
- Other files - Country files, Master Callsign database
- Windows Help file - N1MMLoggerHelp.chm
- Manual in PDF format - N1MMLogger.pdf
- RTTY engine - MMTTY

### 1.5. N1MM video display by N6NC




Download from site 1: (all files approx 5 MB)

- Part 1: <http://www.pi4dec.nl/n1mm/video/N1MM%20Video%20Part%201.wmv> 
- Part 2: <http://www.pi4dec.nl/n1mm/video/N1MM%20Video%20Part%201.wmv> 
- Part 3: <http://www.pi4dec.nl/n1mm/video/N1MM%20Video%20Part%201.wmv> 
- Part 4: <http://www.pi4dec.nl/n1mm/video/N1MM%20Video%20Part%201.wmv> 

or

Download from site 2: (all files approx 5 MB)

- Part 1: [http://www.pa6z.nl/DOWNLOADS/N1MM\\_Video\\_Part\\_1.wmv](http://www.pa6z.nl/DOWNLOADS/N1MM_Video_Part_1.wmv) 

- Part 2: [http://www.pa6z.nl/DOWNLOADS/N1MM\\_Video\\_Part\\_2.wmv](http://www.pa6z.nl/DOWNLOADS/N1MM_Video_Part_2.wmv) 
- Part 3: [http://www.pa6z.nl/DOWNLOADS/N1MM\\_Video\\_Part\\_3.wmv](http://www.pa6z.nl/DOWNLOADS/N1MM_Video_Part_3.wmv) 
- Part 4: [http://www.pa6z.nl/DOWNLOADS/N1MM\\_Video\\_Part\\_4.wmv](http://www.pa6z.nl/DOWNLOADS/N1MM_Video_Part_4.wmv) 
  
- Explanation of screens
  - Part 1 - Screen configuration, Using two monitors
  - Part 2 - Packet/telnet window, Available Mults and Q's window, Bandmaps
  - Part 3 - (first part) Multiplier window, Info window
- Demonstration N1MM logger in contest operation
  - Part 3 - (second part) Action window (VFO A/B), Enter frequency, ESM mode, Mult hunting with Available Mults and Q's display
  - Part 4- Bandmaps and Mult hunting, VFO B action window, Packet/Telnet window and functions

## 2. Support file links

### 2.1. HF Country files (by Jim Reisert, AD1C)

<http://www.country-files.com/cty/> 

- Country files which can be imported in the program (cty.dat or wl\_cty.dat). The better choice is wl\_cty.dat
- Import this country file by selecting 'Import country list from downloaded file' in the 'Tools' menu.
- Look for install information on: Customizing the DXCC list

### 2.2. Super Check Partial Database Files for HF contests

<http://www.supercheckpartial.com> 

- Several types of Check Partial Database files (also called Master files) are created before each major contest:
  - Master.dta - for international contests (all calls)
  - masterdx.dta - for DX contests (non US/VE calls)
  - masterusve.dta - For US/VE contests with W/VE calls
  - masterss.dta - for ARRL sweepstakes contests
- Copy these files in the program directory and select the one to use in the tab 'Associated Files' under 'File | Open Log in Database' dialog'.
- The calls in these database master files appear in the Check window after entering at least two letters of the callsign field.

### 2.3. Super Check Partial Database Files for VHF and up contests (North America only)

<http://www.qsl.net/k1tr/master.htm>

- The calls in this database master.dta file appear in the Check window after entering at least two letters of the callsign field. Copy this file in the program directory and select it in the tab 'Associated Files' under 'File | Open Log in Database' dialog'.

### 2.4. Real time scoring

K1TTT upload software: <http://www.k1ttt.net/software/realtimescore.zip>

K1TTT upload software source code: <http://www.hornucopia.com/xml4contestresults.html>

- Upload software to upload your score by Dave, K1TTT
  - Works automatically with N1MM logger
- The source code for this software is free
- Efforts to standardize real time score reporting can be found at:

Standardize real time score reporting info: <http://www.hornucopia.com/xml4contestresults.html>

### 2.5. Thucydides - a history manager for N1MM logger by Carel, PC5M

<http://www.xs4all.nl/%7Ekvgog/projects/thucydides.html>

- A great tool to create import files from previous contest logs for the N1MM logger Call History function.
- More info about this program in the chapter 'Third Party Software'

### 2.6. Athena - Display real-time contest statistics by Carel, PC5M

<http://www.xs4all.nl/%7Ekvgog/projects/athena.html>

- Athena was developed to provide a (near) real-time insight in how the contest is progressing; How many qso's, multipliers have been worked and what the current score is. This data is presented per band and/or as a total view for all band
- More info about this program in the chapter 'Third Party Software'

## 2.7. MakeHistory by Howard, N4AF

<http://www.pi4dec.nl/n1mm/files/makehistory.zip> 

Makehistory may be used to generate callhistory.txt files for import, this should only be necessary where the Cabrillo logs are from legacy logging programs and have not been imported into N1MM. The program handles not only Cabrillo logs but other ascii logs as well. If the log has already been imported into N1MM use Thucydides.

## 2.8. AB\_Switcher by Dan, WR0DK

<http://wr0dk.home.comcast.net/abswitcher.html> 

AB\_Switcher is a program to allow radio a/b switching on a comport without the use of a parallel port on the host computer. Basically this program monitors that sound card mixer output levels and switches the DTR on the chosen comport to reflect the current radio TX focus.

## 3. Rotator interfacing links

Rotator control supported by N1MM logger.

### 3.1. Antenna Rotator System ( ARS ) by EA4TX

<http://www.ea4tx.com/inde.htm> 

- ARS universal antenna rotor interface by EA4TX

### 3.2. LP-Rotor by Larry Phipps - N8LP

<http://www.telepostinc.com/LP-Rotor-Html/> 

- Standalone freeware rotator control program for use with Microsoft Windows.
- Designed to be used with the Hy-Gain DCU-1 or RotorEZ interfaces for Hy-Gain rotators, or the RotorCard interface for Yaesu rotators.

## 4. Hardware links

Hardware supported by N1MM logger.



## 4.1. Ham Radio Solutions

<http://www.hamradiosolutions.com/> 

- EZmaster
  - WinKey serial keyer
  - Band decoder
  - SO1R & SO2R controller

## 4.2. K1EL

<http://www.k1el.com> 

- WinKey serial keyer

## 4.3. microHAM

<http://www.microham.com/> 

- Band decoder (serial and parallel)
- USB Micro keyer using the WinKey keyer from K1EL
- SO2R boxes
- and much more

## 4.4. Top Ten Devices, Inc.

<http://www.qth.com/topten/> 

- Band decoder
- DX Doubler SO2R controller

## 4.5. Interfacing links

- Sound card interfacing <http://www.qsl.net/wm2u/interface.html> 
- Simple CW, RTTY interfaces <http://users.skynet.be/ON4AOI/keyer.shtml> 

## 5. Software links

## 5.1. MM Software Page (freeware)

### 5.1.1. MMTTY

<http://mmhamsoft.amateur-radio.ca/> 

- The MMTTY software used in N1MM Logger can be found at this website

<http://groups.yahoo.com/group/MMTTY> 

- Internet group for MMTTY

### 5.1.2. MMVARI

<http://mmhamsoft.amateur-radio.ca/> 

- The MMVARI software engine is automatically installed as part of the N1MM Logger installation
- You can download and install a stand-alone copy of MMVARI from this website

## 5.2. Fldigi Software Page (freeware)

<http://www.w1hkj.com/> 

- The Fldigi software used in N1MM Logger can be found at this website

<http://groups.yahoo.com/group/win-fldigi/> 

- Internet group for Fldigi

## 5.3. Port I/O Driver (freeware)

<http://www.driverlinx.com/Download/DIPortIO.htm> 

- Simple user mode DLL and NT kernel driver to allow direct hardware I/O access. Used by the program (Port95NT.exe)
- Freeware from Scientific Software Tools, Inc

#### 5.4. Master.dta Editor (freeware)

<http://www.netvampire.com/ham/> 

- View and edit the Master Callsign Database file used in many contesting programs, import and export callsigns, auto-download announced DX operations. Great program by Alex, VE3NEA.

#### 5.5. Dimension 4 (freeware)

<http://www.thinkman.com/dimension4> 

- Time synchronization tool for re synchronizing your computer time with Internet time standards. This program is successfully used by many N1MM logger users.
- Doesn't work direct under Windows XP, a fix can be found in the FAQ.

#### 5.6. AboutTime (freeware)

<http://www.arachnoid.com/abouttime/> 

- Time synchronization tool for re synchronizing your computer time with Internet time standards. This program is successfully used by many N1MM logger users.
- Doesn't work direct under Windows XP, a fix can be found in the FAQ.

#### 5.7. Cool Edit (shareware)

<http://www.syntrillium.com/> 

- Record, clean up, mix, master, and export to MP3 and other formats with this audio editor. Many, many features.

#### 5.8. Audacity (freeware)

<http://audacity.sourceforge.net/> 

- Audacity is a free audio editor. You can record sounds, play sounds, import and export WAV,

AIFF, and MP3 files, and more. Use it to edit your sounds using Cut, Copy and Paste (with unlimited Undo), mix tracks together, or apply effects to your recordings

- Easy to record an entire contest. Sset the sample rate to 8000 and let it rip!

## 5.9. QuickMix (freeware)

<http://www.msaxon.com/quickmix/> 

- QuickMix is a simple applet that allows you to store all or part of the current state of your audio mixer in a settings file, and to restore the mixer to that state whenever you want.
- Just set the different settings including mute etc. before saving the setting and give the setting a name \*.qmx

## 5.10. Sound Mixer (freeware from PA1ARE)

<http://www.qsl.net/pa1are/software.html> 

- Mixer is a program to set and restore the settings of the soundcard.
- You can use it in two different ways... First you can use in the windows mode, where you have a visible mixer. You can store and retrieve the soundcard settings suitable for a certain application. If you use Mixer in a batch file just specify the label of the settings you want to restore.... Mixer will start (invisible) set the appropriate settings and then exits.

## 5.11. Audiograbber (freeware)

<http://www.audiograbber.com-us.net/> 

- Program which can record (among many other things) whatever the soundcard is playing in a variety of formats including MP3 at various bit rates.
- Tips from Patrick, F6IRF
  - Schedule 1 hour files to start at 00:00 and end at 00:59:55
  - Files are named, according to day/time.
  - MP3 11 kbps quality is more than enough for SSB, CW and RTTY
    - about 3MB/hour mono, or 6MB/hour stereo,for SO2R.
  - If you have "Fraunhofer" codec on you PC, just use this one, it's the best for non-musical applications.

## 5.12. AutoHotKey (freeware)

<http://www.autohotkey.com/> 

- Autohotkey can create hotkeys for keyboard, joystick, and mouse. Remap keys and buttons on your keyboard, joystick, and mouse and has many more features.

Virtually any key, button, or combination can become a hotkey.

- Example script in the 'Third Party Software' chapter
- Almost AutoIt version 2 compatible

## 5.13. AutoIt version 3 (freeware)

<http://www.autoitscript.com/autoit3/> 

- Autohotkey can create hotkeys for keyboard, joystick, and mouse. Remap keys and buttons on your keyboard, joystick, and mouse and has many more features.

Virtually any key, button, or combination can become a hotkey.

## 5.14. KeyTweak (freeware)

<http://webpages.charter.net/krumsick/> 

- Free keyboard remapper

## 5.15. AR Cluster User (freeware from Lee, VE7CC)

<http://www.bcdxc.org/ve7cc/default.htm> 

- This program looks useful to those who want more control over the spots appearing in the logging program. It can run on your local machine, or on another machine. You connect to it via port 7300 from a logging program.
- It is specifically for AR-Cluster, but I would guess it works to a lesser degree with other cluster software.

## 5.16. TelMgr (freeware from LU7DID)

<http://www.qsl.net/lu7did/> 

- Interface between telnet client (N1MM logger) and AGWPE (packet via soundcard).

## 5.17. Telnet interface (freeware from IZ4AFW)

<http://www.qsl.net/iz4afw/> 

- Interface between telnet client (N1MM logger) and AGWPE (packet via soundcard).

## 5.18. CBS (freeware from K5KA)

<http://www.kkn.net/~k5tr/software/Cbs.exe> 

- Post-contest statistics program.
- This program creates qso statistics from a Cabrillo input file.
- It is really great for breaking out QSOs by hour.

## 5.19. SH5 (freeware from UA4WLI)

<http://www.tr4w.com/sh5/> 

- Post-contest statistics program using Cabrillo input files.
- Revealing of potential mistakes in reception of callsigns.
- Search of partial calls.
- Many, many more features

## 6. Contest Calendar links

### 6.1. ARRL Contest Calendar Page

<http://www.arrl.org/contests/> 

### 6.2. SM3CER Contesting service

SM3CER Contest Service

### 6.3. VK4DX Contest Calendar

<http://www.vk4dx.net/> 

### 6.4. WA7BNM Contest Calendar Main Page

<http://www.hornucopia.com/contestcal/> 

## 7. RTTY links

### 7.1. RTTY contesting (by Don AA5AU)

<http://www.rttycontesting.com/> 

Also by Don AA5AU, a VERY good RTTY Primer on using MMTTY and understanding how RTTY works

[http://aa5au.com/gettingstarted/rtty\\_start\\_intro.htm](http://aa5au.com/gettingstarted/rtty_start_intro.htm) 

### 7.2. World RTTY Contest Scene (by DJ3NG)

<http://www.rtty-contest-scene.com/> 

### 7.3. RTTY.com

<http://www.rtty.com/> 

### 7.4. Jim's Gazette

<http://www.n2hos.com/digital/> 

## DX Clusters

### In this Section...

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#### DX Clusters

1. Overview
2. Commands
  - 2.1. SH/DX command set
3. Filter and other examples/features

- 3.1. AR-cluster
  - 3.2. CLX
  - 3.3. DXSpider
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  - 5. Commands
    - 5.1. SH/DX command set
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    - 6.1. AR-cluster
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- 

There are several types of DX clusters used during contests. Most of them have the same type of commands (SH/DX style by the original from AK1A).Below a summary of the most used DX cluster types with some sample commands how to use the DX cluster. For more information read the Help from the cluster you are using.

There are several types of DX clusters used during contests. Most of them have the same type of commands (SH/DX style by the original from AK1A).Below a summary of the most used DX cluster types with some sample commands how to use the DX cluster. For more information read the Help from the cluster you are using.

## 1. Overview



Cluster	AR-Cluster	CLX	DXnet	DXSpider	Wincluster	Clusse	PacketCluster(tm)
<b>By (author)</b>	AB5K	DJ0ZY and DL6RAI	F5MZN	G1TLH	KH2D	OH7LZB	AK1A
<b>Operating System</b>	Windows 32 bits	Linux	Linux, Dos Windows	Linux Windows	Windows 32 bits	Dos	Dos
<b>Command Set</b>	SH/DX	SH/DX	SH/DX	SH/DX	SH/DX	Own	SH/DX
<b>Version used for overview</b>		5.04	4.3b9	1.51	2.3.8	1.0	not found
<b>Still supported</b>	Yes	Yes	Yes	Yes	Yes	No	No
<b>Freeware</b>	\$\$\$	Freeware	Freeware	Freeware	\$\$	Freeware	\$\$
<b>Multilingual</b>	?	?	Yes	Yes	No	Yes	?
<b>Website</b>	<a href="#">Website</a>	<a href="#">Website</a>	<a href="#">Website</a>	<a href="#">Website</a>	<a href="#">Website</a>	<a href="#">Website</a>	No
<b>Help file</b>	<a href="#">Web</a>	<a href="#">Web</a>	not found	<a href="#">Web help</a> <a href="#">PDF help</a> from FRC	not found	not found	not found
<b>Help on DX spots</b>	<a href="#">Web</a>	<a href="#">Web</a>	not found	<a href="#">Web</a>	not found	not found	not found
<b>Help on Filters</b>	<a href="#">Web</a>	<a href="#">Web pg1</a> <a href="#">Web pg2</a>	not found	<a href="#">Web help</a> <a href="#">PDF help</a> by W3BG	not found	not found	not found
<b>Command Reference</b>	<a href="#">Web</a>	<a href="#">Web</a>	not found	<a href="#">Web</a>	not found	not found	not found

## 2. Commands

Action	AR-Cluster	CLX	DXnet	DXSpider	Wincluster	Clusse
<b>General command set</b>	SH/DX	SH/DX	SH/DX	SH/DX	SH/DX	List
<b>Show users</b>	SH/USERS	SH/USERS	SH/USERS	SH/USERS	SH/USERS	
<b>Show WWV</b>	SH/WWV	SH/WWV	SH/WWV	SH/WWV	SH/WWV	
<b>Configuration network</b>			SHow/Conf			
<b>Show Filters</b>	show/filters	show/filters	SHow/Filter	show/filter		
<b>Set Filter</b>	set/filter [..]	set/filter 5				
<b>Reset Specific Filter</b>		set/nofilter 1		clear/spots 1		
<b>Reset All Filters</b>	set/nofilter	set/nofilter	SET/NOFilter	clear/spots all		
<b>Set number of lines to 0</b>					SET/PAGE 0	
<b>Show DX Spot Origination Filters</b>		SHOW/DXDEDX				
<b>Enable DX Spot Origination Filter</b>		SET/DXDEDX				
<b>Disable DX Spot Origination Filter</b>		SET/NODXDEDX				
<b>Show other languages</b>						
<b>Set other language</b>					-	
<b>Search the help database</b>				apropos		

## 2.1. SH/DX command set

- SET/FILTER
- SHow/Filter
- SET/NOFilter
- SET/DX\_announcements
- SET/NODx\_announcements
- SET/Announcements
- SET/NOAnnouncements

- SET/nodx - You do not get spots from the cluster but you can send them out on the network (i.e for SO unassisted stations)

### 3. Filter and other examples/features

Setting band/mode type filters are not recommended as they will often block split frequency operations on the low bands.

Filter examples AR-Cluster and DX-spider by the [Yankee Clipper Contest Club](#) (YCCC).

#### 3.1. AR-cluster

For full details see: <http://www.ab5k.net/ArcDocs/UserManual/ArcFilters.htm>

You only want stateside generated spots and announces? Use: **set/filter k/pass**

**set/filter k,ve/pass** - You will only see DX spots from spotters in the United States (K) and Canada (VE).

**set/filter dxbm/reject vhf,uhf** - VHF and UHF spots will be suppressed.

Remove all filters with: **set/nofilter**

Examine your settings with: **show/filters**

#### 3.2. CLX

For full details see: <http://clx.muc.de/user/english/html/userman.html>

##### **SET/FILTER <nr1,nr2,...,nrX>**

This command lets you set reject filters as defined by your sysop. You first should look up which filters are defined at your CLX node. This is the default list:

Filter Meaning

-----

**1** VHF 144.000 MHz and up

**2** HF 30.000 MHz and down

**3** TOP 1.800-2.000 MHz

**4** all the CW band segments

**5** all the SSB band segments

**6** all the RTTY band segments

**7** all the WARC bands

-----  
Your sysop may or may not have defined further filters. You can find out by using the SHOW/FILTERS command. After you have decided which filters you would like to switch in, you use the command as follows: **SET/FILTER 4,6**

This turns on the CW and RTTY filters, so will leave you only with SSB spots. To further narrow the filter settings, you can add more filters: **SET/FILTER 1,3**

The setting is now 1,3,4 and 6 which eliminates all spots except SSB spots on the HF bands from 80 to 10 meters, including the WARC bands.

### **SET/DXDEDX and SET/NODXDEDX**

This command is used to turn off so-called Internet spots. DX spots originating from specific WAZ zones are not forwarded to you when you have issued a SET/NODXDEDX command. This flag is saved in your user record so you will only have to specify it once to turn these (for you) annoying messages off. The default is to send all DX spots. For example, your sysop could have defined zones 03, 04, 05 and 25 as DX zones. If you then turn on the NO-DX-de-DX filter, you will never again receive any spots from these areas although other users probably will.

To look up, which zones were being defined as DX zones, use the command **SHOW/DXDEDX**. When you have previously disabled DX spots from other continents with **SET/NODXDEDX**, you can re-enable them with **\_SET/DXDEDX\_**.

### **SET/DX\_ANNOUNCE and SET/NODX\_ANNOUNCE**

This command turns the reception of DX spots on or off. This could, for example be used if you were reading a lengthy message and did not want DX spots in between the lines. This command is permanent, it will enable or disable the sending of DX spots. To enable the sending of DX-spots use **SET/DX\_ANNOUNCE**

### **SET/LOGIN\_ANNOUNCE**

Set to see user logins and logouts locally. For each login or logout, a message is sent to you from the system. On a busy node this will generate a lot of traffic.

Login at 1929Z: DL6RAI

Logout at 1930Z: DK2OY

### 3.3. DXSpider

For full details see: <http://www.dxcluster.org/main/usermanual.html> or download it as PDF file (from FRC) at: <http://www.gofrc.org/pdf/dxspider.pdf>

A great PDF file on User Configurable Spot Filters in DXSpider by Jim Samuels - W3BG can be found at: <http://www.gofrc.org/pdf/Filter Primer.pdf>

**SET/USSTATE** is a feature where the US STATE is automatically added before or behind the time field. The information is taken from the FCC database.

The basic format for a spot filter is:

**accept/spots <pattern>**

**reject/spots <pattern>**

As you can see, there are fundamentally two broad classes of filter... accept & reject. A different way of looking at them is:

**accept** - bandpass filter, as in, "Pass these spots to me"

**reject** - bandreject filters, as in, "I don't want to see spots like this"

The <pattern> has many, many different combinations. For now, I'm going to address just two classes... "by" and "call". "By" means that the spot is "by someone" as in a spot "by k1xx" or "by a VE" or "by someone in Maine"

The exact syntax is:

**by\_zone** - spotter in the CQ Zones, 1-40

**by\_dxcc** - spotter is a W or VE or F or G

**by\_state** - spotter is in ME, CT, RI, NH

Remember, spots "by" means callsign of the station doing the spotting, the spotter.

"Call" on the other hand refers to the call, zone, state of station being spotted, the spottee. The syntax here is:

**call\_zone** - the spottee's zone

**call\_dxcc** - the spottee's country

**call\_state** - the spottee's state

Now, on to some simple examples.

**accept/spots by\_dxcc w,ve** - spots only by W & VE stations

**accept/spots by\_zone 5** - spots only by stations in Zone 5

**accept/spots by\_state me** - spots only by stations in Maine...slow weekend

**reject/spots call\_dxcc G** - I don't want to see G stations spotted

**reject/spots call\_zone 14** - No spots of stations in Zone 14

**reject/spots call\_state md** - Please, no more spots of Maryland stations

With the following command I only get spots with "RTTY" in the comment field. This is nice during RTTY contests.

**accept/spot 0 info rtty** - Only show spots with "RTTY" in the comment field

If you want to get rid of a filter, use: **clear/spots all**

Spot filters remain on a DXSpider node until you clear them out. No need to re-enter the same filter each time you log in.

Just a couple words about frequency. You can combine frequency on the same line as an accept/reject filter. For example:


**accept/spots by\_dxcc w,ve and on 10m** - only 10 meter spots by W & VEs

**reject/spots call\_zone 25 and on 160m** - I don't want more spots of JAs on 160 meters

## 4. Links

DX PacketCluster WebNet <http://www.dxcluster.info/> 

Webclusters and other useful information <http://hamgallery.com/clusters/> 

OH2AQ WebCluster (DX-Summit) <http://oh2aq.kolumbus.com/dxs/> 

## 5. Commands

Action	AR-Cluster	CLX	DXnet	DXSpider	Wincluster	Clusse
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<b>Show WWV</b>	SH/WWV	SH/WWV	SH/WWV	SH/WWV	SH/WWV	
<b>Configuration network</b>			SHow/Conf			
<b>Show Filters</b>	show/filters	show/filters	SHow/Filter	show/filter		
<b>Set Filter</b>	set/filter [.]	set/filter 5				
<b>Reset Specific Filter</b>		set/nofilter 1		clear/spots 1		
<b>Reset All Filters</b>	set/nofilter	set/nofilter	SET/NOFilter	clear/spots all		
<b>Set number of lines to 0</b>					SET/PAGE 0	
<b>Show DX Spot Origination Filters</b>		SHOW/DXDEDX				
<b>Enable DX Spot Origination Filter</b>		SET/DXDEDX				
<b>Disable DX Spot Origination Filter</b>		SET/NODXDEDX				
<b>Show other languages</b>						
<b>Set other language</b>					-	
<b>Search the help database</b>				apropos		

## 5.1. SH/DX command set

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- SET/NOFilter
- SET/DX\_announcements
- SET/NODx\_announcements
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For full details see: <http://www.ab5k.net/ArcDocs/UserManual/ArcFilters.htm>

You only want stateside generated spots and announces? Use: **set/filter k/pass**

**set/filter k,ve/pass** - You will only see DX spots from spotters in the United States (K) and Canada (VE).

**set/filter dxbm/reject vhf,uhf** - VHF and UHF spots will be suppressed.

Remove all filters with: **set/nofilter**

Examine your settings with: **show/filters**

### 6.2. CLX

For full details see: <http://clx.muc.de/user/english/html/userman.html>

#### **SET/FILTER <nr1,nr2,...,nrX>**

This command lets you set reject filters as defined by your sysop. You first should look up which filters are defined at your CLX node. This is the default list:

Filter Meaning

-----

**1** VHF 144.000 MHz and up

**2** HF 30.000 MHz and down

**3** TOP 1.800-2.000 MHz



**4** all the CW band segments

**5** all the SSB band segments

**6** all the RTTY band segments

**7** all the WARC bands

-----  
Your sysop may or may not have defined further filters. You can find out by using the SHOW/FILTERS command. After you have decided which filters you would like to switch in, you use the command as follows: **SET/FILTER 4,6**

This turns on the CW and RTTY filters, so will leave you only with SSB spots. To further narrow the filter settings, you can add more filters: **SET/FILTER 1,3**

The setting is now 1,3,4 and 6 which eliminates all spots except SSB spots on the HF bands from 80 to 10 meters, including the WARC bands.

### **SET/DXDEDX and SET/NODXDEDX**

This command is used to turn off so-called Internet spots. DX spots originating from specific WAZ zones are not forwarded to you when you have issued a SET/NODXDEDX command. This flag is saved in your user record so you will only have to specify it once to turn these (for you) annoying messages off. The default is to send all DX spots. For example, your sysop could have defined zones 03, 04, 05 and 25 as DX zones. If you then turn on the NO-DX-de-DX filter, you will never again receive any spots from these areas although other users probably will.

To look up, which zones were being defined as DX zones, use the command **SHOW/DXDEDX**. When you have previously disabled DX spots from other continents with **SET/NODXDEDX**, you can re-enable them with **\_SET/DXDEDX\_**.

### **SET/DX\_ANNOUNCE and SET/NODX\_ANNOUNCE**

This command turns the reception of DX spots on or off. This could, for example be used if you were reading a lengthy message and did not want DX spots in between the lines. This command is permanent, it will enable or disable the sending of DX spots. To enable the sending of DX-spots use **SET/DX\_ANNOUNCE**

### **SET/LOGIN\_ANNOUNCE**

Set to see user logins and logouts locally. For each login or logout, a message is sent to you from the system. On a busy node this will generate a lot of traffic.

Login at 1929Z: DL6RAI

Logout at 1930Z: DK2OY

### 6.3. DXSpider

For full details see: <http://www.dxcluster.org/main/usermanual.html> or download it as PDF file (from FRC) at: <http://www.gofrc.org/pdf/dxspider.pdf>

A great PDF file on User Configurable Spot Filters in DXSpider by Jim Samuels - W3BG can be found at: <http://www.gofrc.org/pdf/Filter Primer.pdf>

**SET/USSTATE** is a feature where the US STATE is automatically added before or behind the time field. The information is taken from the FCC database.

The basic format for a spot filter is:

**accept/spots <pattern>**

**reject/spots <pattern>**

As you can see, there are fundamentally two broad classes of filter... accept & reject. A different way of looking at them is:

**accept** - bandpass filter, as in, "Pass these spots to me"

**reject** - bandreject filters, as in, "I don't want to see spots like this"

The <pattern> has many, many different combinations. For now, I'm going to address just two classes... "by" and "call". "By" means that the spot is "by someone" as in a spot "by k1xx" or "by a VE" or "by someone in Maine"

The exact syntax is:

**by\_zone** - spotter in the CQ Zones, 1-40

**by\_dxcc** - spotter is a W or VE or F or G

**by\_state** - spotter is in ME, CT, RI, NH

Remember, spots "by" means callsign of the station doing the spotting, the spotter.

"Call" on the other hand refers to the call, zone, state of station being spotted, the spottee. The syntax here is:

**call\_zone** - the spottee's zone

**call\_dxcc** - the spottee's country

**call\_state** - the spottee's state

Now, on to some simple examples.

**accept/spots by\_dxcc w,ve** - spots only by W & VE stations

**accept/spots by\_zone 5** - spots only by stations in Zone 5

**accept/spots by\_state me** - spots only by stations in Maine...slow weekend

**reject/spots call\_dxcc G** - I don't want to see G stations spotted

**reject/spots call\_zone 14** - No spots of stations in Zone 14

**reject/spots call\_state md** - Please, no more spots of Maryland stations

With the following command I only get spots with "RTTY" in the comment field. This is nice during RTTY contests.

**accept/spot 0 info rtty** - Only show spots with "RTTY" in the comment field

If you want to get rid of a filter, use: **clear/spots all**

Spot filters remain on a DXSpider node until you clear them out. No need to re-enter the same filter each time you log in.

Just a couple words about frequency. You can combine frequency on the same line as an accept/reject filter. For example:


**accept/spots by\_dxcc w,ve and on 10m** - only 10 meter spots by W & VEs

**reject/spots call\_zone 25 and on 160m** - I don't want more spots of JAs on 160 meters

## 7. Links

DX PacketCluster WebNet <http://www.dxcluster.info/> 

Webclusters and other useful information <http://hamgallery.com/clusters/> 

OH2AQ WebCluster (DX-Summit) <http://oh2aq.kolumbus.com/dxs/> 

## Customizing the DXCC List

### In this Section...

---

#### Customizing the DXCC List

1. Updating the country file - CTY.DAT
  2. Writelog country file
- 

### 1. Updating the country file - CTY.DAT

**Note**

The information that follows should rarely, if ever, be needed. Jim Reisert, AD1C, is very punctual in releasing new versions of the various country files, particularly before each major contest.

The program uses a country file from which it takes all the information like the country name, CQ zone, ITU zone, continent, latitude and longitude etc. This file mostly called CTY.DAT is not directly used by the program but has to be read into the currently used database. The program will retrieve all information from the database (not from the cty.dat file). When importing the country file the program will ask for the file to import. this way several cty.dat files could be used for different contests.

When entering a callsign the left pane of the Entry Window will give Prefix, country name, CQ zone and continent. The Info Window will also give this information and additional calculated information like beam heading, distance, sunset and sunrise.

A number of high profile stations who are not in their own call area, have this built into the country file. The file will populate the correct zone, even though it looks out of place. An example is K2KW who we would expect in zone 5 but lives in California and is entered in the CTY.DAT file living in zone 3.

How to update the country file.

- Download the update using the menu item 'Download latest country file (wl\_cty.dat)(Internet)' from the Tools menu.
- This item will open your web browser to the web page where to download the latest wl\_cty.dat file (Select the correct one..).
- After downloading the new country file it has to be imported in the program by selecting 'Tools | Import country list from downloaded file'.

CTY.DAT file format

The format from CTY.DAT is as follows:

Column	Length	Description
1	26	Country name terminated by a colon character.
27	5	CQ zone terminated by a colon character.
32	5	ITU zone terminated by a colon character.
37	5	2-letter continent abbreviation terminated by a colon character.
42	9	Latitude in degrees, + for North terminated by a colon character.
51	9	Longitude in degrees, + for West terminated by a colon character.
61	9	Local time offset from GMT terminated by a colon character.
69	6	Primary DXCC Prefix terminated by a colon character.

next line(s)	List of prefixes assigned to that country, each one separated by a comma and terminated by a semicolon.
--------------	---

The fields are aligned in columns and spaced out for readability only. It is the ":" at the end of each field that acts as a delimiter for that field.

Alias DXCC prefixes (including the primary one) follow on consecutive lines, separated by ";". If there is more than one line, subsequent lines begin with the "&" continuation character. A ";" terminates the last prefix in the list.

If the country spans multiple zones, then the prefix may be followed by a CQWW zone number in parenthesis, and it may also be followed by an ITU zone number in square brackets, or both, but the CQ zone number in parenthesis must precede the ITU zone number in square brackets.

The following special characters can be applied to an alias prefix:

(#) Override CQ zone where # is the zone number

# Override ITU zone where # is the zone number

## 2. Writelog country file

N1MM logger can also use the country file WL\_CTY.DAT from WriteLog which has extra CQWW zone information for several countries including: Canada, Australia, and China. Because each of these countries is allocated a multitude of prefixes, but the CQWW zone is determined by the call area regardless of prefix, a very large number of entries would be necessary to spell out all the combinations. Instead, WL\_CTY.DAT contains special "macro" commands that indicate how the CQWW zones are determined for that country. See the example below. See the update instructions.

Importing the wl\_cty.dat file as country file is preferred over the 'normal' cty.dat file because of the extra information it contains.

Other info

- \* You can override the continent, zone etc. on a prefix-by-prefix basis.
- \* Primary prefixes preceded by an \* are only valid for the CQWW and WAE contests. The logging program will ignore these lines otherwise. When updating the country file please don't remove the \*.
- \* The logging program doesn't handle prefixes such as FR5ZQ/J correctly. Listing FR/J as a prefix for Juan de Nova in the country file doesn't work unless a station signs "FR/J" as his callsign. If you work one of these islands, you'll have to add the callsign of the worked station to the country file manually before it is counted as the right country.
- \* When updating the CTY.DAT file use a text editor, not a word processor. Notepad is fine, watch out for WordPad etc., always save as a text file!

\* After updating the CTY.DAT file it has to be reloaded. Reload the file via Tools/Import country list from downloaded file.

\* After a Reload the prefixes are imported into the database which you are using. When changing to another database you have to do a reload again to be sure that you use the most recent country file for that database (or the one you want).

\* When a database is copied, also the country list in it will be copied. So if the country file was updated in the original file after a copy you don't have to import the country list again.

Note on KG4 stations: When a KG4 callsign is a 2x2 callsign it is assumed to be Guantanamo otherwise it is K (2x1 or 2x3). When the exact callsign appears in the loaded cty.dat the associated country will be used (K or KG4 are then not automatically assumed).

Examples

Netherlands: an easy example with nothing special. The program will assign all calls starting with PA, PB, PC, etc. to the country Netherlands in CQ zone 14, ITU zone 27 and EU as continent. PA will be the the prefix shown in the multiplier window.

Netherlands: 14: 27: EU: 52.40: -4.90: -1.0: PA:  
PA,PB,PC,PD,PE,PF,PG,PH,PI;

Greenland: Normally only stations with OX are counted as Greenland. The callsign XP1AB has been added which normally belongs to Denmark (OZ). XP1AB will be valid as Greenland with standard Greenland parameters i.e. zones, continent etc.

Greenland: 40: 05: NA: 62.50: 45.00: 3.0: OX:  
OX,XP1AB;

African Italy: This is an example where a \* is added before the primary prefix which means that the country only counts in CQ-sponsored contests.

African Italy: 33: 37: AF: 35.40: -12.50: -1.0: \*IG9:  
IG9,IH9,IQ9L,IZ9;

Other nice examples with zone changes on calls are VE and UA9, see the CTY.DAT file in the program directory.

Writelog macro example.

The macro starts with # and ends with the next ; It means that for all the prefixes in China the zones are determined by the call area and first letter of the suffix.

China: 24: 44: AS: 40.00: -116.40: -8.0: BY:

1. BY: BY3G(23),BY3H(23),BY3I(23),BY3J(23),BY3K(23),BY3L(23),

BY9A(23),BY9B(23),BY9C(23),BY9D(23),BY9E(23),BY9F(23),BY9G(23),  
BY9H(23),BY9I(23),BY9J(23),BY9K(23),BY9L(23),BY9T(23),BY9U(23),  
BY9V(23),BY9W(23),BY9X(23),BY9Y(23),BY9Z(23),BY0(23);  
3H,3I,3J,3K,3L,3M,3N,3O,3P,3Q,3R,3S,3T,3U,BG,BT,BW,BY,BZ,XS;

## Technical Information

## In this Section...

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### Technical Information

1. Directory structure
  2. Where is the program information stored?
  3. The Access database
  4. The "N1MM logger.ini" file
    - 4.1. Functions
    - 4.2. Window Section
  5. Program files
  6. Database files
  7. Files created on your command:
  8. RTTY files
  9. PSK and other modes
  10. PSKCore files (all obsolete)
  11. ADIF fields
  12. Callsign checking in the Digital Interface
  13. Routers and Firewalls
    - 13.1. Adding N1MM to the Windows firewall
- 

N1MM logger is a contest program written in Microsoft Visual Basic which uses a Microsoft Access 2000 database for storing information. Writing and retrieving data to and from the database is done with SQL (Structured Query Language).

Running the program needs no more programs or files than supplied in the installation package and the program update (NewExeVx.x.x).

Do you need all the information given below to use the program? **NO**

#### **Warning**



We recommend not to change any data in the database or any other files unless you are very sure what you are doing. It is possible to change the behavior of the program and get erroneous results. If you have changed the contents of the database and the program behaves strange go back to the original (unaltered) version of the database.

No support will be given to users who change the database structure or contents. The same goes for changing other files used by the program.

You are on your own!

Note: Normally there is no need to access the database or ini files.

Don't make changes if you are not very sure what you are doing. Second and last warning!

When you are interested in the structure of the database you need to have installed Microsoft Access 2000 or the Access 2000 viewer or more recent versions.

Note: When changing data always make a backup from the database (and preferably the whole N1MM logger directory).

## Why is this information given?

Accessing information direct in the database sometimes gives possibilities not directly supported by the program.

Examples:

- You want to have reports which are not standard in the program. With some knowledge of SQL and Access it is possible to generate your own.
- Changing information in the database can sometimes be done much easier this way than within the N1MM logger program.

### Note

After changing QSO information always do a rescore! Multiplier information and QSO points will be updated after a rescore so any changes made direct in the database will be lost. Change multiplier and QSO points in the (Cabrillo) output files. The program updates the database and not the other way around.

N.B. It is not possible to add a contest to the program this way.

Contests and it's rules etc. are in the main program file (N1MM logger.exe) and are not stored in the database or any other files!

## 1. Directory structure

The default directory where the program is installed is in the 'Program Files' directory on the first hard disk (C:). Below this directory two directories are (or can be) made to support Digital Voice Keying (DVK).

C:\Program Files\N1MM Logger	Program file directory
C:\Program Files\N1MM Logger\Wav	Directory to store all wav files used in the SSB function keys. You have to make these yourself.

## 2. Where is the program information stored?

There are several places where program information is stored.

- The Access database file
  - After a first install called HAM.MDB
  - You can rename it or add your own databases from within the program.
  - General contest information



- Contests information
  - Station information
  - QSOs made in the contests
  - Packet spots
  - (Function) key information
  - Country information
  - Etc.
- N1MM logger.ini file
  - Program settings from the configuration screens , these settings overrule the settings in 'Default Settings.ini'
  - Window settings (screen setup)
- Default Settings.txt
  - Default settings file used by the program
- Configuration files
  - Setting up your external TNC
  - MMTTY specific files
- Other files
  - Wav files for CQ etc.
  - Exported Cabrillo, ADIF, generic log and summary sheet files
  - Section files used for specific contests (\*.sec)

### 3. The Access database

A database has tables with in it the data.

Table	Contents		
Antennas	Antenna information ('Config	Configure Ports, Telnet Address, Others	Tab: Antennas')
BandModeFrequency	Radio (vfo) number, frequency and mode information used when changing band.		
CallHist	Table used for 'Call History Lookup' function.		
Contest	All the available contests in the program		
ContestInstance	The contests which are shown in the contest dialog		
CTYDAT	Country information like 'master' prefix, name, CQ and IARU zone, latitude, longitude etc.		
DXLOG	QSOs from all the contests in the table ContestInstance		
Lookup	(Function) keys, States, Provinces etc		
PacketSpots	Packet spots for all the bands. Spots from this table are shown on the bandmaps		
PacketSpotsTest	Test packet spots (for program development)		

Prefixes	Prefixes recognized by the program with default country prefix
SectionsWorked	Information to show the section multipliers in the Multipliers window
Settings	Settings used by the program
Station	Station information i.e. call, name, address etc.
ValidCalls	Not used any more (empty)

## 4. The "N1MM logger.ini" file

Everything in the "N1MM logger.ini" file should be settable through the program's User Interface. Defaults are in the file "Default Settings.txt" . An item will not appear in the "N1MM logger.ini" file if its value is the same as in the 'Default Settings.txt' file. Both files can be found in the program directory.

- The "N1MM logger.ini" file is organized by function (top of file) and windows (bottom of file).
- The function section's attributes can be deleted, and defaults will be used by the program.
- The window section contains position and other window information. Generally these values should not be changed unless a window disappears.
- Try to keep the file in this order, it will make things easier to find during discussions on the user group.
- To comment out a value in the file precede it with a semicolon (;)
- Removing the 'N1MM logger.ini' file will use the defaults in 'Default Settings.txt', the 'N1MM logger.ini' file will be recreated.

### 4.1. Functions

Functions are the name for labels within square brackets that are inserted in an .ini file to make for easy readability. When manually editing an .ini file, it is good practice to put your new lines under the appropriate function heading.

Possible functions are:

[Com1]	[Com2]	[Com3]	[Com4]	[Com5]	[Com6]	[Com7]
[Com8]	[Lpt1]	[Lpt2]	[Lpt3]	[MultiplierWindow]	[SO2R/V]	[Files]
[Digital1]	[Digital2]	[MMTTY]	[Function Keys]	[Other]	[Winkey]	[Mode Control]
[Antennas]	[SO2R/V Setup]	[Available]	[Packet]	[Configurer]	[ConfigurerDialog]	

[CW Window]	[Digital Interface]	[Digital Interface Setup]	[DigitalIO2]	[EditContact]	[EditLookupTable]
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## Examples

[Packet]

Packet Tab=1 - *Telnet window is selected, if removed the Packet tab is selected.*

[Configurer]

Database Name=C:\Program Files\N1MM Logger\PI4GN-Maart-2004.mdb *Selected database*

Contest Type=VHFREG1 *Selected contest in the selected database*

Contest NR=1 *Selected contest number in the selected database*

Recent Contest 1=VHFREG1:6-3-2004:C:\Program Files\N1MM Logger\PI4GN-Maart-2004.mdb  
*Most recent opened contest*

## 4.2. Window Section

Possible windows are:

EntryWindow	EntryWindow2	GraphicalBandMap 1	GraphicalBandMap 2
InfoWindow	Log	LogTypeSelectionDialog	MultsByBand
PacketWindow	PSKEngine	ScoreSummary	StationDialog
SuperCheckPartial	AvailableMultsAndQs	BandMap	

## Examples

[EntryWindow]

Top=3825

Left=2985

Height=3330

Width=5370

[PacketWindow]

WindowState=0 *Window is open (default) or closed (0), the Entry window can not be closed*

Top=9000

Left=3270

Height=2550

Width=12105

Telnet Port=K1TTT.NET *The selected telnet cluster from the list. Specific for this section.*

[BandMap]

CW Wide - 1=\*RMF400CW Narrow - 1=\*RMF250

[InfoWindow]

WWVMessagesVisible=False "WWV messages are not shown in the Info window  
Configuration files"

After installation the files below are stored in the N1MM logger program directory.

## 5. Program files

Never delete these (program) files!

- arrow.bmp - arrow icon used in the bandmaps (non active bandmap)
- ClearRegistry.bat - used to clear the contents of the registry used by the program (obsolete since version 4, can be deleted from the directory).
- cty.dat - the default country file name used when the menu item 'Tools /Import country list from downloaded file' is selected.
- CW IF.exe - this is the Active X component which generates the CW.
- cyanarrow.bmp - arrow icon used in the bandmaps (active bandmap).
- Default Settings.txt - the default settings for the program, differences are in N1MM Logger.ini.
- dirswap.BAT - rename wav file directory (example).
- empty.wav - file used to stop sending a wav file.
- led\_Red.bmp - icon used when a message is shown which needs attention.
- master.dta - file used by the Check window with calls from many testers.
- N1MMLoggerHelp.chm - windows help file (shown when pressing Alt+H).
- N1MM Logger.exe - the N1MM logger contest program.
- N1MM logger.ini - configuration file for functions and windows. Be careful when editing.
- N1MM logger.ini.init - configuration file from the NewExe file. Will be renamed to N1MM Logger.ini if not found.
- N1MMlogger.pdf - the manual which is shown when selecting 'Help / Manual'.
- N1mmWave.ocx - ocx used for recording and playing wav files.
- redden.gif - icon used when a warning message is shown in the Entry window pane.
- RevisionHistory.htm - N1MM Logger Revision History overview.
- \*.sec - text files used for different contest (example: SAC.sec, REF.sec etc).
- style.css - style sheet used in the file 'RevisionHistory.htm'.
- ST6UNST.LOG - file used by Windows when removing this program from your hard disk.
- Suncalcs.dll - dll used by the program.

- Update Log.wri - overview from the last program changes and updates. (obsolete, can be deleted from the directory).
- Upgrade.bat - file to register CW IF.exe to Windows (normally automatically done by the program).
- \*.init - files used during installing which can be deleted but we recommend to leave them in.

## 6. Database files

- ham.mdb - default database file (don't delete).
- new.mdb - default database file used when a new database is created by the user (don't delete).
- \*.MDB - database files made when selecting 'File / New Database'.

Deleting this file means losing all the contest QSOs in it. It's good practice to make a new file every (major) contest and name it after the contest. Example: PACC2002.MDB

## 7. Files created on your command:

- <YOURCALL>.ADI - ADIF file made by the program when selecting 'File / Export / Export ADIF to file...'
- <YOURCALL>.LOG - Cabrillo file made by the program when selecting 'File / Export / Export Cabrillo to file...'
- <YOURCALL>.SUM - Summary Sheet made by the program when selecting 'File / Export / Print Score Summary to File'
- <YOURCALL>.TXT - Log file made by the program when selecting 'File / Export / Export to File (Generic)...'
- \*.MC - Exported Function key files.
- \*.TXT - Exported other files (example: Packet/Telnet buttons)

## 8. RTTY files

MMTTY files are not in the program installation package and should be downloaded separately when needed.

- MMTTY.exe - the MMTTY program
- MMTTY.ini - MMTTY configuration file
- MMTTY.\* - other files used by the MMTTY program
- XMMT.ocx - needed file for MMTTY.exe

- Settings.txt - example file for the AEA PK-232 external controller
- UserPara.ini - MMTTY program settings

## 9. PSK and other modes

The MMVARI engine is used for most digital modes which is included in the N1MM installer. There is no need to download the MMVARI package for use with N1MM logger.

- MMVARI.ocx - the MMVARI engine
- Varicode.tbl - table used by the MMVARI engine

## 10. PSKCore files (all obsolete)

All PSKCore files below are obsolete and not required for use with N1MM logger anymore.

- PSKCore.dll (obsolete, can be deleted from the directory)
- XMMT.ocx (obsolete, can be deleted from the directory)
- PSK63.dll (obsolete, can be deleted from the directory)
- WINPSKX.dll (obsolete, can be deleted from the directory)
- PSK.pal - color setting file for the WINPSK dll (obsolete, can be deleted from the directory)
- WINPSKX.oca - WINPSK support file (obsolete, can be deleted from the directory)

## 11. ADIF fields

N1MM logger complies with the latest ADIF standard. However in the N1MM logger database there is more information stored then we can export (and import) using ADIF. That is why a few N1MM logger specific tags have been added so when exporting an ADIF file and importing it again all information from the DXLOG table will be available. A rescore will update the fields not imported and to get the score and multipliers shown correct on the screen.

APP\_N1MM\_EXCHANGE1 - content of the Exchange1 field from the table DXLOG table.

APP\_N1MM\_POINTS - content of the Points field from the table DXLOG table.

APP\_N1MM\_RADIO\_NR - content of the RadioNr field from the table DXLOG table.

APP\_N1MM\_MISCTEXT - content of the MiscText field from the table DXLOG table.

APP\_N1MM\_CONTINENT - content of the Continent field from the table DXLOG table.

APP\_N1MM\_CONTACTTYPE - content of the ContactType field from the DXLOG table.

APP\_N1MM\_RUN1RUN2:1 - content of the Run field from the DXLOG table.is the Run1/Run2 tag.  
1 means radio 1 was the Run radio, 2 means radio 2 was the Run radio.

## 12. Callsign checking in the Digital Interface

Below describes how callsign checking is done in the Digital Interface windows.

It first checks to see if the callsign is of the right length (More than 2 less than 11). It then checks to see if someplace in the first 6 characters there is a number. 3rd it checks to see if there are no invalid characters in it. Then if it all that passes it goes through the Busted Call Checker. If the Busted Call Checker returns an Error message then the call is invalid. Anything else from the Busted Call Checker makes it a valid call.

As text comes into the Receive screen of the Digital Interface it gets printed to the window and placed in a temp buffer. When a space or a CR or LF is encountered the program will send the text in the temp buffer to the check callsign routines. If it comes back as a valid callsign it is sent to another routine that looks back thru the last 25 characters of the Receive screen and colors them accordingly. At the time the space is encountered the temp holding buffer is cleared and things get sent there all over again. The whole process above takes just over a millisecond to complete.

Unlike other software DE before the call is not required, it looks for space mostly after callsign.

Take a look at this sequence it explains how it picks up callsigns in the RX window:

```
A QWSCFGTWA5TTT WA5TTT UR 599 XXXXXXXXXXXX
```

The program sees the space between the TTT and the WA so it looks into its previous holding buffer which contains "QWSCFGTWA5TTT" that string does not equal a valid callsign even though there is one in it. So because it encountered the space the buffer is cleared and the next string starts being placed into it. When it hits the third space it goes back and checks the buffer again this time it finds WA5TTT and it says it is a valid call. The program now looks back 25 characters and any time it finds WA5TTT it will color it accordingly and also place it in the grab window.

As for the clicking on callsigns it follows the same rule except there is a routine that looks to see the characters that are under the mouse. If it is a valid call then it gets sent through the routines to place it in the entry window. There is a ltrs/figs line of text that shows the actual text that is being converted. This will give you an idea of what text is getting selected etc.

Problems will happen if the rules change in various countries and the rules in the Busted Call Checker can't keep up with the country changes so you get callsigns that do not come out of it OK. The main reason to add the Busted Call Checker routines in there is to cut down on a lot of garbage that would be getting colored that passed all of the check routines but were not really callsigns

## 13. Routers and Firewalls

A router provides your principal defense against the wild, wooly Internet. Everyone who connects to a broadband Internet service should only do so through a router.

A software firewall (like the Windows XP firewall, Zone Alarm, etc.) provides protection from the other computers behind your router. It's probably okay to turn off the Windows Firewall in a contest station.

Routers provide an important function called network address translation (NAT). If you look at your computer's IP address and see 192.168.x.y (or 10.x.y.z), then you're golden. The 192.168.x.y (and 10.x.y.z) address ranges are defined as local only and cannot be routeable across the Internet. If your PC has one of these addresses, it's as if you're behind a telephone switchboard and do not have a direct dial number. That's a good defense.

Software firewalls protect you from other computers behind your router. So if you take your laptop around with you and use various wireless networks, you absolutely need a software firewall. The other computers at Starbucks may be full of viruses, and you need a software firewall to protect you from them. Also, if you have a computer in your house that may be used for some less-than-safe surfing, you should have a software firewall. Kids may have permitted access for online gaming, peer-to-peer file sharing, or may have downloaded software that has spyware, etc. Protect your PC by running a software firewall. Finally, if you have a wireless network, make sure you control who access it. If your neighbor can access your network and has a bunch of malware on his machine, your machines could get infected, too.

Robert K5PI.

### 13.1. Adding N1MM to the Windows firewall

When you do not want to turn off the Windows Firewall you can leave your windows firewall on even though you are behind a router. Add N1MM to your exceptions list and better yet add the local subnet (usually 192.168.1.0 (255.255.255.0)) to the port exceptions.

## External UDP Broadcasts

### In this Section...

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#### External UDP Broadcasts

##### 1. Main program

1.1. `IsBroadcastAppInfo=True`

1.2. `IsBroadcastContact=True`

1.3. `IsBroadcastRadio=True`

##### 2. Programs using the N1MM Logger Broadcasts

---

External broadcasts can be used by third party software to get info from N1MM Logger about a contest in progress to generate, for example, reports, or have an up-to-date web site. UDP broadcasts stay in the same network (same subnet) and cannot be broadcast directly over the internet.

There are additional UDP broadcasts built into N1MM Logger, but they not very useful for general users. Examples include broadcasts to the N1MM rotor program and the real-time score reporting



application.

## 1. Main program

For external UDP broadcasts there are some lines that need to be added manually to the N1MM Logger.ini file. This has to be done with an external text editor, such as Notepad or Wordpad (there is no UI for this option). Do not use a word processing program, such as Microsoft Word.

When the section **[ExternalBroadcast]** is not there it has to be added. An example is:

<b>[ExternalBroadcast]</b>
DestinationIPs=127.0.0.1 192.168.1.56
DestinationPort=12060
IsBroadcastAppInfo=True
IsBroadcastContact=True
IsBroadcastRadio=True

Setting	Comment
<b>DestinationIPs=</b>	Start with IP address 127.0.0.1 (the pc you are running on) and add other PC's IP-addresses (space delimited). You can send to multiple IP addresses in the subnet by specifying 255 for the last octet. E.g. 192.168.1.255 will send to all computers that are in the 192.168.1 subnet. Do not specify 255 in the higher order octets, or you will risk broadcasting to the internet. While eventually the packets will be discarded by the internet, it will not endear you to your ISP.
<b>DestinationPort=</b>	The UDP port to use. Defaults to 12060
<b>IsBroadcastAppInfo=True</b>	Broadcast Application Info. Defaults to False
<b>IsBroadcastContact=True</b>	Broadcast Contact Info. Defaults to False
<b>IsBroadcastRadio=True</b>	Broadcast Radio Info. Defaults to False

The dots in the example UDP broadcasts are TAB characters.

### 1.1. IsBroadcastAppInfo=True

This code is broadcast on the DestinationPort (default: 12060) when IsBroadcastAppInfo=True in the section [ExternalBroadcast](#) from the file N1MM logger.ini at the moment that the Select Contest dialog is closed with OK (and a contest will be loaded and shown on screen).

Example UDP broadcast
I version="1 .0"?>
.C:\Program Files\N1MM logger\contests-2007.MDB
.71
.CQWWSSB

## 1.2. IsBroadcastContact=True

This code is broadcast when **IsBroadcastContact=True** in the section [ExternalBroadcast] from the file N1MM logger.ini at the moment a qso is logged.

<b>Example UDP broadcast</b>
I version="1.0"?>
.CQWWSSB
.71
.22-6-2008 7:04:00
.PA1M
.14
.1420100
.1420100
.PA1M
.USB
.K1TTT
.K
.K1
.PA1M
.
.59
.233
.59
.0
.
.
..
.
.
.
.
.
.
.
.
.14
.5
.
.0
.1
.0
.0

### 1.3. IsBroadcastRadio=True

This code is broadcast when **IsBroadcastRadio=True** in the section [ExternalBroadcast] from the file N1MM logger.ini at the moment that the frequency of the radio changes. The RadioNr in the XML output is the Radio number when in SO2R or the VFO number when in SO1V or SO2V.

Example UDP broadcast
version="1.0"?>
.2< /RadioNr>
.2120000
.2120000
.CW
.PA1M
.False

## 2. Programs using the N1MM Logger Broadcasts

As an example the following program uses the N1MM logger UDP broadcasts.

Freeware software from LA0FA to place N1MM Logger QSO's direct into DXkeeper at:

[http://www.la0fa.com/show\\_article.asp?Article\\_ID=48](http://www.la0fa.com/show_article.asp?Article_ID=48)

ADIF info at: <http://www.dxlabsuite.com/ADIF.htm>

## Off Topic, But Nice to Know

### In this Section...

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#### Off Topic, But Nice to Know

1. Working Dupes or Not?
2. Types of Operating
  - 2.1. Running
  - 2.2. Search and Pounce
  - 2.3. The 'New' Packet Assisted S&P Mode
3. A QSO Speedup Tip (How is Your Typing Speed?)
4. GMT is GMT, or Not?
5. USA and Canada Daylight Savings Time Changes

## 6. Which Monitor to Choose

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This chapter gives general information about contesting coming from discussions on the N1MM logger reflector. Should this be placed in a help/manual for a contest program? We don't know but as the title says: Off topic, but nice to know. We thank the authors for their approval so we could add this to the help/manual.

### 1. Working Dupes or Not?

In paper log days you used to get penalized for too many dupes that weren't marked as such in the log. I don't know of any contest that has ever penalized you for working too many dupes as long as you marked them in your log and didn't try to claim points for them.

Its kind of ironic that the Cabrillo log format has no way to mark dupes, the sponsor's log processing software automatically rescores all the logs so you don't have to worry about even recognizing dupes or worrying about not claiming points for them.

On your specific question. You log by2a but 6y2a properly logs on5zo... 6y2a would get credit because the log checking software would properly match up the one-off call by2a with their log entry of on5zo. If there really is a by2a and they send in a log you would lose credit for a confirmed not-in-log. If there is no such callsign as by2a issued you would lose credit and penalty and lose the multiplier (assuming you didn't work any other by) as a bad call. If there is a by2a but they didn't send in a log you might get to keep the credit if the log checking software and manual checkers don't recognize the busted call.

Lets take it one step further. Say you really screwed up and logged by2et so the log checking software can't figure out that it was really 6y2a that you worked... now 6y2a loses qso credit and penalties for being not in the on5zo log. You may or may not lose credit as above based on the by2et log and callsign status.... now, later on you hear 6y2a and call them again. If they recognize you are a dupe and come back 'qso b4' and refuse to work you, THEY LOSE! They will never get credit for on5zo and will lose the penalty points. If instead they ignore the dupe and work you again the original not-in-log doesn't matter as they are now in your log and everyone gets credit... so NOT logging the dupe is bad.

The same holds for other combinations of them busting your call, or both of you busting each other, etc. It is always better to just log the dupe and move on. There is actually less of a chance you will get penalized if you work the dupe than if you don't.

David Robbins, K1TTT

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web: <http://www.k1ttt.net> 

### 2. Types of Operating

#### 2.1. Running

- In this mode you normally only want to only see new multipliers so the Check spot window serves well. You can set the filters to only see new multipliers so you can easily go grab them and get right back to your run frequency.

## 2.2. Search and Pounce

- The traditional S&P mode. In this mode you dial up the band checking each signal you hear. In this mode the bandmaps work well as they can help you quickly identify each station you hear and determine their status as a new QSO or multiplier or dupe.

## 2.3. The 'New' Packet Assisted S&P Mode

- In this mode you start at one end of the band and quickly go from spot to spot and work all the new stuff on a band. With today's high spotting rates you often find that almost every station you would hear doing the traditional S&P is already in the band map so for an operator in a hurry to work out a band and move on this could be very useful. Also for an operator working a 2nd VFO while still running, or running SO2R to tune one band while CQing on another one this could be useful as you typically have less time to spend figuring out who someone is and would rather have a screen full of new stuff than a screen full of dupes to tune through.

David Robbins, K1TTT

## 3. A QSO Speedup Tip (How is Your Typing Speed?)

Being raised as a contester using CT, I was taught this trick (drill exercises on PED CT trainer, tnx to my contesting elmer ON5YR). By pressing "Insert" to send RST (CT uses "insert" to send call+RST).

***I type the prefix, copy suffix in head, start sending RST while typing the suffix.***

Saves a lot of time and the calling station does not have to wait that extra split second, as soon as his TRX goes from TX to RX, he hears me coming back to him already.

So although I use ESM a lot, whenever I use this trick I still press "Insert", works FB!

Try it, it works FB in combination with ESM.

73 es CU in contest!

Franki ON5ZO

NB. N1MM logger can be set up to send call+rst when pressing 'Insert'.

## 4. GMT is GMT, or Not?

Not quite. Some of Bill Gates' boys didn't know the difference between Greenwich Mean Time and

the local time in Greenwich, England. In some versions of Windows, one of the choices for time zone is labeled (GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London, but unfortunately, despite what the time zone list says this setting is NOT repeat NOT Greenwich Mean Time; it's local time in Greenwich (and Dublin, Edinburgh, Lisbon and London), which in the summer is daylight savings time, i.e. GMT + 1:00 .

There's an often published workaround. If you absolutely gotta put your computer on GMT because you're tired of resetting some old DOS software that doesn't know any better, you can set the computer for (GMT) Casablanca, Monrovia. Those places never go on daylight savings time, so their local time really is the same as GMT all year round, not like Greenwich.

But you know what? If you're using Windows software like N1MM Logger, it's a lot easier to set your computer to your own local time zone and let the operating system take care of all that time zone and daylight savings time stuff automagically.


73, Rich VE3IAY

## 5. USA and Canada Daylight Savings Time Changes

In 2007, the US & Canada changed when daylight time starts and ends. If you reside in one of these countries and have your computer display local time, you need to do one of the following:

**Windows XP:** Install the latest Windows XP updates close to the date of the change (second weekend of March). It should be handled automatically.

### Older versions of Windows:

- Option 1: Read this article in this link and change your machine to reflect the time changes: <http://support.microsoft.com/kb/914387> 
- Option 2: Set your time zone and time to Casablanca, which is GMT without risk of summer/daylight time. If your OS has the option to choose daylight time, leave it unchecked.
- Option 3: Leave your local time alone (i.e. wrong). If your time zone is currently set correctly, your machine is effectively running on GMT/Universal Coordinated time. If you don't touch it, the local time displayed will be wrong but the time recorded in the logging program will be correct.

## 6. Which Monitor to Choose

I have also been evaluating choices for more screen real estate. A couple of pointers that may be of interest.

Once you get into the bifocal stage of life, pixel size ends up being as important as screen resolution, if not more-so. You will find that most 17" and 19" monitors are at 1280 by 1024 resolution. The difference between 17" and 19" is not more real estate but the size of the pixels. Both 17" and 19" monitors will show the same number of pixels, but with the smaller pixels on the 17" monitor, you may end up having to increase font sizes to make the text readable, so you end up

with less effective screen real estate. I recommend 19" over 17" monitors for this reason.

As far as economics is concerned, the wide angle format monitors appear to generally be the best bang for your buck. But keep in mind that a widescreen 19" monitor which is 1680 by 1050 resolution will have smaller pixels than a 19 inch 1280 \* 1024 resolution monitor. If you are considering a widescreen monitor, make sure your video card can drive it. The video card in my almost two year old Dell box can't!

Prices start to go up rapidly once you get into 1600 \* 1200 resolution, which becomes available in the 20" and 21" sizes. At this size and bigger, there are also wide screen versions. Again, make sure the resolution is supported by your video card.

Another thing to consider is whether or not you are going to be using an analog or digital interface. I find that driving a 1280 \* 1024 monitor in analog mode gives very fine lines and makes text difficult to read. Using the same monitor with a digital interface usually gives better results. Microsoft's ClearType software also helps somewhat in this regard.

To summarize, for our application, you want to look for displays with big (0.27mm) pixels. For me, that narrows the choices down to the following, in order of increasing cost/pixel for monitors:

Two 19" 1280 \* 1024 monitors

One 20" or 21" 1600 \* 1200 monitor

One large 22" and up widescreen monitor

Gerald Boutin, VE6WA