

# 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!!!

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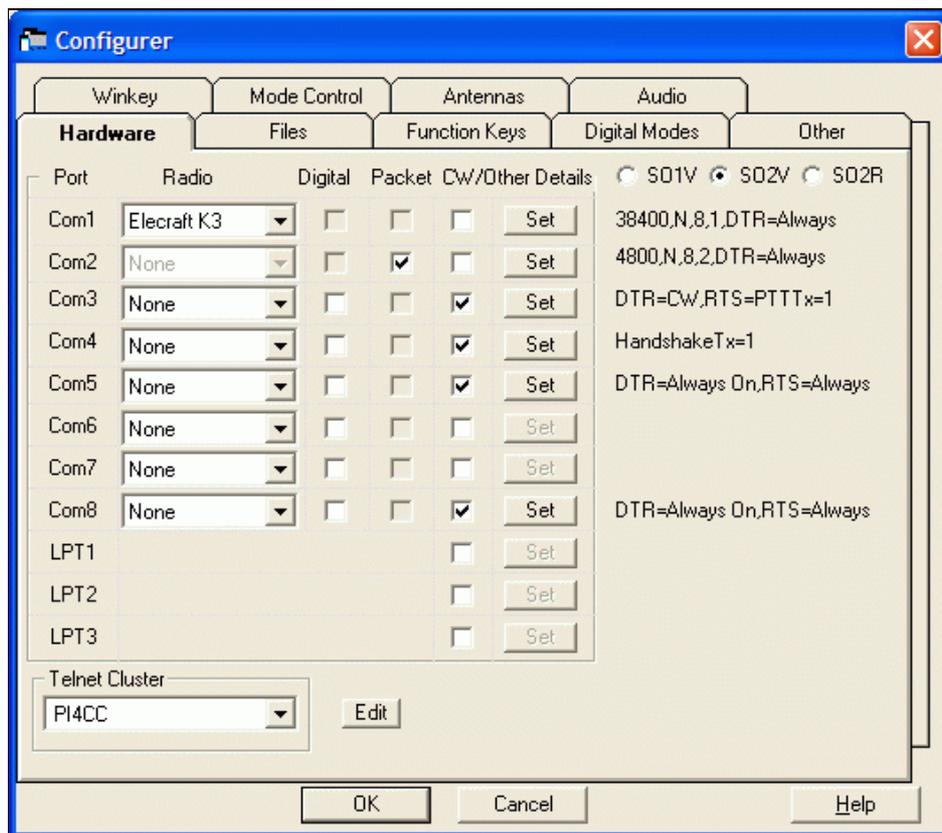
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# 1 Ten Easy Steps to Successful Logging.

(and no, I wasn't drinking when I wrote this)

## 1.1 Step 1. Setup



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

## 1.2 Step 2. Adjust Window Positions

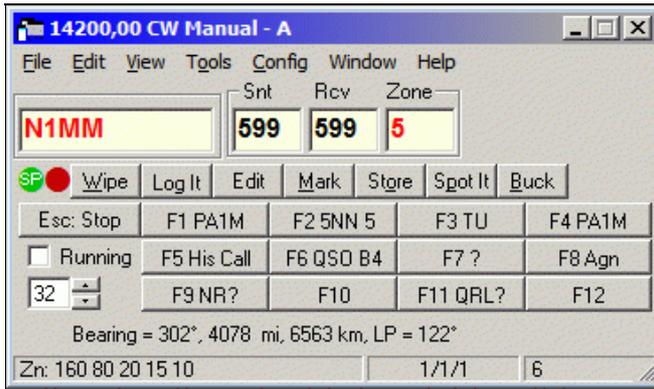
Adjust the window positions as desired by opening every window separately from the 'Window' menu.

## 1.3 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 [interface section](#) for possibilities.

## 1.4 Step 4. Entering a Call

Ok, now we are ready to log. By default, you should be in the General log – look at the log window caption. So you want to log a qso? Type in the callsign field from the Entry Window the call of the station you want to log. Let's say you type 'N1MM'. Notice that the Check window shows calls with N1 in it, later N1M and finally only N1MM. This will happen with any call or partial call 2 or more



characters long. Use the mouse and click on N1MM in the Check window. Notice that N1MM will be filled in the Entry window callsign field, defaults will be set for fields who 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.

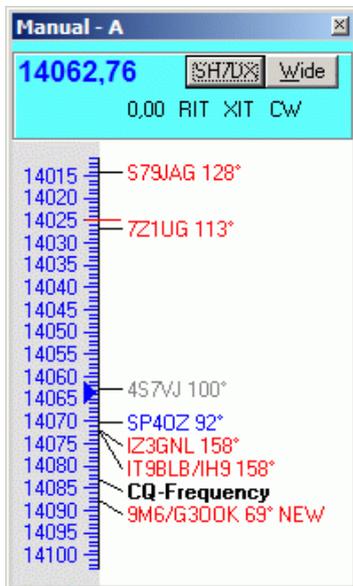
## 1.5 Step 5. Using the Space Bar to Tab

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.

## 1.6 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.

## 1.7 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, 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 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. This you do in the configuration screen (you didn't skip step 1, did you?). I don't want to recommend one, for fear of overloading it, so try one, close the configuration window and type your call in the "Enter Command" window and press enter. Answer the questions, 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.

## 1.8 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 it's 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](#)

## 1.9 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.

## 1.10 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 Edit menu. Here you can change the usage of many of the buttons in the program, like the CW buttons, packet, telnet, etc.

The Tools menu lets you rescore the contest and reload the country (mostly CTY.DAT) file using 'Import country list from downloaded file'. The Config menu lets you change state tables, section tables, not to mention the exciting Configuration options that we all know and love by now.

## 1.11 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

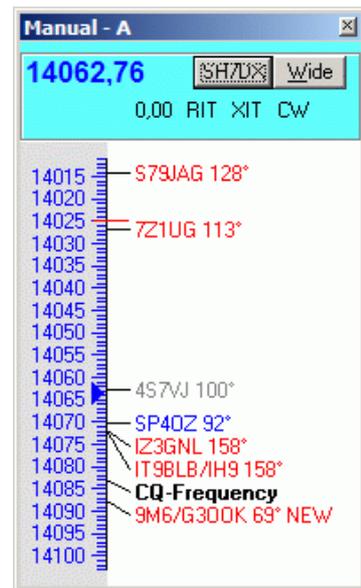
to hook up your radio to enjoy this wonderful feature, just hook some speakers to your sound card and listen to my melodious voice call CQ as you click on the CQ button. In a real contest, however, you'll want to hook up the output of the sound card to your microphone input through a Radio Shack audio 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 help files.

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.

# 2 N1MM Free Contest Logger

## 2.1 General Overview



The N1MM Logger is a **freeware** program designed to do contest logging and some general logging. It is not a general logging program with award tracking etc. but is mainly a contest logging program. Check the [Features](#) listing.

Important! The usefulness of this program is greatly enhanced by reading the [Quick-Start Guide](#)

The [Quick Tour](#) and the [Key Assignments](#) are another *must reads*.

These are the [Supported Contests](#) and the [Supported Radios](#).

The program can be used on Windows 98/ME and on Windows NT/2000/XP/Vista. DOS is not supported. Windows 95 is not supported anymore.

## 2.2 N1MM logger discussion groups

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

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

Note: 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, to take an abstruse 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)
<a href="http://groups.yahoo.com/group/N1MMLogger">http://groups.yahoo.com/group/N1MMLogger</a>	<a href="http://groups.yahoo.com/group/n1mmlogger-Digital">http://groups.yahoo.com/group/n1mmlogger-Digital</a>

## 2.3 Documentation

The documentation for this program is available in three different forms

- On the Internet on the N1MM logger homepage, select 'Help files', item '[View Help files](#)'.
- As the programs Help file ([N1MMLoggerHelp.chm](#))
- As a PDF file ([N1MMLogger.pdf](#)) which can be viewed and printed with Adobe Acrobat Reader (Version 3 or higher)

Both the Help file (CHM file) and the manual (PDF file) can be accessed while in the program. For this to happen the files should be placed in the N1MM logger program directory.

## 2.4 Group Email Addresses

	General program issues (including CW and SSB contests)	Digital program issues (including digital contests)
Post message:	<a href="mailto:N1MMLogger@yahoogroups.com">N1MMLogger@yahoogroups.com</a>	<a href="mailto:N1MMLogger-Digital@yahoogroups.com">N1MMLogger-Digital@yahoogroups.com</a>
Subscribe:	<a href="mailto:N1MMLogger-subscribe@yahoogroups.com">N1MMLogger-subscribe@yahoogroups.com</a>	<a href="mailto:N1MMLogger-Digital-subscribe@yahoogroups.com">N1MMLogger -Digital-subscribe@yahoogroups.com</a>
Unsubscribe:	<a href="mailto:N1MMLogger-unsubscribe@yahoogroups.com">N1MMLogger-unsubscribe@yahoogroups.com</a>	<a href="mailto:N1MMLogger-Digital-unsubscribe@yahoogroups.com">N1MMLogger -Digital-unsubscribe@yahoogroups.com</a>
List owner:	<a href="mailto:N1MMLogger-owner@yahoogroups.com">N1MMLogger-owner@yahoogroups.com</a>	<a href="mailto:N1MMLogger-Digital-owner@yahoogroups.com">N1MMLogger -Digital-owner@yahoogroups.com</a>

## 2.5 Programming specifics

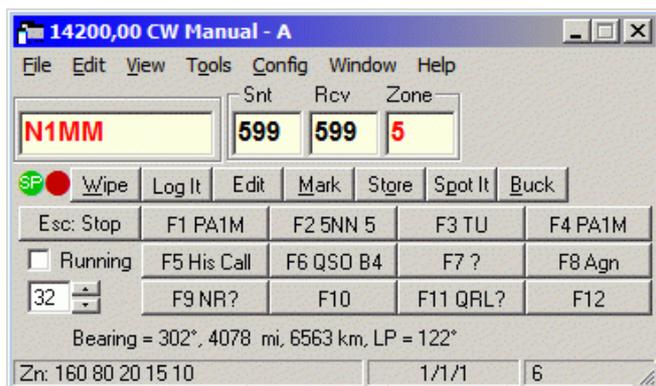
- Coded in Visual Basic 6.0 using no aftermarket controls.
- Uses one freeware dll for LPT port control and one for crc32.
- Database used is Access 2000.
- Uses MMTTY for soundcard RTTY support (FSK and AFSK).
- Uses MMVARI for soundcard PSK support (PSK31, PSK63 and all other MMVARI modes).

The logging program has been designed to work on a Pentium II/III 500-800 MHz, 128 MB as a minimum platform. Thus, it runs reasonably on a 500 MHz Pentium II. Whether it can run as designed on slower speed machines is to be determined. It has not been and won't be a priority to make it run on clunkers.

## 2.6 Program development?

N2AMG, PA1M and I develop the software. It is a cooperative development venture. If you have programming or other skills we'd be interested in your help. To help develop, you'll need your own copy of .Visual .Basic 6.0 PE or EE. A copy of .Access 2000 is helpful, but not required. Contact N1MM to discuss working on this project. Source code is provided to those who would like to contribute to the project.

## 3 Features



- All major HF Contests are supported including General DX logging, DXpedition, DXSatellit and VHFdx.
- Uses sound card for DVK but also DVK interface for W9XT & other DVK's.
- Automatic CW generation.
- RTTY support using MMTTY, HAL DXP38 and other external TNC's (like PK-232)
- Other digital modes like PSK31 and PSK63 support using the MMVARI engine.
- The program retains the size and position of windows as specified by the user.
- The main windows (Entry Window, Log, Bandmaps, Packet, Check, Multipliers, Score Summary, Info, Available Mults and Q's and the Digital Interfaces are non-modal. That is, you can interact with any of them without having to close the last window used.
- Available Window keeps track of needed spots & mults on each band for easy band-change decisions. Color-coded buttons indicate on which bands the current contact is needed.
- 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.
- Click on packet spot in packet window to tune to that frequency/mode.
- Spotted stations appear on callsign textbox frame when you tune near a spot. A touch of the space bar will enter that call into the callsign field.
- Mode-aware fine tuning from the keyboard.
- Automatic beam heading and sunrise/sunset calculations.
- Check partial function.
- Packet & Telnet support – spots from both automatically update the band maps.
- Packet spot filtering.
- CW sending from the keyboard.
- 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.
- Two radio support. Two VFO support when using one radio. One VFO/Bandmap.
- Multiplier window.
- LPT port functionality to control antenna switches, radio selected, and PTT (95/98/ME/NT/2000/XP).
- Multi-user support.
- Cabrillo export support.
- ADIF import/export support.
- All data is stored in an Access 2000 database to facilitate reporting and future integration with other software.
- Two monitor support (Requires Win 98 or better).
- Contact recording to wav files. Right-click on log entry to play back.
- Record level indicator for recording QSOs.
- S&P QSO stack.
- Callsign stacking.
- Spot all S&P calls locally (QSYing wipes the call & spots QSO in bandmap).
- HF including WARC and 60 meter support, VHF and up support.
- Transverter support (SHF bands supported up to 10, 24, 47, 76, 142 and 241 GHz).
- Winkey support (Serial CW keyer by K1EL).
- Antenna mapping.
- SO2R/SO2V support including \$5 SO2R supporting SO2R with just sound cards.
- User-settable band edges for CW, SSB and digital.
- Statistical reports.
- Generation of CW via USB to serial converter.
- Serial number server for multi-user stations.

- Rotator control (Using N1MM Rotor, LP-Rotor or ARSWIN).
- Grayline program
- Multi-User: automatic resync on reconnect.
- Serial number server for SO2R & multi-user – coordinates serial numbers across radios.
- Transaction log, which keeps all QSOs to facilitate recovery of log.
- Support for microHAM SO2R protocol.
- Bring program to top when tuning a VFO.
- Dxpediton mode (Stay in Run or S&P)
- Many more..

## 4 Minimal PC Requirements

### 4.1 Minimum hardware requirements

The logging program has been designed to work on a Pentium II/III 500–800 MHz with 128 MB memory as a minimum platform. Whether it can run as designed on slower speed machines is to be determined. It has not been and won't be a priority to make it run on clunkers.

The graphical resolution is minimal 800 by 600, but much better is 1024 by 768 or more to get all windows on the screen.

A lot of free serial ports is nice to have, this for connecting the radio (or radio's) and packet radio. CW-keying and PTT-ing the radio can be done through a free serial but also by a free parallel port. For PTT-ing MMTTY an extra serial port is needed. Also USB-to-serial converter are supported. For more info see the [Radio Computer interfacing](#) section.

### 4.2 Supported Operating systems

- Windows 95 (not supported anymore)
- Windows 98
- Windows ME
- Windows NT
- Windows 2000
- Windows XP
- and probably future Windows versions.

Linux and other Operating Systems will not be supported.

# 5 Installation and Upgrading

## 5.1 Update Procedure

The Full Installer is needed only once during the first installation. After that the latest update file should be installed. Each update includes all changes from the latest Full installer.

Note: In general, you may install after the Full installer install earlier or later version updates on top of one another.

The Full Installer is named: N1MM-FullInstaller.exe. The update files will be named: N1MM-newexeV7.3.1.exe (as an example). Updates will be numbered [Version].[Month].[Number]. The version released in May 2007 will be version N1MM-newexeV7.3.0. If any fixes are required they will be released when ready, and numbered 7.3.1, 7.3.2, etc.

## 5.2 Downloading the software

### 5.2.1 Internet access

During installation it is possible that a connection to the Internet is requested to download the Help, Manual or the DLPORTIO port driver. A firewall may prevent this action or pop up and ask your permission. If no permission is given these files can not be downloaded.

### 5.2.2 Boot during install

During install it is possible that the PC has to be booted (restarted) to install some new system files. If possible cancel this message and wait until the installer is done and reboot afterwards.

### 5.2.3 Errors

If an error occurs during installation or when starting the program please reboot the PC and see if the error is still disappears. On some Windows systems system files need to be added/updated and need a reboot. If the error(s) persist please report on the N1MM logger discussion group.

### 5.2.4 Links and steps

The software can be downloaded via the links shown below.

- Steps 1 and 2 are the monthly Full Installer and the latest Update files.
  - ♦ Both steps are needed to get the program running and up-to-date.
  - ♦ Only step 2 once the Full Installer has been installed (to keep up to date)
- Steps 3 and 4 are files from other websites needed by the program
  - ♦ These files should be kept up to date at any time
- Step 5 is the download and install of MMTTY used by the program
  - ♦ When RTTY is your passion...
- Step 6 is the Call History manager 'Thucydides'
  - ♦ To create import files from previous contest logs for the Call History function

<b>1</b>	Download the Full Installer file (5 MB) from: includes N1MM Rotor and the Grayline program	Download from <a href="http://www.pi4dec.nl/n1mm">www.pi4dec.nl/n1mm</a> – Dutch site kindly donated by PA8AD / PI4DEC  <a href="#">Download N1MM-FullInstaller.exe</a>
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<b>2</b>	Download the latest N1MM–newexeVx.x.xxx file (1 MB) from:	<a href="http://www.n1mm.com">www.n1mm.com</a> and select under the menu 'Downloads' : <a href="#">Download latest Update</a>
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### 5.2.5 Update needed Support Files from other websites

<b>3</b>	Download and update the latest <b>country file</b> (cty.dat or wl_cty.dat). The better choice is <a href="#">wl_cty.dat</a> Don't forget to import this country file by selecting 'Import country list from downloaded file' in the 'Tools' menu.	<a href="http://www.country-files.com/">http://www.country-files.com/</a> Look for install information on: <a href="#">Customizing the DXCC list</a>
<b>4</b>	Update the <b>Master Callsign database</b> (master.dta). Copy this file in the 'Program folder'. N1MM logger supports the CT–format master.dta file.	<a href="http://k5zd.com/scp/">http://k5zd.com/scp/</a>

### 5.2.6 Optional files to Download and Install

<b>5</b>	Optional: Download MMTTY from the MMTTY homepage.	<a href="http://mmhamsoft.amateur-radio.ca/">http://mmhamsoft.amateur-radio.ca/</a> More information in the <a href="#">MMTTY chapter</a> .
<b>6</b>	Optional: Grayline program by Tom, N1MM.	The grayline program is part of <a href="#">N1MM–Fullinstaller.exe</a> and can be installed afterwards.
<b>7</b>	Optional: Download 'Thucydides' by Carel, PC5M A history manager for N1MM logger A great tool to create import files from previous contest logs for the N1MM logger Call History function.	Download information can be found in the <a href="#">links chapter</a> .

## 5.3 First–Time Install Instructions

Please download the files via the links mentioned above.

- 1 – Download and run the Full Installer called **N1MM–Fullinstaller.exe** (use link above).
  - ◆ The default directory to install will be 'C:\Program Files\N1MM Logger'
- - ◆ The Full–Installer will
  - ◆ Install all needed files on your computer to run N1MM logger
  - ◆ Update your system files where needed
  - ◆ Download the latest Help file (2.5 MB) and copy it into the N1MM Logger program directory
  - ◆ It can be accessed from within the program using Alt–H
  - ◆ Download the latest Manual (PDF) (4 MB) and copy it into the N1MM Logger program directory
  - ◆ It can be accessed from within the program but Adobe Acrobat Reader version 3.0 or higher is needed to display the file and has to be installed. For a paper version of the Manual/Help, this is the file to print.
  - ◆ (Windows NT, 2000 and XP users only), select and install PORT95NT.EXE
  - ◆ Needed for CW serial and parallel port support

*Notice that when running the Full Installer it is possible your computer reports that certain system files are already installed on your system and are newer than the one you are trying to install. It asks if you want to replace the newer, existing file with the old one in the Full Installer. Select 'No'. You do not want to overwrite newer system files.*

The directory where the program is installed will be called the 'program directory' from now on.

**You must install the Full Installer as the administrator of your machine.**

- 2 – Download and run the **N1MM–newexeVx.x.xxx** file upgrade file (Example: N1MM–newexeV5.8.4.exe)(use link above).
  - ◆ Run this file and let it copy and overwrite all the files into the N1MM Logger program directory replacing any old version.
- - ◆ The upgrade file is called **N1MM–newexe(Version).exe**
  - ◆ The version number Vx.x.x is also shown in the description of the file.
  - ◆ This file contains: the latest exes and other necessary files.
  - ◆ Only the last update file is necessary, not all updates before...
- 3 – Download the latest country file under Tools by selecting 'Download latest country file' ,
  - ◆ Select wl\_cty.dat and import this country file by selecting 'Import country list from downloaded file' in the 'Tools' menu.
- 4 – Download the latest master.dta file and copy it in the program directory. N1MM logger supports the CT–format master.dta file.
- 5 – Optional: Download MMTTY for RTTY with the soundcard.
- 6 – Optional: Install the Grayline program from Tom, N1MM. Part of the N1MM–Fullinstaller.exe.
- 7 – Optional: Download 'Thucydides' by Carel, PC5M A history manager for N1MM logger .
  - ◆ A great tool to create import files for the programs Call History function from previous contest logs. More info in the chapter '[Third Party Software](#)'

## 5.4 Subsequent Install Instructions / Upgrading to a new program version

- Download **\*\*only\*\*** the **N1MM–newexeVx.x.xxx** file upgrade file (Example: N1MM–newexeV5.8.4.exe)(use link above).
  - ◆ Run this file and let it copy and overwrite all the files into the N1MM Logger program directory replacing any old version.
  - ◆ When a new ct\_y.dat file is added to the newexe file import it by selecting 'Import country list from downloaded file' under Tools
- - ◆ The upgrade file is called **N1MM–newexe(Version).exe** (Example: N1MM–newexeV5.8.11.exe)
  - ◆ The version number Vx.x.x is also shown in the description of the file.
  - ◆ This file contains: the latest exes and other necessary files.
  - ◆ Only the last update file is necessary, not all updates before...
- 

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

## 5.5 Upgrading the Help file and Manual

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.

- Check the **revision number and revision date** of the file.
  - ◆ The revision number and revision date are shown on the bottom of the first page.
- - ◆ Select Link: [HtmlDocTitlepage.htm](#)
- The Windows Help file is called *N1MMLoggerHelp.chm* (use link above).
  - ◆ Download the Windows help file (2,5 MB) if a newer version is present.
  - ◆ Select link: [N1MMLoggerHelp.chm](#) (right click on link and choose: Save As)
  - ◆ Copy the file(s) into the N1MM Logger program directory replacing the old file(s).
  - ◆ The Help file can be accessed while in the program with Alt+H or from the Help menu but also separately from within Windows.
- The Manual called *N1MMLogger.pdf* (use link above).
  - ◆ Download the PDF version of the help, suitable for printing (4 MB) if a newer version is present.
  - ◆ Select link: [N1MMLogger.pdf](#) (right click on link and choose: Save As)

- ◆ Copy the file(s) into the N1MM Logger program directory replacing the old file(s).
- ◆ The Manual can be accessed while in the program from the Help menu (Manual) but also separately from within Windows. Adobe Acrobat Reader version 3.0 or higher is needed to display the file and has to be installed. For a paper version of the Manual/Help, this is the file to print.
- An e-mail will be send out periodically to announce new versions of the Help and Manual to the group members.

## 5.6 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 Help/Manual!!! but to start at least:
  - ◆ Quick Tour
  - ◆ Using the Program
  - ◆ Setting up the Program
  - ◆ Entry Window
  - ◆ Key Assignments
  - ◆ Basic Functions
  - ◆ Key Assignments Short List (this one should be printed and placed near the radio)

## 5.7 Become a Tester and Report Problems

- If you want to become a tester or want to be serious with the program, please join one or both of the Yahoo discussions groups below. This way you will receive information on bug fixes and new versions. This is especially important during contests, should there be a serious bug. Give out the Yahoo url.
  - ◆ For general program information and CW and SSB contests:  
<http://groups.yahoo.com/group/N1MMLogger/join>
  - ◆ For digital mode issues (including digital contests):  
<http://groups.yahoo.com/group/n1mmlogger-Digital/join>
- Be sure to download the latest update (Newexe). There have been added many new features and contests since the base install files were created. An e-mail will be send out periodically to announce new program versions to the group members.
- Please indicate the version number on your problem report e-mail's, so that I can determine if the problem has already been fixed. The version number displays on the "splash" screen (the one with the tower) on start-up or can be seen in the Help/About window.
- Please report bugs. If I don't know about them, I can't fix them. This is a freeware project. It depends on volunteers like you. The quality of this software is directly proportional to the quality of testing. Thanks for your help!
- To qualify as a tester, you need at least a Pentium II class PC or better and if possible a packet cluster and radio connection.

## 5.8 Bug lists and Feature requests

Feature requests and bug reports can be found on the N1MM web site ([www.n1mm.com](http://www.n1mm.com)). You can check them either from the Download Latest Update or Support pull-down menus. There are 5 lists:

- Pending bugs
- Fixed bugs
- pending feature requests
- Feature requests completed
- Contest-specific issues

- - ◆ The latter are arranged by the month in which the next running of a contest will occur.
  - ◆ Example, if you want to see what's pending for WAE, you would look in August 2006. The idea here is to help the developers schedule their work in time for the next time a contest goes "live."

It is possible that listed items have already been resolved, but the requests and reports not have been moved to the right list. For that reason I really need your help ---- please look for any reports or requests you have filed that are on the wrong list.

As always, thanks for your help and cooperation.

73, Pete N4ZR

## 5.9 Uninstalling the program

- Removing the program from the computer or when installing the program from scratch do the following:
  - ◆ Go in control panel. and select 'add/remove programs', select 'N1MM logger
  - ◆ Remove the Program directory (mostly c:\Program Files\N1MM Logger) and remove it with all it's files.

## 6 Setting up the Program

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 setup for the contest. Below some information how this could be done. Next to reading this chapter also read [Basic Functions](#), the [Key Assignments](#) and the [Quick Tour](#) to have basic program information.

- [Setup station information](#)
- [Setting up radio control](#)
- [Setting up packet/telnet](#)
- [Setup up wav files \(SSB\)](#)
- [How to send messages in CW?](#)
- [Setting up the exchanges](#)
- [How to set up function keys with 'Enter mode'](#)
- [Command line parameters](#)

### 6.1 Setup station information

The information in the [Station dialog](#) 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.

### 6.2 Setting up 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. If not... you have no luck.
- 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.

### 6.3 Setup packet/telnet

We need spots to fill the bandmaps so the next thing to do is connect to a DX cluster. This can be done in the Configurer under the [hardware tab](#) for telnet and packet. For telnet a Internet connection is needed. The telnet cluster to connect can be (also) selected, yes again in the Configurer under the [hardware tab](#).

- Go to the Configurer and select the [hardware tab](#).
- Select at the bottom a telnet cluster. AB5K is default selected (AB5K) and works fine.
- Select the 'Telnet' tab on 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 a Telnet cluster is usually done by sending your callsign.
  - ◆ When everything works fine, spots should appear in the bandmaps.

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 the Configurer and select the hardware tab.
- Select the serial port the TNC is connected to and select the 'Packet' selection box.
- Select the 'Set' button and choose the right settings (baudrate, databits etc).
- Select the 'Packet' tab on 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 bandmaps.

## 6.4 Setup up 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.
  - Go to the Configurer and select the hardware tab.
    - ◆
      - ◇ 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.

## 6.5 Setup up wav files (SSB)

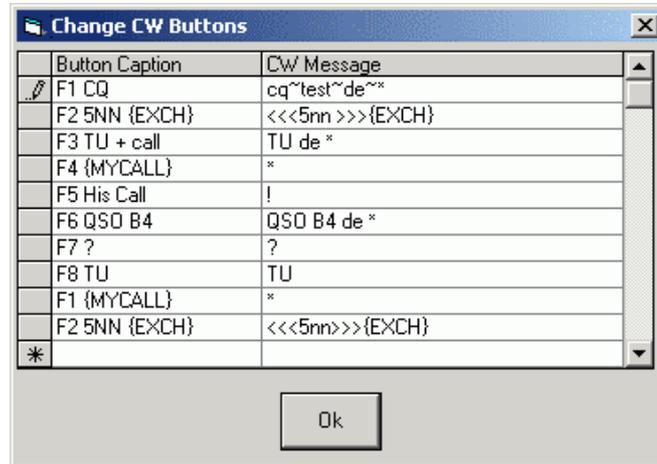
The sound (wav) files which have to be made have some standard texts, some are contest dependent. There are two kind of sound files used by the program.

- 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

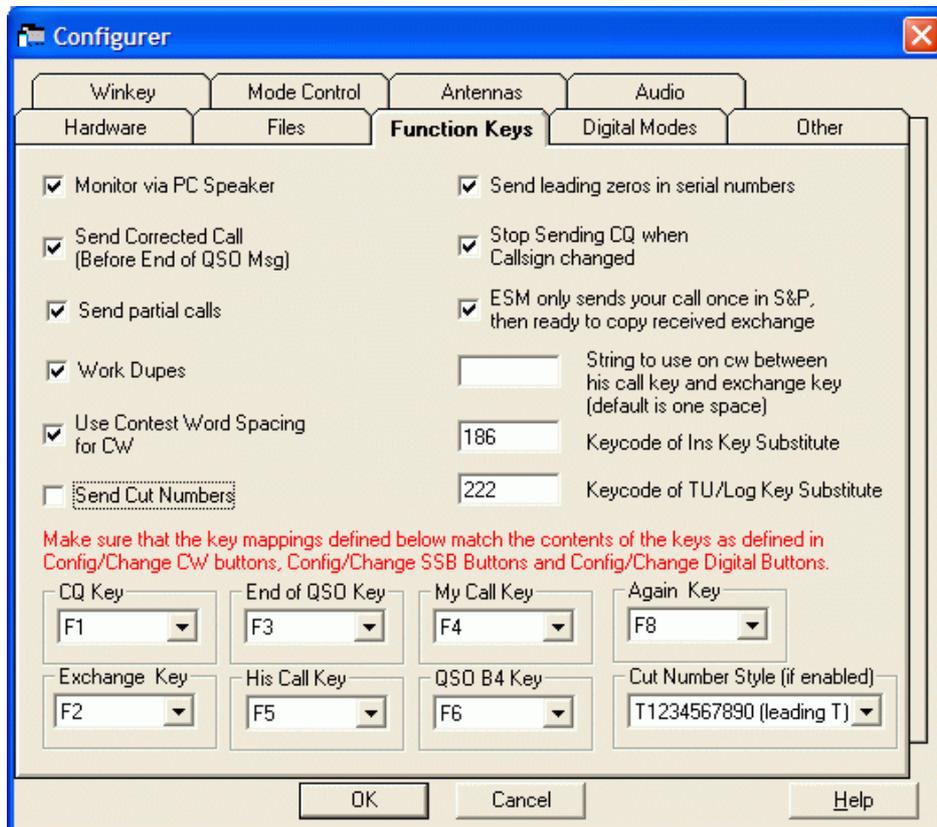
## 6.6 How to send messages in CW?

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 function key tab in the main configurer ('Config | Configure Ports, Telnet Address, Other') has each button set to its correct meaning. I.e. 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](#).

## 6.7 Setting up 'Sent exchange'

What you put in the "Sent Exchange" window 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 (ie, 5NN 4 or whatever your zone is for CQWW CW) on the F-key setup window.

## 6.8 Setting up the exchanges

By Jamie, WW3S

- I'm assuming you want to set up for a **RTTY contest**.
- Go to Config, Ports, telnet and then 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 Digital 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' the corresponding F-key **also** needs to be set in 'Config | Configure Ports, Telnet Address, Other | Tab: Change function keys'.
      - **THESE KEYS NEED TO MATCH OR "ENTER SENDS MESSAGE" 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 read CQ CQWW TEST DE WW3S WW3S TEST.
- These all get changed in change digital buttons. BTW, the same logic applies in CW.

## 6.9 How to set up function keys with 'Enter Sends Message mode'

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

Setup the function keys ('Config | Configure Ports, Telnet Address, Other | Tab: Function Keys')

<i>Default Function keys</i>					
<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>	

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 the 'Config | 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		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	

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

## 6.10 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

## 7 Basic Functions

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.

### [Help](#)

[Going through the Entry Window fields](#)

[Resizing windows](#)

[Select New Contest](#)

[Delete Contest](#)

[Select Country file](#)

[Select Master.dta file](#)

### [Changing Frequency](#)

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### [Running Mode](#)

[Search and Pounce Mode \(S&P mode\)](#)

### [Quick Edit](#)

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[Multipliers and QSOs](#)

[Connecting a telnet cluster](#)

### [Recording on the Fly](#)

[Playing Wav files](#)

[Recording Wav files](#)

[Soundcard control in configurer](#)

### [How to save the log](#)

[Function Key macros](#)

[Save and Restore Window](#)

[Positions](#)

[Edit \(lookup\) table](#)

[Backup and Restore](#)

## 7.1 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.

## 7.2 Going through the Entry Window fields

Use the [spacebar](#). It is the preferred Tab character in the Entry window. The space bar 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** fields is to move to the rarely used fields.

## 7.3 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.

## 7.4 Select New Contest

To select a new contest go to the Contest selection dialog ('File | Open Log in Database'). On the upper right 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 with each major contest where to expect very large logs or on very slow machines.

## 7.5 Delete Contest

Go to the Contest selection dialog ('File | Open Log in Database') and click on the contest in the Contest pane so it is selected. Then press the Delete key.

## 7.6 Select Country file

Selecting a new country files means downloading and copying the country file on your harddisk but also **importing** it into the current used 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 database.

- Download the latest country file under 'Tools' by selecting 'Download latest country file (wl\_cty.dat) (Internet)'
  - ◆ Preferable select *wl\_cty.dat* because it has extra country info.
- Import this country file by selecting 'Import country list from downloaded file'.
  - ◆ Without importing the country file is NOT used by the program.

## 7.7 Select Master.dta file

Selecting a new master.dta file with many regular contest callsigns in it means downloading and copying the country file on your harddisk. No importing needed but you have to select the master.dta file to use for the selected contest.

- Download a master.dta file for the selected contest under 'Tools' by selecting 'Download Latest Check Partial file (Master.DTA) (Internet)'
  - ◆ N1MM logger supports the CT-format master.dta file.
- Select the master.dta file to use in the tab 'Associated Files' under 'File | Open Log in Database' dialog'.
  - ◆ Use the Change button behind 'Master.DTA filename'.

## 7.8 Changing Frequency

Changing frequency can be done in many ways. Below a short list with some possibilities.

- 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. Example: 14200,5 will jump to 14.200,5 MHz. The mode will be changed when needed following the bandmap rules (depending on settings tab: 'Mode Control' in Configurer).
- Enter an offset in the Entry window 'callsign' field. Example: 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. 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). 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.

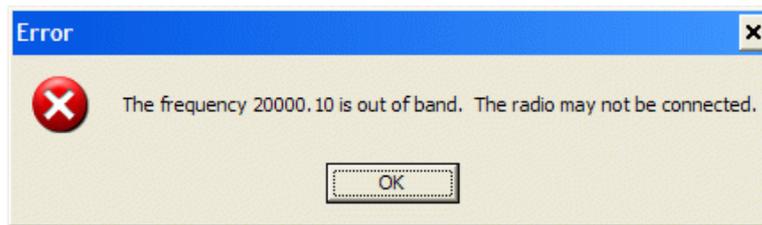
- Enter an offset in the Entry window 'callsign' field to go 'split'. See the [Split Operating](#) section.
- Use one of the many keys below to change frequency, band or vfo/radio. Go look in the [Key Assignments](#) section to read what they all do!

Alt+Ctrl+Down Arrow	Ctrl+Shift+Page Down	Ctrl+Down Arrow	Alt+Ctrl+Q	Ctrl+Left	Alt+Q
Alt+Ctrl+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
Alt+Shift+Ctrl+Up Arrow	Alt+Shift+Ctrl+Down Arrow	Ctrl+Up Arrow	Alt+Shift+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.



## 7.9 Changing Band

Below some of the possibilities how to change band.

- Change the band on your radio, the program will follow if connected.
- **Ctrl+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 when logging a contest.
- Enter a frequency in the Entry window 'callsign' field on another band. 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.

## 7.10 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 into the 'Config' and select 'Config Ports, Telnet Address, Other'. Then select the the 'Mode Control' tab. Under the 'Mode recorded in log' and check 'Always:' and also select PSK31 (example). See also note below.



**Note: How the mode will be controlled on the radio and how contacts will be logged needs to be set on the tab: 'Mode Control' in Configurer.**

## 7.11 Changing 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. A callsign is required to be entered.
- Entering "**OPON**" in the callsign field will also prompt for an operator callsign.

## 7.12 Setting up the CW speed

Setting up the speed can be done using the [Entry window speed control \(only shown when CW is selected\)](#) for each radio or VFO. Use Page Up/Page Down or click on the arrows beside the speed box to change the speed.

## 7.13 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.



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

### 7.13.1 Split frequencies can be set 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.
- Examples:
  - ◆ 7050,3 Ctrl+Enter
  - ◆ 220,3 Ctrl+Enter
  - ◆ +5,3 Ctrl+Enter

### 7.13.2 Split frequencies can be set 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!

### 7.13.3 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.

### 7.13.4 Split operation Key Assignments



#### ***Icom radios and split mode***

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.

NB. 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 VFO s. 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.



#### ***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.

## 7.14 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.
- The string "CQ" are the first characters of a CW message, the first characters of a label, in the first 16 characters of a digital message or anywhere in a SSB wav file name
  - ◆ Example filename: cqwwssb\mycall.wav will get you in Run mode.
- CQ button is pressed, even if no CQ in the message.

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.
- **'** – Send TU message and enter in log .
- **F4** – Sends my call

## 7.15 Search and Pounce mode (S&P mode)

'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.



**Note: If "Running" is checked, the Run messages are shown, if not, 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.

Note that when in Search and Pounce mode, to call CQ, 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).

When the label or the message in S&P mode has "CQ" in it, pressing it also changes you automatically to run mode

Example: You are S&P'ing through the spots. You land on one, and no one is there. What do you do

Send CQ. Rather than make you press Shift+F1, you can press your CQ key that you have programmed in S&P mode. The fact that the label or the message has "CQ" in it, changes you to Run mode. If you sent CQ, don't you want to be in Run 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..



**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.**

### 7.15.1 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 (Run) is always the CQ key there is no need for CQ in the title to make that clear. Tnx Bob – KØRC.

## 7.16 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&Pping 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, make sure that the check box called "Send leading zeros in serial numbers (e.g. TT7)" under the "Function keys" tab in the Configurer is checked.

## 7.17 Setup 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.
  - ◆ 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.

## 7.18 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 should be placed in 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.

- Use the SSB function keys to send wav files
- **Examples:**
  - ◆ Play CQ: **wav\cq.wav**
  - ◆ Play default exchange: **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: **##!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: **wav\{OPERATOR}\cq.wav**
  - ◆ Play call with operators voice: **{OPERATOR}\letters!**

- ◆ Play default exchange with operators voice: **wav\{OPERATOR}\5905.wav**

It is possible to play more .wav files right after the other by separating the wav files with a comma.  
Example: wav\{operator}\blank.wav,wav\{operator}\number.wav#

More examples can be found in the [Macro 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" you have "Mode Category" set to SSB (or Mixed) and not set to CW. Check out the Audio tab in the configurer.

## 7.19 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'](#)



**Note:** Recommend is to record with N1MM logger since 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.



**Note:** 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.

## 7.20 Soundcard control in configurer

The soundcard has to be set up when playing wav files. This has to be done on the Audio tab in the configurer. Check out the settings for it in the [configurer chapter](#).



**Note:** This is the most common problem when no sound is heard when playing wav files.

**Also check for a non existing wav file and the correct path in the program.  
Always check the wav file in a media player 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.

## 7.21 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.



**Note: There is no check if the entered contents is valid like is done when the qso is entered normally.  
So check thoroughly what you type.**

## 7.22 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

## 7.23 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**

## 7.24 Connecting 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 configurator at 'Config | Configure Ports, Telnet Address, Other | Select tab: Hardware', 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

## 7.25 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 '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...

## 7.26 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.

## 7.27 Save and Restore Window Positions

Saving and Restoring window positions is done in the Tools menu under 'Save Window Positions' and under 'Restore Window Positions'.

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!



**TIP!** The callsign used could be RTTY, CW, or SSB. This way it is easy to have window positions saved and restored for the different modes you use. Not suitable in a Multi-op environment but very usable in the single operator multi mode shack.

## 7.28 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 the Delete key. >
- To Inserting/Adding 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 add a new row is direct possible.
- To edit an entry select the field to update and enter the new information.

## 7.29 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.

**Full backup/restore on same computer – proposal 1** – backup and restore the whole N1MM logger subdirectory

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

**Partial backup/restore on same computer – proposal 2** – 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).
  - ◆ More?
- Restoring on the same computer – Restoring the data is more or less the other way around.
  - ◆ Restore All database (\*.mdb) files
    - ◇ Restore the database file(s) back in the program directory (which is the default place but not necessary).
  - ◆ N1MM Logger.ini
    - ◇ Copy the saved file in the Program directory.
  - ◆ Wav files

- ◇ Create the directories WAV and Letters directory and other directories needed.
- ◇ Copy the wav files in them.
- ◆ More?



**Note: This is not the way to place the program on another computer, the first time you always have to install !.**

#### Installation on a different computer

The difference with another computer is that you first have to install N1MM logger on the new computer, this 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 its 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.

## 7.30 Basic Functions for RTTY

Tip 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..

Tip 2. When you click on a callsign do you still need to press the space bar to advance things. You don't. Go to the digital setup screen by clicking setup/settings on the main Digital window. On the main screen there is a setting to Send space after callsign click. Turn that setting on and you will be all set. The "Right Click sends Enter routine can be found in the Digital window, select Setup then 'Rt click= Return not Menu'.

Tip 3 Try turning on the Right Click sends Enter routine from the settings drop down 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.

Tip 4. 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, select Setup then 'Turn Hover Mode On/Off'.

73's Rick N2AMG

## 8 Advanced Functions

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

[Call History Lookup](#)

[Transmit on same band with two radios](#)

[Big Gun versus Little Pistol switch](#)

[Stay in Run Mode \(during Dxpedition\)](#)

[Auto Send](#)

[Call Stacking](#)

[Enter Sends Messages Mode \(ESM mode\)](#)

[QSYing wipes the call & spots QSO in bandmap](#)

[Serial Number server](#)

[SO2R](#)

### 8.1 Call History Lookup

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.



**Note: 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.**

Call history is implemented in a separate table in each database. This table is called CallHist. The Entry window menu options for Call History Lookup are:

- **Config | Call History Lookup**

- ◆ Toggle to let the contest use the Call History table. In this table station information like Name, GridSquare, Section, State, Age etc. can be stored and retrieved during the contest. This setting will cost some performance because the program has to lookup information when leaving the callsign field from this table in the database. This table has to be filled with 'Import Call History' and the contest has to be suited for it before it can be used! Provision has been made in the table for additional fields: State, Birthdate, CK. These are in the table, but do not have any effect on logging.

- **File | Import | Import Call History**

- ◆ Some contests use exchanges which are very often the same the next you work a station. This table 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 [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!

- **File | Import | Export Call History**

- ◆ Exports the information in the Call History table. This table can only be filled by using 'Import Call History'.

- **Tools | 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.

#### 8.1.1 Creating a lookup file for importing in CallHist table

The import function expects a text file with on each line the information as mentioned in the order below.

Order: **Callsign (15), Name (25), Grid1 (6), Grid2 (6), Section (5), State (5), CK , Birthdate**

The delimiter between the fields may be a comma, a semicolon, a space or an equal sign. The delimiters may be mixed in the file but not within one line! The callsign is needed, all other fields are optional. The equal sign is introduced so a friends.ini file used by many RTTY contest programs can be used without converting. The length of each field is given behind the name. The CK has to be an integer and the Birthdate must be a date.

A missing CK must be entered as -1, since any check from 00 through 99 is valid (ARRL Sweepstakes).

Birthdate is expected to be used for the AA contest to compute the other stations age. This will obviously be a little tricky to deal with.

Be sure to put birth dates in a universal format, e.g. 1980-12-31

Example call history file:

<b>Only name needed for contest</b>	<b>Grid Square needed</b>	<b>State needed</b>
N1MM, Tom	PI4GN,,JO33II,JO33jf,	N1MM, Tom,,,,CT
N2AMG;Rick	PA5DD=Uffe=JO22ic=	K3ZO;Fred;;;MD
WW3S=Jamie	PA1T, Timon,JO33jf,	

Or

```
K1CC,RICH,FN31,FN32,,, -1,1900-01-01
KG1D,LES,,,,, -1,1900-01-01
N1MM,TOM,FN31,,CT,CT,61,1949-10-01
# this is comments (line starts with a #)
W1RM,PETE,,,,, -1,1900-01-01
```

- The *callsign* is needed and may not be omitted
- When the Grid square is needed and the name is not known it does not have to be filled. Don't forget the delimiter! A second grid square may be entered at the position of Grid2. Grid1 should be filled if one grid square is known/used. Filling Grid2 is optional.
- Example 'State needed' gives many delimiters. Depending on the contest class an entered name will be used or not.
- There is no maximum for the number of lines. For VHF contesting we normally import a file with over 50,000 lines and there is no noticeable delay in searching (on a fast computer). There is a gridsquare file available from the N1MM website under 'Downloads', select the menu: 'Other Files'. It was created by PA1M for use in European VHF contests.
- Pressing the **SPACE** bar or **TAB** when the cursor is in the **callsign field** will look for a callsign in the CallHist lookup table.
- It is possible to add comment lines in the Call History file, use a # on the first position of the line. See example above.
- Sweepstakes will pull in the Section and CK, the 10m contest will pull in the State, NAQP will pull in the Name & State. PAbeker will use Section. VHFREG1 uses Grid1, Grid2 and name etc. If the contest doesn't use one of those fields you're out of luck!
- To check if a contest uses the call history create a file with one one call to import and each field filled with unique content. When call history enabled this content should show up when this call is entered (and space or tab pressed). By the unique content you can estimate which field (Name, CK etc.) is being used.
- A great tool to use has been made by Carel, PC5M and is called 'Thucydides'. Check out the chapter '[Third Party Software](#)' for more info.

### Tip 1 by Kenny, K2KW

For those of us with limited dB skills, there is a relatively easy way in Excel to get the data into the right format. Start off by parsing out the data from an old log into different columns. (In Excel, there is a Text to Columns conversion, if your data starts off in one line). Once you get the basic data extracted and parsed, insert additional columns for all the fields as required. Then insert a field for every comma you need, resulting in 8 data fields, separated by 7 fields with single commas in them. By now the data should look exactly as you need it, but in 15 different columns. Then in yet another field, use the Excel Concatenate function: " =concatenate(A1, B1, C1, etc)" You will list every column. This function will then concatenate all the data into one long string, and then just copy and paste all the columns (you can do it all at once) with data into an ASCII file. I had just done this at work last

week and it works great. Sounds complicated, but it's quite easy.

### Tip 2 by Tom, N1MM

In the log window, choose 'Select All' and use 'Copy Generic Print String' to speed up this approach. The data in the clipboard can then be pasted into Excel.

### Tip 3 by Thomas, PA1M

Use 'Thucydides' by Carel, PC5M . Basically how Thucydides works is that you will build up a separate database in which you can store all your qso's or data from other history.txt files. This Thucydides database has provision for all known contest fields (e.g. ARRL states, German DOK's, Dutch provinces, etc..)so you can import your log's and it will be stored separate. Of course when information is changed (e.g. a station moved to a different state) it will be updated in the Thucydides database.

When you need now a history.txt for a specific contest you can instruct Thucydides to use only those database fields which holds the correct information and output this at the correct fields in the history.txt to be used by Logger. Both this import and export behaviour is 100% under user control and can be changed (if needed) just by changing an accompanied MS-Excel file.

As Thucydides is not altering any Logger data or databases it is quite safe to play around with it and of course history use is limited to those contests for which Logger has been enabled.

Check out the chapter '[Third Party Software](#)' for more info.

## 8.1.2 How to update the Call History

N1MM logger does NOT make use of that data and the QSOs made during various contests automatically. The database once imported is the same after the contest. Updating this database can be done in 2 ways.

1. Use the menu item 'Update Call History with current log' in the Tools menu. The current Call History data will be updated with the information from the currently selected contest.

2. Export the old Call History database and use a utility to merge the new information and import the combination.

Of course a Call History file shared by others could be used or the examples from the N1MM website under 'Other Files' in the 'Downloads' menu item.

NB. When importing a new Call History file, the old Call History file in the database will be deleted! Make a backup first or export the old Callhistory when not sure.

## 8.2 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 then 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 then 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.

## 8.3 Big Gun versus Little Pistol switch

One of the settings in the Configurer under the 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.

### **So you are a big station**

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

### **So you are a little pistol**

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



**Hint: 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, Ted W4NZ**

## **8.4 Stay in Run Mode (great for Dxpeditions) or stay 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'.

## **8.5 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.

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.

## **8.6 Enter Sends Messages mode (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.

### **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.



**Note: 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 the Function Keys Tab from the Configurer dialog using "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.

		<i>Running mode</i>	<i>S&amp;P mode</i>
<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)	Send 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



**NB: 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 8 messages are for Running mode, and the second 8 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.

### 8.6.1 How to prevent the cursor moving to 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...



**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 ?**

#### Solution 2

To enjoy all the ESM features and still stay synchronized with the pile-up, go to 'Config | Function Keys' and deselect 'Fill in his exchange'.

## 8.6.2 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.



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

## 8.7 QSYing wipes the call & spots QSO in bandmap

If you turn on this feature (in the Config menu), 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.



**Note: There is also a "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.**

## 8.8 Single Operator Call Stacking in all modes

Below you will find instructions on using the various Macro's and Keystrokes for CW,SSB and Digital. We would like any feedback on the operation and use as we have implemented it.

{SOCALLSTACK} & {STACKANOTHER} or CTRL+ALT+G

These are call stacking macros that only function in RUN mode. SOCALLSTACK allows the operator to stack a partial or full callsign. If a callsign is stacked and a second callsign is in the callsign window, the calls are exchanged. Stacked callsigns appear on the callsign entry frame and the bandmap on the CQ-Frequency.

STACKANOTHER or CTRL+ALT+G allow the operator to stack additional callsigns. When the macro completes, the callsign entry window is empty.

The stacked callsign can contain a question mark. If it does, the question mark will be highlighted when the callsign is popped off the stack. If the callsign window is empty and SOCALLSTACK is executed, it will move the next callsign from the stack into the callsign entry window.

When you are spotted, the station callsign will appear in bandmap on the run frequency. SOCALLSTACK will delete and not move the station callsign into the callsign entry window. For this to function correctly, make sure your station callsign is correct in the station information window. SOCALLSTACK will also delete the CQ-Frequency and BUSY@ text (ALT+M) that sometimes appears in the bandmap.

Callsigns can be deleted from the stack without popping them into the callsign entry window with ALT+D.

SOCALLSTACK 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 has not been tested for compatibility 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 operators entry window.

When you have a call stacked it will show in the bandmap and the callframe. Pressing Space moves the stacked call from the Callframe to the callsign box and remove it from bandmap.

Example call stacking for single op's using SOCALLSTACK:

Program F9 key to: {SOCALLSTACK} and F10 to: {LOGTHENPOP}TU NW {F5} {F2}

Two stations are calling which are in order N2IC and K3CT the sequence is:

K3CT F9

N2IC Enter (if in ESM) or the correct function key

Copy N2IC's report press F10 to answer K3CT

{LOGTHENPOP}

This macro will log the current station and if successful then attempt to pop the next callsign off the stack. Intelligence has been included to detect proper logging of the current callsign and that a callsign was popped off the stack.

In CW mode, the function key that uses this macro can include CW strings. For instance, this macro: {LOGTHENPOP} TU NW {F5}{F2} will log the current station, pop the next callsign off the stack, and send "TU NW" followed by the new callsign and report all in one transmission. If there is an error in the callsign or missing/invalid report, the macro is aborted, no CW is sent, and the current callsign remains in the callsign window. If the current callsign is logged and no callsign can be popped off the stack, the CW message is changed to the TU-message identified in the Configuration menu. If the macro only contains {LOGTHENPOP} (nothing else), nothing is sent for this last case.

In SSB mode, the function key that uses this macro can include a wavefile. For instance, this macro: {LOGTHENPOP}wav\{operator}\TnxNow.wav will log the current station, pop the next callsign off the stack, and send the TnxNow recorded wave file in one operation. If there is an error in the callsign or missing/invalid report, the macro is aborted, the wave file is not played, and the current callsign remains in the callsign window. If the current callsign is logged and no callsign can be popped off the stack, the wavefile is changed to the TU-message identified in the Configuration menu. If the macro only contains {LOGTHENPOP} (nothing else, no wave file) no message is played for this last case.

## 8.8.1 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–Key and Single Click on Call in Digital RX window or Alt–CTRL–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 Alt–Ctrl–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 ALT+Ctrl+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.

## 8.9 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 or on 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 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
- 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 automaticall 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.

## 8.10 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, doing 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 couple of 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.



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 :).

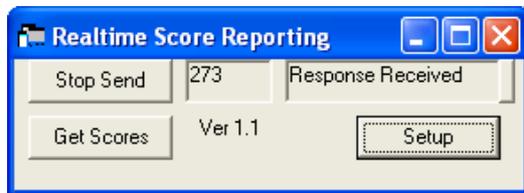
## 8.11 Contest Reporting Application

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.



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 turn it off if you don't want that.

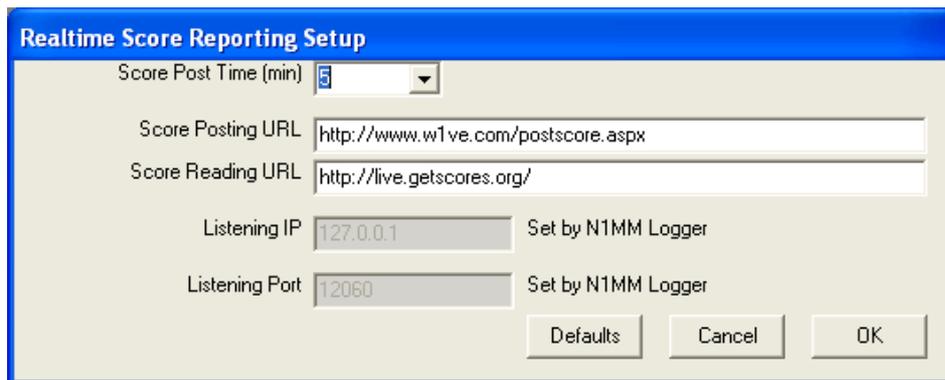
When the application has been started the dialog below will be shown.



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 send 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

All Contests   
 All Bands   
 Any

Mode:   
 Club:   
 IARU Z:

Entry:   
 DXCC:   
 Localle:

Power:   
 CQ Z:   
 Refresh Display:

Display Option:   Hide Options /Sidebar

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)

Class	Who	Rank	Call	Score	QSOs	Total Mults	Band	CQ Zone	IARU Zone	State/Prov/Other	Last Update
MM/HP	W1VE	1	K1TTT	11,290,884	5452	759	ALL	5	8	MA	10-18-06 22:1
MS/HP		1	N1MM	4,973,891	2579	689	ALL	5	8	CT	10-19-06 10:5

Class	Rank	Call	Score	QSOs	Total Mults	160Qs	160Ms	80Qs	80Ms	40Qs	40Ms	20Qs	20Ms	15Qs	15Ms	10Qs	10Ms	Last Update
MM/HP	1	K1TTT	11,290,884	5452	759	189	61	487	103	714	166	2046	186	1779	162	237	81	10-18-06 22:1
MS/HP	1	N1MM	4,973,891	2579	689	21	17	88	68	163	103	585	171	755	163	967	167	10-19-06 10:5

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 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.

## 8.12 How to start contest with other number then 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 to 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 entered, delete fake QSO.

## 8.13 SO2R

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 "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](#).

## 8.14 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..

# 9 Two Monitor Support

Original by Joe Natale, K1JN

## 9.1 Requirements

- Requires Win 98 or better.
- Additional videocard (only when the computer has one video output).
- Additional monitor.

## 9.2 General

Using two monitors is easy and once you have used two you won't want to go back to using one.

To use two monitors is easy. The operating system takes care of everything. Just think of the two monitors as one – sitting side by side. You can move windows (apps) around. When you move to the right on the left monitor and reach the edge of the monitor, just continue and you will be on the left edge of the right monitor. So just open up the program you wish to use then move it on to the second monitor just drag it across to where you want it on the second monitor.

You only need one mouse and keyboard the mouse will move smoothly between the two screens just click the mouse on the monitor that is displaying the program that you wish to use and then the keyboard is available to that program. All of the windows setting and commands are available to both monitors and can be different for each.

Just fit a cheap PCI or APG graphics card into your PC and attach a second monitor and check the windows setting in the control panel under display to extend the desktop across the two monitors and then go and have fun.

Also some laptops support dual monitors. I.e. the laptop screen and one attached to it.

The best way to set up two monitors is to have the **primary** monitor on the *left* because *many* programs do not handle negative position numbers. They all should but they don't. If you do it with Primary on left all programs should work and remember positions. N1MM supports negative position numbers.

### 9.2.1 *Is it worthwhile to use two monitors (and what if they have a different size)?*

Assuming you know your present card does not have two output connectors? Most all new video cards have dual connectors, however you will need an adapter for one of the connectors. A dual monitor video card with 256 MB memory now cost less than \$100.

Using different sizes (example: 17" and a 15" TFT) doesn't seem to be a problem, with the biggest monitor being the main screen. When using N1MM place windows like packet window, score, multiplier and info window on the smaller/second monitor. Everything else will probably fit on the bigger screen. Windows XP handles them both well. probably a very useful addition when using N1MM logger.

Just watch out, if the current monitor is on the motherboard video it might be disabled when you plug in another card. Some bios are ugly about that and will permanently disable the motherboard video or sound when they detect a card. Thus requiring a manual reset of the bios memory to get back to the motherboard video/audio.

## 9.3 Two Monitor Setup

### 9.3.1 Install hardware

Many new computers have already 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

### 9.3.2 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.
- 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!

### 9.3.3 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

- Both Bandmaps
- Log window
- Entry window
- Check partial window



#### Right screen windows

- Packet/telnet window
- Info window
- Available mult's and Q's window
- Score Summary window

# 10 Station Dialog

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.

The 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.

The 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.

The 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.

The e-mail address and SMTP server Address are being 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.

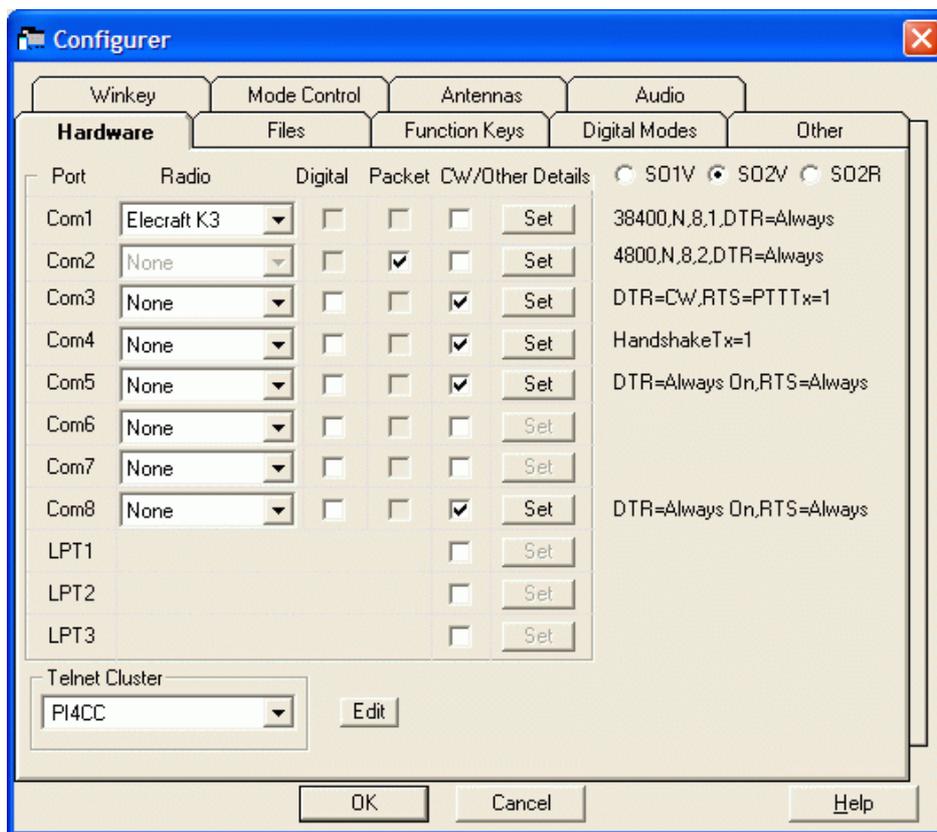
# 11 Configurer Dialog

The Configurer Dialog or Configurer as we call it often has many tabs with program settings influencing the behavior of the program. Be careful in setting up all the items on the different tabs. All settings are remembered by the program in "N1MM Logger.ini"\*. Keeping different versions of this file is a fast way to change between program configurations. Function key information, telnet clusters, call history, and country information are saved in the ham.mdb database and any new databases you may have created.



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". Do not be confused by the file "N1MM Logger.ini.init". It is used by the program during installation. It should not be modified by the user of the program.

## 11.1 Hardware tab



The Hardware tab is used to set up your radios, packet interfaces, telnet connections and CW port. Set the values appropriate to your station. If you do not have one of the items listed, make sure the port selection is 'None'.

### 11.1.1 Hardware setup

The program supports 8 serial ports (Com1 – Com8) and 3 parallel ports (LPT1 – LPT3). Select for each port what is connected and set the correct details.

**Radio** – The radio used and controlled by the program. Select 'None' if no radio is connected.

**Digital** – This port is used for digital communication (MMTTY/MMVARI engine or TNC)

**Packet** – This port is used for packet radio (TNC) if selected. Do not select if no TNC is connected.

**CW/Other**– This selection can be done in combination with a Radio, Digital interface or Packet. Select " CW/Other" on the port, that is supposed to PTT your radio.

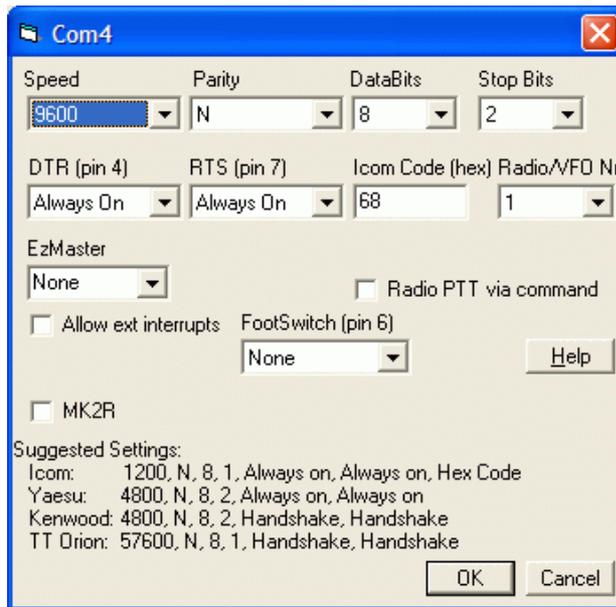
**Details** – A window is shown with a set of controls depending on the selections made above (Radio, Digital, Packet, CW/Other). To the right of the details column are the details settings shown as set (via the Set button).

**SO1V** – Single Operator 1 VFO i.e. one radio and one VFO used

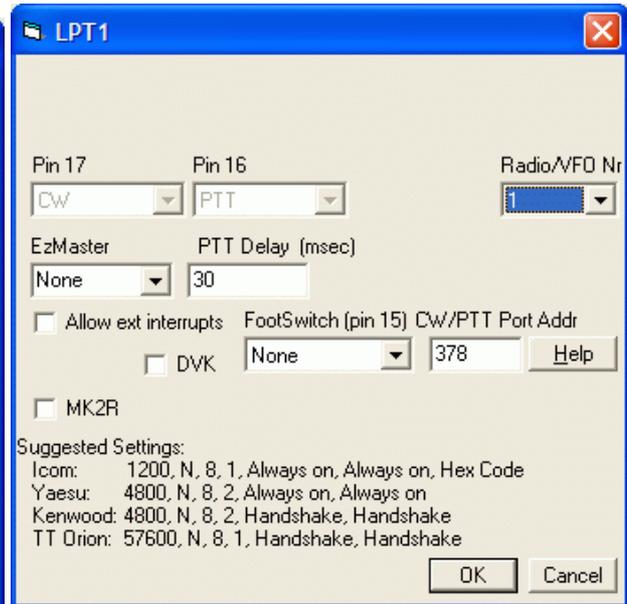
**SO2V** – Single Operator 2 VFO i.e. one radio and two/both VFO used( one radio, two VFOs). Most commonly used.

**SO2R** – Single Operator 2 Radio (2 radios used by one operator)

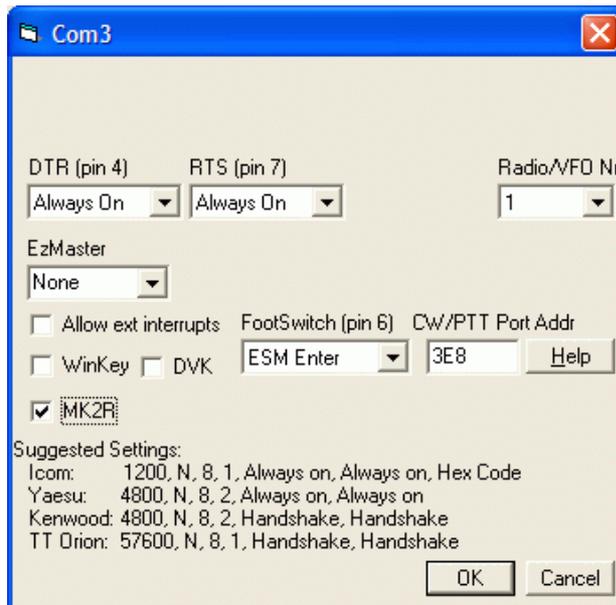
### 11.1.2 Set button examples



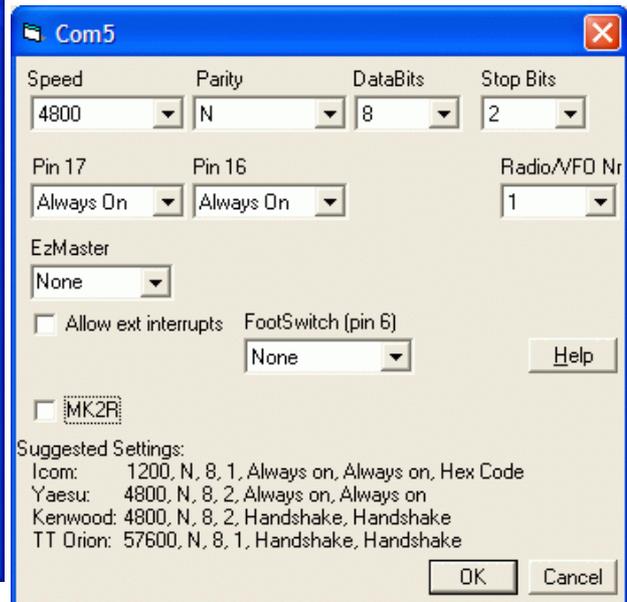
Details shown when **only Radio** (Icom) selected (serial port)



Details shown when **CW/Other** selected (pin 17/16 fixed) for a serial or parallel port



Details shown when **CW** and **PTT** are selected (on serial port). Pin 15/Footswitch mode set to ESM Enter and MK2R selected.



Details shown when **only Digital** selected (serial port)

*There are many more combinations possible 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. The default is 2 stop bits which is generally true for non–Icom radios. (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



Note for Windows 98 users who are having problems getting the 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 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 where the information is valid for.
  - ◆ In **SO1V** (one radio, one VFOs)
    - ◇ The backslash key ( \ ) is inhibited from opening a second Entry window
    - ◇ The PAUSE key and the Ctrl+Right–Arrow key are disabled to inhibit opening the VFO–B bandmap in SO1V mode.
    - ◇ IN SO1V automatically set to the correct number 1
  - ◆ In **SO2V** (one radio, two VFOs) select:
    - ◇ **1** – both VFOs used on the attached radio.
    - ◇ **2** – VFO–A attached to the radio and VFO–B in manual mode.
    - ◇ **Both** – will put both VFOs in manual
      - Don't forget to change the **LPT keying** from Radio 1 (default) to **BOTH**. Otherwise you will not get any keying on VFO B.
      - If set to 1 or 2, PTT will only activate for only that VFO (SO2V mode only).
  - ◆ In **SO2R** select the radio (1 or 2) connected to this port.
    - ◇ If one LPT " CW/Other port" is set up as Radio=Both, and another LPT " CW/Other port" is set up as 2, route band data for second radio to second port.
    - ◇ When using Wnkey 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
- **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 selected).
- **Radio PTT via command** – Select when the PTT for the radio should be send as a command to the radio. Check if you want the program to turn on your radio prior to starting to send CW or a .Wav file. 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 for this port when using a RigBlaster. It will bring focus to the Entry window and stop a CQ in progress when pressing the footswitch attached to the Rigblaster.
- **Winkey** – Select when using a Winkey keyer. No Speed, Parity, Data bits or Stop bits settings have to be set, they are fixed and set by the program. Settings for the keyer can be done on the Winkey tab in the Configurer. Deselected when selection for Digital is turned off or when a radio is selected.

- MK2R – Support for the MK2R SO2R controller from microHAM (using control protocol on COM port). USB-only SO2R (no LPT port required) with the MK2R/MK2R+.
  - ◆ Note: When DVK is also selected the DVK in the MK2R/MK2R+ will be used.
  - ◆ Deselected when selection for CW/Other or Digital is turned off or when a radio is selected.
  - ◆ More info in chapter [Supported Hardware](#) under MK2R
- **CW/Other Port Addr** – specify port address for serial and parallel ports.
  - ◆ When both RTS and DTR are set to PTT they will both be 'keyed' for PTT with the set 'PTT delay'.
  - ◆ Packet uses as handshaking RTS + XON/XOFF.
  - ◆ When using a home-brew self-powered interface set the handshaking to always on (DTR), always on (RTS)
  - ◆ Note: The address here should be the same as used for this port in Windows!



Note. 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.



Note. When setting up CW and your radio has two VFOs, set them up for Radio 1. The radio 1 CW port is for the first radio. If you want also CW on the second radio you also have to setup the CW-port for radio 2.

- **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 the footswitch to the serial ports (even more than one , but one per serial 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 for each

one.

### 11.1.3 Telnet cluster

- **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.

### 11.1.4 Other information

It is possible to have the PTT on the same serial port as the radio. If the type of CW port chosen is LPT1, LPT2 or LPT3, additional information will be present on the parallel port. See [Radio Interfacing](#) for more detailed info.

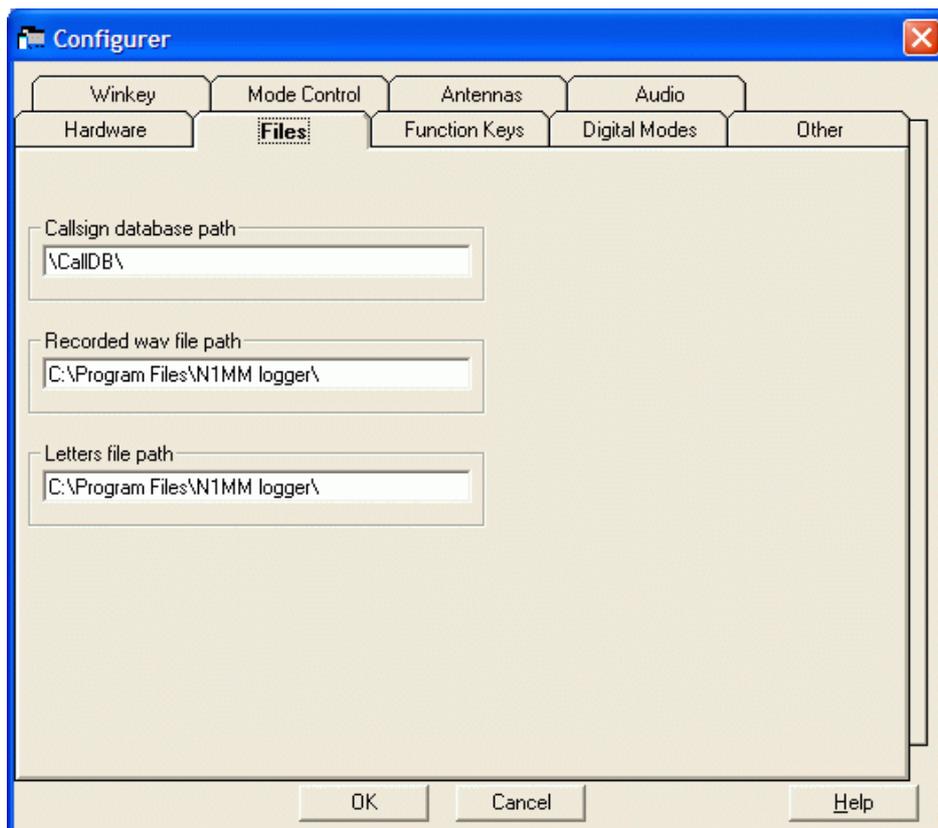
**Help** – Show the help file for this window.

### 11.1.5 Windows NT/2000/XP (32 bit OS)

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

## 11.2 Files tab

The files Tab is used to set the path to the Buckmaster callsign database if present.



### 11.2.1 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\

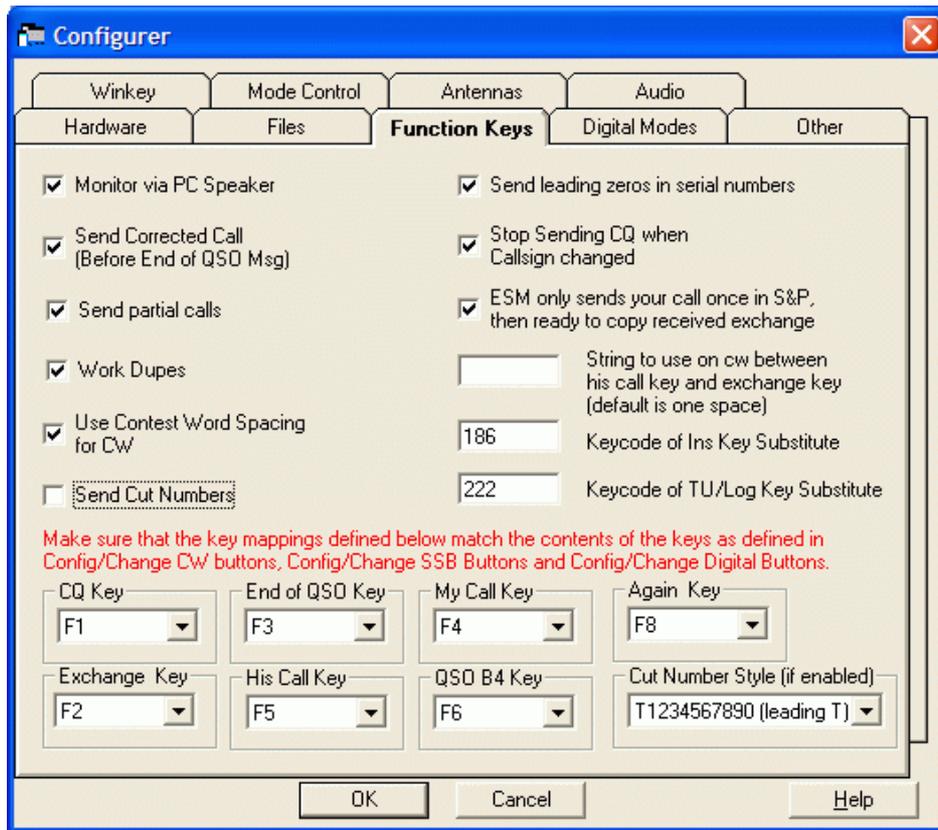
Don't forget the back-slash '\' at the end of the path!

Also, make sure to copy the HAMCAL32.DLL from the CD to the program directory where N1MM Logger is installed. On 'older' CD's, this file is located in the \API\WINDOWS directory. It may be located elsewhere on the newer CD's.

- **Recorded wav file path** – The path where the recorded wav files are placed on your harddisk. In this path the directory with the contest name will be created.
- **Letters file path** – The path to the letters directory. Example: C:\N1MM Logger\wav\{operator}\ This provides the ability to have separate letters file for each operator. The decimal point (.) should be specified as Point.wav.

## 11.3 Function Keys tab

Function keys for each message are set here.



### 11.3.1 Field descriptions

- **Monitor via PC speaker** – 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. 'PA1MM 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 sent (prefix or suffix). If not checked the whole call will be sent.
- **Work Dupes** – 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' why...
- **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 – 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 (e.g. TT7)** – 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. In this 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

**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 & S&P.

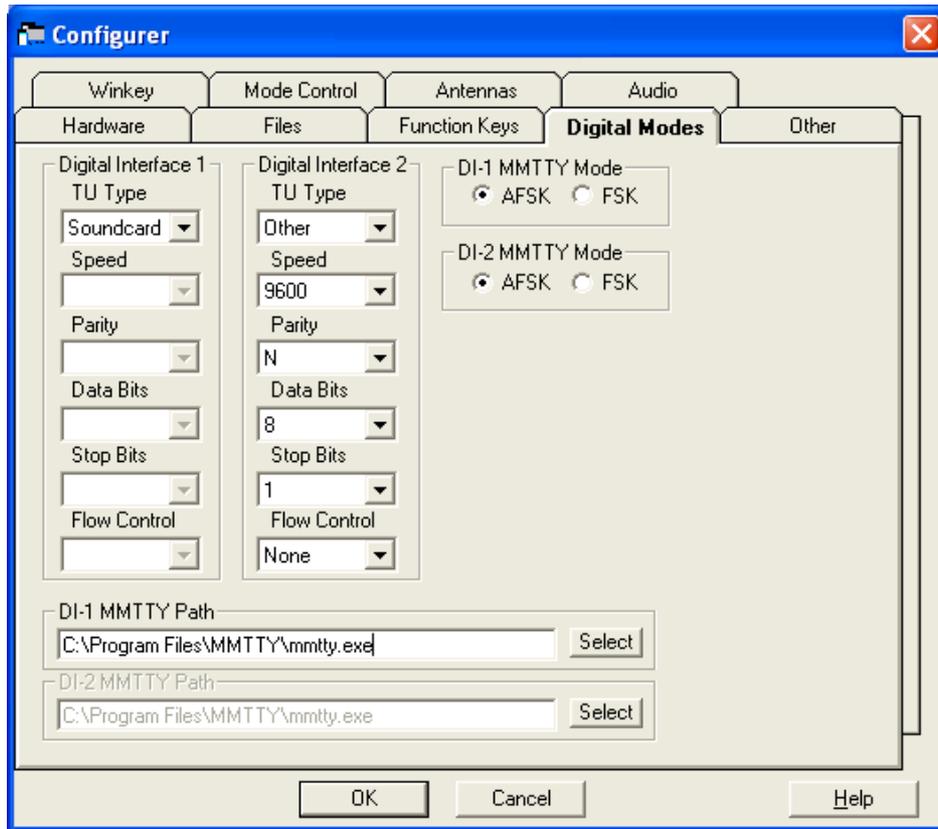
For the following messages a function key can be selected

- 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

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.

## 11.4 Digital Modes tab



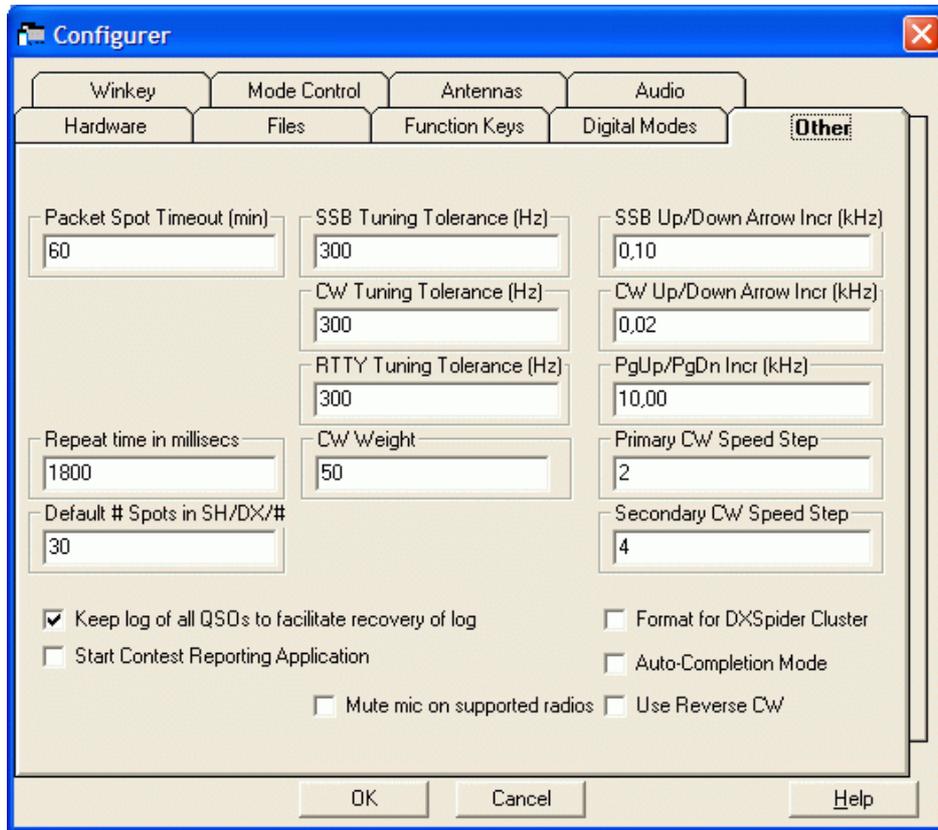
The Digital modes tab is used to set up the interfacing to external Controllers via the Serial ports or MMTTY which uses the sound card.

### 11.4.1 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 when 'CW/Other' has been chosen.
- **DI-1 MMTTY Mode | DI-2 MMTTY mode**
  - ◆ When using MMTTY, select if AFSK or FSK is being used.
  - ◆ If FSK is selected the serial port will not get passed to MMTTY on startup. The serial port has to be set in MMTTY Setup!  
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 from the program.
  - ◆ It's not necessary that MMTTY is in the same directory as N1MM logger.
  - ◆ Via the 'Select' buttons the path and file name can be selected.
  - ◆ DI-1 is for the first Digital Interface, DI-2 for the second Digital Interface.

- ◆ It is possible to select two instances of MMTTY.

## 11.5 Other tab



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

### 11.5.1 Field descriptions

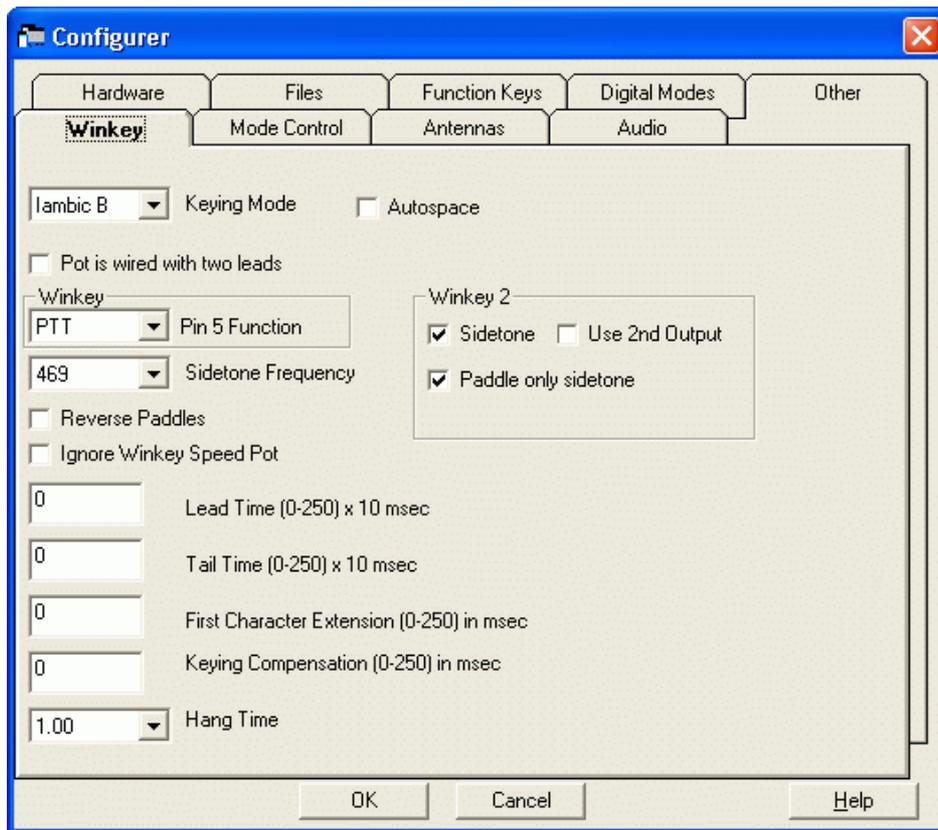
- **Packet Spot Time (min)** – Indicates how long (in minutes) spots are kept in the bandmaps. The default is 60 minutes, any integer may be specified.
- **Repeat time in millisecs** – Specify the repeat interval (CW or SoundBlaster) in the Entry window (Auto-CQ). The default value is 1.8 seconds. Enter 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...
- **CW Up/Down Arrow Incr (kHz)** – This value gives the frequency jump amount in CW 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...
- **PgUp/PgDn Incr (kHz)** – This value gives the frequency jump amount for the {PGUP} {PGDN} macros.
- **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.
- **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.LOG' i.e.: Used database name – contest name – date log created
  - ◆ 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.
- **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 the reverse CW string to the radio to use Reverse CW.

## 11.6 Winkey tab



The Winkey tab is used to control functions of the K1EL Winkey keyer.

This keyer is available stand-alone, or is used in expanded-function interfaces such as Microham Microkeyer or RigExpert. While these functions influence the operation of the Winkey chip, how this may affect the operation of your hardware is influenced by the keyer circuitry. Consult your keyer manual along with the Winkey chip manual for more information on these settings.

Winkey is designed by K1EL and G3WGV. The goal for the keyer is to interface with various Windows programs and to avoid CW timing problems caused by multitasking. This keyer eliminates any hesitation that occurs from scheduling multiple tasks under Windows. It is also a really sweet standalone keyer. 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 potrange speed is from a minimum of 10 wpm to a maximum of 55 wpm.

### 11.6.1 Field descriptions

- **Keying Mode** – Select the keying mode. Choices are: Iambic A, Iambic B, Ultimatic and Semi-Automatic. The default is Iambic-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** – Normal set to zero. Provides a CW-Speed dependent means of holding PTT after CW sending is finished. For this value to be used, Lead Time must be set to zero. See the Winkey manual.
- **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** – Sets the hang 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. **\*\* NOTE that this field denotes 10 mSec intervals -- '1' in this box means 10 mSec. \*\***
- 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.



**NOTE.** 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 ONLY UNTIL the paddle is used to interrupt N1MM sending. Then the Pot speed is used.**



**NOTE.** Setting up CW weight for Winkey. CW weight for Winkey can be set up on the Other Tab using the same 30–70% limits.

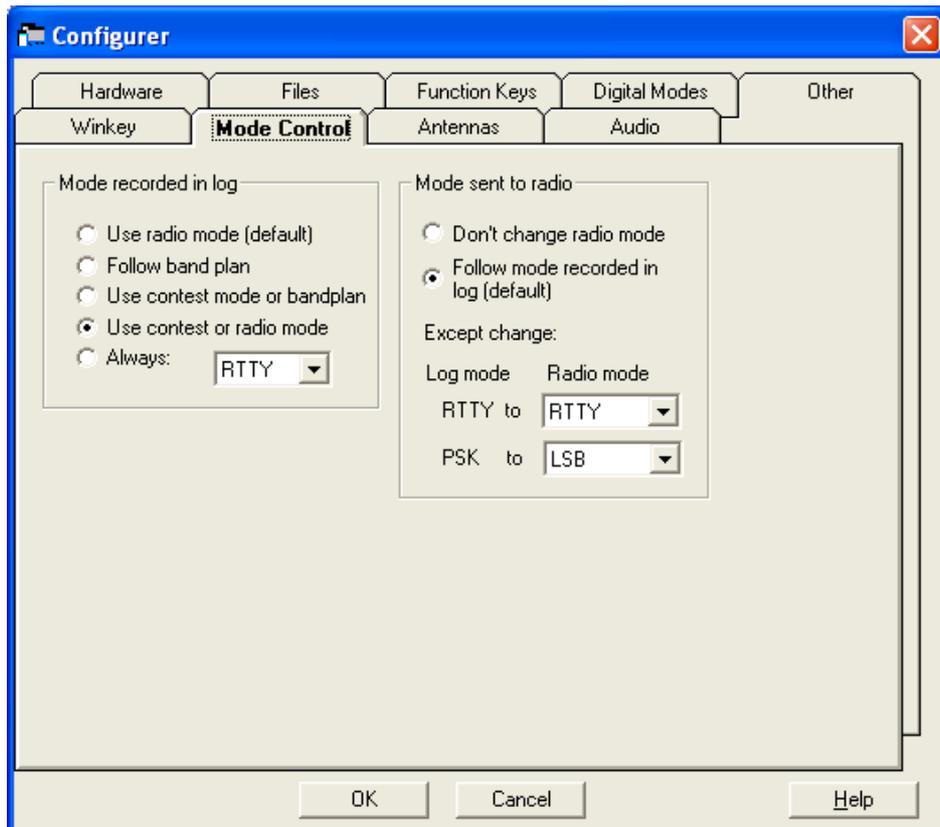
## 11.6.2 How to setup Winkey in N1MM logger

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 value sufficient to make Winkey hold in between characters of hand-sent CW. That's it.



**NOTE.** Winkey needs a dedicated serial port. This can be a 'real' hardware serial port, or a 'virtual port' over USB created by a product that embeds the winkey chip.

## 11.7 Mode Control tab

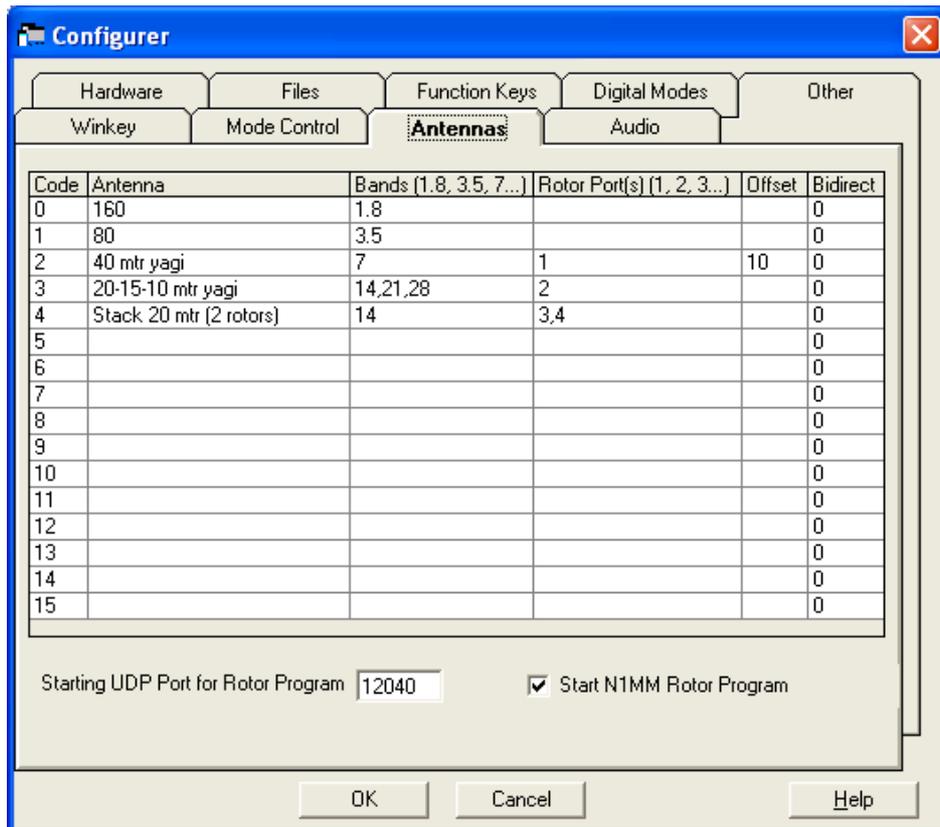


The mode control tab determines **how the mode will be controlled on the connected radio**, whether the program sets the mode when changing frequency or not, and what mode it changes it to. This dialog also gives you control over **how contacts will be logged**. The bandplan currently supports CW and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

### 11.7.1 Field descriptions

- **Mode recorded in log** – Set how to determine the mode which should be entered in the log.
  - ◆ **Use radio mode** – use the mode received from the radio
  - ◆ **Follow band plan (default)** – 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.
  - ◆ **Always:** – always use the mode selected here (CW, SSB, RTTY, PSK31, PSK63).
- **Mode sent to radio** – Select how to determine the mode sent to the radio
  - ◆ **Don't change radio mode** – do not sent info to the radio regarding mode
  - ◆ **Follow mode recorded in log (default)** – use the setting as selected above (Setting: Mode recorded in log)
  - ◆ **Except change**
    - ◇ **Log mode RTTY to Radio mode** – select the radio mode when the log mode is set for RTTY. Choices are: RTTY, USB, LSB.
    - ◇ **Log mode PSK to Radio mode** – select the radio mode when the log mode is set for PSK. Choices are: LSB, USB, RTTY.

## 11.8 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](#).

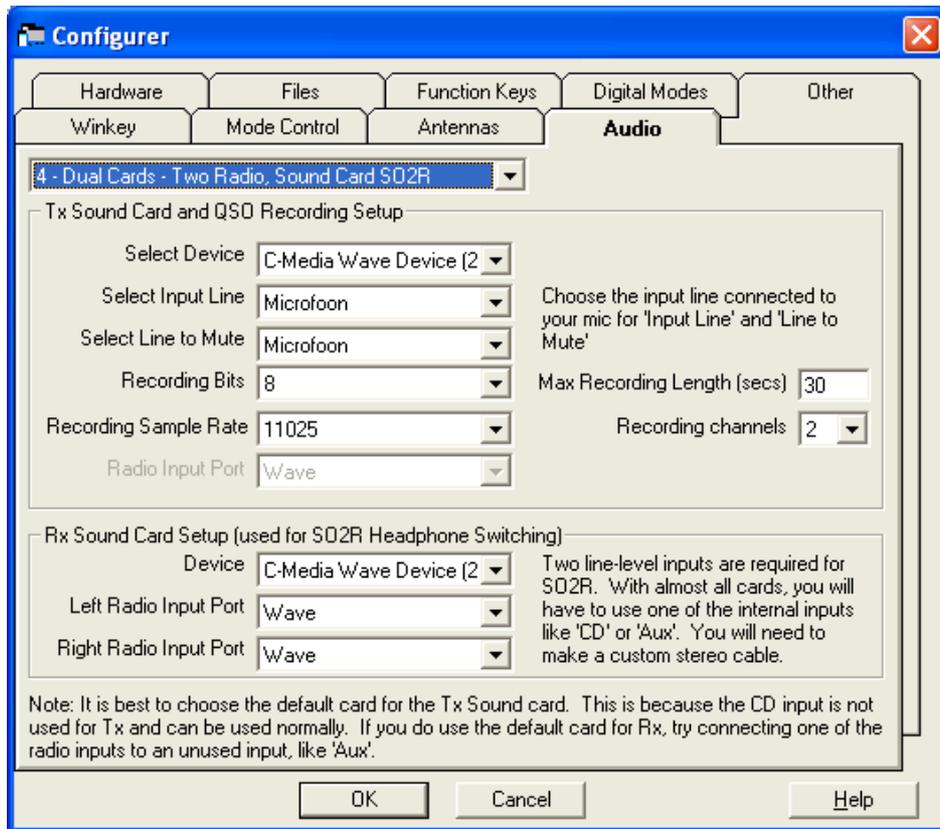
When you press Alt+F9, you will toggle through all the antennas FOR THAT BAND. If there is only one, then no toggling will occur. When you change bands, the antenna switch will be changed to the antenna with the lowest code for that band. The selected antenna will show in the status pane. Commas are 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 setup to the ports used in N1MM rotor
  - ◆ More then 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). Like Stepplr antennes.
- 
- **Start UDP port for Rotor Program** – Set the UDP which is used in cominication between the Rotorprogram and N1MM logger. Defaults to UDP port 12040 and has to be setup 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.



Note. 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.

## 11.9 Audio Setup



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.



**Note.** 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 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.
- ◆

# 12 Start a New Contest Log / Open an Existing Contest Log

## 12.1 General

You need to understand a little about how the N1MM Logger stores contacts. The logger stores contacts in an Access 2000 database. Multiple contests can be stored in the same database. Within the database, contest information is stored in two tables. One table is for the contacts, and one is for the contest information shown in the Contest Specifics section of the dialog. In this second table the start date for the contest is stored. This start date does not affect what contacts are associated with that contest. If you log a contact while a particular contest is chosen, that contact is associated with that contest, no matter what the date of the contact or the contest. The contest date is only used to help you identify a particular contest.

The supported contest can be found in the chapter "[Supported Contests](#)".

A general log is the contest: DX. To do both CW and SSB in this 'contest' choose Mixed mode. Selecting SSB or CW will only allow the selected mode.

- **Ok** – Leave this dialog saving the contents.
- **Help** – Show the help file for this window.
- **Cancel** – Leave this dialog without saving the contents.



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

## 12.2 Start a new contest log

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

- In the top part of the dialog a new contest can be selected by clicking on the Log Type handle.
- Fill in the details for your specific situation in the two tabs 'Contest' and 'Associated Files'. More information in the paragraph below.
- The contest selection defaults to the correct mode based on the contest.
- **Log Type:** Make the choice for the appropriate contest.
- **Start date:** The date the contest is created in this database.
  - ◆ It is possible to have the same contest several times within the same database. The date tells which contest to use.

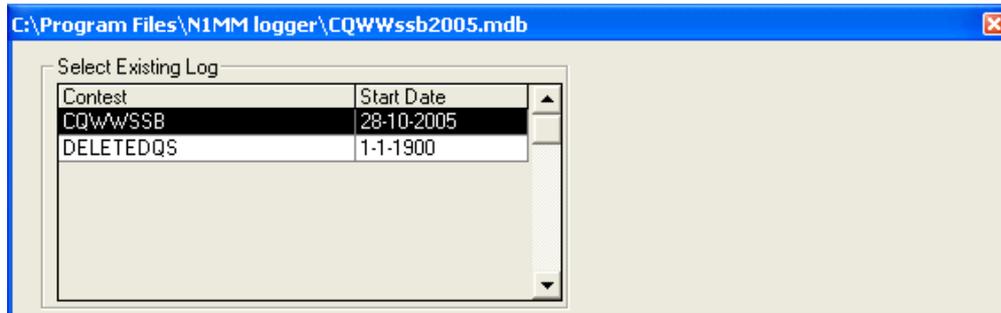


Which contests are supported can be found in the chapter '[Supported Contests](#)'. Check the website for the latest rules and check the contest setup information in chapter '[Contest Setup Instructions](#)'.

## 12.3 Open an Existing Contest Log

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

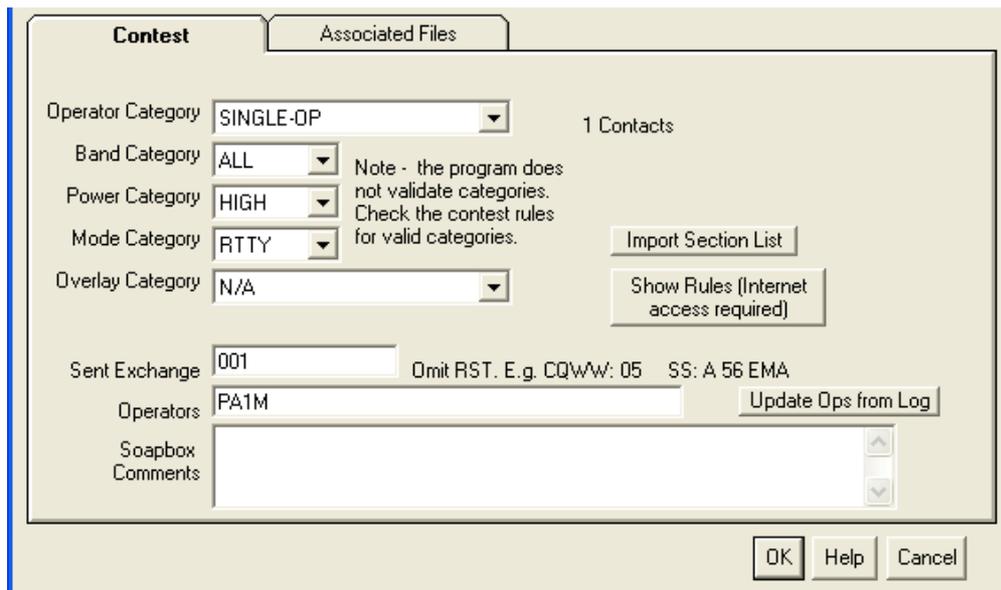
- In the top part of the dialog the currently available contest logs can be selected by clicking on it.
- Contest specific changes can be made in the tabs 'Contest' and 'Associated Files'. More information in the paragraph below.



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

Example: The CQWWSSB in the picture above is selected and can be deleted by pressing the Delete key.

## 12.4 Contest Specific Information



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

### 12.4.1 Tab: Contest

- **Operator Category:** Make a choice for your situation.

Choices are:

- ◆ SINGLE-OP
- ◆ SINGLE-OP-ASSISTED
- ◆ MULTI-ONE
- ◆ 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

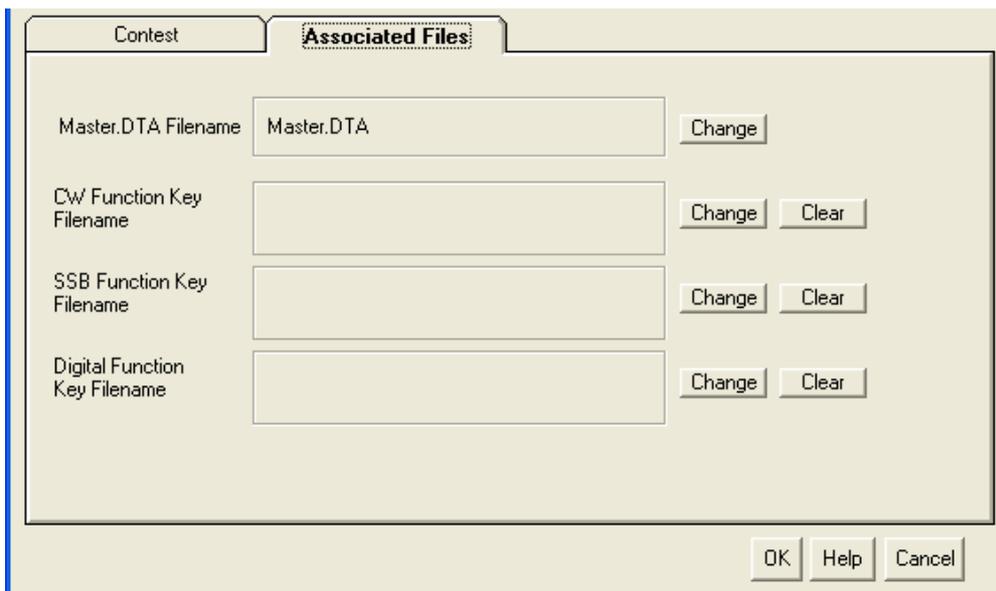
- ◆ ROVER
- ◆ MULTI-UNLIMITED
- ◆ MULTI-LIMITED
- **Band Category:** Make a choice for your situation.  
Choices are:
  - ◆ ALL
  - ◆ 160M
  - ◆ 80M
  - ◆ 40M
  - ◆ 20M
  - ◆ 15M
  - ◆ 10M
  - ◆ LIMITED
  - ◆ CHECKLOG
- **Power Category:** Make a choice for your situation.  
Choices are:
  - ◆ HIGH
  - ◆ LOW
  - ◆ QRP
  - ◆ MEDIUM
- **Mode Category:** Make a choice for your situation.  
Choices are:
  - ◆ CW
  - ◆ SSB
  - ◆ RTTY
  - ◆ PSK
  - ◆ MIXED
- **Overlay Category:** Make a choice for your situation.  
Choices are:
  - ◆ N/A (default)
  - ◆ ROOKIE
  - ◆ BAND-LIMITED
  - ◆ TB-WIRES (tri-bander and wires)
  - ◆ OVER-50
  - ◆ HQ
  - ◆ NOVICE-TECH

The category overlay of the log submission when appropriate. 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
  - ◆ **Enter the exchange without the RS(T) !!**
  - ◆ The result will be extra RST lines in the output files (Cabrillo, generic file output) !
  - ◆ The program will give a warning when a RST (alike information) will be entered.
  - ◆     ◆ Warning: "Don't put signal report in the sent exchange. It will cause incorrect cabrillo output."
- **Operators:** Enter here all the callsigns from the operators. 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 in the operators field.
- **Soapbox comments:** Give 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: Edit Section List: Edit the contest section file for the selected contest.
    - ◇ A dialog will be shown where an abbreviation and a key can be entered.
  - ◆ 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
    - ◇ Updating this file can be done with a Text editor like 'Notepad' when when rules have changed and sections need updating.
- Button: **Show Rules (Internet access required)**: Goes to the website from the contest sponsor on the Internet where the rules can be found. Some contest sponsors think it is easy to change the page within the website or even the whole website every year. Please contact us to update this entry when this happens...

## 12.4.2 Tab: Associated Files



- **Master.DTA Filename**: Shows the selected master.dta file for this specific contest-specific (not contest instance-specific).
  - ◆ E.g all qso parties will use the same master.dta filename.
  - ◆ Defaults to master.dta.
    - ◇ The **Change** button gives the possibility to select a different master.dta file for this contest type.

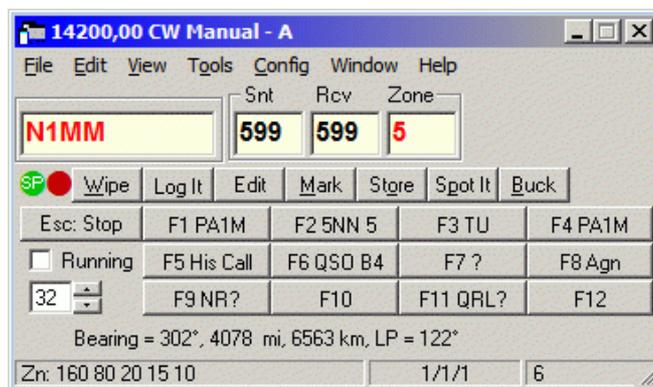


**Note:** Be sure to always load the most recent (and right) CTY.DAT file before entering a contest. Download the most recent country file from the Internet using '*Download latest country file (wl\_cty.dat) (Internet)*' in the **Tools** menu AND import it into the current database using '*Import country list from downloaded file*'.

- **SSB Function Key Filename** – Select the SSB function keys to import with this contest. A path is allowed when selecting the file.
  - ♦ The **Change** button gives the possibility to select a filename for this contestlog.
  - ♦ The Clear button clears the selected filename.
  
- **CW Function Keys** – Select the CW function keys to import with this contest. A path is allowed when selecting the file.
  - ♦ The **Change** button gives the possibility to select a filename for this contestlog.
  - ♦ The Clear button clears the selected filename.
  
- **Digital Function Keys** – Select the Digital Interface function keys to import with this contest (not the extra keys from the Digital Interface). A path is allowed when selecting the file.
  - ♦ The **Change** button gives the possibility to select a filename for this contestlog.
  - ♦ The Clear button clears the selected filename.

# 13 Entry Window

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 normally.
- The **spacebar** will jump from field to field filling in defaults. Defaults like the callsign from the frame, the reports, and information from previous contacts with this station are shown in the log window.



**The spacebar is the preferred Tab character.**

- Button Assignments
- Other Info (Running Check Box)
- Status Bar Information
- Callsign Colors
- Other Features
- Function Keys
- Other Keys (Insert & Ctrl+Enter)

**Menu system:** File Edit View Tools Config Window Help

## 13.1 Button Assignments

- **Wipe Alt+W** – Wipe Out Entry Fields. Clear information about the current contact (equal to Ctrl+W).
- **Log It Enter** – Write this contact to the database. Disabled when in reedit mode.
- **Edit** – Edit additional contact information.
- **Mark Alt+M** – Mark this frequency in the Bandmap as being in use. I.e. you don't want to take time to enter the call of the station using this frequency.
- **Store Alt+O** – Stores the contact in the Bandmap where it will be shown in bold because it is self spotted.. The call will also be placed on the callsign frame.
- **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+Functionkey. 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 the associated CW or .wav file. 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...

## 13.2 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** – will highlight as you press the keys. When you type the first character, it will delete the highlighted character.



Check out the chapter [Key Assignments](#) for all available key assignments by the program.

## 13.3 Other Info

**Running Alt+U** – Mark this contact as being part of a run (versus S&P).

- "Running" is *automatically marked*:
- 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 Shift+F1(= CQ-button) when in Search and Pounce mode (this can be changed on the Function Keys tab from the Configurer dialog.
- when clicking on the green dot when it shows SP (Search & Pounce)

## 13.4 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

## 13.5 Callsign Colors

There are two places where a callsign can be shown in the Entry Window, in the Callsign field and on the callsign-frame.

<b>Red</b>	<b>Single Multiplier</b> Example: CQWW – qso is either zone or country multiplier (one multipliers)
Green	<b>Double or better Multiplier</b> Example: CQWW – qso is a zone and a country multiplier (two multipliers)
<b>Blue</b>	<b>New contact</b>

<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.
-------------	--

## 13.6 The red and green dots (LEDs)

On the Entry Window a green and/or a red dot (LED) might 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.

### 13.6.1 Dot/LED colors used:

**Green dot/LED** – This VFO/Radio has receive (RX) and keyboard focus. RX and keyboard focus are always together.

- Inside the green dot the Ru/SP (Run/S&P) designators are shown. **Ru** means the station is in running mode, and **SP** means the station 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

**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
- To move both Transmit and Receive focus pressing Ctrl+Left–Arrow / Ctrl+Right–Arrow will move both foci to the left and right radios
- When transmitting the TX focus can not be changed
- When the VFO had TX focus, the LED is dark red. When that VFO 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

## 13.7 The Entry Windows

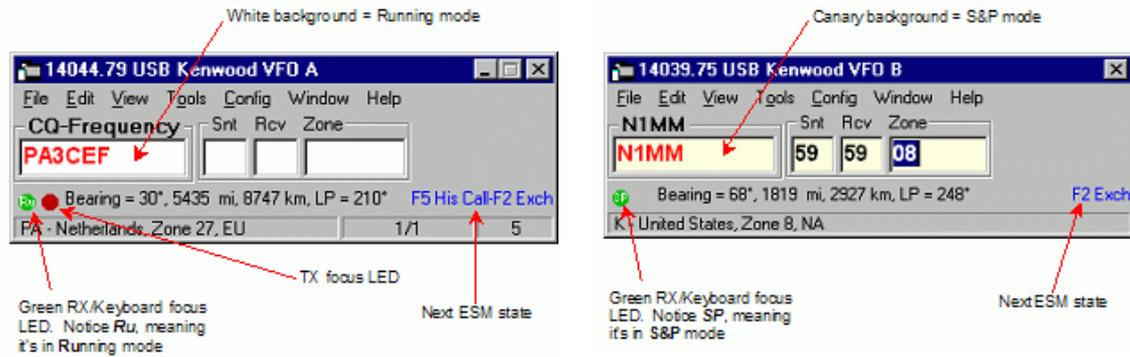
The program has two Entry windows. **When using both bandmaps/both VFOs, both Entry windows are needed to make QSOs on both VFOs!**

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 below Entry Window examples 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](#).



**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!**

## 13.8 Other Features

- When a callsign is entered info about the country (bearing, distance etc.) is shown just above the status bar. When calculating the bearing the section or state from the callhistory is being (when turned on) used otherwise the coordinates of the state that is the closest to the middle of the callarea 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.
- 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 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, 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 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.
- **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 give CQ once or repeat. The on/off on the status bar determines if 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.
- **Shift+Ctrl+Fx** – Record SSB message for the assigned function key. Pressing Shift+Ctrl+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 like 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 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:**

<b>CQ Zone</b>	only allow numbers, tab, space, backspace
<b>Section</b>	only allow letters/numbers
<b>Exchange</b>	only allow letters/numbers
<b>Grid</b>	only allow letters/numbers
<b>Power</b>	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.

## 13.9 Function Keys

### 13.9.1 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 remapped , this can be done in 'Config |Configure Ports, Telnet Address, Others | Tab: Function Keys'.

The function keys can be stacked. This means you can press several function keys behind each other which will all be send in the selected order. The text from each key will be fully sent (CW & SSB).

When hovering with the mouse over a function key button the text to sent is shown.

### 13.9.2 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.

Note that if you are in Search and Pounce mode, to call CQ, you will need to press Shift+F1 or first change to Running mode by pressing Ctrl+U (or clicking the Running indicator). That will automatically place you in Running mode, the Run indicator will be set, and you can press F1 from that point on.

<i>Default Function keys</i>					
<b>F1</b>	<b>CQ key</b>	<b>F5</b>	<b>His Call Key</b>	<b>F9</b>	
<b>F2</b>	<b>Exchange key</b>	<b>F6</b>	<b>QSO B4 Key</b>	<b>F10</b>	
<b>F3</b>	<b>End of QSO Key</b>	<b>F7</b>		<b>F11</b>	
<b>F4</b>	<b>My Call Key</b>	<b>F8</b>	<b>Again Key</b>	<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 wav 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 1:** 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).



**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.



**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.

## 13.10 Other Keys

Key	Send function key(s)	Action(s)
<b>Insert</b> (middle)	<b>His Call Key &amp; Exchange Key</b>	Send His Call followed by the Exchange.
; (same as Insert key)	<b>His Call Key &amp; Exchange Key</b>	Send His Call followed by the Exchange.
<b>Alt+Enter</b>		Log the contact.
,	<b>End of QSO Key &amp; Log contact</b>	Will send the <i>End of QSO</i> message and logs the contact.
<b>Alt+Ctrl+Enter</b>		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.

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 (QUERTZ, QUERTY, 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.

## 13.11 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 in the chapter '[Select Log Type Dialog](#)'.
- Open log in database – Open an existing log within the current database. More info in the chapter '[Select Log Type Dialog](#)'.
- **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 done partly automatic by using the export and import functions for packet/telnet buttons and function keys.

- **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'.

#### • 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 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 (Cal lAreas). When a state or province does not show up correct in logger this menu item is a good try to resolve the problem. Do a rescore after this menu-item when already qsos have been logged.
- ◆ **Import Packet/Telnet Buttons from file...** – Import the contents of the Packet/Telnet buttons file (\*.mc). This way for every kind of packet cluster or different locations a separate set of Packet/Telnet Buttons could be created.
- ◆ **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 portnumber may be added using a : after the telnet cluster address where needed. Example: GB7UJS,gb7ujs.shacknet.nu:7373 or K1TTT.NET,K1TTT.NET
- ◆ **Import Function Keys to file** – Import the contents of a saved function keys file (\*.mc). This file can be edited with a text editor like Notepad before importing.
  - ◆ **SSB Function Keys...** – import the SSB function keys.
  - ◆ **CW Function Keys...** – import the 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



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.



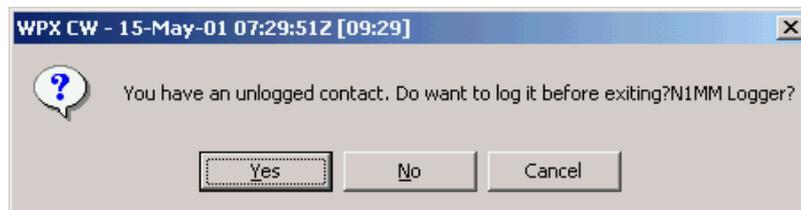
- ◆ **Export ADIF to file by date from ALL contests...** – Create an ADIF file from all QSOs in all contests when the current contest is DX. Otherwise, it exports only from the contest you are logging in. The first time the default date from which QSOs will be exported is 1900-01-01 (yyyy-mm-dd). The 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 Cabrillo to file...** – Create a Cabrillo file for contest log submission, when created it can be edited using Windows default 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. For Multi-op stations select the correct Operator Category in the contest setup window (like Multi-Two, to generate the correct numbers for each station). In multi-single Cabrillo, the station number field matches with the Mult and Run station. It is a good idea to rescore the contest before submitting and check if all texts in the header of the Cabrillo file are correct before submitting the log.
- ◆ **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 table. This table can only be filled by using Import Call History.
- ◆ **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...'. This way for every packet cluster or different locations a separate set of Packet/Telnet Buttons could be created. 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. The length of the macro to export can not be longer than 70 characters long and the caption can not be longer than 9 characters wide.
  - ◊ **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.



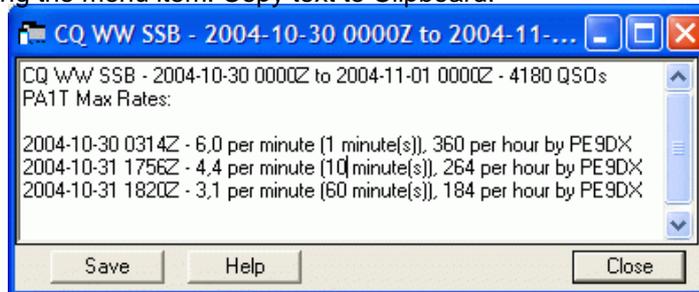
## 13.12 Edit Menu Selections

- **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.

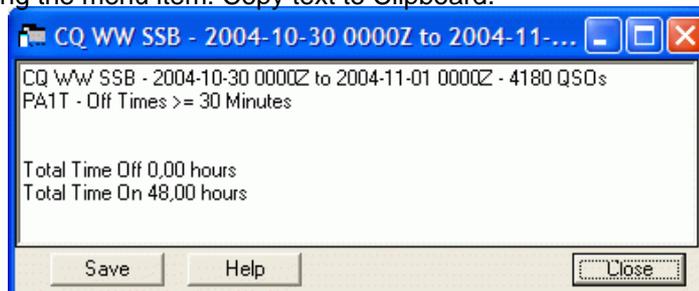
- **Quick Edit Previous Contacts (Forward) Ctrl+A** – Quickly edit the QSOs worked before in the log. Ctrl+Q moves back one QSO, Ctrl+A moves forward one QSO. If the text boxes in the Entry window are colored blue, you are in Quick Edit mode. To exit, press enter to save changes or Escape to abandon 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.

## 13.13 View Menu Selections

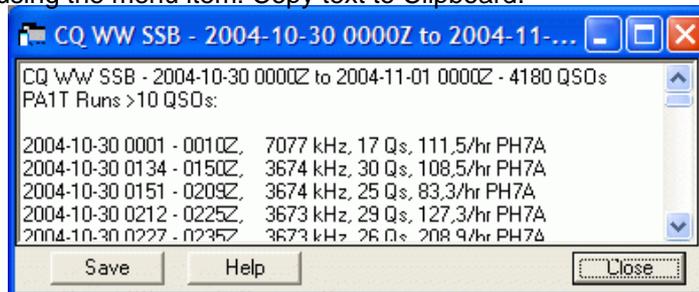
- **Max Rates** – View 1 minute, 10 minutes and 60 minutes highest rates for the contest. The content shown can be saved as a text file by clicking on the Save button or by right clicking to the clipboard using the menu item: Copy text to Clipboard.



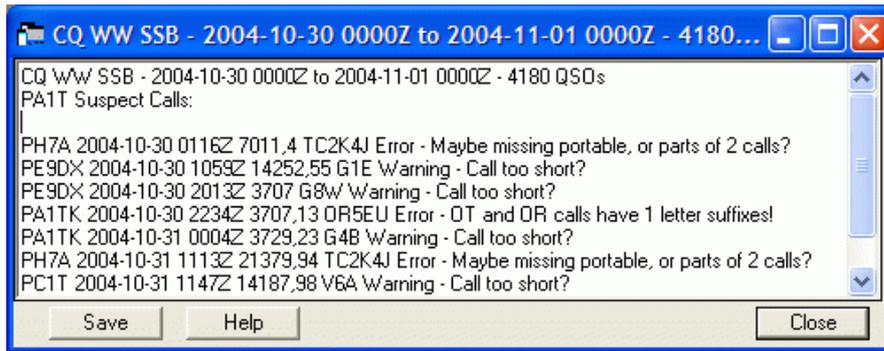
- **Off Times** – Show off times. Shown is the start and end of the period and the minutes off time, if the operator is known it will be shown. Also the total off time is given in minutes and days/hours/minutes. If a contest does not have an off period, I set it at 30 minutes. The content shown can be 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.



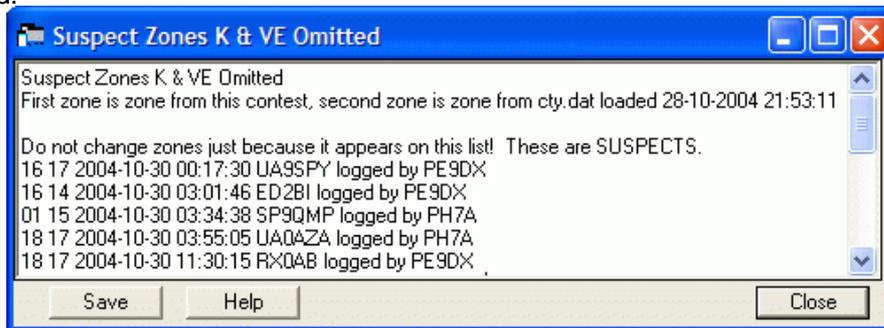
- **Runs** – Shows all runs. These are the periods between band changes and includes off times. The content shown can be saved as a text file by clicking the Save button or by right clicking to the clipboard using the menu item: Copy text to Clipboard.



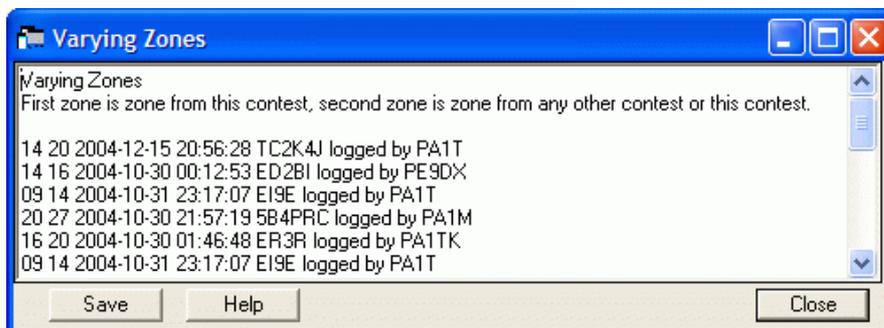
- **Suspect Calls** – Show suspect calls using the [K1TTT's call checking function](#). A window will open with the results. The content shown can be saved as a text file by clicking the Save button or by right clicking to the clipboard using the menu item: Copy text to Clipboard.



- **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.
- **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
- **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.

## 13.14 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.  
***Always load the most recent (and right) 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 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 123Â°
  - ◆ Alt-L will turn the beam using long path.
- **Stop Rotor Alt+Ctrl+J** – Stop turning the rotator.
- **Packet Window Tools** – It opens the menu for the Packet Window, from the Entry window. So you don't need to look at the packet window while operating. This lets you change things without un-minimizing it.
- **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 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.



More info about rotator control can be found in the chapter '[Supported Hardware](#)' under 'Rotator control'

## 13.15 Config Menu Selections

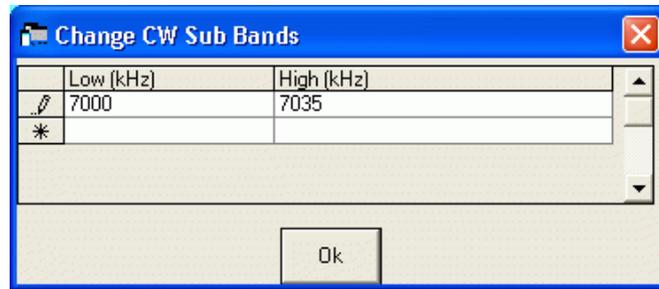
- **Configure Ports, Telnet Address, Others** – Also called 'Configurer'. This a very important dialog which can change the programs behavior. This menu opens the configuration dialog to modify setup options.
- **Change Your Station Data** – Modify overall Station information – name, call, address, state, latitude, longitude, etc. The callsign entered here is very important for most contests (to determine in which country YOU are).
- **Change Sub Bands** – 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.

**Ctrl-D** – delete a row in the table or use right click menu.

- ◆ **CW Sub Bands** – See example below. 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.
- ◆ **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



- **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.
- **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'.
- **Enter Sends Messages (ESM mode) Ctrl+M** – the so called 'Enter mode'. Messages can be sent by pressing the Enter key. You must correctly match the function keys to the messages set up in the function key buttons. Entire normal contacts (QSOs, Running and S&P) can be handled with the Enter key.
- **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.
- **Spot all S&P QSOs** – Spot the contact when you log it. Watch not to flood the packet network. This feature is turned off EVERY time you exit the program. This is to prevent accidental spotting test QSOs or casual rag chew QSOs.
  - ◆ A contact is automatically spotted when:
  - ◆ "Spot all S&P QSOs" is checked **and**
  - ◆ if your running check box is **not** checked **and**
  - ◆ the spot is not already on your bandmap
- **QSYing wipes the call & spots QSO in bandmap** – The ability to spot all S&P calls locally to the bandmaps. The call is shown **bold** in the bandmap and shown on the callsign frame. The setting of this feature remains as it was across program restarts. An example is given in the Basic functions chapter.
 

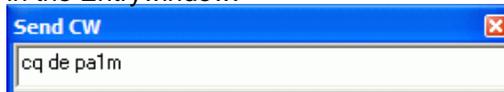
Example: Tune to 21200, Enter VU2PTT, Tune off, VU2PTT is "spotted" at 21200. Repeat as long as desired. Go back and work all of them using Ctrl+Up and Ctrl+Dn to navigate.
- **Do not run on CQ-frequency** – When selected and QSY-ing back to an old Run frequency, the mode stays in S&P. F1 and Alt+Q continue to switch to Run mode. This is most useful in Sprint-like contests.
- **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.
- **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. When having a radio with VFO A/B it's there to let you use the main frequency control as an RIT. With a Main/Sub radios like the Icom 756/7800 series you can not RX on SUB without receiving on both VFO s. In this

- case put RX on Main and TX on SUB for Alt-S to work.
- **Dual Rx always on** – Yaesu FT-1000 series and Icom IC-756 series, IC-781 ,IC-775 and IC-7800 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.
    - ◆ Not selected – The sub receiver will switched off (RX led off)
  - **CQ Repeat Alt+R** – Toggle to let the CQ button give CQ once or repeat. The on/off on the status bar determines if 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. The function is automatically turned off when no longer on the CQ-frequency and the mode changed to S&P mode.
  - **Set CQ repeat time Ctrl+R** – Specify the repeat interval (CW or SoundBlaster) in seconds or milliseconds (Auto-CQ). The default value is 1.8 seconds.
  - **Call History Lookup** – Toggle to let the contest use the Call History table. In this table station information like Name, GridSquare, Section, State, Age etc. can be stored and retrieved during the contest. This setting will cost some performance because the program has to lookup information when leaving the callsign field from this table in the database. This table has to be filled with 'Import Call History' and the contest has to be suited for it before it can be used!
  - **Record QSOs** – Record current contacts when in CW or SSB and is 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'.
  - **Change Packet/CW/SSB/Digital Message Buttons Alt+K** – Change the contents of the Packet/CW/SSB/Digital message buttons. The maximum length of text from the Packet, CW, SSB and RTTY buttons is 255 characters. Alt+K will access the CW/SSB/RTTY exchange buttons depending on the mode you are in. Use **Ctrl-D** to delete a row in the table or use the right click menu.
    - ◆ **Change CW Buttons** – Change the contents of the CW buttons. Note that the use of '&' in the Button Caption will cause the following lettered key to become a "Alt+Hotkey". It can happen that the "Alt+Hotkey" combination already exists!. The first one found by the program, probably in the Menu will be used. Another instance won't be used! Also the packet substitutions can be used. Examples: {F1} {F2} {GRID} See the possibilities in the Macros chapter
    - ◆ **Change SSB Buttons** – Change the contents of the SSB buttons. Please use the file chooser buttons to the right of each row. Note that the use of '&' in the Button Caption will cause the following lettered key to become a " Alt+Hotkey." It can happen that the "Alt+Hotkey" combination already exists!. The first one found by the program, probably in the Menu will be used. Another instance won't be used! There are some special characters which may be used, see the Macros chapter for the possibilities.
    - ◆ **Change Digital Buttons** – Change the contents of the Digital buttons. Note that the use of '&' in the Button Caption will cause the following lettered key to become a "Alt+Hotkey." It can happen that the "Alt+Hotkey" combination already exists!. the first one found by the program, probably in the Menu will be used. Another instance won't be used! Also the packet substitutions can be used. Examples: {F1} {F2} {GRID} There are some special characters which may be used, see the Macros chapter for the possibilities.
  - **Multi-User Mode** – Start the networking mode of N1MM logger (Multiple computers connected to each other).
  - **Multi-User Tools** – Menu with Multi User stations tools.
    - ◆ For more detailed info see Multi-user chapter.
  - **Edit Station Computer Names** – Associate the computer numbers (starting with 0 for the master station) with its IP-addresses for ue 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.
  - **Change Exchange Abbreviations** – Change the exchange abbreviations
    - ◆ **Change ARRL Section Abbreviations** – Change the list of valid ARRL Sections

- ◆ **Change QSO Party Abbreviations** – Change the list of QSO party Abbreviations. Can only be selected when a QSO party is the selected contest.
- **SO2R – More info about SO2R can be found in the [chapter SO2R](#)**
  - ◆ **Dueling CQ's Ctrl+B** – SO2R feature that toggles CQ's from radio to radio until someone answers. Dueling between SSB and CW CQ's is supported too.
    - ◇ Changing either radio in frequency more than 200 Hz will terminate Dueling CQ.
  - ◆ **Set Dueling CQ Repeat Time** – Adjustable delay before the opposite radio starts to CQ when using duelling CQ.
  - ◆ **Advanced SO2R Ctrl+Shift+I** – toggle 'Advanced SO2R'. With Advanced SO2R on, focus will be set to sending radio's entry window when a message completes.
  - ◆ **Advanced SO2R Delay Time Ctrl+Shift+N** – Adjustable delay for Advanced SO2R.
  - ◆ **Focus on Other Radio Ctrl+Shift+K** – FocusOther, Another method of focus control.
  - ◆ **Toggle CTRLFx Macro Ctrl+Shift+L** – This macro allows the user to send on the other radio (CW only).
  - ◆ **TX Lockout** – Select a lockout item. Also MIXED mode category is supported i.e. blocks second TRX on the same band and mode. This doesn't prevent RX overload.
    - ◇ **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** –
- **WAE** – Special commands for the WAE DC contest only
  - ◆ **Toggle WAE QTC mode Ctrl+Z** – Toggle the WAE QTC mode between QSO and RQTC. See the WAE contest setup in the chapter '[Setup Contests](#)' for WAE specific use and operating of the program.
  - ◆ **WAE Received QTC Confirmation** – Enter the WAE confirmation string or .WAV file

## 13.16 Window Menu Selections

- **Available Mult's and Q's** – Display the Available Mult's and Q's window. More info in the chapter [Available Mult's and Q's Window](#).
- **Bandmap Ctrl+B** – Display the Bandmap window. More info in the chapter [Bandmap Window](#).
- **Check** – Display the Check window. More info in the chapter [Check Partial Window](#).
- **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 Entrywindow.



- **Digital Interface** – Displays the Digital (RTTY/MMTTY/PSK) interface window. More info in the Digital 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 chapter [Gray Line](#).
- **Info** – Display the Info window. More info in the chapter [Info Window](#).
- **Log Ctrl+L** – Display the Log window (toggles between open and minimized). More info in the chapter [Log Window](#).
- **Multipliers by Band** – Display the multipliers by band window. More info in the chapter [Multipliers by Band Dialog](#).
- **Packet** – Display the Packet/Telnet window. More info in the chapter [Packet Window](#).
- **Score Reporting** – Start the realtime score reporting application. More info in the chapter [Score Reporting](#).
- **Score Summary** – Display the score summary window. More info in the chapter [Score Summary Dialog](#).

- **Visual Dupesheet** – Display the Visual Dupesheet window. More info in the chapter [Visual Dupesheet](#)

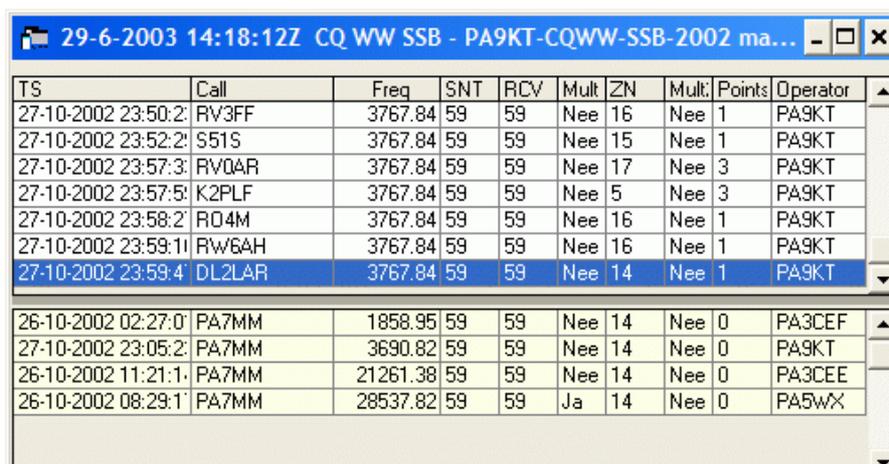
Ctrl+Tab toggles between the Entry window and Packet windows. If other windows are added that have text boxes, then they will be accessed in a round-robin basis via Ctrl+Tab

## 13.17 Help 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 the tower from Tom (N1MM) with a Cushcraft X9 at the top!

# 14 Log Window

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

TS	Call	Freq	SNT	RCV	Mult	ZN	Mult	Points	Operator
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	PA5WX

- 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.

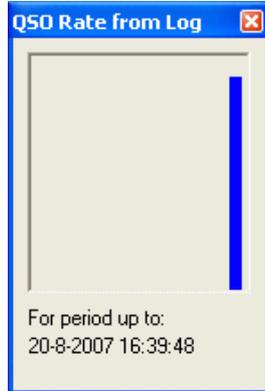
## 14.1 Keyboard Assignments

- **Enter** – Edit the contact which is selected.
- **Delete (Ctrl+D)** – Delete the contact which is selected.

## 14.2 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

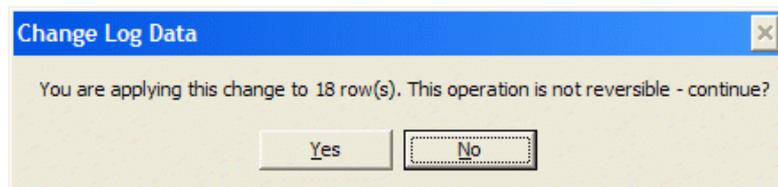
- discards the changes bringing you back in normal logging mode.
- ◇ **Edit Contact** – Edit the contact.
- ◇ **Delete Contact (Ctrl+D)** – Remove the contact from the log.
- ◇ **Play Contact** – This selection will be gray, if there is no .WAV recording file for this contact. If it is not gray, the 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.



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.

# 15 Bandmap Window

Your Bandmap window will be similar to this one.



The Bandmap Window represents a VFO or a radio. There are two scenarios, one radio with 2 VFOs displayed, or two radios with one VFO shown for each radio. The bandmap is made zoomable to the complete band size.

## 15.1 One radio scenario

With one radio, 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 will have a blue top.

## 15.2 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.

## 15.3 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.

## 15.4 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.

## 15.5 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 NOT has KEYBOARD focus.
- **Shift – Numeric keypad – key** – Zoom out to show more spots from the bandmap which NOT has KEYBOARD focus.

## 15.6 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** – Click this label to toggle from **USB/LSB** (band sensitive) via **RTTY** to **CW** (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.

## 15.7 Mouse Assignments

### 15.7.1 Left-Click menu

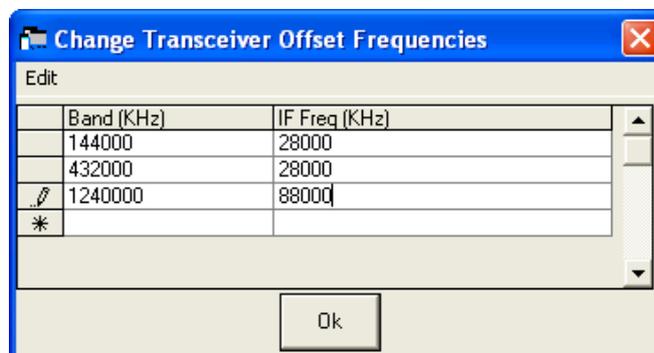
- **Click on frequency** – Jump with the active VFO/radio to that frequency.
- **Shift+Click on frequency (SO2R only)** – Jump to that frequency on the non active radio. This allows you to be active and sending on one radio and change the frequency on the other radio without making it active.
- **Shift+Click on bandmap callsign (SO2R only)** – Send the frequency to the other radio and place the callsign on the other 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.

## 15.7.2 Right-Click menu

If you right click in the Bandmap Window the following menu items will appear. Not all menu items are always shown.

- **Zoom In** – Show less spots on the bandmap which has keyboard focus.
- **Zoom Out** – Show more spots on the bandmap which has keyboard 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.
- **Packet Spot Timeout** – Indicates how long (in minutes) spots are kept in the bandmaps. The default is 60 minutes, any integer may be specified.
- **Remove Spot** – Remove this spot from the bandmap. A spot on the same frequency will be put in callframe.
- **Remove Packet Spots, Leave Self Spots** – Remove all packet spots coming in via packet but leave all self spots in the bandmap.
- **Remove All Spots** – Remove all spots from this bandmap.
- **Turn Rotor** – Turn rotator to bearing for callsign in Entry window.
- **Show Last 10 Spots** – Show the last 10 spots for this call in the packet or telnet window.
- **Show/Buck Packet** – Show the Buckmaster information for this call in the packet or telnet window. Uses SH/QRZ if format for DXSpider is chosen in configurer.
- **Show Station** – Show the station information for this call in the packet or telnet window.
- **Show QSL/Packet** – Show the QSL information for this call in the packet or telnet window.
- **Show Sunrise/Sunset** – Show the Sunrise/Sunset information for this call in the packet or telnet window based on the imported country file. (This information is also available in the Info Window).
- **Show Buck/Internet** – Show the information that 'www.QRZ.com' has for this call using Internet Explorer.
- **Show Buck Local** – Show the Buckmaster database information for this call. This requires installation of Buckmaster database software and database, also see the Files section from Configurer.
- **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.
- **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.
  - ◆ CW Wide
  - ◆ CW Narrow
  - ◆ SSB Wide
  - ◆ SSB Narrow
  - ◆ Digi Wide
  - ◆ 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.



- **Help** – Show the help file for this window.



**When a command is sent to the packet window, it is sent to whichever connection is active.**



**When the connected cluster is a DXSpider cluster, select on Tab: Other in the Configurer 'Format for DX Spider cluster'.**

### 15.7.3 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

### 15.7.4 Hovering with the mouse over RX arrow

Hovering with the mouse over the RX arrow shows the frequency.

## 15.8 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.

## 15.9 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.

## 15.10 Red lines indicating US license frequencies

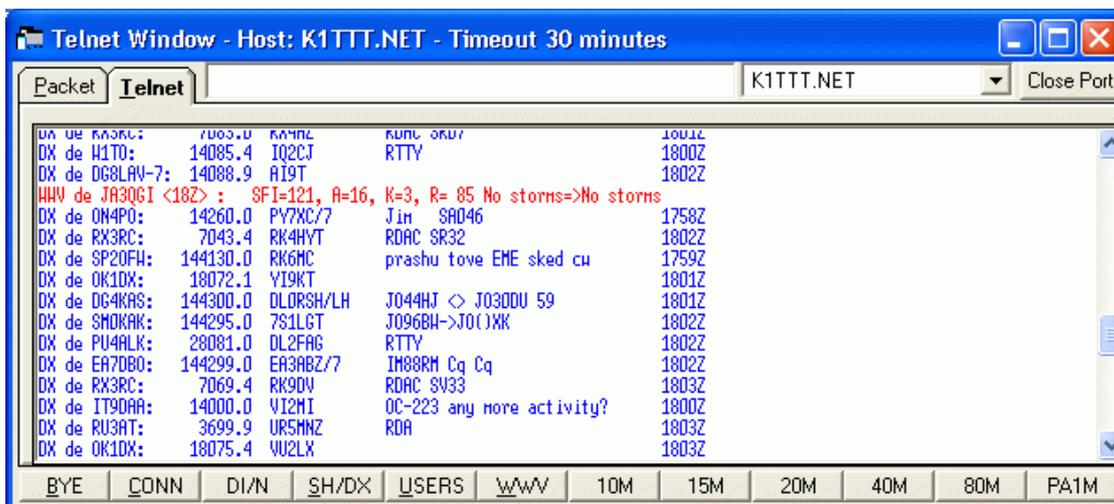
On the bandmap there are red lines to indicate extra, advanced and general portions of each band. Since US hams can operate only in their section and the sections of lower class licenses, it is in your interest to operate some in the higher portions of each band. Otherwise there are some US hams you 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.

# 16 Packet Window

Your Packet window will be similar to this one.



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 packet 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.

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.

## 16.1 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.

## 16.2 Initial Button Assignments

Below the default key assignment for the packet/telnet buttons. A maximum of 12 buttons are available for packet and telnet. Adding more lines in the Packet Button edit window will not lead to more buttons, 12 is a fixed value. The contents and texts shown on the buttons can be changed in anything you like.

Button text	Command	Description	Packet	Telnet
BYE	BYE	Log off cluster.	Ok	Ok
CONN	C PE1M-7	Connect to the (non telnet) packet cluster.	Connect	-

		Example: C PE1M-7 You have to set your cluster's call under 'Tools   Change Packet Buttons'.		
<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 packet cluster by sending your call to telnet cluster. Most telnet clusters expect your callsign as the first text to receive. The callsign used with the macro {MYCALL} is taken from the station information dialog.	-	<b>Connect</b>

- **Close Port** – Close the current Telnet connection.

## 16.3 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.

## 16.4 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.
- **Right mouse button** – Displays a menu:
  - ◆ **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 a cluster when the program starts. When running telnet, auto logon will press the right most button (F12, default this is your call). When running packet, auto logon will press the second F2 button: "C call". When running both, only the one that was in focus the last time before starting will be restarted.
- ◆ **Packet Spot Timeout** – Indicates how long (in minutes) spots are kept in the bandmaps. The default is 60 minutes, any integer may be specified.
- ◆ **Remove Packet Spots, Leave Self Spots** – Remove all packet spots coming in via packet 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.
- ◆ **Packet Filters**
  - ◇ **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 (currently)** – 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 HF** – When selected all spots on the HF bands (< 30 MHz) are passed to the bandmaps. See note below.
  - ◇ **Allow VHF** – When selected all spots on the VHF 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 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".
  - ◇ **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** – See example below. 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 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 packet cluster but tell the program whether to use the spots in the bandmaps, 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 window itself will not be filtered, you would have to do that at the packet/telnet node. Learn your [packetcluster's filtering commands](#). This is the best way to accomplish what you want.

## 16.5 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

## 16.6 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.

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.

## 16.7 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.

## 16.8 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 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 (it mostly is).
5. Now the cluster should be connected by the program.

## 16.9 How to setup and connect a cluster using a TNC

1. Click on the Packet tab in the Packet window.
2. Setup the connect string to your local packet cluster under the F2 (Conn) button.
3. Click on the F2 button (Conn).

4. Now the cluster should be connected by the program.
  - ◆ Setting up the connect string and the possible used of Nodes to the Cluster is mostly the problem.

## 16.10 Auto connecting a cluster

- Set up your packet or telnet to the cluster to connect as explained above
- Right click in the packet/telnet window (top) and select in the menu: Auto Logon
- 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 11 is pressed depending on whether you are packet or telnet.
- There is a "stay-alive" timer that sends a CR every 9 minutes.
- If the connection drops, that's it. You are off.

## 16.11 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.

## 16.12 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.

## 16.13 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.

## 16.14 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

## 16.15 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?

## 16.16 CW-skimmer

Cw-skimmer version 1.1 it has a built in telnet server which allows you to telnet to your local machine or network and the spots look like normal telnet spots.

Add an entry to your Telnet list with the address: 127.0.0.1:7300

# 17 Check Partial Window

## 17.1 Features

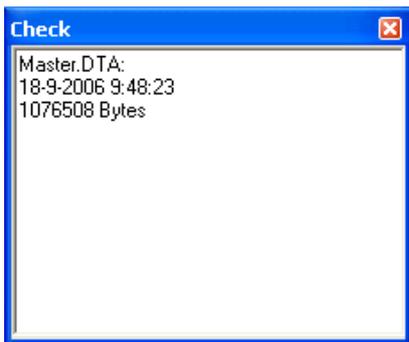
- Check partial displays all the callsigns from the MASTER.DTA file *and* worked calls from the current log, which matches the input in the callsign field of the Entry window.
- The Check Partial window is cleared when a character is typed in the callsign field in the Entry window, so clearing the callsign field won't clear the Check Partial window.
- All data is shown in upper case and is stripped from non standard ASCII characters.
- *This window only has entries when there is a valid MASTER.DTA file in the program file directory and selected under 'Associated |Files'.*

The title bar shows Mul: or Q: followed by the band.

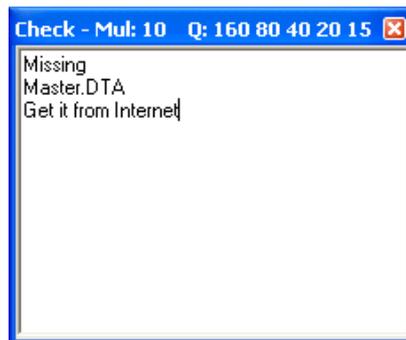
- **Mul:** – multiplier on this band
- **Q:** – qso on this band
- Example: Mul: 15 20 Q: 160 80 40 10 – multiplier on 15 and 20 meter and a qso on the other bands

The Check Partial window is divided into two areas, separated by a blank line. This blank line separates calls in the current log versus calls in the selected SCP database (master.dta)file.

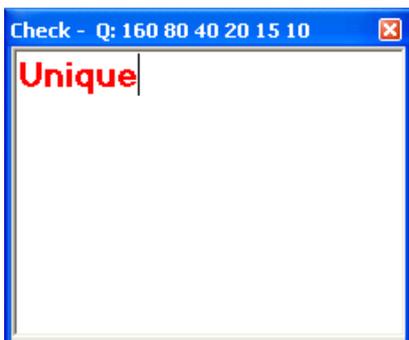
- Upper area: callsigns found in this contest log
- ♦ QSOs made in this contest
- Lower area: callsigns found in the selected master.dta file



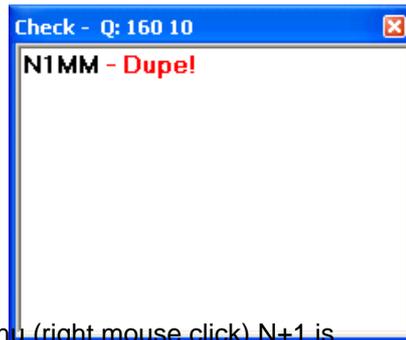
<--  
When the program is started and no callsign is entered the Check window will show the date, time and length of the MASTER.DTA file



---->  
When the master.dta file for the selected contest is not found or missing a warning will be given, Use 'Download latest Cjcheck partial file (Master.DTA) (Internet)' under 'Tools' to download the file from the Internet.



<---When there are no matches found **Unique** will be shown in big red letters



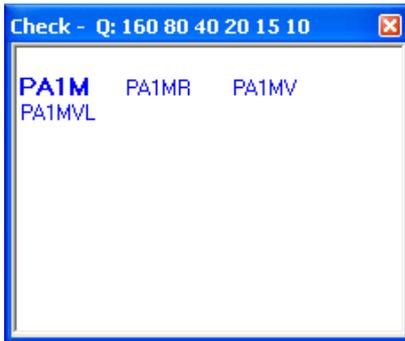
---->  
When the station entered is a dupe it will be shown in red and the text **Dupe!** will be added. Example: **N1MM - Dupe!**

The behavior of the contents of the window differs if under the menu (right mouse click) N+1 is selected.

When N+1 is selected also callsigns will be shown with one letter or digit difference from the callsign entered in the Entry window callsign field.

- 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).

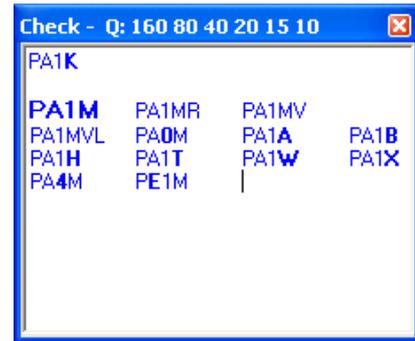
N+1 not selected



PA1M entered in Entry window

<--  
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 **bold** and 12 point font (Example: PA1M)

N+1 selected



-->  
When N+1 selected also PA1K is found in the log and many more callsigns is the master.dta file. The different character is shown bold..

## 17.2 Colors of the callsigns

Blue	New contact on this band
Gray	Dupe 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.

## 17.3 Keyboard Assignments

- **Alt+Y** – will "yank" the first call from the Check window in the Entry window callsign field.

## 17.4 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.

## 17.5 Wildcard search

If one or more characters are not known a ? may be used. 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** does match KN1M but also N1MM. N+1 will do this automatically for one ? on every place in the call.

The use of two questionmarks is also allowed , 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.

# 18 Available Mults and Qs Window

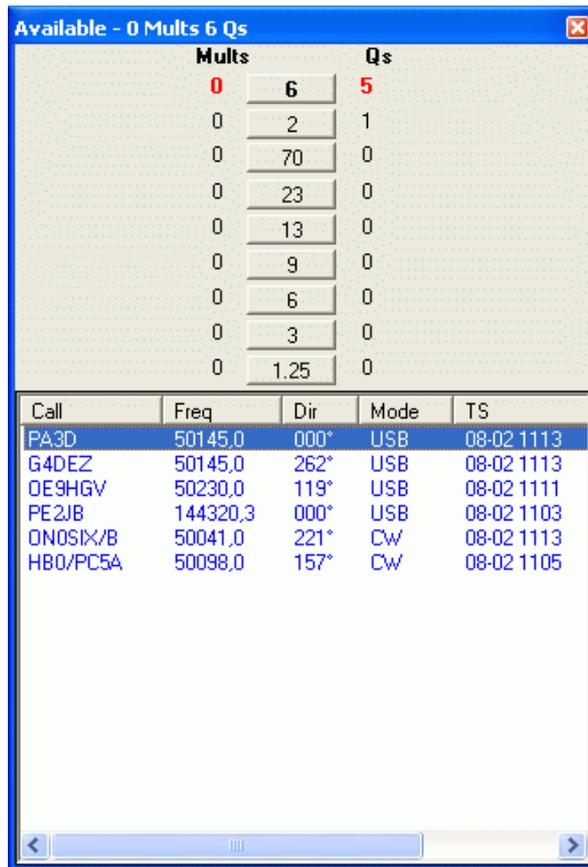
The Available Mults and Qs window will be similar to this one.

Available - 10 Mults 20 Qs ✖

Mults	Qs
2	160
0	80
2	40
<b>4</b>	<b>20</b>
0	15
2	10

Call	Freq	Dir	Mode	TS
OH3OJ/P	14258,9	046*	USB	08-02 1112
RW4LYL/6/M	14175,5	067*	USB	08-02 1112
RZ9HW/0	14181,0	055*	USB	08-02 1112
GB100J	14303,0	262*	USB	08-02 1108
RA4LBS	14175,5	067*	USB	08-02 1103
LY2FX	14166,0	072*	USB	08-02 1102
RZ9HW/0	14181,0	055*	USB	08-02 1056
RZ9Yw/0	14181,0	055*	USB	08-02 1056
DQ50SAAR	14018,1	119*	CW	08-02 1112
OK0EG/B	28282,0	111*	CW	08-02 1112
FW0MO	1821,0	005*	CW	08-02 1111
C06RJ	7071,2	284*	CW	08-02 1111
HS0ZBS	14070,0	079*	CW	08-02 1110
8J1A/1	7014,8	037*	CW	08-02 1110
DK0TEN	28257,0	119*	CW	08-02 1110
7L1YII	14071,6	037*	CW	08-02 1109
ZL1KMN	1819,1	033*	CW	08-02 1109
DL0IGI/B	28205,0	119*	CW	08-02 1108
I1M/B	28180,0	156*	CW	08-02 1107
UA0IT	7036,5	055*	CW	08-02 1100



This window consists of three parts, the header, the band buttons and at the bottom the multiplier list box. Left an example for the HF bands, on the left for VHF and up.

## 18.1 The Header

The header shows behind 'Available' the number of Multipliers and Qso's. Example 4 Mults 12 Qs

## 18.2 The Band buttons

The top part of this window indicates the number of multipliers (left column) or non-dupe contacts (right column) available on that band. **Red** numbers indicate the band with the largest number of contacts (QSOs) available. The left picture shows a HF version with the HF bands for use during HF contests. The WARC bands only appear when DX or SATDX are selected as contest. A VHF version will appear when a VHF contest is selected (right picture).

The band buttons change color per band when a callsign is entered in the callsign field. The color gives information if this station is a new multiplier, a new contact or a dupe on this band. So we can see instantaneously if we need this station on another band.

The active band's button text is shown in **bold**.

## 18.3 Multiplier List box

The list box shows the last multipliers received via Packet or Telnet.

There are 4 columns: Call, Frequency, Bearing (Dir), Time (TS). The format for the time = mm-dd hhmm .

Clicking on the selected column title will sort the column, clicking again will reverse the sort order.

## 18.4 Keyboard Assignments

- **Alt+Ctrl up/down arrow** – step through the multipliers shown in the list box.

## 18.5 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.
- Clicking on a band button will set the transmit and keyboard focus.
  - ◆ Note: When both Entry windows are open on the same band then clicking on a multiplier will bring this multiplier to the window without transmit focus
- Select the correct radio/VFO by right or left clicking the band button.

## 18.6 Band button background 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**

## 18.7 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. The selection is set in the Right-Click menu explained below.
    - ◇ **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 what was in there!.
- **Left mouse key clicking on column title**
  - ◆ Change log sort order using the selected column title (Call, Frequency, Bearing (Dir), Time (TS)). A second click on the column title will sort descending.

## 18.7.1 Right-Click menu

If you right click in the Available Window the following menu items will appear. Not all menu items are always selectable.

- **Delete Spot** – Delete selected spot from multiplier list
- **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.
- **QSY Right Radio (right click on spot)** – QSY the second (right) radio to the selected spot
- **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
  
- **1 – Show Focus Radio/VFO** – Show only the last multipliers from the VFO or Radio which has focus.
- **2 – Show non-Focus Radio/VFO** – Show only the last multipliers from the VFO or Radio which not has focus.
- **3 – Show Both Radios/VFOs** – Show the last multipliers from both VFOs or Radios.
- **4 – Show All Bands** – Show the last multipliers which came in on all bands.
- **160** – Show only info for 160 meter band.
- **80** – Show only info for 80 meter band.
- **40** – Show only info for 40 meter band.
- **20** – Show only info for 20 meter band.
- **15** – Show only info for 15 meter band.
- **10** – Show only info for 10 meter band.
- **Show Q's\_Mults** – toggle between QSOs in blue or Multipliers in red (for the selected options above)
  
- **Help** – Show the help file for this window.

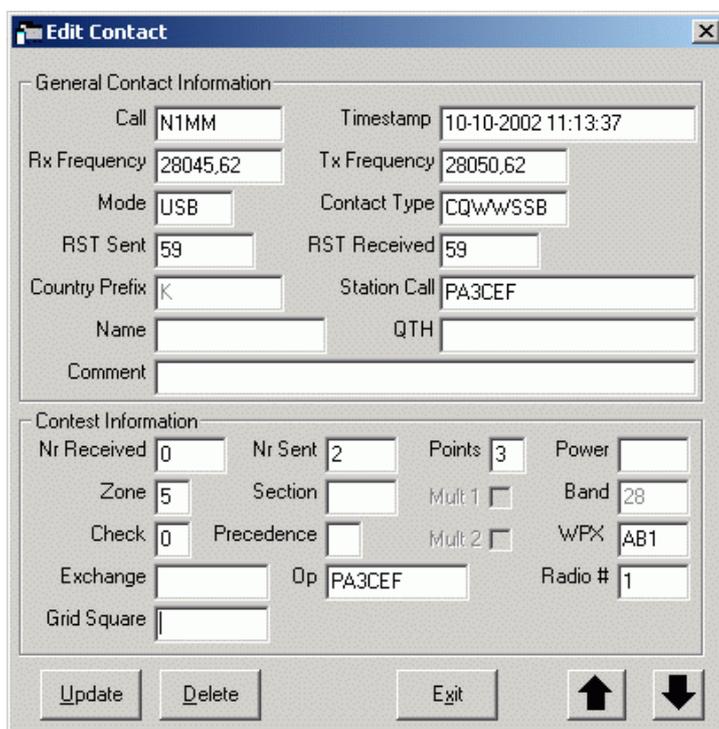
**Hovering** with the mouse over a spot in the multiplier list will show a tooltip with more info about the spot (frequency, spotter, time, comments)

## 18.8 Other info

Only calls from dupes are shown if the length of the callsign is greater than 2 characters.

# 19 Edit Contact Dialog

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.

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.

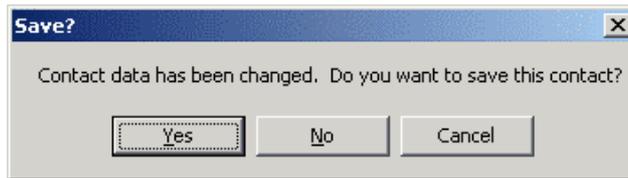
The main reason for tracking down these things is for better information about what countries are needed during the contest.



*HINT. 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.



*HINT.* 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.

## 19.1 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.

## 19.2 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.

### 19.3 How to place a deleted qso back?

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.

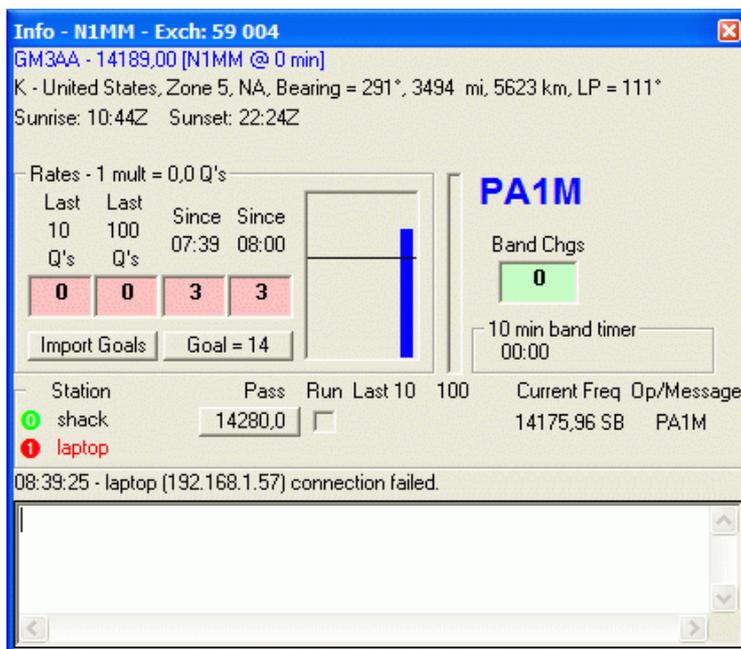
- Open the DELETEDQS contest in the database.
- Left click on the contact you want to restore, then right click, select 'Copy/ADIF String'.
- Open the contest you want to paste it into.
- Right click in the log window and select 'Paste contacts'.

### 19.4 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?

## 20 Info Window

Your Info window will be similar to this one.



The info window can be found in the Entry Window dialog under the menu 'Window | Info'.

### 20.1 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.
- Multi–Run indicator – Shows MULT or RUN
  - ◆ 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 multits 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..

## 20.2 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.

## 20.3 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** – Rate since the start of the current hour in GMT (QSOs per hour)
- Middle part
  - ◆ **Real Time raphical 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.

### 20.3.1 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

### 20.3.2 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.
- **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.

### 20.3.3 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.

## 20.4 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

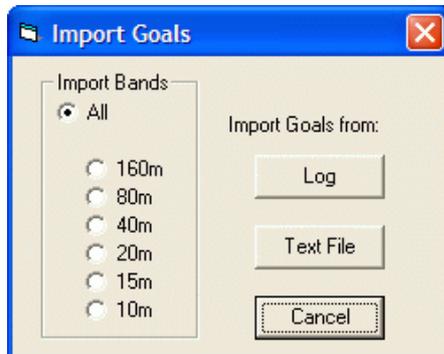
afterwards if necessary.

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.

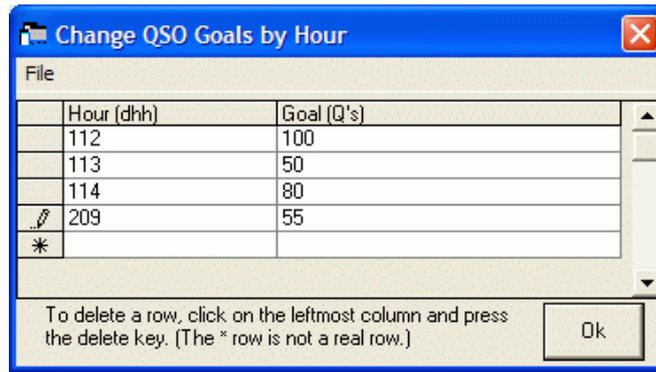
## 20.4.1 Setting the QSO numbers

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 prefilled.
    - ◆ 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 shour 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 menas day 1 and 12 UTC. The last line is day 2 and 09 UTC.



Note: 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. Again a reason to use for each (major) contest it's own database.

## 20.5 Multi-User information

### 20.5.1 General

In the bottom part of the Info window all information needed during contesting is displayed. See the picture below.

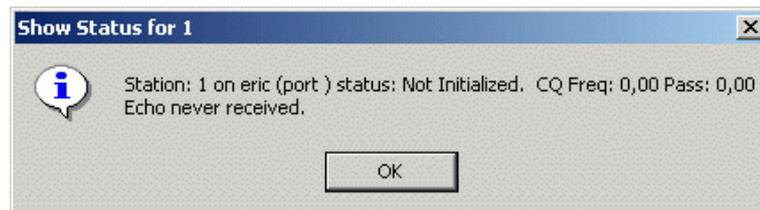
Station	Pass	Run	Operator	Last 10	100	Freq
USA	28235	<input checked="" type="checkbox"/>	N1MM	0	0	28235.0
*Europe		<input type="checkbox"/>	PA3CEF	12	13	14263.0

12:20:34 - Connected to USA (64.252.136.17)

- **Green or Red station icon**
  - ◆ **Green** means connected
  - ◆ **Red** means not connected
  - ◆ **Light Red** means that the program has not been able to contact the other machine for a while.
    - ◇ 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)
-

## 20.5.2 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.

## 21 Score Summary Dialog

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	
Total	3331	6114	567	131	
Score: 4.267.572					

Example screen CQWW SSB

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	
Total	Both	892	892	150	
Score: 133.800					

Example screen PACC

Score - 245.592 Points			
Band	Mode	QSOs	Pts
144	USB	702	245592
Total	Both	702	245592
Score: 245.592			

Example screen VHFREG1

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.

### 21.1 Mouse Assignments:

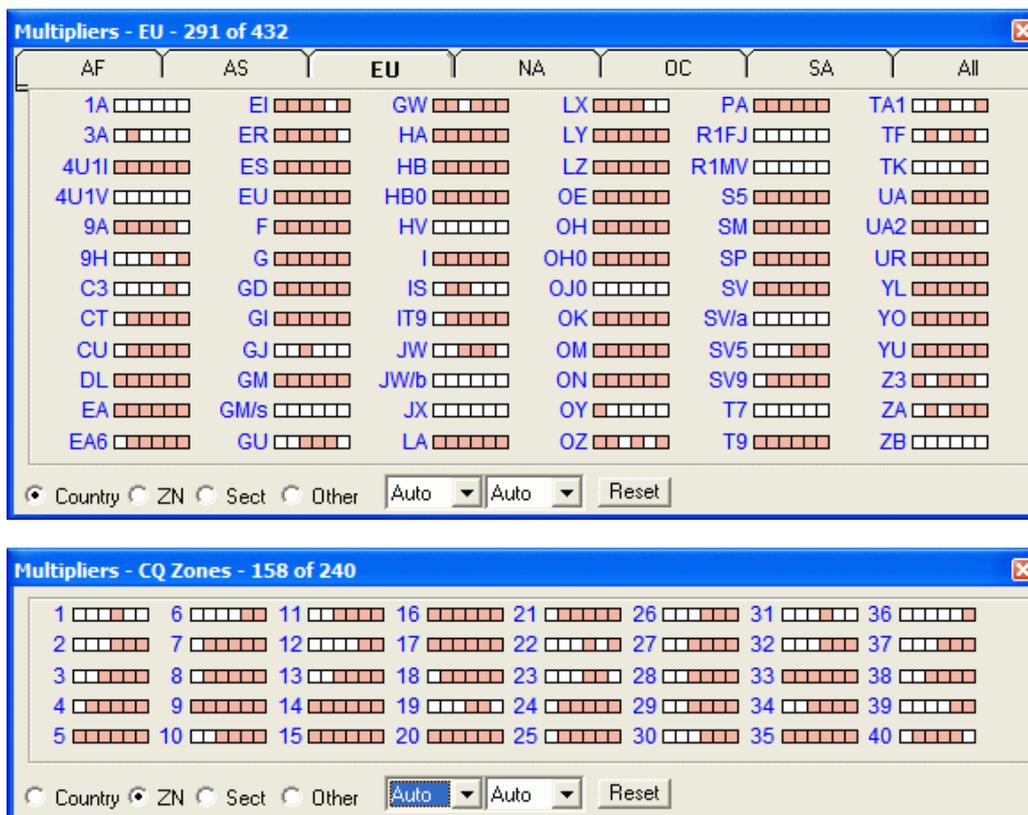
- **Right mouse key clicking**, a menu will appear
  - ◆ **Copy all** – Copy all info to the Windows clipboard.
  - ◆ **Print to file** – Print the score summary to a file.
  - ◆ **Help** – Show the help file for this window.



Note: The number of contacts shown on screen and printed on the summary sheet are without dupe contacts.

## 22 Multipliers by Band Dialog

Your Mults by Band Dialog window will be similar to these.



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 contest 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** depend 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' dialog'.
- 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

## 22.1 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.

## 22.2 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.
  - ◆ **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.
  - ◆ **Help** – Show the help file for this window.

## 22.3 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**

## 22.4 Colors

- **White** – You need this one, work 'em.
- **(light) Red** – Worked country, zone, section or grid square.

## 23 Statistics

Statistics can be found under 'View' – 'Statistics'.



**Note: 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.**

### 23.1 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:

Fields	Row	Column	Remarks
Band			
Operator			compare operators, only useful when running Multi-operator
Hour			
RadioNr			only useful when using more than one radio
Mode			useful in mixed contests
CountryPrefix			worked number of stations per country or mode
Zone			
Section			used in many local contests
CK			2 digit number used in Sweepstakes
Prec			Precedence used in Sweepstakes
Points			
Mult1			first multiplier selected contest (when applicable)
Mult2			second multiplier selected contest (when applicable)
Mult3			third multiplier selected contest (when applicable)
WPXPrefix			prefix
GridSquare			shows 4 characters of grid square
Run1Run2			useful when doing SO2R
MiscText			contest specific information
ContactType			Blank = qso, "D" = dupe, "N" = non-workable station
Day			first or second day of the contest
Mult & Band			
Exchange1			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.



Note: The number of contacts shown on screen and printed on the summary sheet are without dupe contacts.

### 23.2 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.

### 23.2.1 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.

### 23.3 Example statistics

Below some example statistics. Interesting statistics are:

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	PE9DX
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

CountryPrefix	Total
DL	475
F	44
G	5
HB	10
OE	1
OK	24
ON	24
OZ	6
PA	79
SM	3
SP	4
Total	675

Band	Total	N1MM	PA1M	PA1T	PA3CB
1.8	152		29	29	
3.5	509		25	69	
7	434		9	156	
14	975		46	275	11
21	891	244	44	91	
28	370	103	126	3	
Total	3331	347	279	623	11

## 24 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.

- Each VFO/Bandmap has it's own Visal Dupesheet. The VFO A sheet displays all of the contacts for the band your VFO A is set to. VFO B does the same for whatever your VFO B is set to even if you don't (or cannot) use VFO B. This has nothing to do with what your worked on which VFO.
- 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 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 visible 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 300 stations per band. Going above this limit will give an error message.
- There are no mouse assignments or menus in this dialog.

### 24.1 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 Visible 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 Visible Dupesheet feature. As you tune the band, you keep your eyes focused on the Visible Dupesheet. It becomes second nature to scan the Visible 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 Visible 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 Visible Dupesheet an ideal way to dupe check.

# 25 General RTTY and PSK Information

In this chapter general information about RTTY and PSK. With the use of the MMTTY and the MMVARI engines and through external TNC's many more modes can be used from within N1MM logger.

## 25.1 RTTY Information

### 25.1.1 General RTTY info

On the radio make sure:

- Audio processing is **off**
  - ◆ Speech processing is **off**
  - ◆ Hi boost is **off** (Kenwood radios)
- Radio should be in **LSB mode**
- The most used 'Speed' is 45 Baud (60 words/min)
- The 'standard' shift is 170 Hz
- When using a TNC set 'Mark' to 2125 Hz and the 'Space' to 2295 Hz
- Don't overrun your finals from the transceiver and/or amplifier
  - ◆ 50 percent duty cycle is mostly ok
  - ◆ See the [Interfacing section](#) of this help 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.
- Almost always only the small filters in the radio are being used (250 – 500 Hz)

### 25.1.2 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 – 1840	1800 – 1840	1830 – 1840		
3570 – 3630	3580 – 3600	3590	3580 – 3620	3520 – 3525
7025 – 7100	7025–7050 7080 – 7100	7040	7035 – 7045	
	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	

### 25.1.3 General RTTY info

By Rich, VE3IAY

The 5-bit Baudot 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 the next space, if you are both using UnShift On Space = USOS) comes along and sets

things right. Sometimes the opposite happens – a real 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 for example, pretty soon 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. Letters can also be printed as numbers; for example, "CQ TEST" when converted to FIGS case becomes ":1 53'5".

Various software has different ways of helping out with this. Each way has its own pluses and minuses. In MMTTY run stand-alone, if you right click on a "word", the entire word changes to the opposite case. So, for example, my call sign is converted to ;3E8-6 , and yours would come out as ;-E0) . Some programs have a separate (usually one-line) window in which all incoming text is displayed in the opposite case. N1MM's digital window has an option (available by right-clicking in the DI window) which reserves one line for opposite-case display, but instead of using it to display incoming text as it comes in, it shows text that the mouse "hovers" over (no click necessary) in the opposite case. This requires you to move the mouse over the offending text, but it doesn't get lost whenever there is a line feed in the incoming data.

If everyone is using USOS (unshift on space), as they should, then most of these errors only last for one "word" (up until the next space), and you can probably get by without any LTRS/FIGS assistance from your software. However, some people refuse to use USOS, and some subvert it by refusing to put spaces in their messages, probably from a mistaken wish to make their messages as short and "efficient" as possible. Having the opposite-case display can be almost a necessity in such cases. These folks haven't yet realized that the goal is to maximize communications throughput, not to minimize the time spent transmitting, and they also haven't yet worked out that a single request for a repeat every few QSOs can cost them more time than they save. In anything less than perfect conditions, this is quite likely.

For example, some people send their exchange as 599-123-123. If you miss the FIGS character, this comes out as TOOAQWEAQWE. Not everyone can figure out the serial number from that, especially if you add in a few other errors so it comes out as TOOAPWEUQWA.

On the other hand, if the exchange is sent as 599 123 123 123 using USOS, a single error does no harm. Even at a fairly high error rate, you still have a reasonable chance of getting two identical serial numbers in the clear and not needing a repeat. Yes, 599-123-123 is much faster than 599 123 123 123 with USOS when conditions are perfect, but when signals are poor, the net throughput of the second version can be a lot higher.

Of course, the guy who doesn't put in any separator at all (599123 or TOOQWE) forces you to enter the entire exchange by hand even if there is no transmission error – maybe his software doesn't recognize serial numbers in the clear, but maybe yours does – does he have to penalize you too?

## 25.2 PSK Information

### 25.2.1 General PSK info

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**  
LSB is also possible but normally USB is used.
- Don't overrun your finals from the transceiver and/or amplifier
  - ◆ 50 percent duty cycle is mostly ok
  - ◆ 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.

### 25.2.2 Common Digital Frequencies

nd	Digital Frequencies (kHz)
160 meter	
80 meter	3575 – 3585 / 3620 – 3640
40 meter	7060 – 7080
30 meter	10130 – 10145
20 meter	14065 – 14090
17 meter	18100 – 18110
15 meter	21060 – 21090
12 meter	24920 – 24930
10 meter	28110 – 28125

### 25.2.3 Common PSK Frequencies

PSK31 activity starts from the bottom edge of the IARU RTTY bandplan, expanding upwards as activity increases.

PSK Frequency (kHz)	Remarks
1838.15	
3580.15	
7035.15	7080.15 in Region 2.
10142.15	WARC, no contesting
14070.15	
18100.15	WARC, no contesting
21080.15	
24920.15	WARC, no contesting
28120.15	

## 26 Digital Overview and Features

The complete digital part of the N1MM logger program has been designed, coded and is being maintained by Rick Ellison, N2AMG

### 26.1 General

N1MM logger is able to operate many digital modes thanks to the flexible way it has been set up. The interface will operate with MMTTY, MMVARI and all external TNCs.

This chapter will give an overview how to use the program in Digital Modes, giving information about keyboard functions, macros etc. At the end of the chapter some nice to have features.

The next chapter will give information how to set up the program followed by separate chapters about MMTTY, MMVARI and external TNCs.



**When having troubles please first check the Digital Modes part of the chapter Frequently Asked Questions.**

### 26.2 Making QSOs

This paragraph explains:

- How to make a Digital mode transmission
- Keyboard, Insert key and Mouse Assignments
- Function keys
- Macros

#### 26.2.1 Make a Digital Mode transmission

- We need to make room for a new Digital Interface screen so for now minimize the Logger Telnet/Packet window.
- Select 'Window | Digital Interface' and the Digital Interface will open. The Digital Interface window can be positioned and resized on your monitor as desired.
- When MMTTY or MMVARI is chosen two extra windows will appear: the MMTTY Engine window (how it will appear depends on the settings in the Configurer) and the Digital Interface window. If an external TNC is used only the Digital Interface window is opened.
- 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. 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.
- The **red** and **green** lines show roughly where the spectrum works the best. The **red** line indicates center 1500 and the **green** lines show 2000 and 1000 Hz.
- There is a timer in the Digital window that activates after 5 secs of inactivity and sends focus back to the Entry window.  
It is in there as MMTTY/MMVARI likes to take focus and not let go of it. And currently there is no way to tell MMTTY/MMVARI to let go of it...

#### 26.2.2 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.



***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..
- ESM mode, does not simulate the space bar but only sets focus to the Entry Window.
- "-" are being stripped from exchange elements
- CQ Repeat time starts
  - ◆ when using MMTTY or MMVARI from when the sending stops.
  - ◆ when using an external TNC when the message begins as there is no way to tell when the TNC finishes sending.
- The {RX} macro string has a CR/LF at the end for easy recognition.
- During transmit, callsigns are not grabbed from the receive window.
- Linefeed characters (LF) in incoming text are replaced with Carriage Return (CR) characters. This prevents the showing of blocks in the receive window.



**To get auto-CQ to work correctly with a TNC set you 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.**



**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.**



**When using a TNC turn off *Stop Sending CQ when Callsign changed* this is located in the configuration area under function keys. 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.**

## 26.3 QSO making tips

During the contest the contest information like callsigns, exchanges are showing in the Digital Interface (DI). This information has to be brought to the Entry window and split out over Callsign filed and the exchange fields. Also transmissions have to be made. In Digital modes the normal behavior as used in CW (using the insert key) and SSB (just type it in) can be used. There are some extra possibilities in Digital modes which can be used (Callsign box in DI and GRAB button, additional macros and hover mode in combination with the right click mouse button).

### 26.3.1 Using Hover mode:

- With hover mode when you hold the mouse over a valid call sign it places the callsign in callsign filed in the Entry Window. 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 your 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

### 26.3.2 The rate improver – Right Click = Enter not menu"

Select from the settings menu in the Digital window "Right Click = Enter not menu". When not using this setting then you need to give it a try. It could improve your rate greatly as your hand never leaves the mouse except for the occasional difficult exchange. And your eye do not have to move far from the Digital window either. Making a qso means:

- While in Run mode
  - ◆ Right click in the DI's RX window it 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 your back at the first bullet)

- In S&P it does the same thing as hitting enter to advance thru the ESM mode.

The right click takes the place of hitting 'Enter' for the 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 PA2AMG

## 26.4 Do you have... (what to check when it does not work)

Below the most common mistakes made setting up or using N1MM logger in RTTY mode.

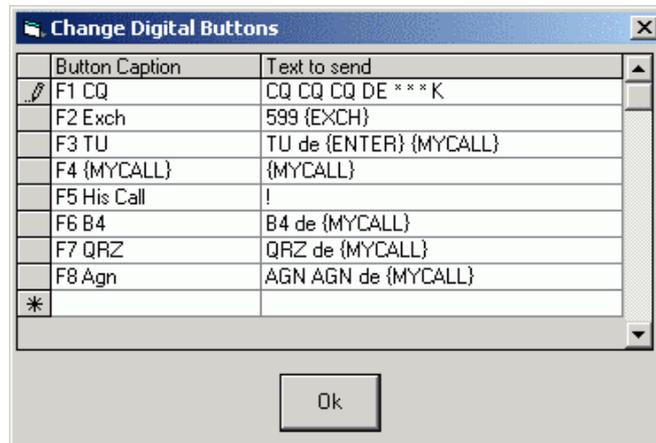
- Add {TX} and {RX} to each of the F Keys...
- Set up "always RTTY" in the Configurer under the Tab: Mode Control
- Select the DI type in the Configurer under the Tab: Digital Modes
- When MMTTY selected: Set up the path to MMTTY in the Configurer under the Tab: Digital Modes
- More?

### 26.4.1 Insert key Assignments

<i>Mode</i>	<i>Enter Sends Message (ESM mode)</i>	<i>INSERT key or ; key does the following:</i>
<b>RUN</b> <i>and</i> <b>S&amp;P</b>	<b>OFF</b>	<ol style="list-style-type: none"> <li>1. Grab Callsign from call list if callsign field empty otherwise use call in callsign field.</li> <li>2. Prefills Exchange Boxes</li> <li>3. <b>NO DUPE</b>: Sends F5 (Hiscall) + F2 (Exchange) <b>or</b> <b>DUPE</b>: Sends Nothing</li> <li>4. Places cursor in next exchange field (Example: Sect)</li> </ol>
<b>RUN</b>	<b>ON</b>	<ol style="list-style-type: none"> <li>1. Grab Callsign from call list if callsign field empty otherwise use call in callsign field.</li> <li>2. Prefills Exchange Boxes</li> <li>3. <b>NO DUPE</b>: Sends F5 (Hiscall) + F2 (Exchange) <b>or</b> <b>DUPE</b> <b>WorkDupes checked</b>: Sends F5 (Hiscall) + F2 (Exchange) <b>WorkDupes not checked</b>:Sends F6(Dupe)</li> <li>4. Places cursor in next exchange field (Example: Sect)</li> <li>5. Highlights F8 button</li> </ol>
<b>S&amp;P</b>	<b>ON</b>	<ol style="list-style-type: none"> <li>1. Grab Callsign from call list if callsign field empty otherwise use call in callsign field.</li> <li>2. Prefills Exchange Boxes</li> <li>3. <b>NO DUPE</b>: Sends F4 (Mycall) <b>or</b> <b>DUPE</b> <b>WorkDupes checked</b>: Sends F5 (Hiscall) + F2 (Exchange) <b>WorkDupes not checked</b>:Sends F6(Dupe)</li> <li>4. Once exchange entered INSERT sends F5–F2 <ul style="list-style-type: none"> <li>◆ Pressing INSERT again will continue to send F5–F2</li> </ul> </li> <li>5. Places cursor in next exchange field (Example: Sect)</li> </ol>

## 26.4.2 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:



## 26.4.3 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 on the [macros page](#).

There are several additional macros for an External TNC. Please check the chapter '[Digital – External TNC support](#)'

Also please check the rules for macros when using [MMTTY](#) and [MMVARI](#)

## 26.5 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
    - ◇ Example: N1MM, Tom
- Select the menu item: 'Call History Lookup' under 'Config'
- 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.

## 26.6 Outputting RX data to a text file

Outputting 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
- 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.

## 26.7 SO2R

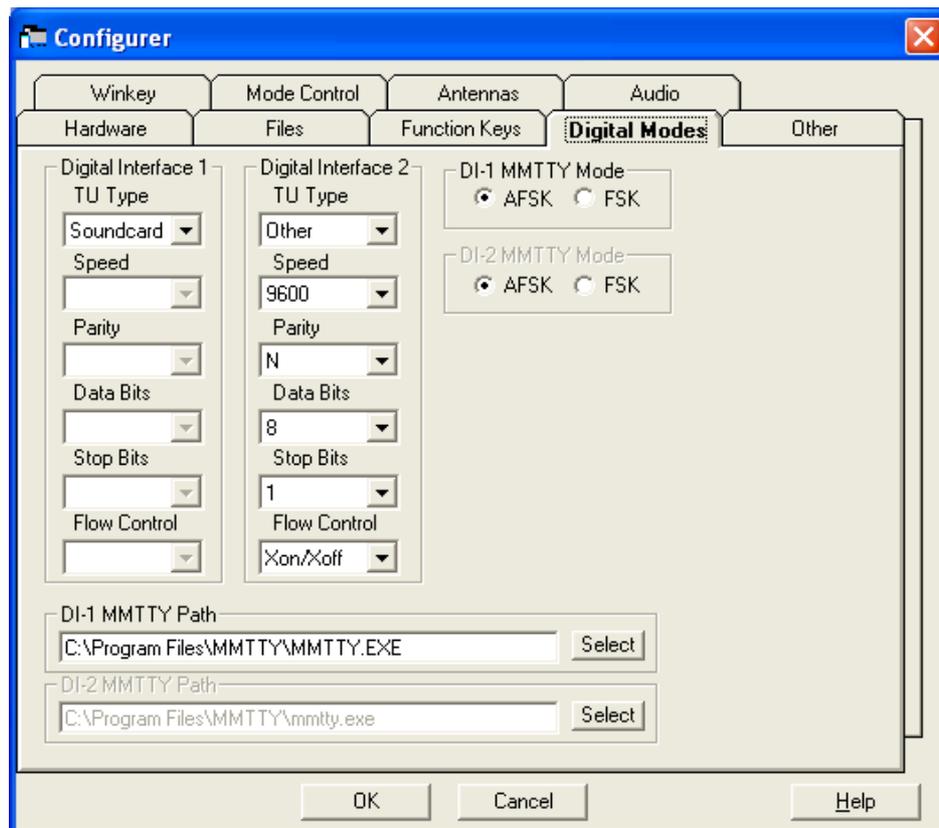
N1MM logger also supports SO2R for RTTY. You can use any combination of either 2 MMTTY windows, 2 TNC windows or a combination of MMTTY and a TNC for SO2R operation. Info about MMTTY soundcard setup and SO2R can be found in the N1MM logger Help file in the [SO2R chapter](#)

# 27 Digital Setup

## 27.1 Setup overview

Setting up an interface means configuring it for the selected interface. Configuring has to be done within N1MM logger in a few places and possibly also in the MMTTY or MMVARI engine or the External TNC.

## 27.2 Setting up the Configurer



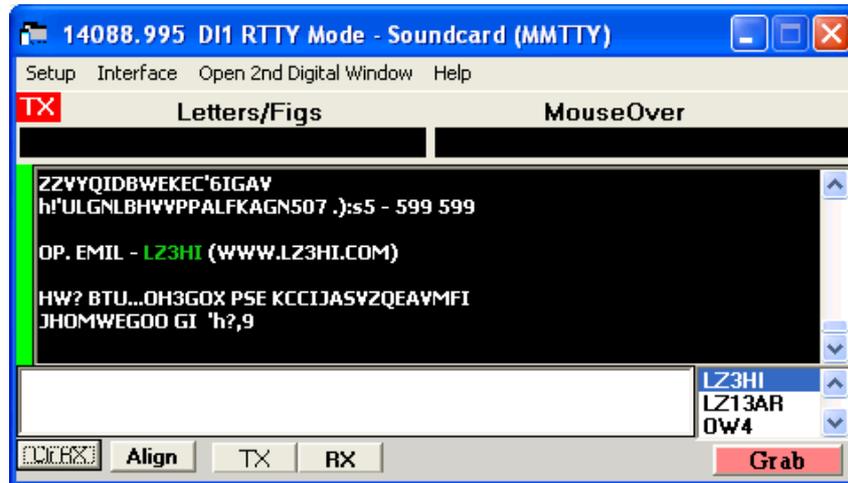
Note: DI = Digital Interface

- Open the Configurer ('Config | Configure Ports, Telnet Address, Other')
- **MMTTY**
  - ◆ Go to the tab: **Digital Modes**
    - ◇ **TU Type:** *Soundcard*
    - ◇ **DI-1/2 MMTTY Mode:** Select *AFSK* or *FSK*
    - ◇ **DI-1/2 MMTTY Path:** Select path to MMTTY.EXE
- **MMVARI**
  - ◆ Go to the tab: **Digital Modes**
    - ◇ **TU Type:** *Soundcard*
- **External TNC**
  - ◆ Go to the tab: **Hardware**
    - ◇ Select: **Digital** for the serial port used by the external TNC
      - NB when selecting two external TNCs two serial posts have to be selected Digital.
      - The lowest serial port is always DI-1, the highest serial port is

- always DI-2.
  - ◆ Go to the tab: Digital Modes
    - ◇ **TU Type:** *Other*
    - ◇ **Set other parameters accordingly** ( Example settings: 9600 ,8 ,N ,1, Xon-Xoff)
- Save the configuration (OK)

## 27.3 The Digital Interface – Window

The Digital Interface window used is for each type of interface (MMTTY, MMVARI or an external interface) and is for all very similar.



The Digital Interface is shown when it is selected under Window in the Entry Window. If a second RTTY port is configured a menu item will appear on the top of the Digital Interface allowing you to open the second RTTY interface.. The exact frequency is displayed in Digital Interface caption (rig(+/-)audio).

- **TX** – Indicator to show where the transmit is going to take place (useful when using two sessions like SO2R).
- **Letters/Figs** – Shows where is mouse is on in reverse (letters/figures switched).
- **MouseOver** – Shows the text which would be selected where the mouse is positioned over.
- **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. Whenever a callsign is printed to a window 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. Also in the window if the LTRS/FIGS Converter is turned on a Text line will appear at the top of the RX window. When the LTRS/FIGS Converter is turned on moving the mouse over text in the window will show the converted text in the Converter text line. By clicking on the colored pane 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 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.
- **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). Only 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 (starting and 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. Dupe callsigns will not be shown in the grab window.



Note: 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 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 adjusts in relation to the width of interface.
- **Clr RX** – Clear the receive window (also possible using the right click menu).
- **Align** – This is used to move the signal that you are coping into the pass band of your filters. Set the frequency in the setup area.  
Example: center of filter pass band is 2100. When clicking on a signal at about 1400 it will be a hard time coping him. In order to copy the station has to come in my filter range. Click Align and the rig shifts and the spectrum frequency shifts and places the station on the set frequency setup already. Now click a button to turn on the filters and poof there he is...
- **TX** – Start the RTTY transmission, the transceiver is keyed. This button is only shown when MMTTY is selected.
- **RX** – Stop the RTTY transmission, the transceiver changes back to receive. This button is only shown when MMTTY is selected.
- **Grab** – Transfer the selected callsign in the Callsign textbox to the callsign field on the main logger window. Once the callsign is filled what ever you click on next will fill the next box to have info entered in. The mouse is the only way to do this. When the Digital Interface is in transmit calls are not added to the Grab window.

It is possible to have 2 Digital Interface windows open at the same time. Open your first interface then click again on the menu item called 'Open 2nd RTTY Window'. This feature can be used to copy both the TNC and MMTTY to pick up on callsigns you might have missed etc. Or if you have 2 radios and 2 separate TNC's you can switch between the 2 of them. Note: The macros for the second Interface window you open up will not be the same as they are for the first window you open.

#### Callsign coloring

When a callsign is recognized in the receive input stream and the callsign is found in the Master.dta file the callsign will be colored and brought to the Grab window. When 2 calls are found in the same String the last one gets highlighted. The highlighted calls in text strings are clickable.

### 27.3.1 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 your clicking to be sent to Entry window. (Must click first in window to place 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)
- **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.

## 27.3.2 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, pressing Ctrl+Left arrow or Ctrl+Right arrow will swap from one active Digital Interface to the other. Digital Interface 1 will follow radio 1 (bandmap A), Digital Interface 2 will follow radio 2 (bandmap B).

## 27.4 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.

### 27.4.1 Selection: Soundcard as interface

- **Setup**
  - ◇ **Settings** – Setting up the Digital Interface, see the paragraph 'Setting up the Digital Interface' below.
  - ◇ Bring to Foreground when made Active – Bring the Digital Interface and Engine to the foreground when it's Entry window has focus.
    - ◇ This adds ability to stack Digital Interface's 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 non Vista Windows versions.
    - ◇ **Transmit Mixer** – Shows the Play control mixer dialog from the Windows operating system. Only for non Vista Windows versions.
  - ◇ **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 callsign in callsign filed in the Entry Window.
    - ◇ 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 your 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 Hovermode for additional information.
  - ◇ Send Text File – Send a text file. A file section dialog will open.
  - ◇ Enable Digital Call Stacking –
- **Interface**
  - ◇ **MMTTY** – Select MMTTY or Other (TNC) as interface
  - ◇ **MMVARI** – Select MMVARI as interface.

- **Open 2nd Digital Window** – Opens the second digital interface window. In Configurer, under the Digital Modes tab, a second Digital Interface has to be chosen.
- **Help** – Shows help file

## 27.4.2 Selection: OTHER

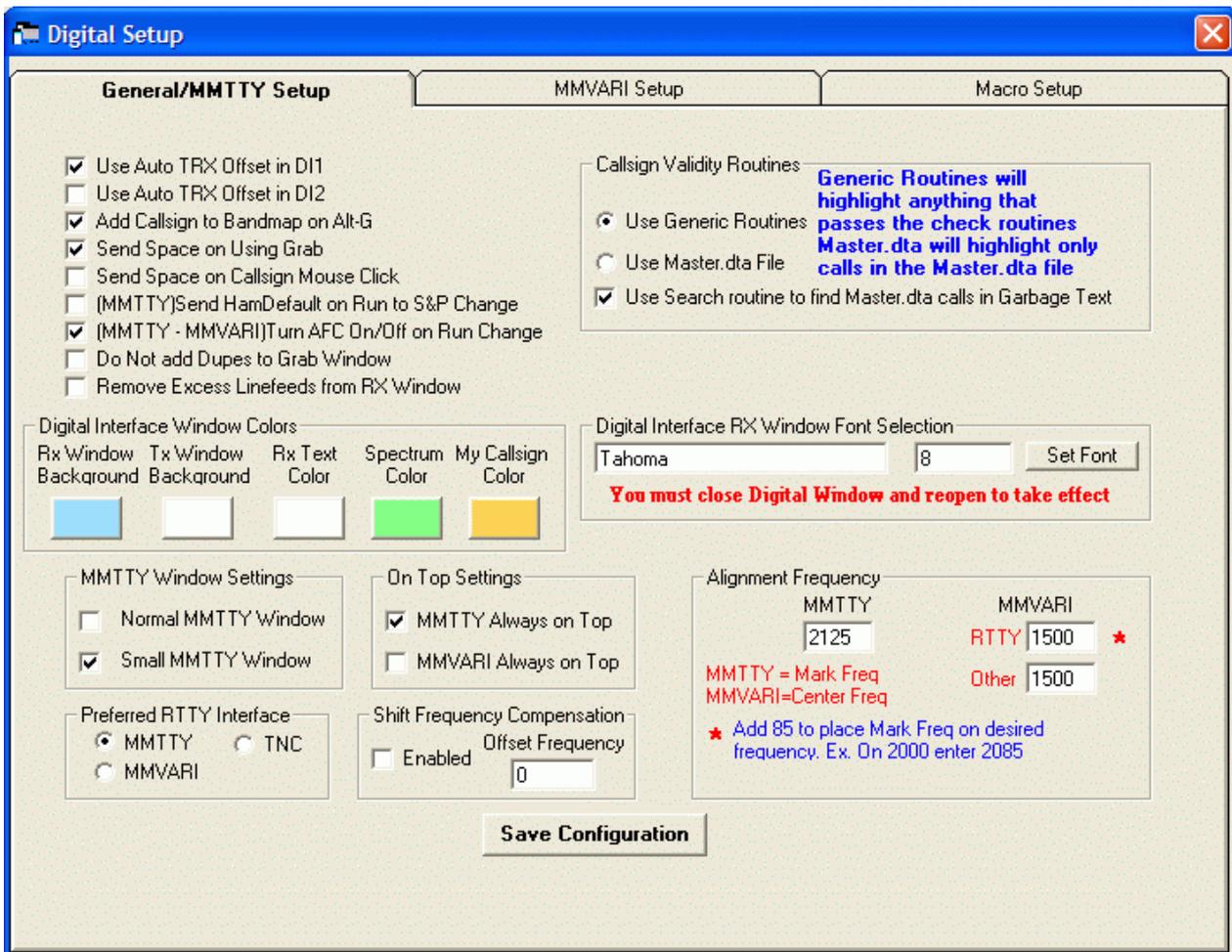
- **Setup**
  - ◆ **Settings** – Setting up the Digital Interface, see chapter below (Setting up the Digital Interface).
  - ◆ **Load TNC Settings File** – Ability to load the TNC settings file named 'SETTINGS.TXT' to the TNC. An example file which can be used for the PK-232 can be found on the website when selecting 'Other Files'.
- **Mode**
  - ◆ **RTTY** – Select RTTY as mode.
  - ◆ **PSK** – Select PSK as mode.
- Help** – Shows help file.

## 27.5 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.

### 27.5.1 Tab: General/MMTTY Setup

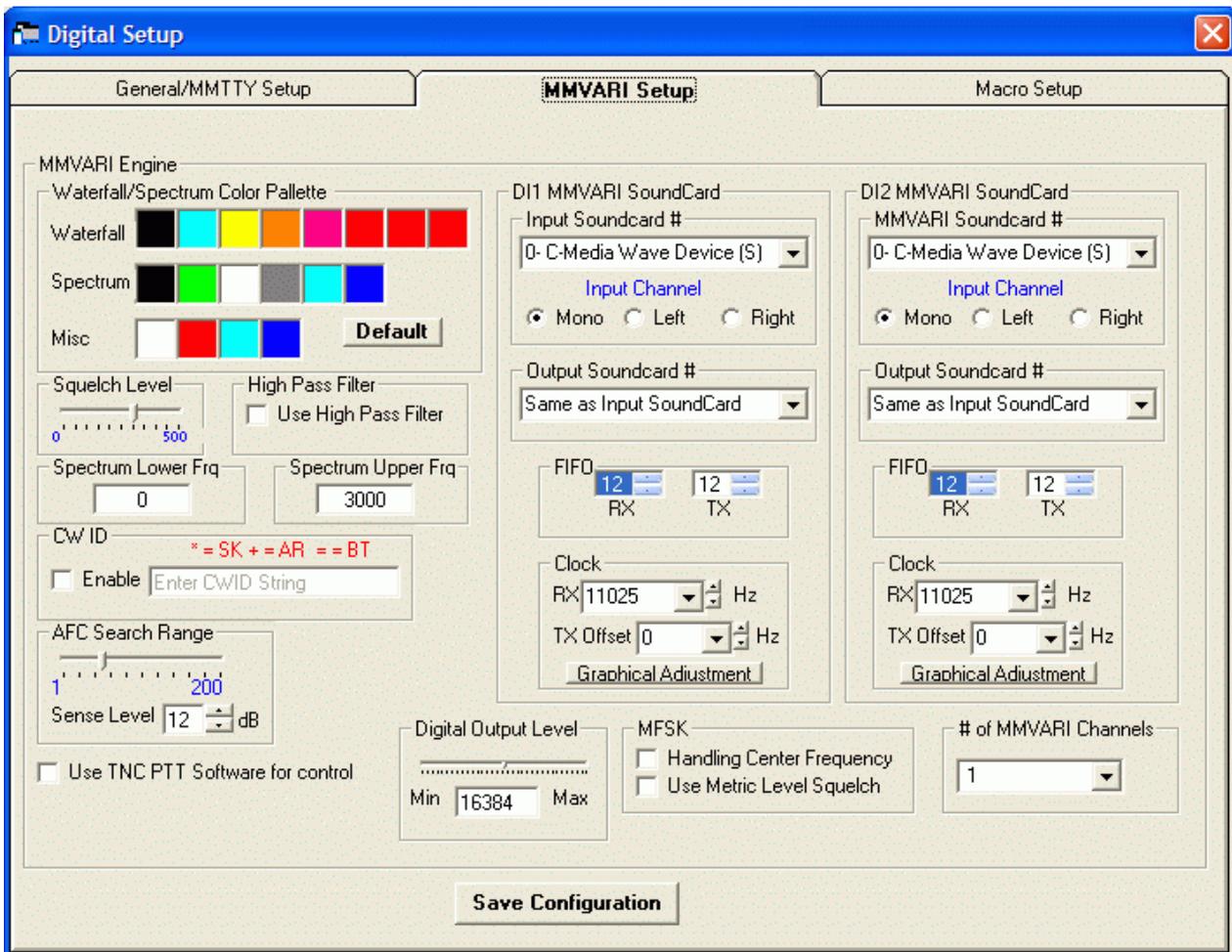
This interface has general setup information for ANY type of interface (Soundcard or external TNC) and some specific settings for MMTTY and MMVARI.



- **Use Auto TRX Offset in DI1** – Adds or subtracts the Mark frequency to the radio frequency and adjusts the band maps accordingly for Digital Interface 2.
  - ◆ When setup correct packet spots actually show up where they are posted. Say for example you are using AFSK and someone posts a spot at 14.080 when you click on that sport the radio will go there but you are actually listening 2.125 hz further up or down the band so you always have to chase the spot. by turning this on when you click the spot it will adjust the radio to where it should be so the spot still lines up on 14.080 but you mark freq will be on that spot instead of the radio.
- **Use Auto TRX Offset in DI2** – See above, but for Digital Interface 2.
- **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)
- **Send Space on Using Grab** – Setting for sending space after grabbing call from grab window.
- **Send Space on Callsign Mouse Click** – (MMTTY and PSK) Ability to set if a space character is sent to Entry Window when clicking on the callsign with mouse. Select to enable.
- **(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 (MMTTY–PSK) 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.
- **Remove Excess Linefeeds from RX Window** – Ability to strip excess linefeeds from RX Window.
- **(MMVARI) Do not send Squelch tail** – (PSK only) Ability to *not* send squelch tail in PSK mode which gives a faster turn over time. Select to enable.

- 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.
  - ◆ Use Search routine to find Master.dta in Garbage Text – ability to turn off checking for callsigns in garbage text in digital modes.
- **Digital Interface Window Colors**
  - ◆ The RTTY receive and the transmit window background colors, RX text color, Spectrum color and own callsign 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 MMTTY Window** – The normal size MMTTY window is shown. A restart of N1MM logger is needed to activate this function.
  - ◆ **Small MMTTY Window** – The small size MMTTY window is shown. A restart of N1MM logger is needed to activate this function.
- On Top Settings
  - ◆ **MMTTY always on Top** – MMTTY is always over 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 over 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.
- Preferred RTTY Interface – Select the preferred RTTY interface. Choices are: MMTTY, MMVARI or TNC
- Shift Frequency Compensation – for radios which use Shift Frequency Compensation.
  - ◆ Enabled – Select to enable Shift Frequency Compensation.
  - ◆ Offset Frequency – the frequency offset.
- **Alignment Frequency** – (MMTTY and PSK)
  - ◆ **MMTTY** – RTTY alignment frequency. This is Mark frequency
  - ◆ **MMVARI** – This is the Center frequency
    - ◇ RTTY – RTTY alignment frequency in MMVARI
      - NB Add 85 to place Mark Frequency on desired frequency. Example: On 2000, enter 2085.
    - ◇ 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 cross in the upper right corner to close the window.

## 27.5.2 Tab: MMVARI Setup

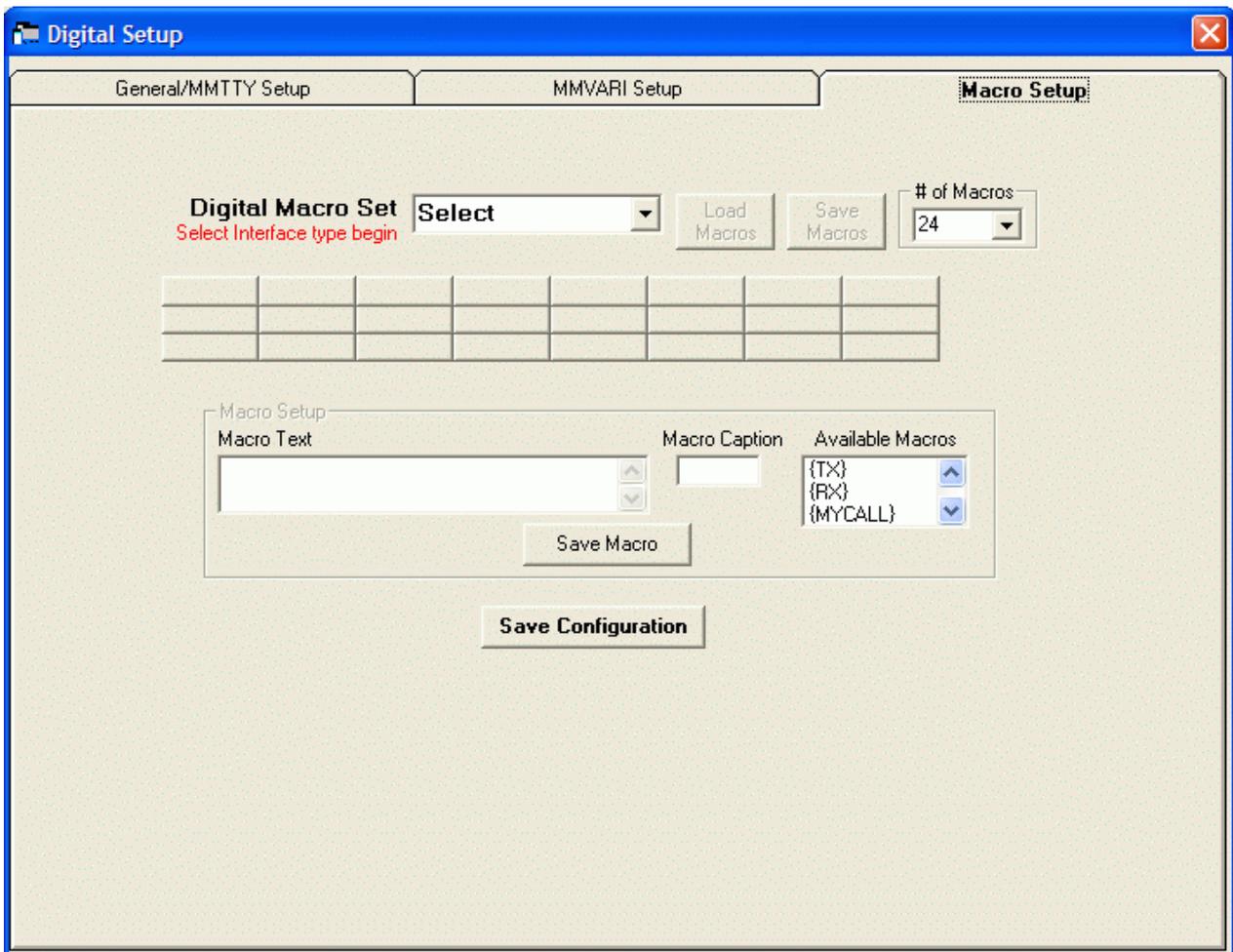


### • MMVARI Engine

- ◆ **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 pallet 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 as to where you would like the interface to start copying signals at. 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 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 behind it (Enter CWID String). This string will be sent 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 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 Souncard#** – Select the input soundcard to be used when having more than one soundcard in your computer (maximum 4).
    - ◇ **Input Channel** – Select the input channel. Mono, Left channel or Right channel.
    - ◇ **Output Souncard#** – Select the output soundcard to be used when having 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 2, 3 or 4.
- **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.

### 27.5.3 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:
    - ◇ SounccardPSK – macros for the PSK interface (MMVARI).
    - ◇ SoundcardRTTY – macros for RTTY (MMTTYA and MMVARI).
    - ◇ Other – macros for the TNC.
  - ◆ 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.
  - ◆ These 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 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.

## 27.5.4 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: {ENTERLF}I AM QRV BK  
 All Agn: {ENTERLF}ALL AGN ALL AGN BK  
 AGN: {ENTERLF}AGN QTC: \$\$\$    Use \$ for location of Number  
 Save QTC: {ENTERLF}R R R ALL OK BK

**SQTC**

RU QRV: {ENTERLF}R U QRV BK  
 Send All Heading: {ENTERLF}{QTC} {QTC}    ←Use {QTC} for location of QTC Numbers  
 Send All Ending: {ENTERLF}QSL?? BK DE {MyCall}  
 Save QTC: {ENTERLF}GL DE {MYCALL}  
 OTC Spacing: {ENTERLF}    Use {ENTER} or {ENTERLF}

**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.

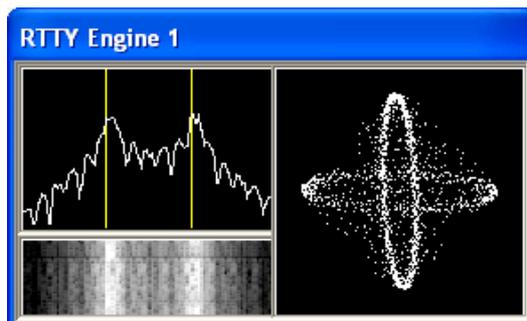
## 28 Digital – MMTTY for RTTY support

The MMTTY soundcard interface is based on the MMVARI engine by Makoto Mori, JE3HHT.

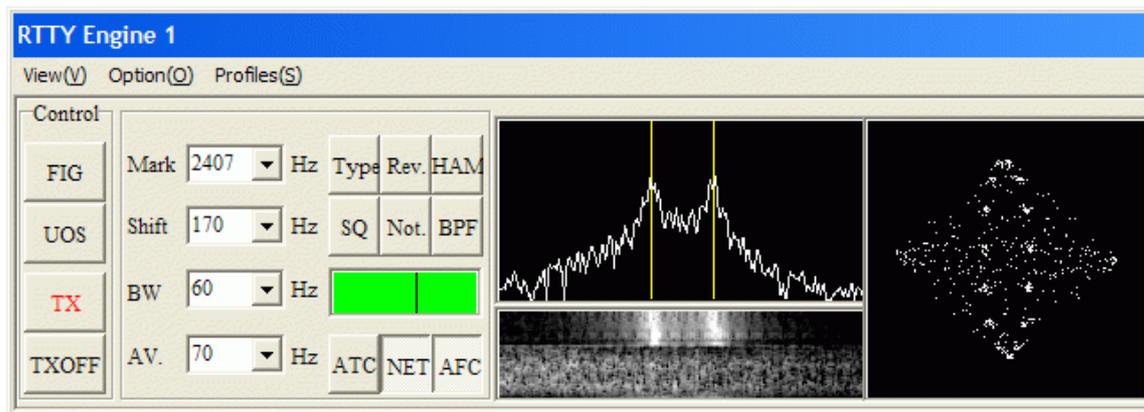
### 28.1 MMTTY Windows

When using MMTTY two windows will open.

- the Digital Interface window
  - ◆ which is equal for MMTTY, MMVARI and external Interfaces. More information about external interfaces in the chapter 'Digital – External TNC Support'.
- the MMTTY engine window –
  - ◆ there are two versions which can be selected in the Digital Interface menu under Settings.
    - ◇ Small version MMTTY engine window



◇ Large version MMTTY engine window



## 28.2 Download, configure and test MMTTY

### 28.2.1 Download MMTTY

- Download the current release of MMTTY (check [links chapter](#) for url)
  - ◆ **At least version 1.64 is needed.**
- 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.

## 28.2.2 Configure MMTTY

### FSK KEYING

1. Open the Configurer (Configure Ports, Telnet Address, Other in the Config menu).
  - ◆ Select the tab 'Digital Modes'
    - ◇ Select Soundcard as your Interface type.
    - ◇ Select for the selected Digital Interface as MMTTY Mode FSK
    - ◇ Select the path to your MMTTY directory, preferable not the same directory as N1MM logger is installed in.
  - ◆ Select the 'Hardware' tab
    - ◇ Place a check mark under the Digital column that you are using for the digital port.
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' (under the Window menu) and MMTTY will load.
  - ◆ Select: 'Option/Setup' in MMTTY.
    - ◇ Select the TX tab. and set your serial port that you will be using for FSK keying and data.
    - ◇ Close the Setup dialog
    - ◇ Close the 'Digital Interface' to have MMTTY save the settings.
4. From this point every time the Digital Interface loads it will NOT pass the port info to MMTTY. MMTTY will load the the serial settings from it's own settings file.

or another approach

1. Load up MMTTY (in what ever directory you have set in the loggers setting) in standalone mode and set the TX port to Com1. Close that out.
2. In N1MM logger under the 'Hardware' tab in the Configurer make sure that you have a digital check mark next to Com1 and in the settings section of that port put RST = PTT.
3. Next switch to the 'Digital Modes' tab and make sure that the MMTTY settings show FSK instead of AFSK.
4. Save the settings and close N1MM logger. When you open MMTTY it should be set to use Com1.

### Using the RIGblaster interface for FSK with N1MM/MMTTY combo.

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.

### AFSK KEYING

1. Open the Configurer (Configure Ports, Telnet Address, Other in the Config menu).
  - ◆ Select the tab 'Digital Modes'
    - ◇ Select Soundcard as your Interface type.
    - ◇ Select for the selected Digital Interface as MMTTY Mode AFSK
    - ◇ Select the path to your MMTTY directory, preferable not the same directory as N1MM logger is installed in.
  - ◆ Select the 'Hardware' tab
    - ◇ Place a check mark under the Digital column that you are using for the digital port.
2. Save and exit.

**SO2R :** In order to use 2 copies of MMTTY you need to have 2 different keying comports setup for MMTTY to use. Also the second serial port must be a higher number than the first.. More info can be found in the [SO2R chapter](#).

### 28.2.3 Testing MMTTY

MMTTY is also a stand alone application. So testing can be done outside N1MM logger.

### 28.2.4 Two radio setup

For 2 radio operation where you are using 2 separate soundcards You should be setting the soundcards to their respective soundcard number. These settings can be found on the TX tab under 'Option/Setup' from MMTTY. When not correctly set up send info on radio 2 will print out on the DI1.

When using one soundcard using the right/left channels it sometimes helps to set the soundcard number to -1 on radio 2 and 0 on radio 1.

## 28.3 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.

#### *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
- Make sure you click the "ham" button for proper shift etc.
- Probably set AFC off..when you are in a crowded section of the band and manually tune the signals
- Also in crowded sections its helpful to use the built-in notch and bandpass filters
- Make sure to use LSB

*Periodically you get a lost sound indication in the MMTTY window and the program quits responding to RTTY.*

- This should never happen but when it does it happens every 20 minutes or so. 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..... Mostly the transition from RX-TX-RX is much smoother.

#### *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.

#### *When should I use the NET option: **NET On/Off with Run Change***

- When in 'Search and Pounce' mode the program will check the NET option, your signal will track any drift on the person you are calling and working.
- When in 'Running' mode the program will uncheck the NET option, you don't want to 'follow' the station which is calling you over the band.

*Why to use "Auto Update TRX Offset w/Mark Freq."*

- Default the mark frequency being used is 2125 Hz. Under the settings menu on the Digital window check **Auto Update TRX Offset w/Mark Freq.** This way the program will track the mark frequency and will be more on frequency when a spot comes in. When leaving the Digital window the offset is set back to 0 and turned off...

# 29 Digital – MMVARI for PSK and other modes

## 29.1 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 which are next to **bpsk** (like PSK31 and PSK63) also **GMSK** (HF), **FSK** (V/UHF), **FSK-W** (V/UHF, satellite), **BPSK** (HF), **bpsk** (Standard bpsk), **rtty-L** (LSB), **rtty-U** (USB), **MFSK-L** (LSB) and **MFSK-U** (USB).

The MMVARI engine does not have to be installed separate, 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.

### 29.1.1 The MMVARI Interface Window



The MMVARI interface window is broken into several areas which will be covered from the top down. The exact frequency is displayed in the Digital Interface and MMVARI Engine Caption (rig(+/-)audio).

- **TX** – Indicator to show where the transmit is going to take place (useful when using two sessions like SO2R).
- **Letters/Figs** – Shows where is mouse is on in reverse (letters/figures switched).
- **MouseOver** – Shows the text which would be selected where the mouse is positioned over.
- **Receive Windows 1 and 2** – Both these windows operate in the same manner and both windows are able to grab callsigns and place them into the grab window that will be discussed later.
  - There is a colored pane on the left side of each receive window that serves 2 purposes
    1. Identifies which window is currently the transmit window by coloring it **Red**.
    2. 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.

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. Whenever a callsign is printed to a window 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.

Selecting another frequency for this window is done by *left* clicking in the Waterfall or Spectrum window. This is the window used for making QSOs. If you select a callsign using your mouse it will be put into the callsign field in the Entry window.

The two receive windows are resizable by the middle splitter.

- **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 what ever is typed will be sent. The size is static and doesn't change size (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 equal to the callsign in the received text, the call in the Entry window does not get placed into the call list.

- **Clr RX** – This is a fast way to clear BOTH receive windows. If you want to clear individual windows right click over the window and a menu will pop up. The only time this menu will not appear is if you are in RUN MODE. Then when you right click on either of the 2 receive windows the F2 macro will be sent. You can still access the clear menu by right clicking in the TX window.
- **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.
- **RX** – This places the interface back into receive mode after all the characters in the transmit buffer have been sent. To abort transmit immediately you may press the Escape key.
- **Macro buttons** – These buttons on the Digital Interface are 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 interface.
- **Grab** – Transfer the selected callsign in the callsign text box to the callsign field on the main logger window. Once the callsign is filled what ever you click on next will fill the next box to have info entered in. The mouse is the only way to do this.

## 29.1.2 The Waterfall or Spectrum window



- **The digital engine window** – This window which uses the MMVARI control from Makoto Mori, JE3HHT which is equipped with a total of nine RX channels and one TX channel. Across the top it shows the frequency of your radio. As you tune your radio this will update and the numbers will change. There are colored cursors which represent the 2 receive windows. The yellow cursor is for the 1st receive window and the red cursor is for the 2nd receive window. To change frequency for the 1st receive window you place your mouse pointer over a signal trace and click with your *left* mouse button. To change frequency for the 2nd receive window you place your mouse pointer over a trace and click with your *right* mouse button.

- The exact frequency of the Main Channel is displayed in Digital Interface and PSK Engine Caption (rig(+/-)audio).

The remaining text boxes represent the receive frequency of the receive windows. The IMD settings for each channel are listed and will change whenever idle signal (only signal no text) is received.

## • Buttons above the FFT

- - ◆ **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.
  - ◆ **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 Escape key.
  - ◆ **AFC** – Shows AFC on or off. Selected (white) means AFC on.
  - ◆ **NET** – Shows NET on or off. Selected (white) means NET on. When NET is on the TX frequency follows the RX frequency.
  - ◆ **Align** – This is used to move the signal that you are coping into the pass band of your filters. Set the frequency in the setup area.  
Example: center of filter pass band is 2100. When clicking on a signal at about 1400 it will be a hard time coping him. In order to copy the station has to come in my filter range. Click Align and the rig shifts and the spectrum frequency shifts and places the station on the set frequency setup already. Now click a button to turn on the filters and poof there he is...
  - ◆ **Mode selection** – Select the mode to use by clicking on this button. The Speed selections are mode dependent. Selections are:
    - ◇ **BPSK** – MBCS experiment (HF) – Possible speed selections: **31.25, 62.5** and **125.0**
    - ◇ **bpsk** – Standard bpsk – Possible speed selections: **31.25, 62.5** and **125.0**
    - ◇ **rtty-L** – BAUDOT (LSB) – Possible speed selections: **Fixed 45.45**
    - ◇ **rtty-U** – BAUDOT (USB) – Possible speed selections: **Fixed 45.45**
    - ◇ **MFSK-L** – MFSK (LSB) – Possible speed selections: **15.625** and **31.25**
    - ◇ **MFSK-U** – MFSK (USB) – Possible speed selections: **15.625** and **31.25**
    - ◇ **GMSK** – MBCS experiment (HF) – Possible speed selections: **31.25, 62.5** and **125.0**
    - ◇ **FSK** – MBCS experiment (V/UHF) – Possible speed selections: **31.25, 62.5** and **125.0**
    - ◇ **FSK-W** – MBCS experiment (V/UHF, satellite) – Possible speed selections: **31.25, 62.5** and **125.0**
  - ◆ **Speed selection** – Select the speed to use in bps by clicking on this button. The speed to select is mode dependent.
    - ◇ Possible selections are: **15.625, 31.25, 45.45, 62.5, 125.0** or **250.0** (bps)
  - ◆ Main Channel receive frequency.
  - ◆ Main Channel transmit frequency.
  - ◆ Main Channel IMD setting (S/N).

## • The FFT

- - ◆ At the top of the window the radio frequencies is shown.
  - ◆ Markers
    - ◇ Top markers (taps)
      - 1 – frequency receive channel 1
      - N – indicates a notch filter
    - ◇ The light blue vertical line (spectrum) or a light blue colored marker (waterfall) indicates the selected listening frequency.
    - ◇ The dark blue vertical line (spectrum) or a dark blue colored marker (waterfall) indicates the TX carrier frequency.

## • Mouse key clicking

- ◆ **Left mouse key clicking**
  - ◇ Single clicking in the FFT will change the transmit frequency
- ◆ **Right mouse key clicking**
  - ◇ The exact transmit frequency 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.
- Delete all notches** – all set notches will be removed.
- Set TX carrier on here** – a dark blue line will appear for the selected frequency.
- Turn Off bandpass Filter** – Turns the BPF off

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 FFT

- ◆ Below the FFT the receive channels will be shown. The number of shown receive channels can be configured.
- ◆ **Mode** – Select the mode to use for this receive channel. Selections are: GMSK, FSK, FSK-W, BPSK, bpsk, rtty-L, rtty-U, MFSK-L or MFSK-U
- ◆ **Speed** – Select the speed to use for this receive channel. Selections are: 15.625, 31.25, 45.45, 62.5, 125.0 or 250.0
- ◆ Receive channel frequency.
- ◆ Receive channel IMD setting (S/N).
- ◆ **AFC** – Shows 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.
- ◆ Waterfall display – shows within 500 hz of the signal that that channel is on. You can click anywhere in the waterfall or drag the indicator to where you want it.
- ◆ **Swap** – Swaps transmit control between the receive windows. The indicator on the left of the window will turn **red** if the window has transmit control and **green** when not. This is good in contesting as while working one station. You can dial the second station in via the second receive window and after you finish the first contact just hit swap button and then call the other station.

## • Menu at the Top

- ◆ **BPF** – When enabled selects the used Band Pass Filter. The BPF filter uses a very tight skirt and uses 80db of rejection. Mind you this is not as good and the filter selections in your radio and it is still possible to have overload from a nearby station. The Band Pass filter can be enabled/disabled using the first menu item (Disable BPF/Enable BPF).
  - ◇ Selections when enabled are: Wide 1000 Hz, Middle 500 Hz, Narrow 250 Hz, Ultra Narrow 100 Hz, Custom (Grayed out)
    - The custom setting normally is grayed out. To set Custom setting left click in the waterfall where you want the BPF to start. Drag your mouse with the left button held down and release it where you want the BPF to end. The waterfall will immediately change to your set 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 Off on the BPF menu or right clicking in the waterfall and selecting Turn off
  - ◇ The BPF is retained when you close and reopen the Engine.
- ◆ **ATC** – Select if Automatic Timing Control (ATC) is turned 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 type to use. Selections are: Spectrum, Waterfall, Sync or Wave Input
  - ◇ **FFT Width** – Select the FFT width to use. Selections are: 250 Hz, 500 Hz, 1000 Hz, 2000 Hz, 3000 Hz or User Defined
  - ◇ **FFT Scale** – Select the FFT scale to use. Selections are: 100 dB, 60 dB, Square Amplitude

- ◊ **Waterfall AGC** – Turn the waterfall AGC on or off.
- ◆ **SHIFT** – Shift selections. The choices are 170 Hz, 200 Hz, 23 Hz or User Defined.
  - ◊ Only in RTTL–L, RTTY–U and GMSK.

### 29.1.3 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.

## 29.2 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 chapter '[Digital Setup](#)'.

### 29.3 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.

### 29.4 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.

## 30 Digital – External TNC Support

The Digital Interface will not only work with MMTTY, MMVARI and external TNC"s like th ePK232, HAL DXP38 but with ANY TNC.

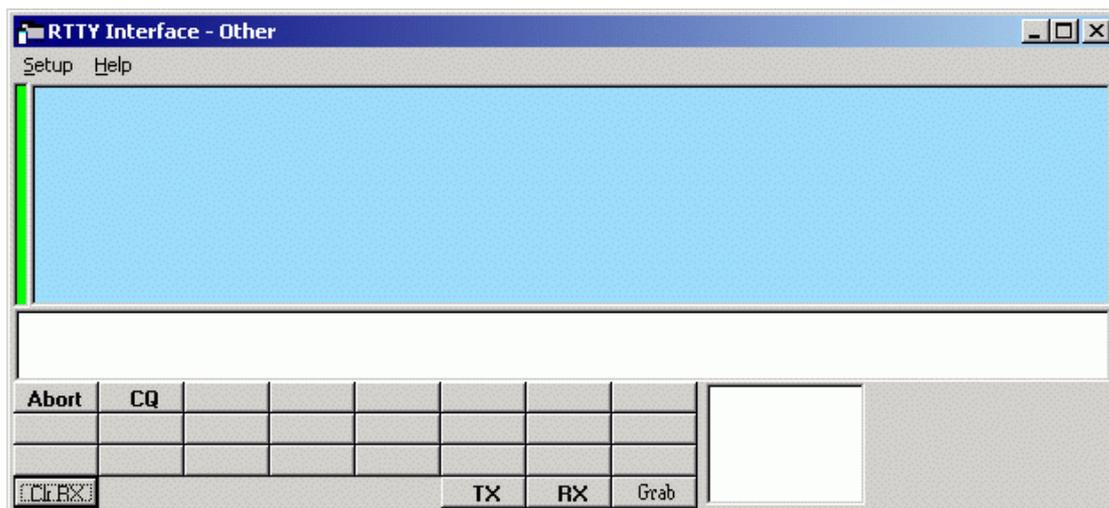
This because the commands for the TNC are not hard coded into the program. This has to be done by the user of the program :-)

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.



### 30.1 The Digital Interface

The Digital Interface can be used with any external TNC.



Using a TNC will show an interface like the one above.

### 30.2 Setting up the TNC in the Configurer

1. Start the N1MM Logger application.
2. On the Logger Main Window do a 'Config> Configure Ports, Telnet Address, Other'
3. In Digital Setup
  - ◆ Choose Other for Interface
  - ◆ Set other parameters accordingly (Example settings: Com 4 ,9600 ,8 ,N ,1, RST-Xon)
  - ◆ 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} and save the macro.
6. 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}

### 30.3 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 on the Hyperterm terminal program.

The interface has been tested with the three mentioned TNC's below and work fine with them. Any other TNC should also work as long as you place the right commands for that TNC in the macros.

### 30.4 Additional Macros for he 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.

There is one special macro key on the TNC interface. **The very first macro button must be setup to send the abort transmission command.** As you see in the above picture I have this marked as Abort and have it colored RED. If at any time you press the ESC key while transmitting it will send this macro to the TNC to stop transmission immediately.

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 what ever 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.

### 30.5 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.

### 30.5.1 Hardware Set-up

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*.

### 30.5.2 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

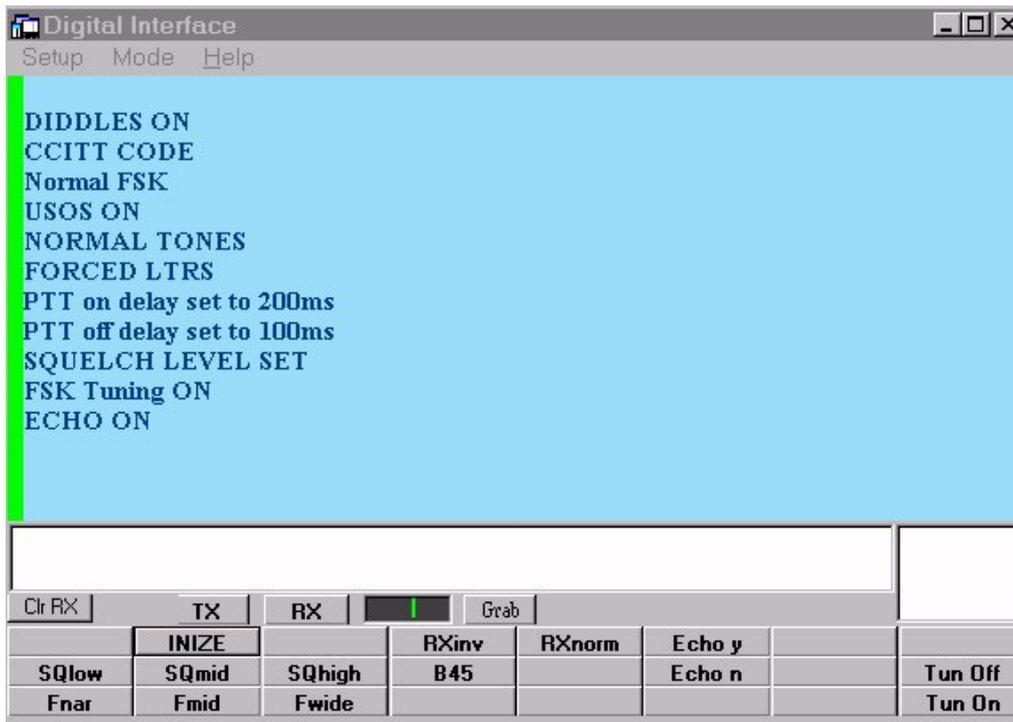
- On the digital configuration dialog
  - ◆ Choose a free port and configure it for 9600 baud, N,8,1 and no handshaking.
    - ◇ It works fine on the first port but was not tried yet on the second channel. Nor have I tried using two channels.
    - ◇ I have been able to get the DXP38 to run on the first 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}



**Example Macro file (other 1.mc). This macro is available for download from the N1MM website (Other files)**

```

*,-
INIZE,{H8084}{H8085}{H80D1}{H80C0}{H80DB}{H80D3}{H805B}{H8089}{H80E3}{H8002}{H80ED}{H8001}
      {H80E8}{H8037}{H8000}{H805D}{H8059}{H800E}
*,-
RXinv,{H804C}
RXnorm,{H805C}
Echo y,{H8059}
*,-
*,-
SQlow,{H80E8}{H8015}
SQmid,{H80E8}{H8037}
SQhigh,{H80E8}{H8045}
B45,{H80E4}{H8000}{H800E}
*,-
Echo n,{H8049}
*,-
Tun Off,{H804D}
Fnar,{H80EB}{H8000}
Fmid,{H80EB}{H8001}
Fwide,{H80EB}{H8002}
*,-
*,-
*,-
*,-
Tun On,{H805D}
TX,{H800D}
RX,{H800E}
ESC,{H8006}

```

### 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.

### 30.5.3 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.

### 30.6 HAL ST-8000 (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...

### 30.7 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 some RTTY settings for the KAM TNC

<b>AUTO CR</b>	0	<b>AUTO LF</b>	ON	<b>AUTO STRT</b>	OFF
<b>BK ON DEL</b>	ON	<b>CD</b>	SOFTWARE	<b>CR ADD</b>	OFF
<b>DIDDLE</b>	ON	<b>ECHO</b>	ON	<b>FILTER</b>	OFF
<b>FSK INV</b>	OFF	<b>INVERT</b>	OFF	<b>LFSUP</b>	OFF
<b>LOW TONES</b>	OFF	<b>MARK</b>	2125HZ	<b>RBAUD</b>	45
<b>SHIFT</b>	170	<b>SPACE</b>	2295HZ	<b>USOS</b>	ON
<b>XFLOW</b>	ON	<b>XMITECHO</b>	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.
- ◆ Example:
  - ◇ CQ macro: `{TX} CQ CQ CQ DE W3PP W3PP W3PP KKK {RX}`

## 30.8 PK-232 – Setup

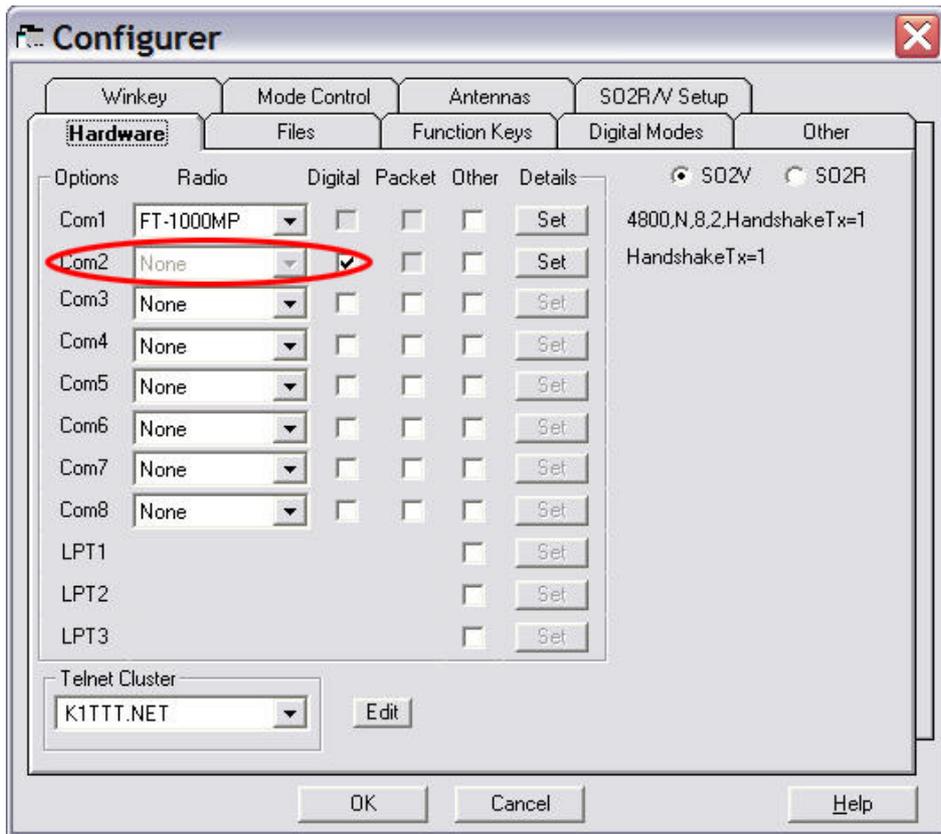
- Make sure the PK-232 autobaud is set and the unit is set to RTTY mode.
- Launch Hyperterm and set its parameters to 1200 baud, 8-data, no-parity, 2 stop bits, and no flow control.
- Connect the PK-232 to the port configured in Hyperterm.
- Turn on the PK-232.
- Type a few "\*" characters so your PK-232 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.

### 30.8.1 Setting up the PK-232

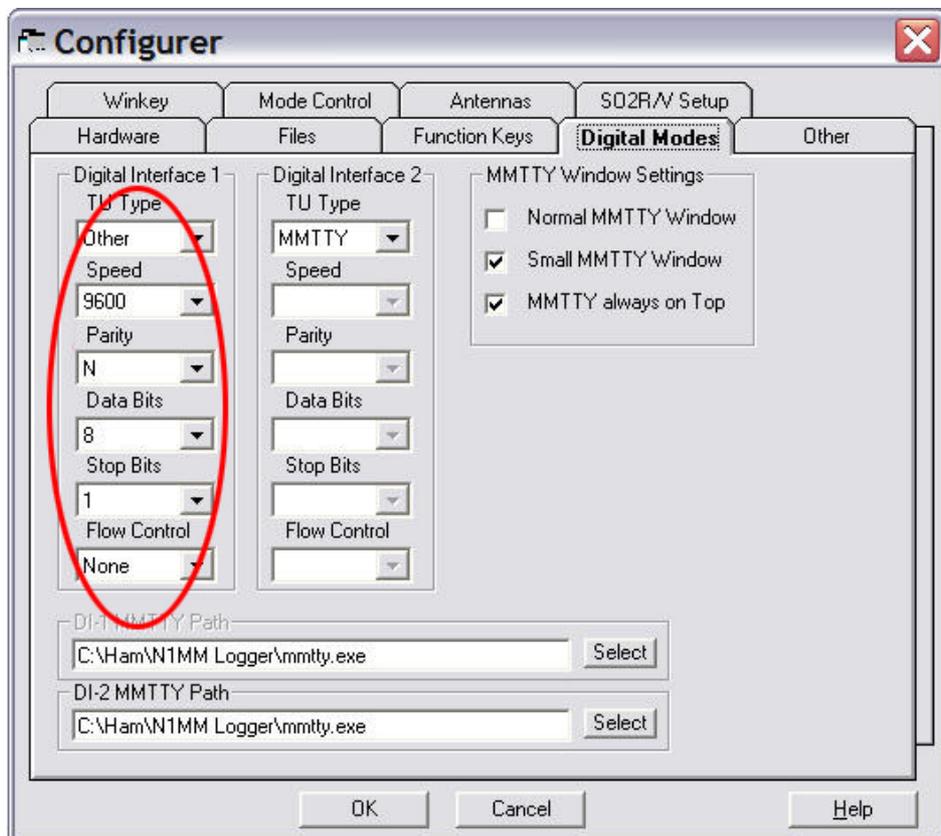
By John VK4WPX / VK4CEJ

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).

## 30.9 SCS PTC

- 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' '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](#)..

# 31 Before the Contest

- [Start of the contest season](#)
- [Check the contest rules and if the contest program uses them correct](#)
- [Call History Lookup](#)
- [Importing and exporting message Function keys](#)
- [Getting ready for CQWW \(and other contests\)](#)
- [How to record Wav files for the Function keys used in SSB contests.](#)

## 31.1 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:

### 31.1.1 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 Alt-Ctrl-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 cty.dat. A printed copy at the operating position is helpful in this.

### 31.1.2 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

## 31.2 Check the contest rules and if the contest program uses them correct

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

## 31.3 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 chapter '[Advanced Functions](#)'

## 31.4 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 FunctionKeys 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.

## 31.5 Getting ready for CQWW (and other contests)

Top contesters 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:
  - ◆ Enter sends messages
  - ◆ Autocompletion
  - ◆ Multi-op
  - ◆ Send leading zeros
  - ◆ Send corrected call
  - ◆ Radio interface
  - ◆ Packet connection
  - ◆ 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

## 31.6 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.

Here is what is recommend by Uffe, PA5DD

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.....

Audacity anomaly: When making SSB recording in AUDACITY, sampling rate MUST be set to 44100 HZ. Any sample rate less than that causes the splash to be heard.... on the end of every recording.

Place the Wav files you have made in the *N1MM Logger*\wav directory and call them cq.wav n1mm.wav 59.wav etc. Just what you like! In the program I specify them as:

```
CQ      wav\cq.wav
N1MM   wav\n1mm.wav
Exch   wav\59.wav
```

### **NOTE THERE IS NO LEADING \ before wav !**

This notation means to start looking for the directory at the current directory (N1MM Logger or whatever).

When making also all letters and number wav files these have to be placed in the *N1MM Logger*\Letters directory.

Examples:

```
letters\1.wav
letters\2.wav etc
```

```
? = letters\query.wav
/ = letters\stroke.wav
```

Below some extra information from Mario, S56A, N1YU

- I recorded CQ CONTEST FROM S56A S56A CONTEST, S56A, THANKS S56A, THANKS 599 15 in one session. That should cover most of my automatic SSB transmissions.
- I used 20 dB MIC preamp in SoundBlaster and spoke few words before the real recording in order to settle ALC. I used modest 8 bit 11K sampling.
- Graphic equalizer was later used with 125 Hz cutoff, flat settings on 250 and 500 Hz, +7 dB on 1 kHz, +14 dB on 2 kHz and – 18 dB on 4 kHz.
- Output was checked for flat topping and later normalized. This is NOT Hi-Fi sound but HF SSB optimized audio.



NB. When using WAV files turn off Windows sounds in ' Control Panel – Sound' and select: Scheme : No sounds.

## 31.7 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 particularly an issue 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 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.

## 31.8 Turn of Windows Sounds when using Wav files

- Open Control Panel
- Double-click the Sounds folder.
- Click on the Sounds Tab
- Select scheme: No Sounds

## 31.9 Adding a new font to Windows

- Open Control Panel.
- Double-click the Fonts folder.
- On the File menu, click 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

## 32 During The Contest

### 32.1 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 anymore. 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. No concern during the contest. You have reported bugs long before the contest and of course these are 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!**

### 32.2 Bugs

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.
  1. E.g. "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.

## 33 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.

- [Post-Contest QSO Entry](#)
- [Change All Contact Timestamps by a Fixed Amount](#)
- [How to create Cabrillo files](#)
- [Submitting E-mail logs for ARRL Contests](#)
- [ARRL Contest Robot](#)
- [Printing QSL cards](#)
- [Importing a contest into your general logging program](#)

### 33.1 Post-Contest QSO Entry

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...

**Warning: 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!**

#### 33.1.1 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}
etc.
```

#### 33.1.2 Change time/date

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.



**Note:** 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.

## 33.2 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 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)



**Note:** While you can easily adjust for a mistake by doing another offset, it is advisable that you backup your log before doing any changes.

## 33.3 How to create Cabrillo files

Cabrillo is being used by the major contests.

- Select 'File | Export | Export Cabrillo to file...'
  - ◆ This will create 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 rescore the contest before submitting.
  - ◆ A Cabrillo file will be created named <yourcall>.LOG in the N1MM logger program directory.

In the chapter [Technical Information](#) there is some more information about files the program can make on your command. (Cabrillo, summary sheet, log, ADIF etc.)

## 33.4 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.

## 33.5 How to get statistics

The program does have very nice statistics by itself. Also there is a external tool from I8NHJ. Below some possibilities.

- Select under 'View' the menu item '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 chapter [Third Party Software](#)

## 33.6 Submitting E-mail logs for ARRL/CQ contests

ARRL and CQ need a Cabrillo log file for each contest.

- The Cabrillo log file named: <yourcall>.LOG Example: N1MM.log
  - ◆ 'File | Export | Export Cabrillo to file...'

Submitting the files

1. Attach the Cabrillo Yourcall.\* file. DO NOT send them as text but as **attached files**.  
Check the file before sending. Read the the first part of the log file to check if all is correct.
2. The E-mail subject line should read:
  - ◆ ARRL: Contest, Yourcall, Class and Power  
Example E-mail subject line: ARRL DX CW N1MM SOA HP
  - ◆ CQ: Callsign and the mode (SSB or CW).  
Example E-mail subject line: N1MM CW
3. See the ARRL and CQ Web site for the appropriate e-mail addresses:
  - ◆ ARRL at <http://www.arrl.org/contests/email.html>
  - ◆ CQ at <http://www.cqwww.com>
4. From the robot (answering computer) in return you'll receive an automatic message, acknowledging receipt of your log. Please save this message.
5. Remember that logs received after the deadline will be considered check logs only!

## 33.7 ARRL Contest Robot

Log files to the ARRL have to Cabrillo files and need to be sent as attachments (not as text)!

Below a possible response from the ARRL contest Robot.

(This is an automated response).

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  
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.*

## 33.8 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.

## 33.9 Importing a contest 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...

## 34 Help files and Manuals

The documentation for this program is available in three different forms

- On the Internet on the N1MM logger homepage([www.n1mm.com](http://www.n1mm.com) ) , select "Help | View Help files".
- As the programs Help file (N1MMLoggerHelp.chm) which can be downloaded (select link below).
- As a PDF file (N1MMLogger.pdf) which can be downloaded (select link below). The PDF file can be viewed and printed with Adobe Acrobat Reader (Version 3 or higher)

Both the Help file (CHM file) and the manual (PDF file) can be accessed while in the program. For this to happen the files should be placed in the N1MM logger program directory.

### English– most recently updated / latest versions updated almost every week

- Quick Start Guide by Pete, N4ZR
  - ◆ 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 microphone audio) is well covered in the manual.
  - ◆ **A must read for the beginning N1MM logger user!**
- [View Quick–Start Guide on the web](#)
- [Download the Quick–Start Guide in PDF format \(use right–click to download\)](#)

Please check the [version information](#) and download the latest [Help](#) and/or [Manual](#) when getting behind..

- **Help file**
- [View English Help on the web](#)
- [Download the English Help as Windows Help file \(2,5 MB\)](#)
- - ◆ Computers using Windows XP Service Pack 2 or Windows Server 2003 Service Pack 1 or higher will place a block on compiled help files (\*.chm) that are downloaded from the Internet. The block will interfere with the operation of the help file and an Action canceled or The page cannot be displayed error will be displayed in the topic pane. The problem is caused by security features introduced in the service packs designed to reduce vulnerabilities in HTML help.
  - ◆ Workaround: After downloading the document, open it from the location where it was saved and a security warning will appear. In order to view the help documents properly, the checkmark must be cleared from the Always ask before opening this file check box. The files will then open properly from the PC. Alternatively, right–click on the file you want to open, click Properties, and then click Unblock.
- **Manual**
- [Download the complete English Manual in PDF format \(use right–click to download\) \(4 MB\)](#)
  - ◆ The manual is (almost) equal to the Help files on the website or the compiled version.
- [Download the KeyAssignments in PDF format \(use right–click to download\) \(15 kB\)](#)
- [Download the KeyAssignments Shortlist in PDF format \(use right–click to download\) \(5 kB\)](#)
- **Version information**
- [Show the version of the English Help file and manual \(go to the bottom of the page\)](#)
- **Other information**
- [Take the English Quick Tour](#)

### Español

The whole help/manual has been translated in Spanish by a whole team of translators around José, EA7GV

- **Fichero de ayuda**
- [Ver ayuda en la web](#)
- [Descargar la ayuda en castellano como fichero de ayuda de Windows \(2,1 MB\)](#)
- - ◆ Los ordenadores que ejecuten Windows XP Service Pack 2 o Windows Server 2003 Service Pack 1 o superior bloquean los ficheros compilados de ayuda (\*.chm) descargados desde Internet. El bloqueo impedirá el funcionamiento correcto del fichero de ayuda y mostrará en el panel derecho "Acción cancelada" o "La página no puede ser mostrada". La causa está en las prestaciones de seguridad introducidas en los 'service packs' para evitar las vulnerabilidades de los ficheros de ayuda HTML.
  - ◆ Para Arreglarlo: Despues de descargar el documento, abrelo desde donde lo hayas guardado, una advertencia de seguridad aparecerá. Para abrir la ayuda correctamente, habrá que quitar la marca de Preguntar siempre antes de abrir este archivo . Los archivos se abrirán sin mayores problemas en adelante. Alternativamente, clic con el botón derecho sobre el archivo, propiedades y clic en desbloquear.
  - ◆ El fichero de ayuda se llama N1MMLoggerHelp\_es.chm para diferenciarlo de la versión inglesa. Pero si quieres usarlo desde el programa con Alt+H, tienes que llamarlo N1MMLoggerHelp.chm y ponerlo en la carpeta del programa. Si no quieres sobrescribir la versión inglesa renómbrala.
- **Manual**
- [Descargar el manual en formato PDF \(utiliza el botón derecho para la descarga\)](#)
- - ◆ El manual se llama N1MMLogger\_es.pdf para diferenciarlo de la versión inglesa. Pero si quieres usarlo desde el programa Menú Help... Manual, tienes que llamarlo N1MMLogger.pdf y ponerlo en la carpeta del programa. Si no quieres sobrescribir la versión inglesa renómbrala.
- [Asignaciones de teclas \(PDF\)](#)
- [Asignaciones de teclas, lista abreviada \(PDF\)](#)
- **Información de versión**
- [Muestra la última version en castellano de la ayuda y el manual \(ve al final de la página\)](#)
- **Otra información**
- [Guía rápida](#)

## German

The complete Help has been translated in German by Eike, DM3ML (version 6.11.0 november 28, 2006)

- **Help file**
- [Download Help as Windows Help file \(3.3 MB\)](#)

## 34.1 Version 4

### English– latest version 4 Help file (not being updated anymore)

- **Latest version 4 Help file 4.0.191** (December 31 2004)
- [Download Help as Windows Help file \(2.1 MB\)](#)
- **Latest version 4 Manual 4.0.191** (December 31 2004)
- [Download Manual in PDF format \(use right-click to download\) \(3,3 MB\)](#)

## German

The complete Help has been translated in German by Eike, DM3ML August 2004. NB. A newer version of the Help is available (see above).

- **Manual**

- [Download Manual in PDF format \(zipped\) \(version 4.0.88 August 2004\) \(use right-click to download\)](#) (2.6 MB)

## Polish

All files have been translated in Polish by a whole team of translators around Andy, VA3PL in June 2004

- **Help file**
- [View Polish Help on the web](#)
- [Download Help as Windows Help file \(Version 3.0.193 8 luty 2004\)](#) (1.8 MB)
- **Manual**
- [Download Manual in PDF format \(Version 3.0.193 8 luty 2004\)\(use right-click to download\)](#) (2.8 MB)
- **Version information**
- [Show the version of the Help file and manual \(go to the bottom of the page\)](#)

## French

The most important parts of the Help have been translated in French by Patrick, TK5EP

- **Other information**
- [View French Help on the web](#)

## Italian

The Quick Tour has been translated in Italian by Max, I8NHJ

- **Other information**
- [Take the Quick Tour / Una Panoramica del Programma \(July 2002\)](#)

## Spanish

In 2001 and 2002 some of the Help files were translated in Spanish by Fernando LU9UOL and by Fernando LW2DX.

With the more recent Spanish translation these translations have been removed from the website. Thanks guys for the early adaption of the program!

## 34.2 Frequently Asked Questions

### Question: What is the latest version of the Help and the Manual?

At the bottom of the first page the latest date and version of the Help/Manual are shown. See the link above.

NB. The **English** version is always the latest version of the Help and Manual.

### Question: Why are the Help and the Manual out of date?

The Help updates on a schedule different from the program (mostly every few weeks). The program is updated by Tom, N1MM, the Help/Manual by Thomas, PA1M.

- You need to download it separately, it's not in the N1MM logger update file.
- Check to see if there is a more recent Help file and Manual (updated every few weeks).
- Major updates will be announced on the N1MMLogger reflector but there are many in-between updates.
- The Help and Manual are updated at the same interval.

### Question: Why doesn't the Help work?

- Try Alt+H and not F1

- Probably because the file is not on disk or not in the right folder (program directory N1MM logger).
- The latest version can be downloaded from the link above.
- In the N1MM-FullInstaller.exe file there is an replacement Help file which gives instructions to download the most recent version.
- The Manual is not included at all and can be downloaded which is advised for printing.
- Windows blocks the program (Windows XP/SP2 security)
  - ♦ Computers using Windows XP Service Pack 2 or Windows Server 2003 Service Pack 1 or higher will place a block on compiled help files (\*.chm) that are downloaded from the Internet. The block will interfere with the operation of the help file and an Action canceled or The page cannot be displayed error will be displayed in the topic pane. The problem is caused by security features introduced in the service packs designed to reduce vulnerabilities in HTML help.
  - ♦ Workaround: After downloading the document, open it from the location where it was saved and a security warning will appear. In order to view the help documents properly, the checkmark must be cleared from the Always ask before opening this file check box. The files will then open properly from the PC. Alternatively, right-click on the file you want to open, click Properties, and then click Unblock.

# 35 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!

- [Bandmaps, Entry windows and the mysteries thereof...](#)
- [N1MM Logger Contest Technique](#)
- [Start of the contest season](#)
- [Autocompletion mode](#)
- [Log editing](#)
- [Force to log whatever heard](#)
- [Prefix not found when logging contact \(no multiplier credit\)](#)
- [Having F1 always send CQ](#)
- [Silence the Function Keys](#)
- [How I recommend to S&P on a new band](#)
- [Setting contest goals](#)
- [Problems during a contest](#)
- [Using up/down arrows to tune](#)
- [CW Tips](#)
- [Working Dupes](#)
- [Packet Spot Timeout](#)
- [How should I really use this program if I am SOA?](#)
- [How to find a worked station in the log when I missed parts](#)
- [Databases versus Contests](#)
- [How to upgrade the database to a newer version?](#)
- [Deleting QSOs \(especially important for Multi-User\)](#)
- [QSYing wipes the call & spots QSO in bandmap](#)
- [Exchange abbreviations](#)
- [Too many calls on the bandmaps!](#)
- [Gray line openings](#)
- [Serial number contest tip](#)
- [Dead radio at startup](#)
- [Read the update log](#)
- [Packet/telnet button setup](#)
- [Slow PC syndrome](#)
- [Using N1MMLogger for regular logging](#)
- [Move RX frequency from the keyboard](#)
- [Recording QSOs](#)
- [How to Tune your radio](#)

## 35.1 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.

## 35.2 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-UpArrow/Ctrl-Alt-DownArrow 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

### 35.3 N1MM Logger Contest Technique

I can't go over 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" this is there ONLY for US Sprints, as those stations move around 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.

In all cases DO NOT TURN OFF "Show non-workable spots". 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...

### 35.4 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.

## 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.

## 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.

## ESM

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.

## 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.

## 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

## 35.5 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.

## 35.6 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"

## 35.7 Force to log whatever heard

**Ctrl+Alt+Enter** will force the program to log whatever it doesn't recognize in the exchange field.

## 35.8 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'.
3. ♦ Note that this addition will be wiped out on the next reload of the country file.
4. 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.

## 35.9 Having F1 always send CQ

Hitting F1 should always call CQ in CW/SSB and also place you in Running mode? Here is the trick.

N1MM logger places the program in Running mode when

– CQ are 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 are 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.

So we have to program a CQ macro on one of the the S&P buttons. Then when S&P and you press F1 (my choice) it switches to run automatically and the buttons are now the run buttons. Tune off the run frequency and they revert back to S&P. Default the function key F1 does not contain a CQ so that is what we have to change. The following changes to your Message Buttons to have F1 always call CQ.

- 'Config |Change Packet/CW/SSB/Digital Message Buttons | Change CW Buttons' (or SSB Buttons)
- The default **S&P** Caption Button for F1 is normally: "F1 {MY CALL}"
  - ♦ This will have F1 in S&P just send your call once.
- Change the default **S&P** F1 Caption Button to "CQ F1 S&P" followed by your CQ message in the CW or SSB Message box .
- The default **Running** CQ F1 Caption Button should also read "CQ F1 Run" followed by your CQ message in the message box

*Note:* Even when doing the above, while in ESM, the Enter key still sends Your Call once, like normal S&P operation with ESM.

*Note:* Where the CQ has to be in the caption depends on the mode used! At the begining will always be ok.

## 35.10 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.

## 35.11 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 Alt+Ctrl 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.

## 35.12 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.

## 35.13 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. See: [TestPlan.wri](#)

If found problems before the contest, please send the bugs in to be fixed as much before the contest as possible

2. 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.

## 35.14 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 press of a key is set on the Configurer Other tab.

## 35.15 CW Tips

**CW Macro tip:** 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.

**Contest Spacing:** Go to 'Config | Change Ports, Telnet Address, Other | Function Keys'. The box is default 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 this box is not checked, 7 bits between words is used, which is "normal spacing".

## 35.16 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.

## 35.17 Packet Spot Timeout

What setting should I use for the 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.

## 35.18 How should I really use this program if I am SOA?

SOA = Single Operator Assisted

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 Alt+Ctrl+Up arrow and Alt+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.

## 35.19 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 low 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 grid square fields.

## 35.20 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!

## **35.21 How to upgrade the database to a newer version?**

A. 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?

## **35.22 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.

## **35.23 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.

## 35.24 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 Change Exchange Abbreviations under Config 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.)

## 35.25 Too many calls on the bandmaps!

What do you do if the calls are crowded together on the bandmaps? 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).

## 35.26 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).

## 35.27 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.

## 35.28 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.

## 35.29 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.

## 35.30 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.

## 35.31 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 bandmaps.

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}

## 35.32 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

## 35.33 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

## 35.34 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 haddisk 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.



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

## 36 VHF and Up contesting

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

10	10	JO								
89	99	09	19	29	39	49	59	69	79	89
10	10	JO								
88	98	08	18	28	38	48	58	68	78	88
10	10	JO								
87	97	07	17	27	37	47	57	67	77	87
10	10	JO								
86	96	06	16	26	36	46	56	66	76	86
10	10	JO								
85	95	05	15	25	35	45	55	65	75	85
10	10	JO								
84	94	04	14	24	34	44	54	64	74	84
10	10	JO								
83	93	03	13	23	33	43	53	63	73	83
10	10	JO								
82	92	02	12	22	32	42	52	62	72	82
10	10	JO								
81	91	01	11	21	31	41	51	61	71	81
10	10	JO								
80	90	00	10	20	30	40	50	60	70	80
IN	IN	JN								
89	99	09	19	29	39	49	59	69	79	89
IN	IN	JN								
88	98	08	18	28	38	48	58	68	78	88
IN	IN	JN								
87	97	07	17	27	37	47	57	67	77	87
IN	IN	JN								
86	96	06	16	26	36	46	56	66	76	86

Country
  ZN
  Sect
  Other
 Auto Auto Reset

### 36.1 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.

### 36.2 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..

#### 36.2.1 Call History Lookup

More information about this can be found in the chapter [Before the contest](#)

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.

### 36.2.2 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](#) and the [chapter Third party Software](#).

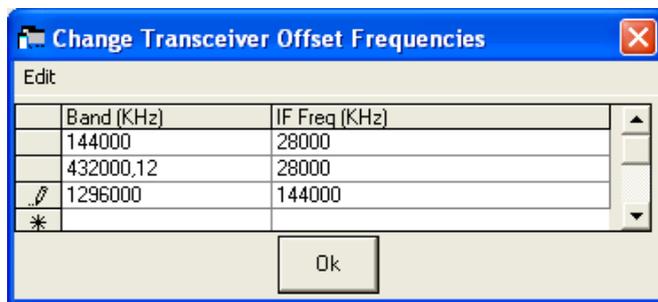
### 36.2.3 VHF master.dta file

For HF there are several master.dta files which contain callsigns of active testers. 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 section](#)) 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'.

### 36.2.4 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 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 or 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 transverter offsets in if you want the frequencies to "wrap".

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. i.e. 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).

## 36.3 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). 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.



Note: 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.

## 36.4 Example Contest setup

Additions are welcome!

### 36.4.1 Create (days) before the contest

- New master.dta file
  - ◆ Use tool from Alex, VE3NEA, see chapter [Links](#)
- 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'
      - Give a name like: VHFcwfunctionkeys.mc
  - ◆ Update these text files if needed
  - ◆ Check possible macros in [chapter macros](#)
- 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 [chapter macros](#) 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 [chapter macros](#)
- 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!
- ....

### 36.4.2 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
  - ◆ 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.

### 36.4.3 After starting the program

- Select/Check if correct database is used
  - ◆ 'File | open Database and 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: VHFcwfunctionkeys.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'
      - 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 chapter [Setup Contests](#))
- Setup configuration (Rig control, PTT, CW)
  - ◆ Check the tab 'Mode Control' in the Configurer.
- When using a transverter
  - ◆ Enter offset for bandmap A and bandmap B
- ....

Have fun during the contest!

## 37 Key Assignments Short List

Running keys	S&P Keys
<p><b>F1</b> = CQ ; or <b>insert</b> = Send call and report ' = Send TU message and enter in log</p> <p><b>Alt+R</b> = Enable CQ repeat <b>Ctrl+R</b> = Set repeat time</p> <p><b>Esc</b> = Stop sending, stop repeat</p>	<p><b>Shift+F1</b> = Call CQ and switch to run <b>Alt+U</b> = Toggle S&amp;P/Run. Set CQ–frequency for pass <b>Alt+Q</b> = Return to CQ–frequency</p> <p><b>Ctrl+Up/Dn arrow</b> = Grab next qso from bandmap <b>Alt+Ctrl+Up/Dn arrow</b> = Grab next mult from bandmap</p>
General keys	Radio control
<p><b>Ctrl+O</b> = Set operator call (or <b>OPON</b> in Callsign field) <b>Ctrl+N</b> = Add note to log</p> <p><b>Ctrl+W</b> or <b>Alt+W</b> = Wipe entry fields Release a reserved serial number</p> <p><b>SPACE</b> or <b>Tab</b> = Move between logging fields <b>Enter</b> = Log it (see ESM mode)</p> <p><b>Ctrl+Q/A</b> = Quick edit previous or next call <b>Ctrl+D</b> = Delete last qso!</p> <p><b>Alt+H</b> = Show help <b>Alt+K</b> = Edit message buttons <b>Alt+Ctrl+Enter</b> = Log a not accepted 'invalid' qso.</p>	<p><b>Alt–F10</b> = Swap VFOs <b>Alt+Q</b> = Return to CQ frequency <b>Alt+F8</b> = Return to last frequency</p> <p><b>Ctrl+PgUp/PgDn</b> = Up/Down a band <b>Type CW/USB/LSB/RTTY=</b> Change mode</p> <p><b>Ctrl+S</b> = Set radio into split <b>Ctrl–Alt–S</b> – Toggle split mode <b>Ctrl+Enter</b> = Set split frequency <b>Alt+F7</b> = Set split frequency or offset to specified frequency <b>Alt+'</b> = Toggle between the wide and narrow filters <b>Alt+F12</b> – Copy frequency and mode to other radio/VFO. or swaps MAIN and SUB using the CAT radio command</p> <p><b>Backslash ( \ )</b> = Change Receive (RX) focus (VFO/Radio)</p>
DX Spots and Band Map	ESM Mode
<p><b>Mouse wheel</b> = Zoom in/out bandmap <b>Keypad +/-</b> = Zoom in/out bandmap <b>Alt+D</b> = Remove spot</p> <p><b>Alt+P</b> = Send spot <b>Ctrl+P</b> = Send spot with comment <b>Ctrl+Tab</b> = Toggle to/from packet window</p> <p><b>Alt+O</b> = Store contact in the Bandmap</p> <p><b>Alt+Q</b> = Jumps to the CQ frequency on this band</p>	<p><b>Ctrl+M</b> = Turn on/off <b>Insert</b> or ; = Send call and exchange <b>Enter</b> = Send TU and log it <b>Enter</b> = Start CQ again... <b>Alt+Enter</b> = Log without sending anything</p> <p><b>Multi–User Mode</b></p> <p><b>Alt+Z</b> = Set pass frequency (broadcasted to all computers)</p>
SO2R	Specific radios / Rotor control
<p><b>Backslash ( \ )</b> – <b>Two radios</b> = Change Receive (RX) focus <b>Pause</b> = Swap both Transmit and Receive/Keyboard focus</p> <p><b>Ctrl+Enter</b> = Send next ESM state on alternate radio <b>Ctrl+F1 to F12</b> = Send message on alternate radio <b>Ctrl+B</b> = Dueling CQ's <b>` (Back–quote)</b> = Toggle Stereo/Mono ( LPT pin 5). <b>Ctrl+I</b> – Toggle through SO2R supported modes (\$5SO2R)</p>	<p><b>FT–1000MP + FT1000D + some Icom Dual Watch radios</b> <b>Alt+F12</b> = Dual Receive toggle</p> <p><b>TenTec Orion</b> <b>Alt+F12</b> = Toggle Main/left Sub/Right and Active in both ears. Rotor control for the callsign in the</p>

	Entry window. <b>Alt+J</b> – Turn rotor to bearing <b>Alt+L</b> – Turn rotor to long path bearing <b>Ctrl+Alt+J</b> – Stop turning the rotor
--	---

CW	SSB	RTTY	VHF
<b>Page Up</b> = speed up <b>Page Down</b> = speed down <b>=</b> = send last Fkey again <b>Ctrl+K</b> = CW window <b>Esc</b> = Stop sending	<b>Ctrl+Shift+F1</b> = Record CQ <b>Ctrl+Shift+F*</b> = Record F-key message NB. Same keys again to stop recording	<b>Alt+G</b> = Grab call from stack <b>Alt+T</b> = RX/TX toggle <b>Ctrl+Arrows</b> = Swaps DI <b>Ctrl+K</b> = manual window <b>Esc</b> = Stop sending	<b>Alt+=</b> = Search entered info <b>Alt+minus</b> = Toggle grids <b>Ctrl+E</b> = Send message to stations <b>Alt+Z</b> = Set pass frequency

# 38 Key Assignments

The keys below work from all main windows

## 38.1 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.

## 38.2 Active Radio/Bandmap Control Key Assignments

**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*.

### 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.
- **Alt+Shift+Q** – Jumps to the last CQ frequency on other band (non-active bandmap).
- **Alt+Ctrl+Q** – Jumps to your last used CQ frequency on *any* band and tune active bandmap to that frequency.
- **Alt+Shift+Up Arrow** – Get next spot lower in frequency that is *self-spotted*.
- **Alt+Shift+Down Arrow** – Get next spot higher in frequency that is *self-spotted*.

### 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 and Alt+F6** – Swap radio frequency and mode between VFOs (one radio)/radios (two radios).
- **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).

### 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.

### 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 + 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)** – Toggle Stereo/Mono ( LPT pin 5)
  - ◆ Back-quote can be found on US keyboard left from 1 below tilde ~
- **= (equal key)** – Will send the last message key (F1–F12) again.

## 38.3 Non-Active Radio/Bandmap Control Key Assignments

### Jump to Spots

- **Ctrl+Shift+Down Arrow** – Get next spot higher in frequency.
- **Ctrl+Shift+Up Arrow** – Get next spot lower in frequency.
- **Alt+Shift+Ctrl+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.
- **Alt+Shift+Ctrl+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.
- **Alt+Shift+Q** – Jumps to your last CQ frequency on the inactive VFO/radio.

### 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).

## 38.4 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 TAB character .
  - ◆ 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 his window.
  - ◆ Serial number contests: Release a reserved serial number after it has been reserved.
- **Ctrl+Shift+W** – Wipe out other window's contact information.
- **Alt+Ctrl+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.
- **Ctrl+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}

<i>Key</i>	<i>Send function key(s)</i>	<i>Action(s)</i>
<b>Insert</b> (middle)	<b>His Call Key &amp; Exchange Key</b>	Send His call followed by the Exchange.
<b>;</b> (same as <i>Insert</i> key)	<b>His Call Key &amp; Exchange Key</b>	Send His call followed by the Exchange.

<b>Alt+Enter</b>		Log the contact.
.	<b>End of QSO Key &amp; Log contact</b>	Will send the <i>End of QSO</i> message and logs the contact.

## 38.5 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** – Will highlight as you press the keys. When you type the first character, it will delete the highlighted character.

## 38.6 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..

<i>Default Function keys</i>							
<b>F1</b>	<b>CQ key</b>	<b>F2</b>	<b>Exchange key</b>	<b>F3</b>	<b>End of QSO Key</b>	<b>F4</b>	<b>My Call Key</b>
<b>F5</b>	<b>His Call Key</b>	<b>F6</b>	<b>QSO B4 Key</b>	<b>F7</b>		<b>F8</b>	<b>Again Key</b>
<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.

## 38.7 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.

## 38.8 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

## 38.9 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)

## 38.10 'Enter Sends Message' mode (ESM)

- **Ctrl+M** – Toggle 'Enter Sends Message' mode
- **Alt+Enter** – Log without sending anything

Callsign field	Exchange field	<i>Running mode</i>	<i>Search and Pounce mode</i>
		Enter sends:	Enter sends:
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,	Valid (after	End QSO +	End QSO + Log

Work Dupes checked	sending exchange)	Log (F3 + Log It)	(F3 + Log It)
--------------------	-------------------	-------------------	---------------

## 38.11 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.

## 38.12 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.

## 38.13 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.
- **Single quote key** *a.k.a. unshifted tilde key (~)* Toggle STEREO mode on/off, or toggle Auto/PTT modes with modified DXD . Notes: On US keyboards, they key we are talking about is the key just to the left of the number 1 key. We are calling this key the Tilde key, which is technically not correct it's the key, or single quote 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 focus control.
- **Ctrl+Shift+N** – Set advanced SO2R delay time
- **Ctrl+Shift+K** – FocusOther, Another method of focus control. Set focus on Other Radio
- **Ctrl+Shift+L** – Toggle CTRLFx Macro. This macro allows the user to send on the other radio (CW only).

## 38.14 RTTY Key Assignments

Key	Button Caption	Action (in text)
F1	&CQ	CQ TEST DE *
F2	&Exchange	5NN #
F3	&His Call	!
F4	&My Call	*
F5	&TU	TU DE *

F6	Call/Exch	! 5NN #
F7		

- **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 radio1 (bandmap A) DI2 will follow radio2 (bandmap B).

### 38.15 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..

### 38.16 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.

### 38.17 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.

### 38.18 Lookup Table Edit

- **Ctrl-D** – to delete a row in the table or use the right click menu.

# 39 Interfacing

## 39.1 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 configurator to match your Windows setup.

Port	Address
LPT1	&H378
LPT2	&H278
LPT3	&H3BC
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 (Win98) '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.

## 39.2 Radio interfacing

Interfacing to a radio is done directly with a serial cable (straight or crossed) or when using an older radio an additional interface is needed. Every brand has it's own solution for it, also they have there own commands when changing frequency, changing band etc. So always look in the manual what to use with your radio to get it connected. When a direct serial cable is needed be sure it has all the necessary pins wired. A cable with full wiring is mostly ok but sometimes a cable with only 3 wires could be the way to go.. When using an additional interface there are two choices again. You buy the original for your radio or you build one yourself. When you buy an original interface the manual will say what kind of cable you need for it. When you make an interface yourself or buy a not original interface it can be that you are in trouble. The program determines if you have to use a cable with

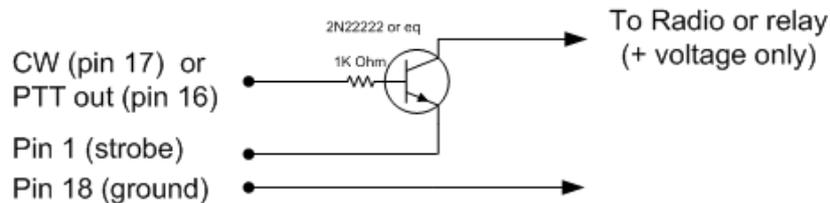
only three wires (software handshaking) or five wires (hardware handshaking).

Pin DB9	Pin DB25	Name	Description	Software handshaking	DB9	DB25	Hardware handshaking
1	8	CD	Carrier Detect	Ground	pin 5	pin 7	Ground
2	3	RXD	Receive Data	RXD	pin 2	pin 3	RXD
3	2	TXD	Transmit Data	TXD	pin 3	pin 2	TXD
4	20	DTR	Data Terminal Ready	Not used	pin 7	pin 4	RTS
5	7	GND	System Ground	Not used	pin 8	pin 5	CTS
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				

## 39.3 CW key and PTT interfacing

### 39.3.1 Via Parallel port

Below a picture of a possible interface.



Parallel port cw or ptt interface.

#### Parallel (LPT) port

- Pin 1 – Strobe
- Pin 16 – PTT output
- Pin 17 – CW output
- Pin 18 – Ground

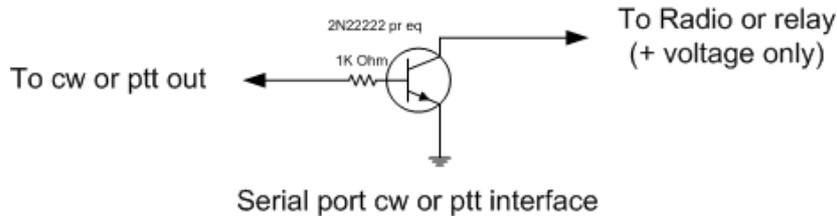
### 39.3.2 Via Serial Port

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(!) the PTT-line have to come from the same serial/parallel port.  
Example: When COM4 e.g. is the CW-Port the PTT-line has to be connected at the same jack

#### 39.3.2.1 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.

### 39.3.2.2 Using an optocoupler

By Brian Kassel, K7RE

As the serial port spec is to have -12 and + 12 on the DTR pin, a diode needs to be put in series with the 470 ohm resistor that drives the LED on the input to the OPTO-Isolator. The cathode (banded) end goes toward the OPTO-Isolator. A transistor could be used here, but I like the OPTO-Isolator route, as it affords more protection to the serial port in case something downstream from the port goes awry. You still need to protect the active device in your interface from the negative voltage though. Some notebook serial ports don't have a negative voltage, so you may be all right there, BUT if you switch out the interface to a PC that does, you are in for trouble. BTW, no negative voltage appears at parallel (LPT / printer) ports, so no negative voltage protection or isolation is needed there.

### 39.3.3 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 does not work well when using USB to serial. 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 very nice overview of serial- USB converters can be found at the RTTY contesting page by AA5AU at: <http://www.rttycontesting.com/us>

## 39.4 Additional Parallel Port Interfacing

If the type of CW port chosen is LPT1, LPT2 or LPT3, 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.



**NB. 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.

### 39.4.1 Parallel port pin layout

LPT pin	Description
1	<b>Return for PTT and CW output.</b> This pin has limited sink capability, so you may need to buffer it
2	<b>Band output (Least Significant Bit) set by Antenna tab in Configurer</b> This pin is also used to stop the message sent on the hardware DVK.
3	<b>NA-compatible TX focus. – Radio 1/2</b> 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	<b>NA-compatible RX focus.</b> 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	<b>(Shift+singlequote) to toggle for Stereo mono.</b> 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	<b>Band output set by Antenna tab in Configurer</b>
8	<b>Band output set by Antenna tab in Configurer</b>
9	<b>Band output (Most Significant Bit) set by Antenna tab in Configurer</b>
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	<b>PTT output</b> , high = transmit mode
17	<b>CW output</b>
18–25	<b>Return for Band output</b>

### 39.5 Band decoder output

The 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
---	---	---	---	---	----	---	---	---	---

### 39.5.1 Sample configs

<b>Top Ten Devices automatic band decoder</b>	<b>Multi band antennas</b>
---	----------------------------

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 below:

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 bands are used per code.

### 39.5.2 Sample config two stacked antennas

To antenna switch

Both Upper Lower

Decoder, 3 of n outputs shown

Configurer

Hardware Files Function Keys Digital Modes Other

Winkey Mode Control Antennas Audio

Code	Antenna	Bands (1.8, 3.5, 7...)	Rotor Port(s) (1, 2, 3...)	Offset	Bidirect
0	20 mtr stack - Both yagis	14			0
1	20 mtr stack - Upper yagi	14			0
2	20 mtr stack - Lower yagi	14			0
3					0
4					0
5					0
6					0
7					0
8					0
9					0
10					0
11					0
12					0
13					0
14					0
15					0

Starting UDP Port for Rotor Program 
 Start N1MM Rotor Program

RTTY

Sample config for switching between two stacked antennas with an automatic antenna switch. This diagram assumes that the decoder emits positive DC voltages from each terminal.

Attach the upper antenna to terminal one, and the lower antenna to terminal two. When the program outputs code 1, the upper antenna will be selected. When the program the program outputs code 2, the lower antenna will be selected. When the program outputs code 0, both antennas will be selected. Note that 0 is the lowest code, so both antennas will be the default.

The picture below shows the configuration in the Configurer.

### 39.5.3 Bearing data

Bearing data for rotator control is currently not available on the LPT port.

## 39.6 Sound card interfacing

Preferred method

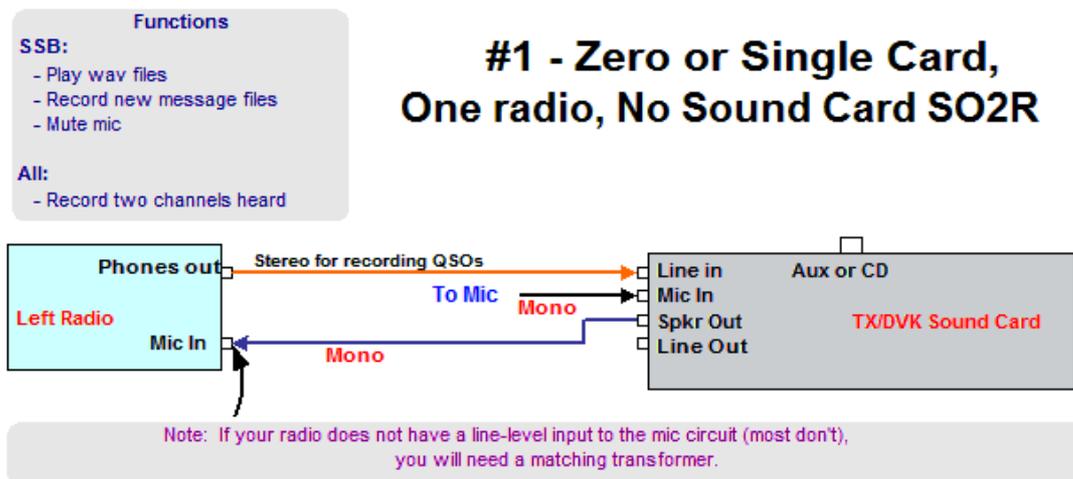
Its better to run the mic through the sound card all the time. That way your audio sounds the same either recorded or live. It also lets you re-record cq's on the fly, something that is really needed for 40m and 80m split cq'ing. Check out "#1 – Zero or Single Card, One radio, No Sound Card SO2R " which can also be found with more examples in the [SO2R section](#).

### 39.6.1 #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 in the Configurer and setup the top part of this dialog.

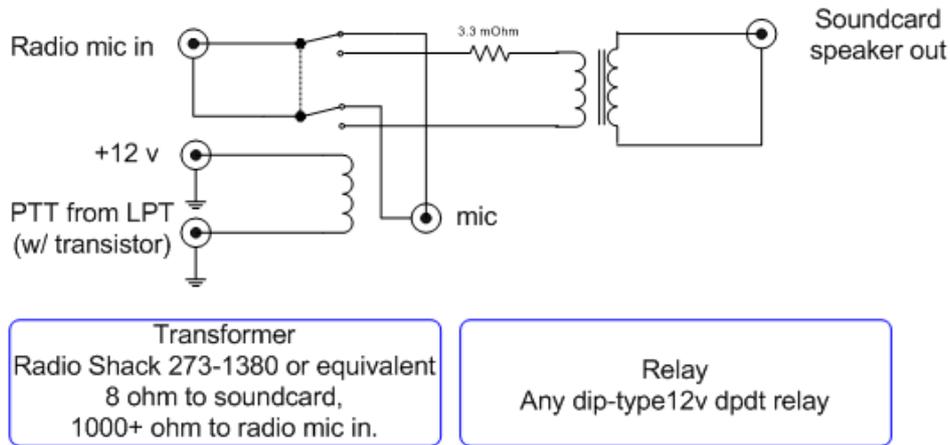
The sound is centered rather than set to a radio channel.



### 39.6.2 Another possible soundcard interface.

This is NOT the preferred method any more!

## Sound Card DVK Interface



### Sound card DVK

- 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.

## 39.7 Serial and Parallel port interfacing under Windows NT/2000/XP

Windows NT, Windows 2000, XP and their descendants require a special dll 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

## 39.8 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.

## 39.9 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 through 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.

## 39.10 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.

### 39.10.1 Parallel port

Hooking up a footswitch to LPT1 can be done by connecting a 10k resistor from pin 14 to pin 15 of LPT1. Pin 14 is +5V (see note below). 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 configurator.

Note: pin 14 also used for Radio A/Radio B control of external boxes, so that it won't always be +5 volts. If this is the case an external +5 V power supply can be used.

### 39.10.2 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.



# 40 Macros

## 40.1 General

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 on several places in the program.

- Function key buttons (Entry window)
- Packet buttons (Packet window)
- RTTY programmable buttons (RTTY window)
- PSK programmable buttons (PSK window)



Note: Not every macro can be used on 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).



**Note: 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.

### 40.1.1 General macros

General macros can be used on all the places mentioned above.

<b>Macro keyword</b>	<b>Substituted by</b>
*	Call from the Station info dialog, same as {MYCALL}.
!	Sends the callsign entered in the callsign field.
@	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: wav\{operator}\CQ Listening.wav@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. <b>Note:</b> 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.
{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}	<p>If you want something to execute after the message is sent, you must precede it with an {END} macro.</p> <p>The {END} macro signals to the program that the remaining {} commands are to be executed when the program returns from sending the CW, SSB or DIGI messages. Any text to send after the {END} macro is discarded.</p>
#	Send next (or last) serial number.
{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.
{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).
{KMGRIDDISTANCE}	Distance in kilometer between own gridsquare and grid textbox (contact in Entry window).
{LOG}	<p>CW: Logs the current contact. Same as ENTER in the Entry Window</p> <p>Digital: Put the {LOG} macro after the {RX} macro...</p> <p>Note: does not work in phone (SSB, FM etc)</p>
{LASTCALL}	Call of last station <u>logged</u> .
{LASTEXCH}	Exchange of last station <u>logged</u> . 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.
{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.
{RUN}	Sends the last logged callsign and then goes into <i>Running</i> 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.
{CLEARIT}	Reset the RIT to zero. 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) ++ 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. ++ 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: <a href="#">Time2- How it works</a>
{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}	Sends text assigned to function key F1
{F2}	Sends text assigned to function key F2
{F3}	Sends text assigned to function key F3
{F4}	Sends text assigned to function key F4
{F5}	Sends text assigned to function key F5
{F6}	Sends text assigned to function key F6
{F7}	Sends text assigned to function key F7

<b>{F8}</b>	Sends text assigned to function key F8
<b>{F9}</b>	Sends text assigned to function key F9
<b>{F10}</b>	Sends text assigned to function key F10
<b>{F11}</b>	Sends text assigned to function key F11
<b>{F12}</b>	Sends text assigned to function key F12
<b>{CAT1HEX radio_hex_command(s)}</b> <b>{CAT2HEX radio_hex_command(s)}</b>	<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. 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:</p> <p>{CAT1HEX FEFE66E01C0102FD / FEFE66E01C0102FD }</p>
<b>{CAT1ASC radio_ASCII_command(s)}</b> <b>{CAT2ASC radio_ASCII_command(s)}</b>	<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. 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 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:</p> <p>{CAT1ASC PB1;/PB2;}  {CAT1ASC PB1;PB2;}  {CAT1ASC P&lt;42&gt;1;PB2;}  FT2000 – Play message #1 would be: {CAT1ASC PB01;}</p> <p>You may place a space between the macro name and the radio CAT command to improve readability. All leading spaces after the</p>

	<p>CAT1ASC macro command name are removed.</p> <p>If the ASCII radio command contains characters that are macros (*, !, #), these characters must be sent using the hex notation explained above. 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>
<p><b>{ANTRX1TOGGLE}</b></p> <p><b>{ANTRX2TOGGLE}</b></p> <p><b>{ANTRX3TOGGLE}</b></p> <p><b>{ANTRX4TOGGLE}</b></p>	<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>
<p><b>{SOCALLSTACK}</b></p>	<p>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 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.</p> <p>{SOCALLSTACK} is not intended to be used with the MM call stacking function. See also the macro <b>{STACKANOTHER}</b></p> <p>Callsigns stacked by {SOCALLSTACK} can be popped off the stack by pressing the space bar when the CQ-Literal is on the call frame.</p> <p>More info and examples in the chapter: <a href="#">Advanced functions</a></p>
<p><b>{STACKANOTHER}</b></p>	<p>Macro to stack additional callsigns in all modes. Also check the keycombination CTRL+ALT+G</p> <p>More info and examples in the chapter: <a href="#">Advanced functions</a></p>
<p><b>{LOGTHENPOP}</b></p>	<p>This is a macro intended to be used 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 macro works only in RUN mode. The suggested macro key is:</p> <p>{LOGTHENPOP} TU NW {F5}{F2}</p>

	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: <a href="#">Advanced functions</a> Example fucntionkey setup can be found in the chapter <a href="#">Functionkeys</a> (CW: example 3)
{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.

++ = These macros can not be used in MMTTY and PSK.  
The TNC Interface does accept all of the macros above.

Eight of the new commands 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.

Radio specific commands were added for those SO2R users that do not have identical radios. The new macros follow the same syntax as the existing CAT1HEX and CAT1ASC macros.

The new macros CATA1HEX, CATA2HEX, CATA1ASC, CATA2ASC will send the command to the radio when it is the Active radio.

The new macros CATI1HEX, CATI2HEX, CATI1ASC, CATI2ASC will send the command to the radio when it is the Inactive radio.

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. 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}
```

The last macro is the CATDELAY macro. Radio communications are suspended while sending CW and users were unable to send CAT commands to the radio before the CW started. The CATDELAY macro simply delays the start of CW to allow the radio commands to be sent the radio. 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 (a delay of 1 second).

### 40.1.2 CW macros

CW macros are only substituted when used in substitutions for [CW buttons](#).

NB Note taht the ! needs to have a different character in the macro. Use a caret ^ in the macro to send a !

Macro keyword	Substituted by	Character	Macro keyword	Substituted by	Character	Substituted by
<	Increment CW speed with 2 wpm. See examples.	!	^	..---	É	..--
>	Decrement CW speed with 2 wpm. See examples.	"	"	..--.	Ü	..---
~		'	'	..----.	Ä	..--
		?	?	..---..	Á	..---.
		/	/	---..	Ñ	---..
		:	:	----...	Ö	----.
		;	;	"-.-.-."	_	..---.

	Send half space character. See examples.	(	(	"_._._."	\$	..._._-
		)	)	"_._._."	@	._._._.
		,	,	"_._._."		
		-	-	-...-		
[	SK	..._._-				
]	AS	._._.				
+	AR	._._.				
=	BT	-...-				



Tip: 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.

### 40.1.3 SSB macros

SSB macros are only substituted when used in substitutions for SSB buttons.

SSB macros can not be concatenated if the result will be two wav files. A combination with the # macro at the first place will work.

Macro keyword	Substituted by
{OPERATOR}	Specify wav files like: wav\{OPERATOR}\cq.wav Default to station callsign if not specified. See examples.

### 40.1.4 SO2R macros

SO2R macros are only substituted when SO2R is selected.

Macro keyword	Substituted by
{JUMPRX}	Change the RX focus to the other input window. If only one input window is shown the second window will be opened.
{WIPE}	Wipe the focus window.
{ADVSO2RON}	Turn 'Advanced SO2R' on. See chapter ' <u>SO2R</u> '
{ADVSO2ROFF}	Turn 'Advanced SO2R' off. See chapter ' <u>SO2R</u> '
{CTRLFx}	This macro allows the user to send on the other radio (and is <b>CW only</b> ). 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.

### 40.1.5 Multi User macros

Multi User macros are only substituted when in Multi User mode.

<b>Macro keyword</b>	<b>Substituted by</b>
<b>{MESSAGE}</b>	Send a message (via function key) to other connected stations over the network. Please check the examples below.
<b>{PASS 0}</b> ... <b>{PASS 15}</b>	Pass frequency from station 0 (Master station) through station 15.
<b>{PASS 1800}</b> ... <b>{PASS 28000}</b>	Insert pass frequency for first connected station found on that band. (Valid 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.

### 40.1.6 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>Macros</b>	<b>Substituted by</b>
<b>{TX}</b>	Starts transmission in the digital interfaces (needed to transmit!) <b>Needed at the beginning of every Digital macro!</b>
<b>{RX}</b>	Switches to receive in the digital interfaces (needed to get back to receive). <b>Needed at the end of every Digital macro!</b>
<b>{CLRRX}</b>	Clears the RX window. This macro can be used either alone or after an {END} macro.
<b>{SCQ}</b>	Macro to be placed at end of TU macro to 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) Sends an idle tone. (Only when using MMTTY)
<b>{FILE:xxxx}</b>	Macro to 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 anyplace 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>	Will 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>	Resets to HAM Default
<b>{PROFILE1}</b> ... <b>{PROFILE8}</b>	By inserting {PROFILE1} through {PROFILE8} in the function keys at the start of the CQ or S&P macro's 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. (Only when using MMTTY)
<b>{HXXXX}</b>	For use with the HAL DXP38. 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 <a href="#">RTTY chapter</a> for more HAL DXP38 info.
<b>{DI1}</b> ... <b>{DI24}</b>	Sends texts assigned to the digital macro keys DI-1 to DI-24 on the Digital Interface.
<b>{LOGTHENGRAB}</b>	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.
<b>{DIGQTCR}</b> <b>{DIGQTCS}</b>	WAE contest: Macro to open Digital QTC Recieve window. WAE contest: Macro to open Digital QTC Send window.

Some Remarks:

- Using the {TX} and {RX} macros will allow macros to be strung together as the radio will not unkey until it sees the {RX} or the RX button is pushed.
- Also ESC will switch the rig to RX.



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.

### 40.1.7 Packet/Telnet macros

Packet/Telnet macros are only substituted when used in the [packet/telnet buttons](#).

<i>Macro keyword</i>	<i>Substituted by</i>
<b>{WAIT}</b>	Wait 5 seconds (fixed value)

## 40.2 Macro examples

### 40.2.1 CW macro examples

- **Sent the call entered in the callsign field**
  - ◆ Macro: !
    - ◇ Sent his call. The callsign entered in the callsign entry field will be send by the program via the serial of 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.
    - ◇ \* will be replaced with the callsign from the Station dialog.
- **Sent part of exchange faster (report sent 6 wpm faster)**
  - ◆ Macro: <<<5nn>>>{EXCH}

◇ The report 5nn is send 6 wpm faster than the exchange.

### 40.2.2 SSB macro examples

- **Sent the call entered in the callsign field**
  - ◆ Macro: !
    - ◇ Sent his call. The callsign entered in the callsign entry field will be send by the soundcard. In the 'Letters' directory all the wav files for the letters/numbers etc. must be present. Examples can be found on the N1MM website, select 'Other Files' under 'Downloads'.
- **Let each operator have his own wav files**
  - ◆ Macro: **wav\{OPERATOR}\cq.wav**
    - ◇ You can specify wav files like: 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, like: "C:\wavfiles\cq.wav".
    - ◇ If you **\*\*really\*\*** wanted to, you could have: \wav\{OPERATOR}CQ.wav and name them:
      - N1MMCQ.wav
      - PA1MCQ.wav
    - ◇ Play exchange with operators voice: **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.

### 40.2.3 RTTY and PSK macro examples

- **Example macros for the PK-232 (Digital interface window)**

<i>Button text</i>	<i>Macro</i>
Abort	{CTRL-C}R{ENTER}TC{ENTER}
TX	X{ENTER}
RX	{CTRL-D}
Band Up	RB U{ENTER}
RxReverse	RXREV T{ENTER}

- **Example function key macros for the PK-232 (Entry window function keys)**

<i>Mode</i>	<i>Button text</i>	<i>Macro</i>
Running	F1 CQ	X{ENTER}CQ CQ CQ TEST DE {MYCALL} {MYCALL} K CQ{CTRL-D}
Running	F2 Exch.	X{ENTER} ! UR 599 {EXCH} 599 {EXCH} BK{CTRL-D}
Running	F3 Tnx/Qrz	X{ENTER} ! TU GL DE {MYCALL} QRZ{CTRL-D}
S&P	F1 {MYCALL}	X{ENTER}! DE {MYCALL} {MYCALL}{CTRL-D}
S&P	F2 Exch.	X{ENTER}! UR 599 {EXCH} 599 {EXCH} GL DE {MYCALL}{CTRL-D}

- **Example macros for the KAM**

<i>Button text</i>	<i>Macro</i>
--------------------	--------------

Abort	{CTRL-C}R RTTY {ENTER}
TX	{CTRL-C}T
RX	{CTRL-C}E

• **Example macros for the SCS PTC (Digital interface window)**

<i>Button text</i>	<i>Macro</i>
Abort	{ESC}CLR{ENTER}{CTRL-D}{ENTER}
TX/RX	{CTRL-Y}
RX-Reverse	{ESC}TR 1{ENTER}
RX-Norm	{ESC}TR 0{ENTER}
45 Baud	{ESC}BAU 45{ENTER}
75 Baud	{ESC}BAU 75{ENTER}
Command mode	{ESC}Q{ENTER}
<i>Button text</i>	<i>Macro</i>
RTTY	{ESC}Q{ENTER}BAU{ENTER}
PSK31	{ESC}Q{ENTER}PSKT{ENTER}
CW	{ESC}Q{ENTER}CWT{ENTER}
AMTOR	{ESC}Q{ENTER}AMTOR{ENTER}
PACKET	{ESC}Q{ENTER}PACKET{ENTER}

• **Example function key macros for the SCS PTC (Entry window function keys)**

<i>Mode</i>	<i>Button text</i>	<i>Macro</i>
Running	F1 CQ	{CTRL-Y}CQ TEST DE * * * k{ENTER}{CTRL-Y}
Running	F2 EXCH	{CTRL-Y}! HI 599 {EXCH} {EXCH} K{CTRL-Y}
Running	F3 CFM	{CTRL-Y}! QSL TU DE * QRZ? K{CTRL-Y}
S&P	F1 CALL	{CTRL-Y}! DE * * K{CTRL-Y}
S&P	F2 EXCH	{CTRL-Y}DE * TU 599 {EXCH} {EXCH} GL DE *{CTRL-Y}

• **Example macros for MMTTY (Entry window function keys)**

<i>Mode</i>	<i>Button text</i>	<i>Macro</i>
Running	F1 CQ	{TX} CQ CQ CQ TEST DE {MYCALL} {MYCALL} K CQ {RX}
Running	F2 Exch.	{TX} ! UR 599 {EXCH} 599 {EXCH} BK{RX}
Running	F3 Tnx/QRz	{TX} ! TU GL DE {MYCALL} QRZ {RX}
S&P	F1 {MYCALL}	{TX} ! DE {MYCALL} {MYCALL}{RX}
S&P	F2 Exch.	{TX} ! UR 599 {EXCH} 599 {EXCH} GL DE {MYCALL}{RX}
Send CQ which starts on a new line		{TX}{ENTERLF} CQ DE {MYCALL}{RX}

## 40.2.4 Packet macro examples

- **Connect the local DXcluster using TAPR firmware:**
  - ◆ {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:**
  - ◆ {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:**
  - ◆ {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}  
Sends my call to the TNC.
    - ◇ {ESC}P 100{ENTER}  
Change the Persistence to 100
    - ◇ {ESC}S1{ENTER}  
Change to channel 1
    - ◇ {ESC}C {CLUSTER}{ENTER}  
Connects my local DXcluster

So one function keys does it all!!
- **This is an example using the {WAIT} macro:**
  - ◆ In the substitutions you can include things like {CTRL-M}. There is also a {WAIT} macro that waits 5 seconds.
  - ◆ 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.
- **Example to send 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}

## 40.2.5 {MESSAGE} macro example

The {MESSAGE} macro sends a message (via a functionkey) 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.

<i>Button text</i>	<i>Macro</i>
F8 Pass station	{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 send from one band to another.
F8 Pass station	{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.
F8 OK	{MESSAGE}2 OK  Sent OK to station 2

#### 40.2.6 {END} macro examples

The {END} macro signals to 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:

```
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.

Note: Only {} macros with side effects are used when they are placed after the {END} macro. I.e. 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:

```
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.

# 41 Multi User Support

It is possible to use N1MM logger in Multi-User Multi-Transmitter operation. For this to work you need at least two networked computers with a maximum of 15. These computers need to have network interface cards. 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 has number 0.

## 41.1 Features

- Maximum of 16 networked computers with one 'master' station (0-15).
- Use of standard network interface cards (NIC's).
- IP-addresses are used during configuring.
- Talk capability between networked stations.
- Automatic time synchronization.
- Pass frequency information between stations.
- Packet
  - ◆ Distributed to all connected computers.
  - ◆ The ability to send packet commands to the master station, from there it will be send out to the cluster.
- 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.

## 41.2 Configuration

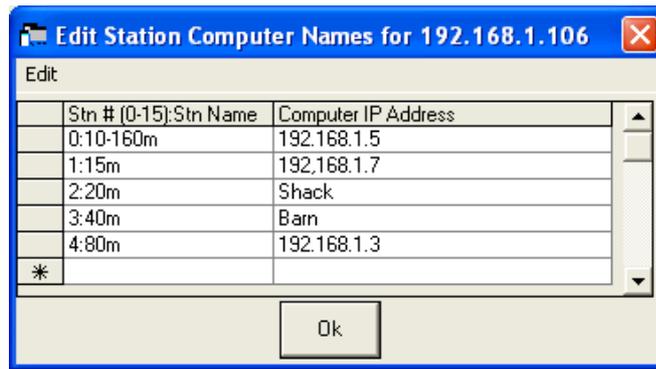
Assumed is that the network is setup and working correctly so every computer can ping each other. There is no need to 'see' all the other computers in the 'Networking environment' (My Network Places etc.) but it's easy when sharing/copying/updating files. You must be able to ping every computer from every other computer before proceeding with these instructions. It is not important if the network uses twisted-pair or coax cable etc.

A network connected using the computers serial ports as being used in older DOS programs is not supported.



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

- **Setup all the computers**
  - ◆ Setup all the computers with their radio's as if they were being used stand-alone. So the radio can be controlled, PTT/CW/.Wav files are working etc. Just as you like it.
  - ◆ **All computers have to 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 right time. Every computer will use this time!
  - ◆ This has to be station **0** !!!
- All other networked stations (not the "Master" station 0)
  - ◆ Select the Telnet window to have all packet cluster info shown (received from the master station).
    - ◇ The Packet window won't give any info on a slave computer.
  - ◆ So always the Telnet window on the slaves, no matter if you use Packet or Telnet on the master computer.
- Set up all the stations identically before starting Multi-User mode.
- **Setup 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** – Enter the station number starting with 0 for the master station. The computer name may be entered after a : (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 in order.
  - ◇ **Computer IP Address** – Enter the computer IP-address or the computer name this depends on if 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.
  - ◇ **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: 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
    - ◇ Checking the IP address is a bit more complicated: 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.
    - ◇ 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 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.



**Tip: The setup information is kept in the database. Set up the contest & the Multi-User configuration info on one computer including messages etc. Copy the database to the other computers and have it all set up.**

- **Start Multi-User mode**

- ◆ Go to 'Config | Multi-User Mode'.
  - Clicking on this selection will enable this option.



**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)

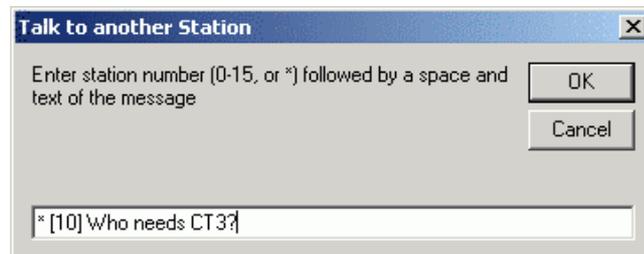
## 41.3 Multi-User Tools menu

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.

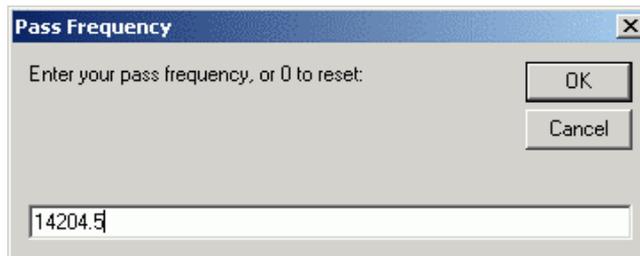
Go to 'Config | Multi-User Tools'

- **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. Default the program places a \* and behind that the band of the station who sends the message.
  - ◆ Possible station numbers
  - ◆ \* – will send the message to all stations
  - ◆ 0 – send a message to station 0 (Master station)
  - ◆ 1 – send a message to station 1
  - ◆ Etc.

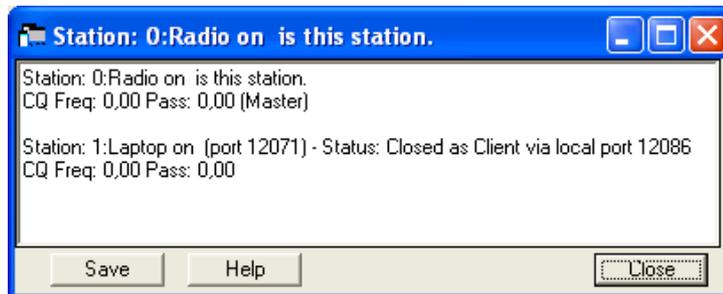
Omitting the number or '\*' will send the message to all connected stations.



- **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 .

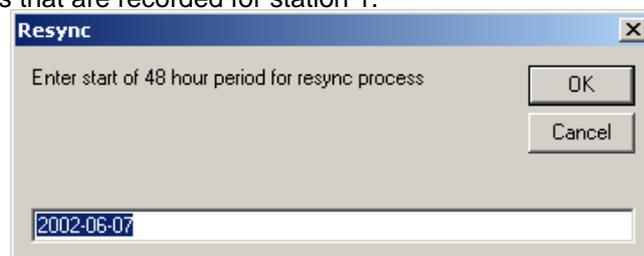


- **Send Freq/Mode to Call Stack Target Station Alt+I** – This command was originally put in for WRTC–2006 competitors. It allows the partner station to remotely load VFO B on a target station. NB Will only work when Multi–user mode is selected.
- **Log QSOs at all stations** – Check this option to log 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.
- 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 this allow 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'

## 41.4 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
  - ◆ **Light red** – Connection in progress or connection lost, the program will try to solve this situation..
- 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

### 41.4.1 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?
      - ◇ *This is 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?
    - ◇ *This is not yet implemented*

## 41.4.2 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.

## 41.5 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](#) .

## 41.6 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

## 41.7 Where to place the database files

Do NOT share the log on a server, place it locally on your hard disk.

- 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.

## 41.8 Other info

- Deleting QSOs made by another station in a Multi-User situation is not allowed, a warning message is shown.
- 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). 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.
- Note that Multi-Two MUST use Multi-User mode and keep run & mult station numbers the same throughout the contest. This is to keep the radio number in the Cabrillo output consequent. Cabrillo only outputs a radio number when using multi-two or multi-multi.
- 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 on a station is selected 'Config | Multi-User tools | Don't use non-mults' giving CQ is not allowed.
- Only the master station will auto-reconnect to packet/telnet when enabled.
- Ctrl+Alt+M changes the run station number

## 41.9 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.

### 41.9.1 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, e.g.:
  - ◆ 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 95/98/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.

### 41.9.2 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.

### 41.9.3 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.

## 41.10 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.

## 41.11 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 connection is not working anymore check the IP-addresses. This address changes from time-to time (when dynamic). 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!

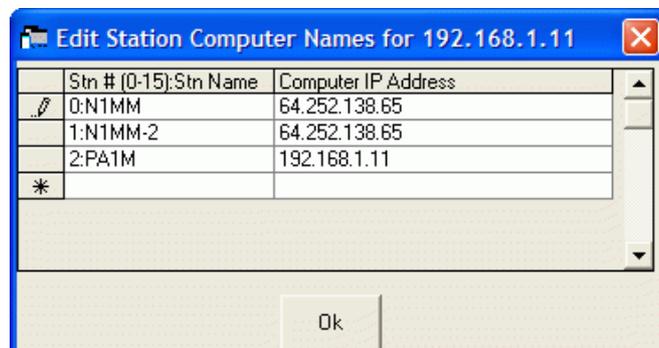
The used incoming port is equal to 12070 + Station Nr (0-15) to allow port forwarding in routers. 12070 is used for the first PC in the list, 12071 for the second etc.

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.



**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 like "multi-multi distributed". 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 camaraderie that comes with Multi-Multi operation. Maybe not, but without trying, how will we ever know? And anyway it interests me, and I do this for fun...

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 than 500m? I think the IARU HQ is the only contest where they look the other way in that regard. In most other contests this will probably be illegal unless of course you create your own contest category (MMD). Maybe only as a demonstration one year (and send in as check log) just to test the technology.

# 42 SO2R

## 42.1 The 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 "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.

The philosophy for SO2R development is to allow any two radios to be used, they do not have to be identical. In it's 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 rig to a receiving rig. A large % of the very serious SO2R operators use identical radios just to keep reduce the confusion factor, but having identical radios isn't necessary software wise.

Then, 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 while your computer sends CQ. In some contests, particularly the North American Sprint CW contest, unusual contest formats can make SO2R even more useful. But, for the most part, SO2R is most useful during the CQWW and ARRL DX CW contests. 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 receiver. This means that a DVK is needed for phone SO2R.

Especially phone SO2R is an extremely tiring activity. 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. This is another reason that the Sprint CW contest is particularly adapted to SO2R — it's only 4 hours long.

If your radio is not supported by N1MM (e.g. the JRC radios), or it's an old radio with no computer interface, the radio can still be used, but you just don't get automated rig control on that radio.

In SO2V, which is "Single Operator 2 VFOs", you hook up one radio. If your rig simply has 2 VFOs, VFO A/B will be assigned to each of the Entry Windows. If you have a rig with a sub-RX, 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 keying from Radio 1 (default) to BOTH. Otherwise you will not get any keying on radio 2.

Only two radios will be supported (or 2 receivers depending on how you look at it).

This means one radio with two VFOs (A/B) is being used rather than two separate radios. SO2V is more 'normal' for most people, as most are not set up for SO2R. N1MM Logger's SO2V interface is essentially identical to the SO2R interface, but with SO2V you are using a single radio, presumably with a 2nd receiver. 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. While SO2V can also increase your score, the big increases come with SO2R (if done correctly).

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.

## 42.2 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 is going to send next (when in ESM mode)
- Visual cues identifying transmit focus, Run vs. S&P, and more!

## 42.3 Supported features

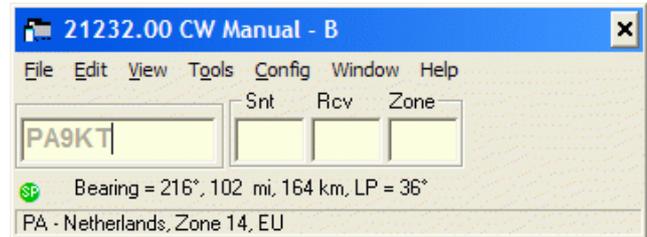
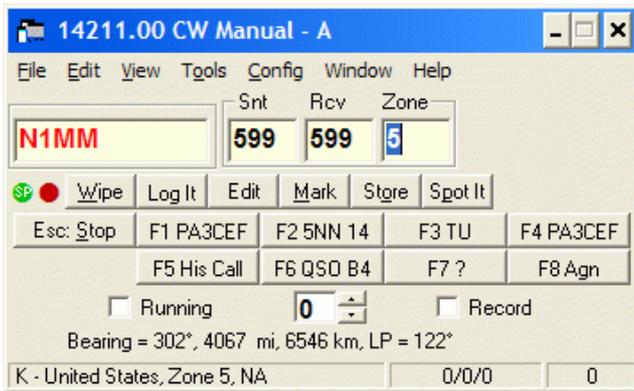
N1MM Logger supports all of the features you would expect from any world-class SO2R software. In addition, there are a lot of unique features:

- Two Entry windows are displayed that are fully interchangeable in functionality (windows are not dedicated to a specific task).
- Traditional Running and S&P mode is 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 (not implemented yet)
- 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 alternate radio from existing 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 2nd S&P Entry window does not abort sending on RUN radio
- Hitting Escape stops sending on either VFO, but does not change 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 (not implemented yet)
- All Key Assignments work on both radios (unless otherwise specified)
- Supports Top Ten DX Doubler and WX0B Station Master and others.
- Support SO2R if neither radios are interfaced.
- Dueling CQ's will send CQ (without delay) alternately on each radio (Ctrl+B).
  - ◆ If dueling CQ's 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 too.
- A SO2R software radio lockout for digital 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 one or two sound cards (5\$ SO2R)
- When changing band using Ctrl+PgUp/Down will skip the other radio's band.
  - ◆ THIS IS NOT A SUBSTITUTE FOR HARDWARE LOCKOUT!!!
- The send CW will echo in the status bar (only when in SO2R)
- During VOX operation, in 5\$ SO2R the TX audio should will track the TX focus all the time.
- In SO2R CW message progress, the text send, will show on the active radio entry window statusbar.

## 42.4 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.

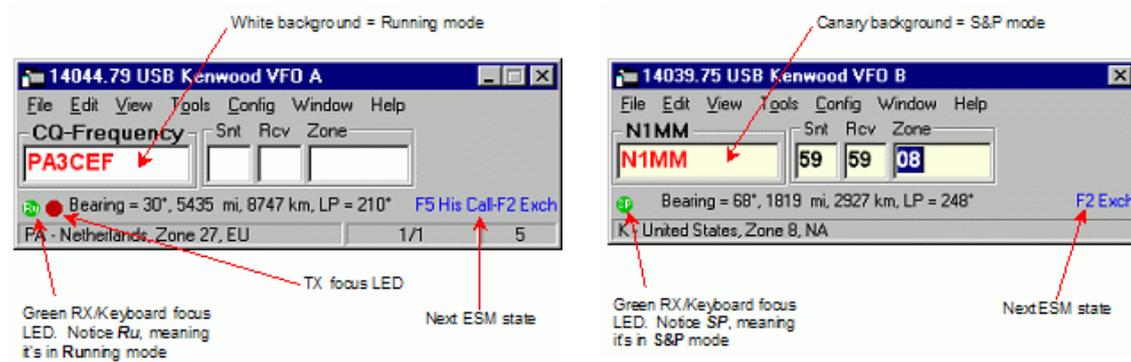
Screen real estate is in short supply. To minimize screen real estate, you can shrink the Entry Windows compared to the default layout. Below is an example of the default Entry Window and a minimized version. Also the use of two monitors more screen real estate.



To launch the 2nd Entry Window, hit the \ button.

## 42.5 Typical SO2R Entry Windows

Most people who are comfortable with N1MM Logger tend to use the reduced size Entry Windows in the below examples. 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&Pping on the other. The below Entry Window examples 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 all the information 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).

## 42.6 The SO2R dots (LEDs)

On the Entry Window a green and/or a red dot (LED) might 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 VFO has receive+keyboard focus and the red LED indicates that VFO has transmit (TX) focus. In addition, the red TX LED changes between dark red (TX focus) and bright red (VFO/radio is transmitting). Inside the LED are letters which identify different states (see below).

### 42.6.1 Dot/LED colors used:

**Green dot/LED** – This VFO/Radio has receive (RX) and keyboard focus. RX and keyboard focus are always together.

- Inside the green dot the Ru/SP (Run/S&P) designators are shown. **Ru** means the station is in running mode, and **SP** means the station 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

**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
- To move both Transmit and Receive focus pressing Ctrl+Left–Arrow / Ctrl+Right–Arrow will move both foci to the left and right radios
- When transmitting the TX focus can not be changed
- When the VFO had TX focus, the LED is dark red. When that VFO is transmitting, the LED changes to bright red
- Inside the red dot the **R** (Repeat) designator is shown when Repeat mode (for CQing) is active
- Inside the red dot the **D** (Duelling CQ) designator is shown when Duelling CQ is active

## 42.7 Key Assignments (unique to SO2R)

### 42.7.1 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 and Alt+F6** – Swap radio frequency and mode between VFOs (one radio)/radios (two radios).
- **Ctrl+B** – Duelling CQ's will send CQ (without delay) alternately on each radio. If Duelling CQ's is turned on, both radios become run radios. Duelling SSB and CW CQ's are supported too.
- **Single quote key** *a.k.a. unshifted tilde key (~)* – Toggle STEREO mode on/off, or toggle Auto/PTT modes with modified DXD . Notes: On US keyboards, they key we are talking about is the key just to the left of the number 1 key. We are calling this key the Tilde key, which is technically not correct – it's the ` key, or single quote key.
- **Ctrl+I** – Toggle through the SO2R modes supported by the program (see below). 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'
  - ◆ 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 3sec 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).
  - ◆ FocusOther is mutually exclusive from Advanced SO2R and does not use adjustable time on the Run radio. The paradigm is simplified to placing the entry window focus on the NON-TRANSMITTING window. Apart from how focus is controlled, all else is the same. This may be turned on/off via Ctrl+Shift+K.
- Ctrl+Shift+L – This macro allows the user to send on the other radio.
  - ◆ Make sure that "Toggle {CTRLFn} macro is checked on in the Configurer SO2R submenu.

### 42.7.2 Bandmap features

- **Shift+Click on frequency (SO2R only)** – Jump to that frequency on the non active radio. This allows you to be active and sending on one radio and change the frequency on the other radio without making it active.
- **Shift+Click on bandmap callsign (SO2R only)** – Send the frequency to the other radio and place the callsign on the other radio's callsign frame.

### 42.7.3 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&Ping on Radio 2. Both RX and TX focus start off in your Run Entry Window (Radio 1 in this example). You are S&Ping 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). Assume that station comes back to you, and you copy his exchange. Hit Enter again to send your exchange, and you just made 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 proving more fruitful at the moment.

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.



**Note: 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.

**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:** Dueling CQ's. This feature was initially coded, but is not working correctly at this time. You may be able to send alternate CQs on each radio, but there are many aspects of this feature which are not finished yet.

#### ***Requested Dueling CQ Features:***

- When dueling CQ's are activated, RX focus automatically moves to inactive (not transmitting) radio. When someone answers your CQ, your RX focus will be on the radio it should be, ready to copy the call.
- Hitting Escape or typing a call turns off the CQ's of the radio that has RX focus. Thus RX focus stays where it is. CQ will continue on radio that does not have RX focus (RX focus will not move). By hitting Escape, typing a call, or beginning to transmit on the other radio, you will drop out of Dueling CQ.
- Hitting F1 on the radio that was not calling CQ will restart dueling CQ's with that radio. The new CQ will start when the alternate radio CQ stops.

{CTRLFn} macro Ctrl+Shift+L – This macro allows the user to send on the other radio (CW only).

- Make sure that "Toggle {CTRLFn} macro is checked on in the Configurer SO2R submenu.
- 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.
- 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 {CTRLFn} 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 and make you sound liddish. 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

## **42.8 Mouse Assignments**

- **Left mouse key and right mouse key**
  - ◊ on a free space in one of the two Entry windows changes the Receive focus to that radio/VFO

## **42.9 SO2R menu (under Config)**

- **SO2R**
  - ◊ **Dueling CQ's** Ctrl+B – will send CQ (without delay) alternately on each radio.
  - ◊ **TX Lockout** – Select a lockout item.
    - ◊ **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.
  - NB Ctrl+I is only operative in '\$5SO2R' 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.

## 42.10 Software Setup

Setting up SO2R and SO2V starts in the Config menu:

- Config > "Configure Ports, Telnet Address, Other" > Hardware Tab

Then if SO2V:	Then if SO2R:
<ul style="list-style-type: none"> <li>• Set up radio</li> <li>• Set up keying if necessary (LPT or Winkey)</li> <li>• Click SO2V button</li> <li>• Click OK to close Config window</li> <li>• Launch N1MM Logger, set up contest etc.</li> <li>• If 2nd Entry Window is not shown, hit the \ key (backlash key)</li> </ul>	<ul style="list-style-type: none"> <li>• Set up radios</li> <li>• Set up keying if necessary (LPT or Winkey)</li> <li>• Click SO2R button</li> <li>• Configure left/right radio in pop up box (when you click on SO2R button)</li> <li>• Click OK</li> <li>• Launch N1MM Logger, set up contest etc.</li> <li>• If 2nd Entry Window is not shown, hit the \ key (backslash key)</li> <li>• SO2R – 1 computer radio + 1 manual radio (so two radios)</li> <li>• SO2V – 1 computer radio with 2 VFOs and no manual radio (so one radio)</li> </ul>

Selected Mode	Radios attached	Choices	Selection
SO2R	None	<ul style="list-style-type: none"> <li>• SO2R – Left Manual, Right Manual</li> </ul>	Automatically selected
SO2R	1 (Kenwood)	<ul style="list-style-type: none"> <li>• SO2R – Left Manual, Right Kenwood Com1</li> <li>• SO2R – Left Kenwood Com1, Right Manual</li> </ul>	Select one
SO2R	2 (Kenwood & FT847)	<ul style="list-style-type: none"> <li>• SO2R – Left Kenwood Com 1, Right FT847 Com 2</li> <li>• SO2R – Left FT847 Com1, Right Kenwood Com 2</li> </ul>	Select one

SO2V	1 (Kenwood)	• SO2V – Kenwood	Automatically selected
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### 42.10.1 LPT keying

When operating SO2V (and SO2R), you also need to change your LPT keying from Radio 1 (default) to BOTH. Otherwise you will not get any keying on radio 2.

## 42.11 SO2R Radio Support

All radios supported before will work with SO2R. Since many operators will use an older radio (no computer interface) to get active in 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 for it's COM port. You only set up that information when you have a computer controlled radio.

If you are using a radio with no computer control, when you select the SO2R Button on the 'Config | Config Ports | Hardware tab'. Select whether VFO A or VFO B will be computer controlled or manual.

## 42.12 Using External SO2R controllers

N1MM Logger is compatible with most hardware SO2R controllers using the LPT port (legacy) like 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 but also via 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:

### 42.12.1 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



Note: 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.

### 42.12.2 Using Winkey with external SO2R controllers

The WinKey device will work with two radios. WinKey has PIC pin 3 output, which is normal CW and PIC pin 5 which is PTT. Under software control Pin 3 can be Radio 1 CW and Pin 5 can be Radio 2 CW outputs. The serial port assigned to the WinKey device should have the "Hardware" tab "Set" and WinKey checked and Radio Nr set to 'Both'. Plus the SO2R activated on the "Hardware" tab. 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.

## 42.13 SO2R using the DX doubler

### 42.13.1 Internal DXD Jumpers

Operation Mode	Jumper 1	Jumper 2	Jumper 3
Normal	1-2	4-5	8-9
Stereo	1-2	5-6	8-9

The Normal Mode are 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.

### 42.13.2 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 tilde key (actually it's an *unshifted* tilde, or simply the ` key) will toggle the STEREO mode on and off.



*Note: 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.

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 (Both Ears when RUN radio TX)
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 using the tilde key if needed. Once a Fn message is sent that includes a macro, the Stereo feature will go back to it's programmed state.

Example for F1 – CQ Message Button : {STEREOON} CQ TEST \* \* TEST {END} {STEREOOFF}

### 42.13.3 Modifying the DXD to Switch between Auto and PTT Modes from the Keyboard

In addition to enabling NA-style stereo operation, DXD users have another option, that of using the tilde key or the {STEREOON/OFF} macros to switch between the DXD's Auto and PTT modes. This requires a simple hardware modification, described below.

Normally, the only way to put both ears on the non-transmitting radio (for aggressive S&P) is to manually switch the DXD from Auto to PTT position. But this means you must take your hand off the keyboard. The DXD can be modified so Auto/PTT operation is switched from the keyboard, with a small mod inside the DXD:

- Install DXD jumpers in their CT/Writelog/TR/MM position. This has the effect of isolating pin 5 of the LPT port.
- Put a 2N2222 open collector transistor switch between pin 5 and the "Auto" terminal of S3 on the DXD (that's the audio mode switch). Pin 5 drives the base of the transistor through a 1K resistor, just like the basic CW keying interface. The resistor is connected to the high side of R22, the emitter is grounded to the ground side of R22, and the collector is wired to the switch side of R29.
- You can mount the transistor next to R22 with double-sided tape. Ugly but effective. That's all there is to it.

With this modification, the {STEREOON} macro really functions as {AUTOON}, while the {STEREOOFF} macro will switch the DXD to PTT mode.

## 42.14 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.

### 42.14.1 #1 – Zero or Single Card, One radio, No Sound Card SO2R

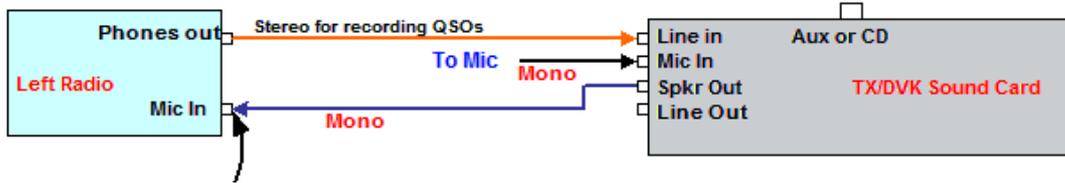
One radio and one sound card to play wav files and record new messages and mute the microphone when playing wav files.

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.

- Functions**
- SSB:**
- Play wav files
  - Record new message files
  - Mute mic
- All:**
- Record two channels heard

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



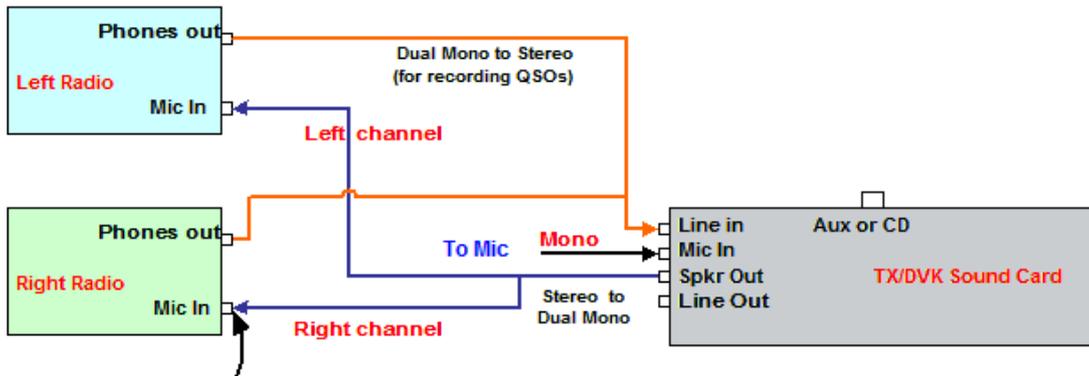
Note: If your radio does not have a line-level input to the mic circuit (most don't), you will need a matching transformer.

### 42.14.2 #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.

- Functions**
- SSB:**
- Play WAV files
  - Record new message files
  - Mute mic
- All:**
- Record one channel for each radio

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



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).

### 42.14.3 #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:**

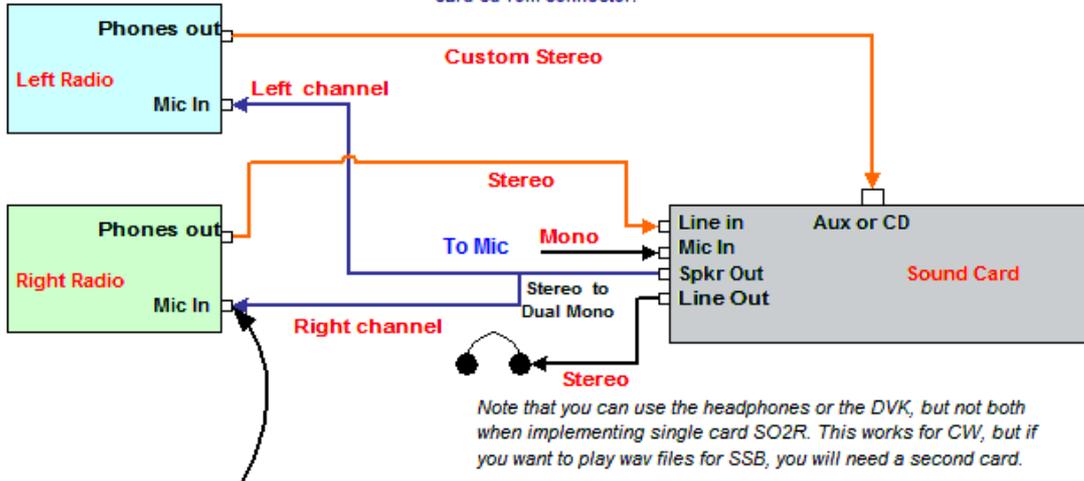
- Switch phones between radios

**All:**

- Record two channels heard

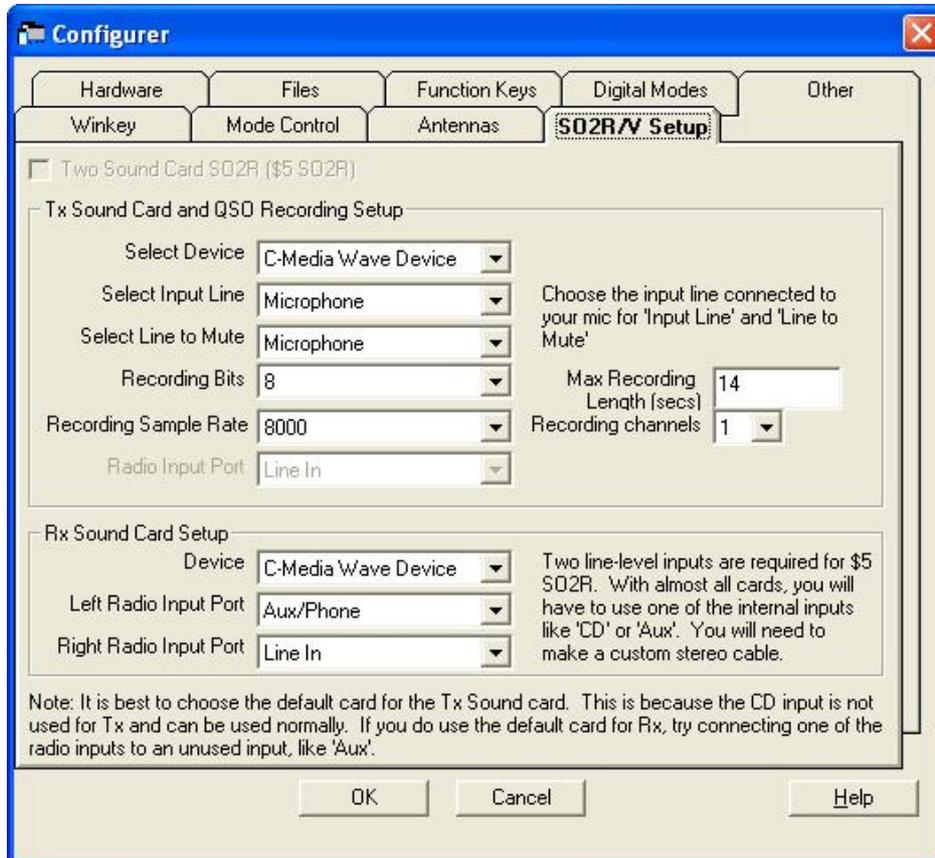
# #3 - Single Card - Two radio, Sound Card SO2R, CW Only

[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.

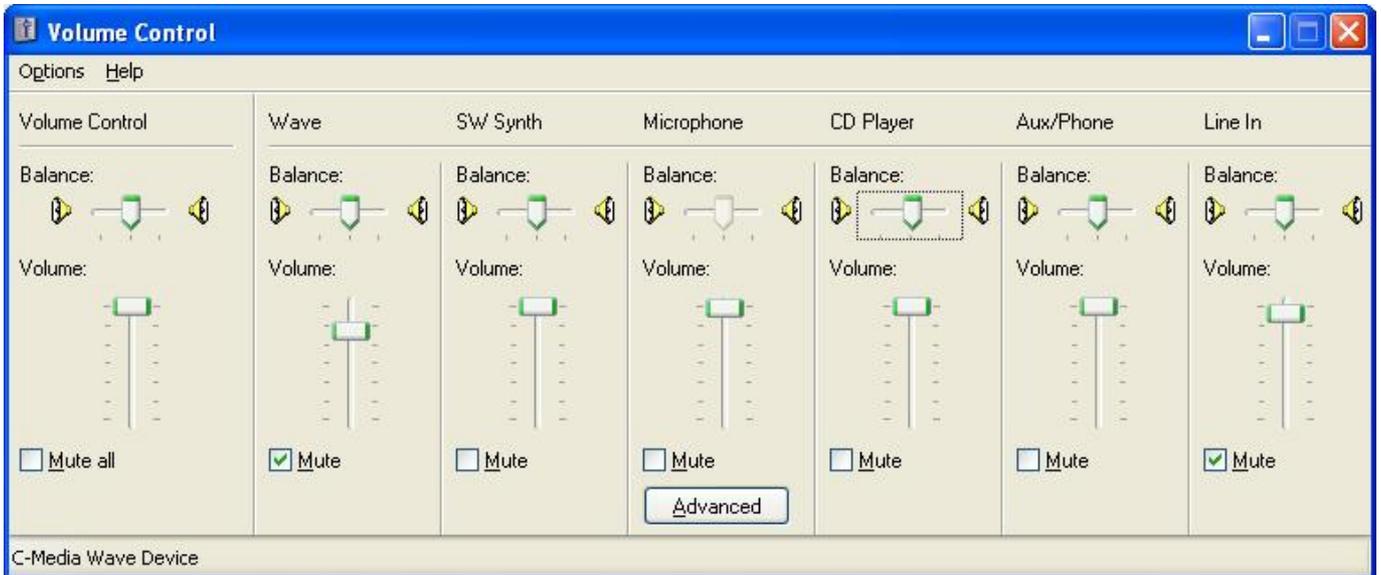


Note: If your radio does not have a line-level input to the mic circuit (most don't), you will need a matching transformer (for each radio).

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 configurator. 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.

#### 42.14.4 #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.

##### Functions SSB

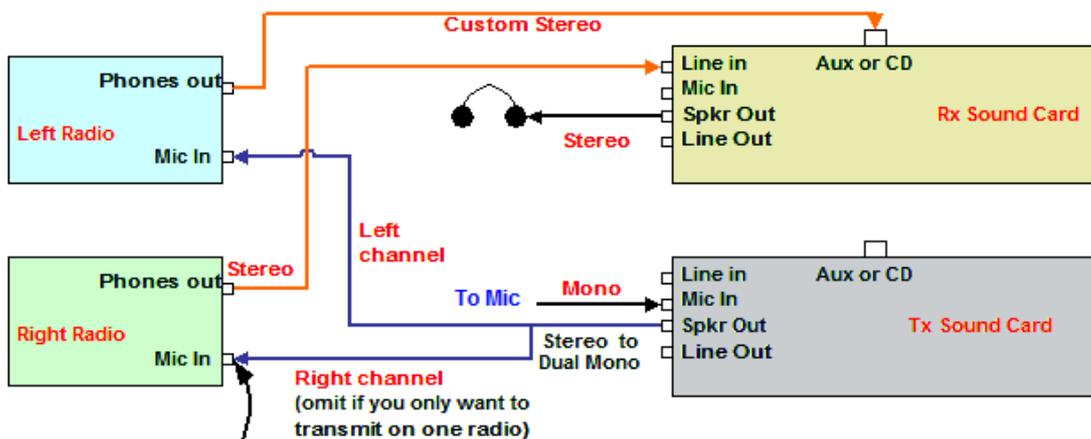
- Play WAV files
- Record new message files
- Mute mic

##### All:

- Switch phones between radios
- Record two channels heard

### #4 - \$5 SO2R

[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.



**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.

**Two Sound Card SO2R – SO2R State Table**

Mode	Decision Inputs			Program Set Outputs				What you hear			
	Keyboard Focus	Cq Playing	Dual	Sound Card	Radio	Left Input	Right Input	Left Dual	Right Dual	Left Ear	Right Ear
<b>Auto</b>	Left	None	Off	Left	Right	Off	Off	Off	Off	L-main	R-main
	Left	Left	Off/R-on?	Mute	Center	Off	Off/Note 1	Off	Off	R-main	R-main/sub?
	Left	Right	Off/L-on?	Center	Mute	Off/Note 1	Off	Off	Off	L-main	L-main/sub?
	Right	None	Off	Left	Right	Off	Off	Off	Off	L-main	R-main
	Right	Left	Off/R-on?	Mute	Center	Off	Off/Note 1	Off	Off	R-main	R-main/sub?
	Right	Right	Off/L-on?	Center	Mute	Off/Note 1	Off	Off	Off	L-main	L-main/sub?
<b>One rig auto</b>	Left	None	Don't care	Center	Mute	NC	NC	NC	NC	L-main	L-main/sub?
	Left	Left	Don't care	Mute	Center	NC	NC	NC	NC	R-main	R-main/sub?
	Left	Right	Don't care	Center	Mute	NC	NC	NC	NC	L-main	L-main/sub?
	Right	None	Don't care	Mute	Center	NC	NC	NC	NC	R-main	R-main/sub?
	Right	Left	Don't care	Mute	Center	NC	NC	NC	NC	R-main	R-main/sub?
	Right	Right	Don't care	Center	Mute	NC	NC	NC	NC	L-main	L-main/sub?
<b>Manual</b>	Left	Don't care	Don't care	Center	Mute	NC	NC	NC	NC	L-main	L-main/sub?
	Left	Don't care	Don't care	Center	Mute	NC	NC	NC	NC	L-main	L-main/sub?
	Left	Don't care	Don't care	Center	Mute	NC	NC	NC	NC	L-main	L-main/sub?
	Right	Don't care	Don't care	Mute	Center	NC	NC	NC	NC	R-main	R-main/sub?
	Right	Don't care	Don't care	Mute	Center	NC	NC	NC	NC	R-main	R-main/sub?
	Right	Don't care	Don't care	Mute	Center	NC	NC	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.

## 42.15 Advanced SO2R

Advanced SO2R is a powerful feature intended for SO2R operators and is totally unique to N1MM. 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

### 42.15.1 Advanced SO2R rules for moving RX focus

Advanced SO2R rule 1	Tuning either VFO/Radio will result in the RX focus moving to that VFO/Radio if, and only if, the call fields are empty.
Advanced SO2R rule 2	RX focus is moved to the Run/TX radio when it finishes sending CQ (or Fn) message, UNLESS a call sign is 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, the S&P radio grab RX focus until 1000 ms has passed.

### 42.15.2 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!

### 42.15.3 Advanced SO2R CONTROLS & MACROS

<b>ON/OFF Macro</b>	You can turn on/off Advanced SO2R by using macros in CW/SSB key buttons: {ADVSO2R}
<b>ON/OFF Shortcut</b>	Turn on/off Advanced SO2R with <b>Ctrl+Shift+I</b>
<b>RX FOCUS CONTROL (Override):</b>	The backslash key (\) will always move RX focus to the "opposite" vfo/radio and stays there until the next action/state takes RX focus control (in case RX focus ends up where you don't want it)
Adjustable delay	Advanced SO2R now has an adjustable delay set via CTRL+SHIFT+N
FocusOther	Another method of focus control set via Ctrl+Shift+K

**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			Radio B			Focus Does:
Callsign Field	Exchange Field	Is:	Callsign Field	Exchange Field	Is:	
					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 B)
		Tune VFO A		Filled		Focus stays where it was (VFO B)

## 42.16 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.

### 42.16.1 SO2R RTTY with 1 sound card

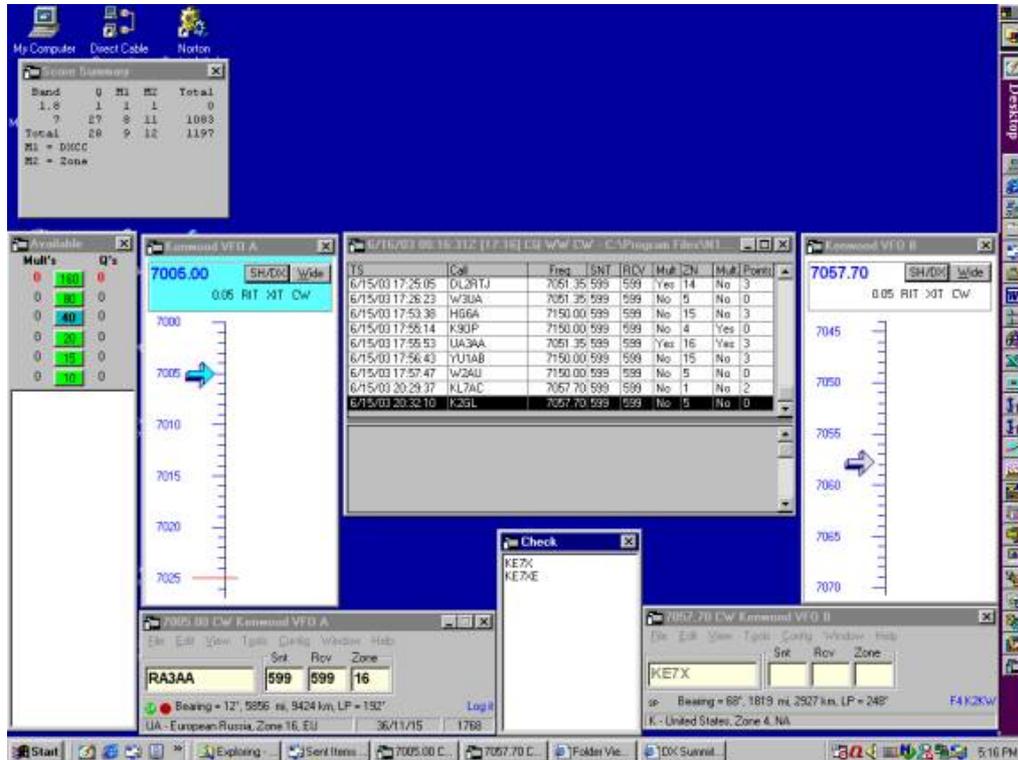
One sound card can do 2 channels of RTTY decode. Just set MMTTY instances to the same card but one to left the other to right channel. MMTTY seems to transmit the same AFSK audio to both channels but that's ok cause the SO2R box only routes PTT to one of the radios at a time. A special stereo Y cable has to be made so one radio goes to the left channel and the other to the right

channel.

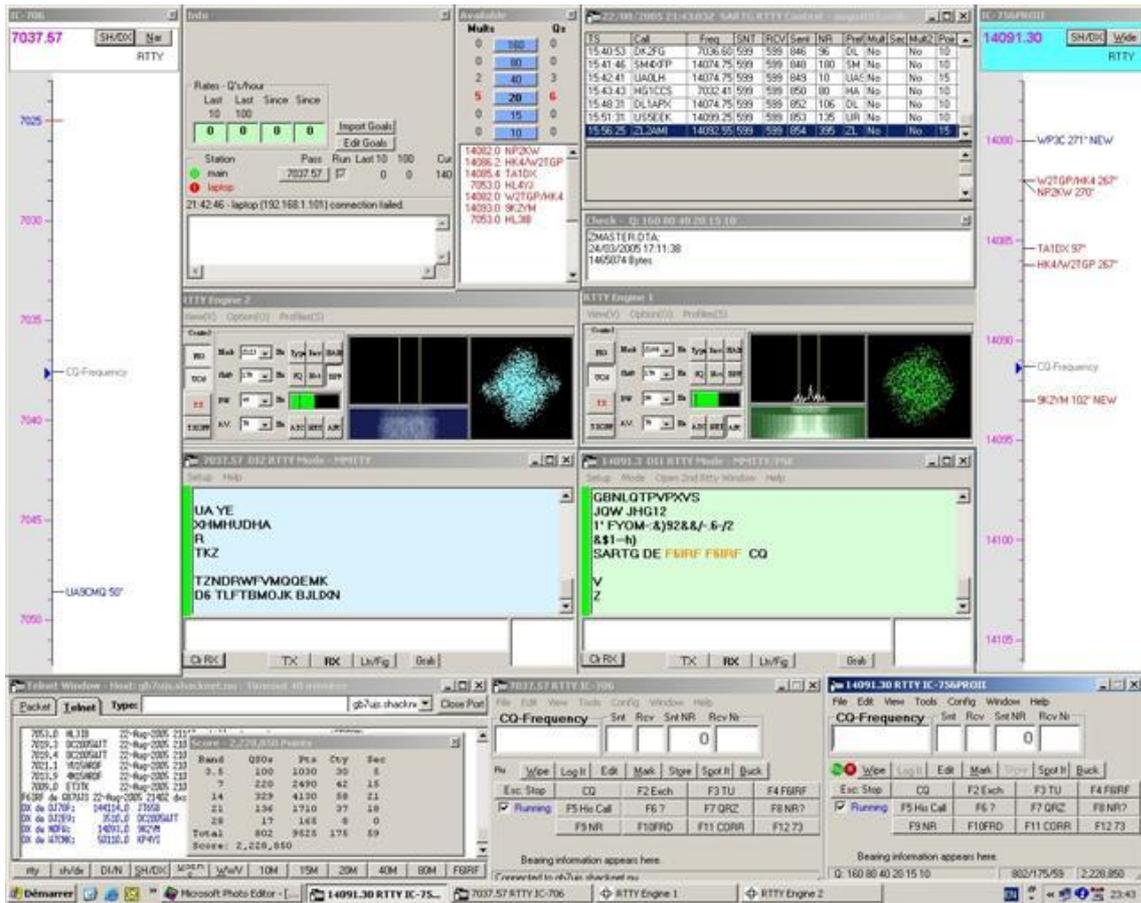
If the above works depends a lot on the used soundcard/chip. In other instances MMTTY does not seem to like addressing Left/Right separately. In that case only one (the first) digital interface will receive anything and you are out of luck....

## 42.17 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.



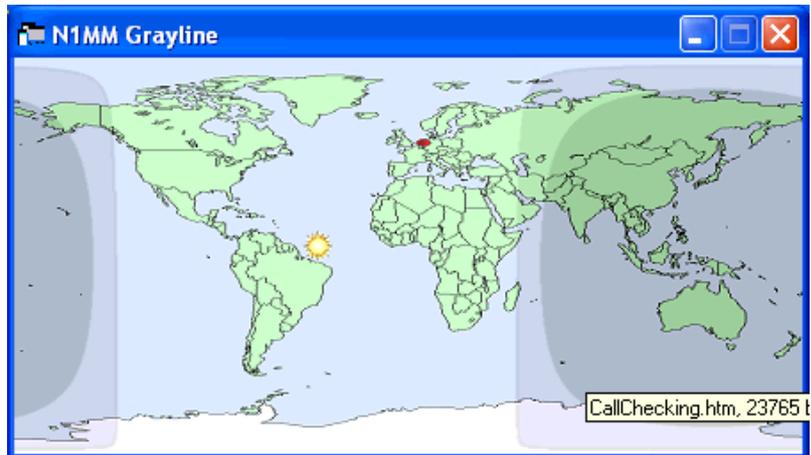
The screen above was taken by K2KW from a 17" screen.



The screen shot above was taken by F6IRF and gives an example of a SO2R screen for RTTY.

## 43 Grayline Program

A Grayline program comes with the N1MM logger software package. It is included in the N1MM–Fullinstaller installation program. You may install the Grayline program at any time, during initial installation or later. N1MM logger is not installed on your computer in order to use the Grayline program. The logging program does not need to be running to use it. You may start the program from the Window menu in the N1MM logger main program.



### 43.0.1 Right Click Menu Selections

- Grayline contrast
  - ◆ A dialog will open and with sliders 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 being used (Config | Change Your Station data| Latitude & Longitude).
  - ◆ NBAfter a chnage to your lat/long data, you must close N1MM logger and the Grayline program, then open N1MM logger first, then open Grayline.
- 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°
  - ◆ Nautic terminator – 12°
  - ◆ Astronomical terminator – 18°
-

# 44 N1MM Rotor Control

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:

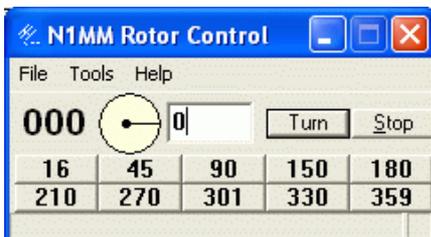
- Entry window:
  - ◆ by entering a beam heading in the callsign field and press Alt+J. The rotor will turn to the entered beam heading.
    - ◇ Example:234 Alt+J will turn the rotor to 234 degrees.
    - ◇ The number must be numeric, >= 0 and <= 360.
  - ◆ using the menu items in the Tools menu
    - ◇ **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.

## 44.1 N1MM Rotor Control

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)

#### 44.1.1 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 SteppIR'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.

#### 44.1.2 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).

### 44.1.3 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.

### 44.1.4 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.

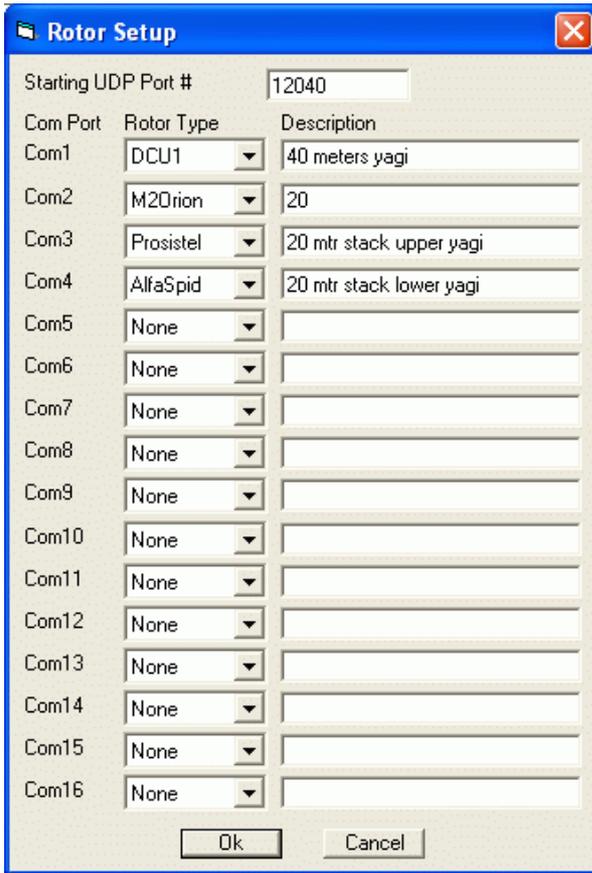
NB. As the rotor program can be on another computer this has to be set in both programs separately and identical.

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.

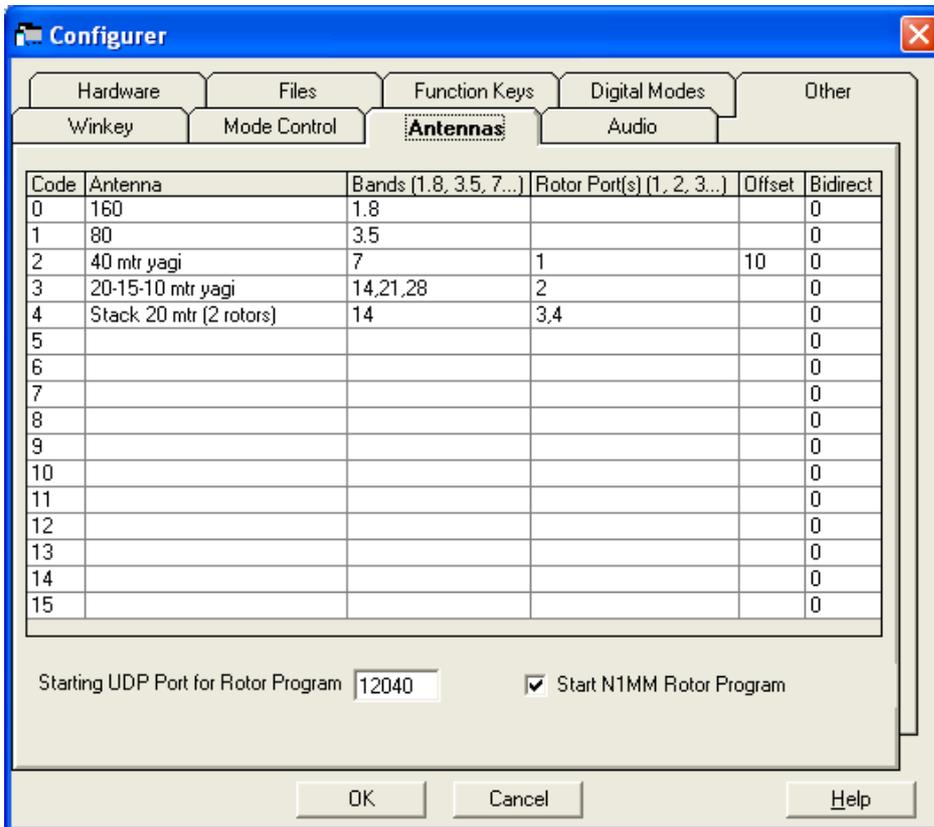
Multiple rotor setup

When more rotors have to be turned by the program then there is a need to map a rotor to an antenna (or antennas)

1. Setup the antenna selections in the Configurer; Tab: Antennas
2. 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 the Configurer (Tab: Antennas) I.e. you relate a com port to a particular antenna. If you specify more than one com port, you will turn both.

### 44.1.5 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.
- 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

### 44.1.6 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.

### 44.1.7 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.

## 44.2 Using external hardware or software

Rotor control is supported direct by the program for:

- 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.

# 45 Supported Hardware

## 45.1 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

## 45.2 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 switch all controlled with USB / COM / Parallel Ports. NB. Only LPT port switching is supported (not USB)!

More info can be found on the Ham Radio Solutions website which can be found in the [links](#) section.

## 45.3 K1EL – Winkey

"Winkey is an external keyer designed by K1EL and G3WGV. This keyer is available stand-alone, or the keyer chip is used in expanded-function interfaces such as Ham Radio Solutions EZMaster, Microham Microkeyer, or RigExpert. While these functions influence the operation of the Winkey chip, how this may affect the operation of your hardware is influenced by the keyer circuitry. Consult your keyer manual along with the Winkey chip manual for more information on these settings.

The goal for the keyer is to interface with various Windows programs and to avoid CW timing problems caused by multitasking. This keyer eliminates any hesitation that occurs from scheduling multiple tasks under Windows. It is also a really sweet standalone keyer. Winkey is fed ASCII characters from N1MM Logger (via COM or USB Ports), and converts the ASCII to timed CW.

More info can be found on the website which can be found in the [links](#) section.

This keyer eliminates any hesitation that occurs from scheduling multiple tasks under Windows. It is also a really sweet standalone keyer. To enable the key, choose a com port for it from the Hardware tab. Check the Winkey option after pressing Set for that com port. Winkey options can be set on the Winkey tab of the Configurer.

- Selectable sidetone frequency.
- CT spacing is supported.
- Paddle speed changes are shown on the status bar.
- Four keying modes supported. They are: Iambic A, Iambic B, Ultimatic and Semi-Automatic (Bug). The default is Iambic B mode.
- Computer sending (and repeat) stops when paddles are touched.
- Supports call correction.
- One CW output plus choice of:

- ◆ 2nd CW output
- ◆ Sidetone
- ◆ PTT
- Two radio support, Winkey will switch between pin 5 (CW output) and pin 3 (2nd CW output when selected) for two radios.
- Only Winkey v4 and later are supported. A warning will be shown if a non supported (older) version is being used.
- The PTT leadtime can be set using the PTT delay in configurer.
- The computer speed will only change using the Winkey potmeter unless the manual speed changes by more than 1 wpm.

The left pane of the Entry window gives information about the Winkey keyer, some examples:

- Winkey paddle speed = 32
- Winkey Version = 10



**When you are serious about contesting always run the K1EL keyer from a battery and not (only from) the serial port. When you have to reboot your PC for any reason the keyer will still function with an external battery, it won't if powered from the serial port. This will be a frustrating reboot...**



**Winkey needs a dedicated serial port. This can be a 'real' hardware serial port, or a 'virtual port' over USB created by a product that embeds the winkey chip**



**The pre-version 9 Winkeys had a bug that when you were sending paddle CW the Winkey's PTT would drop occasionally for a millisecond. If you were using vox on your transceiver, or a modern transceiver, no issue, but it could be hard on the T/R relays in your amp if you were relying just on PTT.**

**From version 10 Winkey has non volatile settings, so that you can use it without the computer being on – if you power it separately.**

N1MM does not support more than one instance of WinKey. To handel two radios there are two ways to do that with WinKey:

- 1) Use Pin 14 on a parallel port as the A/B toggle to drive a relay which switches the CW output (and PTT) between radios
- 2) Use N1MM's support for Pin 3 / Pin 5 output and use Pin 3 for Radio #1 and Pin 5 for Radio #2.

The downside of option #2 is that there is no WinKey generated PTT (and with microKEYER "advanced" PTT for an amplifier) for hand sent CW.

### 45.3.1 Why Winkey?

WinKey works totally different from conventional keyers, but on a user level, you don't notice that: it just keys your rig like other interfaces. The benefit is on slower PC's, where LPT or com port keying might be 'stuttering' because the PC has other tasks to do while processing the CW. Or on newer PC's or laptops, that might not have LPT's or (too few) com ports but plenty of USB. Doing CW with an ordinary COM–CW interface does not always work on a USB–to–serial converter, WinKey should work just fine through such a device, because rather than being triggered by voltage levels, it exchanges text strings.

Other than that, K1EL has made WinKey also a good stand–alone keyer for the price I've seen commercial 'dumb' LPT interfaces being sold. And it can be used to write your own software (should you want to) without going through the hassle of solving timing problems that come with sending CW with a PC. Ask Tom what a pain that is! That's because WinKey is intelligent and 'talks' with the PC by exchanging ASCII text strings, and then processes these strings with its own built in logic to CW, rather than CW being generated on the PC itself.

N1MM logger needs at least version 9 or higher of Winkey. It is a very inexpensive upgrade from K1EL.



N1MM does support no more than one instance of WinKey....

### 45.3.2 Setting up the K1EL WinKey

When you plug the Winkeyer USB into your computer, Windows will assign a COM port number to it. You can use the K1EL software (Winkeyer2 or wktest) to test all your serial ports in turn until you find which port is connected to the Winkeyer, or else you can find the number by looking in the Device Manager under Ports (COM & LPT), where it will appear as "USB Serial Port (COMx)".

Note that if Windows assigns a COM number higher than 8, you will have to change the number to somewhere in the range 3–8 in order that N1MM Logger can find it. AFAIK, you have to do this from Device Manager. It takes longer to describe this than to do it – let's leave that for now unless you discover you need it.

Once you are sure which COM port number the Winkeyer is using, you can set it in the N1MM Configurer. Place a check mark under CW/Other beside that port number, click on the Set button, and check both the Winkey and the Allow ext interrupts boxes. That should do it. If you want to adjust Winkeyer's parameters, there is a Winkey tab in the Configurer for that.

Note that if you unplug the Winkeyer and plug it in to the same USB jack again later, Windows will remember the COM port number it used last time. However, if you plug the Winkeyer into a different USB jack, Windows will assign a new COM port number and leave the old one marked as "in use". If you have a few USB serial devices and you move them around from one USB jack to another, pretty soon you can end up with all of your COM ports marked as "in use" even though you aren't actually using any of them. Because of this, it's best to get into the habit of always using the same USB jacks for your USB devices. That way you won't have to keep on reconfiguring. 73, Rich VE3KI

## 45.4 microHAM – microKEYER

I thought it might be useful to share my settings for running N1MM with microKEYER and in my case a FT-1000MP.

### *CW keying*

- microKEYER router software.
  - ◆ First check you have a green check for microKEYER in the router software
  - ◆ Click on PTT/FSK tab and check for WinKey PTT = PTT1
  - ◆ Assign in Router COM6 to Radio control and COM8 to WinKey.
    - ◇ If these ports are not available than create them by Virtual Port/Create.
- Open N1MM/Config/Configure Ports ...
  - ◆ For COM7 select FT-1000MP than click Set and enter 4800/N/8/2, DTR=Always On/RTS=Always On. OK.
  - ◆ For COM8 check "CW/Other" and than Set. Check WinKey. OK.
  - ◆ Now tick on "WinKey tab" and Pin5 function = PTT. OK

This got me up and running for rig control with the FT-1000MP and CW keying.

### *RTTY*

N1MM logger – configurer	MK Router	MMTTY – set-up menu
<b>Com6</b> FT1000MP rig control DTR + CTS always on PTT via rig control <b>Com7</b> digital DTR + CTS always on <b>Com8</b> WinKey	Radio <b>Com6</b> FSK <b>Com7</b> WinKey <b>Com8</b>	Misc tab – TX port COM-TxD(FSK) TX tab – PTT port 7 ****This is the setting that caught me out!!!

The actual Com port numbers are not important as long as you use the same number for all the different parts of the set-up. The above works perfectly for me. Please feel free to correct any errors or omissions.

73 Jim MM0BQI

### 45.4.1 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.

### 45.4.2 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.

### 45.4.3 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" .

### 45.4.4 Truncation of messages (when using Winkey keyer)

Symptom: Sent 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.

## 45.5 microHAM – MK2R/MK2R+

To set up MK2R+ with N1MM using LPT control see:  
[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

<u>microHAM Router</u>	<u>N1MM Logger (6.10.9 or higher)</u>
<ul style="list-style-type: none"> <li>• VOICE Audio Switching for both radios: <b>CmCmCm</b></li> </ul> <p>FT1000MP, Proset Plus plugged to front mic jack.</p>	<ul style="list-style-type: none"> <li>• Configurer   Audio tab               <ul style="list-style-type: none"> <li>◆ 2 – Single Card – Two Radio, No sound card SO2R</li> <li>◆ Select Device = USB Voice CODEC</li> <li>◆ Select Input Line = Microphone</li> <li>◆ Select Line to Mute = Microphone</li> <li>◆ Recording bits = 16</li> <li>◆ Sampling rate = 22050</li> </ul> </li> </ul> <p>Ctrl+Shift+Fx to record, Fx to playback.</p>

### 45.5.1 USB-only SO2R support

With USB-only SO2R support using the the MicroHam SO2R protoco. 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.

## 45.5.2 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):

COM A – WinKey (it is best to assign WinKey to the "lowest" port to avoid loss of CW if another port is activated for CW)

COM B – Radio #1 (PTT and Footswitch is optional on this port)

COM C – Radio #2 (PTT and Footswitch is optional on this port)

COM D – Digital #1 FSK and PTT for Radio #1 (assign Radio 1)

COM E – Digital #2 FSK and PTT for Radio #2 (assign Radio 2)

COM F – 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.

## 45.5.3 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.

## 45.6 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.

## 45.7 Top Ten Devices – Automatic band decoder & DX Doubler

To replicate the default *Top Ten Devices* behavior, you would need to set up the Antenna tab in Configurer as shown in the [Interfacing section](#).

### 45.7.1 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.

73, Pete N4ZR



Note: When using the DX Doubler on another port then LPT1 check out the proper addresses.

## 45.8 West Mountain Radio – RigBlaster

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)

**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.

CW key down problem and Rigblaster Pro

When your radio in CW stays in key down position try setting DTR to CW.

## 45.9 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.

## 46 Unsupported Hardware

### 46.1 CW decoders

No CW decoder is built in nor any external CW decoder is supported.

### 46.2 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).

## 47 Other hardware information

All by Joe Subich, W4TV

### 47.1 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.).

### 47.2 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.

### 47.3 External versus internal soundcards

There are claims that External USB soundcards work substantially better (and should be used) than internal soundcards (on sigital 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.

### 47.4 Going back from serial ports 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.

## 48 Supported Contests

### 48.1 General contest logging (all modes)

<i>Contest</i>	<i>Log Type</i>	<i>Jump to</i>	<i>Remarks</i>
DX (General log)	DX	<u>Setup</u>	Sent RST, Received RST fields, Name and Comment field
DXPEDITION	DXPEDITION	<u>Setup</u>	Only has Sent and Received RST fields
DXSERIAL	DXSERIAL	<u>Setup</u>	Sent and received RST, Nr fields and a Comment field for Generic Serial number contests. Default multipliers and points.
DXSATELLIT	DXSATELLIT	<u>Setup</u>	Only three fields: Call, Grid and Satellite
VHFDX	VHFDX	<u>Setup</u>	Sent RST, Received RST fields, Grid and Comment field
VHFSERIAL	VHFSERIAL	<u>Setup</u>	Sent and received RST, Nr fields and Grid fields. For generic VHF serial number contests. Comments possible.

## 48.2 Supported HF CW/SSB contests

All contests are supported 'both' sides unless specifically mentioned.

<b>Contest</b>	<b>Log Type</b>	<b>Jump to</b>	<b>Website</b>	<b>Remarks</b>
9A CW contest (Croatian CW contest)	9ACW	<a href="#">Setup</a>	<a href="#">Website</a>	CW only; 3rd full weekend in December
All Asian DX contest CW / SSB	ALLASIACW ALLASIASSB	<a href="#">Setup</a>	<a href="#">Website</a>	CW – Third Saturday of June (48 hours) SSB – First Saturday of September (48 hours)
Asian Pacific Sprint	APSCW APSSSB	<a href="#">Setup</a>	<a href="#">Website</a>	In Spring, Summer, Fall (2 hours)
ARCI QRP Contests	ARCI	<a href="#">Setup</a>	<a href="#">Website</a>	This contest supports 7 ARCI QRP contests
ARI International DX Contest	ARIDX	<a href="#">Setup</a>	<a href="#">Website</a>	Per version 4.0.63
ARRL 10 Meter contest	ARRL10M	<a href="#">Setup</a>	<a href="#">Website</a>	
ARRL 160 Meter contest	ARRL160	<a href="#">Setup</a>	<a href="#">Website</a>	
ARRL Field Day contest	FD	<a href="#">Setup</a>	<a href="#">Website</a>	Dupe Sheets not always required for this contest, see ARRL Field Day <a href="#">Setup</a> instructions. Info by Dan Henderson, N1ND from the ARRL contest branch.
ARRL International DX contest CW /Phone	ARRLDXCW ARRLDXSSB	<a href="#">Setup</a>	<a href="#">Website</a>	
ARRL November Sweep Stakes CW / SSB	SSCW SSSSB	<a href="#">Setup</a>	<a href="#">Website</a>	
Baltic contest	BALTIC	<a href="#">Setup</a>	<a href="#">Website</a>	Every year the last but one weekend in May – one week before WPX CW Contest
CIS DX contest	CISDXCW CISDXSSB	<a href="#">Setup</a>	<a href="#">Website</a>	Commonwealth of Independent States
CNCW Spanish contest	CNCW	<a href="#">Setup</a>	<a href="#">Website</a>	Local Spanish CW contest
CQ–M International DX contest	CQM	<a href="#">Setup</a>	<a href="#">Website</a>	Second weekend of May.
CQ World–Wide 160 Meter DX Contest – CW / Phone	CQ160CW CQ160SSB	<a href="#">Setup</a>	<a href="#">Website</a>	
CQ World Wide DX contest – CW / SSB	CQWWCW CQWWSSB	<a href="#">Setup</a>	<a href="#">Website1</a> <a href="#">Website2</a>	CW – Last full weekend of November (48 hours) SSB – Last full weekend of October (48 hours)
CQ World Wide WPX contest – CW / Phone	CQWPXCW CQWPXSSB	<a href="#">Setup</a>	<a href="#">Website</a>	
Cup of the Russian Federation (RFC) contest	RFCCW RFCSSB	<a href="#">Setup</a>		Internal Russian contest in January.
DARC 10 meter contest	DARC10M	<a href="#">Setup</a>	<a href="#">Website</a>	2nd full weekend in January.

DARC Weihnachtswettbewerb (XMAS contest)	XMAS	<a href="#">Setup</a>	<a href="#">Website</a>	December 26
European Sprint – CW / Phone	EUSCW EUSSSB	<a href="#">Setup</a>	<a href="#">Website</a>	In April and October (both modes) (4 hours)
DIG contest – CW / Phone (DIG QSO Party)	DIGCW DIGSSB	<a href="#">Setup</a>	<a href="#">Website</a>	SSB: Second weekend in March CW: Second weekend in April Also for short contests in June and Oktober.
EU HF Championship	EUHFC	<a href="#">Setup</a>	<a href="#">Website</a>	First Saturday in August (12:00 – 23:59 UTC).
FOC Marathon	FOCCW	<a href="#">Setup</a>	<a href="#">Website</a>	First full weekend in February
GACW WWSA CW DX contest	GACW	<a href="#">Setup</a>	<a href="#">Website</a>	Second weekend in June. CW only.
HA DX contest	HADX	<a href="#">Setup</a>	<a href="#">Website</a>	3rd full weekend in January
Helvetia Contest	HELVETIA	<a href="#">Setup</a>	<a href="#">Website</a>	
High Speed CW Contest (HSC CW)	HSCCW	<a href="#">Setup</a>	<a href="#">Website</a>	
Holyland contest	HOLYLAND	<a href="#">Setup</a>	<a href="#">Website</a>	
IARU Radiosporting contest HF	IARU	<a href="#">Setup</a>	<a href="#">Website</a>	
IARU Region 1 Fieldday contest	FDREG1	<a href="#">Setup</a>		According rules for Belgium, Germany, United Kingdom (SSB and CW), Netherlands, Switzerland, Ireland (only CW), Italy, Slovenia (S5) and Russia (UA, UA2, UA9).
IOTA (RSGB ) Islands On The Air contest	IOTA	<a href="#">Setup</a>	<a href="#">Website</a>	
JA–domestic	JADOMESTIC	<a href="#">Setup</a>		Generic support for Japanese domestic contests.
JIDX Contest	JIDXCW JIDXSSB	<a href="#">Setup</a>	<a href="#">Website</a>	CW: 2nd full weekend of April PH: 2nd full weekend of November Sat. 0700 UTC – Sun. 1300 UTC
King of Spain contest	KINGEACW KINGEASSB	<a href="#">Setup</a>	<a href="#">Website</a>	
LOTW	LOTWCW LOTWSSB	<a href="#">Setup</a>	<a href="#">Website</a>	
LZ DX contest	LZDX	<a href="#">Setup</a>	<a href="#">Website</a>	The weekend before the last full weekend of November (weekend before CQWW CW)
LZ Open and LZ Sprint contests	LZOPEN	<a href="#">Setup</a>	<a href="#">Website</a>	For all three contests. LZ Open and both sprint contests (40/80 meter)
Manchester Mineira All America	CWJFMM	<a href="#">Setup</a>	<a href="#">Website</a>	

				South and North American CW only contest by CWJF
Michigan QRP Contest	ARCI	<a href="#">Setup</a>	<a href="#">Website</a>	This contest supports 4 Michigan QRP contests Select ARCI contest (same rules)
NA Sprint – CW / SSB	SPRINTCW SPRINTSSB	<a href="#">Setup</a>	<a href="#">Website</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
NCCC NS Ladder Competition	SPRINTLADD	<a href="#">Setup</a>	<a href="#">Website</a>	Every thursday evening 19:30–2000 PST.
North American QSO Parties (NAQP) – CW / SSB	NAQPCW NAQPSSB	<a href="#">Setup</a>	<a href="#">Website</a>	CW: Second full weekend in January SSB: Third full weekend in January
NRAU–Baltic contest	NRAUCW NRAUSSB	<a href="#">Setup</a>	<a href="#">Website</a>	2nd full weekend in January
Oceania contest CW / SSB	OCEANIACW OCEANIASSB	<a href="#">Setup</a>	<a href="#">Website</a>	SSB: First weekend in October CW: Second weekend in October
OK–OM DX contest	OKOMDX	<a href="#">Setup</a>	<a href="#">Website</a>	Second full weekend in November
PA–beker CW / SSB contest	PABEKERCW PABEKERSSB	<a href="#">Setup</a>	<a href="#">Website</a>	Second full weekend in November Local Dutch CW and SSB contest
PACC contest	PACC	<a href="#">Setup</a>	<a href="#">Website</a>	First full weekend of February
Portugal Day Contest	PORTUGAL	<a href="#">Setup</a>	<a href="#">Website</a>	Second Saturday of June
QSO parties (US and Canada)	QSOPARTY			See next chapter/section.
RAC Canada Day Contest RAC Canada Winter Contest	RAC	<a href="#">Setup</a>	<a href="#">Website</a>	Both contests have the same rules
RAEM contest (E.T.Krenkel contest)	RAEM	<a href="#">Setup</a>	<a href="#">Website</a>	Fourth full weekend of December
REF DX contest	REFCW REFSSB	<a href="#">Setup</a>	<a href="#">Website</a>	CW: last weekend of January SSB: last weekend of February
RSGB 1.8MHz CW contests	RSGB160CW	<a href="#">Setup</a>	<a href="#">Website</a>	CW only. In February and November
RSGB 21/28 MHz contest	RSGB2128	<a href="#">Setup</a>	<a href="#">Website</a>	
RSGB 80 Meter Club Championship	RSGB80MCC	<a href="#">Setup</a>	<a href="#">Website</a>	
		<a href="#">Setup</a>	<a href="#">Website</a>	

RSGB Affiliated Societies Team Contests (AFS)	RSGBAFS-C RSGBAFS-S			
RSGB Club Calls contest	RSGBCLUB	<a href="#">Setup</a>	<a href="#">Website</a>	
RSGB Commonwealth Contest	RSGBJUBILE	<a href="#">Setup</a>	<a href="#">Website</a>	Note: the contest name was the formerly the RSGB Jubilee contest. Now converted to the RSGB Commonwealth Contest.
RSGB National Field Day RSGB SSB Field Day	FDREG1	<a href="#">Setup</a>	<a href="#">Website</a>	According rules for Belgium, Germany, United Kingdom (SSB and CW), Netherlands, Switzerland, Ireland (only CW), Slovenia (S5) and Russia (UA, UA2, UA9).
RSGB Low Power Field Day	RSGBLP	<a href="#">Setup</a>	<a href="#">Website</a>	
RSGB ROPOCO	ROPOCO	<a href="#">Setup</a>	<a href="#">Website</a>	Internal RSGB contest
Russian District Award Contest (RDAC)	RDAC	<a href="#">Setup</a>	<a href="#">Website</a>	
Russian DX	RUSSIANDX	<a href="#">Setup</a>	<a href="#">Website</a>	
Russian YL/OM contest	RUSYLOM	<a href="#">Setup</a>	<a href="#">Website</a>	Website in Russian
SAC	SACCW SACSSB	<a href="#">Setup</a>	<a href="#">Website</a>	
SP DX contest	SPDX	<a href="#">Setup</a>	<a href="#">Website</a>	First full weekend of April (15:00–15:00 GMT)
Stew Perry Topband Distance Challenge	STEWPERRY	<a href="#">Setup</a>	<a href="#">Website</a>	Last full weekend of December
UBA DX Contest CW/SSB	UBACW UBASSB	<a href="#">Setup</a>	<a href="#">Website</a>	SSB: last weekend of January CW: last weekend of February
UBA ON contest	UBAON	<a href="#">Setup</a>	<a href="#">Website</a>	Last Sunday September: 6 m Phone/CW First Sunday October: HF – 80 m SSB Second Sunday October: HF – 80 m CW Third Sunday October: 2 m Phone/CW
UBA Low band Winter Contest	UBAWINTER	<a href="#">Setup</a>	<a href="#">Website</a>	160, 80 and 40 meters
UBA Spring	UBASPRING	<a href="#">Setup</a>	<a href="#">Website</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
Ukrainian DX contest	UKRAINDX	<a href="#">Setup</a>	<a href="#">Website</a>	First full weekend of November

UK DX Contest – CW/SSB	UKDXCW UKDXSSB	<a href="#">Setup</a>	<a href="#">Website</a>	
WAEDC–Contest	WAECW WAESSB	<a href="#">Setup</a>	<a href="#">Website</a>	The starter for the new Contest season.
Worked All Germany (WAG) contest	WAG	<a href="#">Setup</a>	<a href="#">Website</a>	October, third full weekend
WRTC	WRTC	<a href="#">Setup</a>		World Radiosport Team Championship held every 4 years.
YO DX HF contest	YOHFDX	<a href="#">Setup</a>	<a href="#">Website</a>	Last weekend in August
Independence of Venezuela Contest	YV	<a href="#">Setup</a>	<a href="#">Website</a>	First full weekend in July

## 48.3 QSO Parties (CW/SSB)

The QSO parties below are supported.

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 [Setup](#) for more information. There are some scoring anomalies with the qsoparties.

### 48.3.1 United States

QSO party		QSO party		QSO party		QSO party	
Alabama (AL)	<a href="#">Website</a>	Alaska (AK)		Arkansas (AR)	<a href="#">Website</a>	California (CA)	<a href="#">Website</a>
Colorado (CO)	<a href="#">Website</a>	Delaware (DE)	<a href="#">Website</a>	Florida (FL)	<a href="#">Website Setup</a>	Georgia (GA)	<a href="#">Website</a>
Hawaii (HI)	<a href="#">Website</a>	Indiana (IN)	<a href="#">Website</a>	Illinois (IL)	<a href="#">Website</a>	Kansas (KS)	
Kentucky (KY)	<a href="#">Website</a>	Louisiana (LA)	<a href="#">Website</a>	Maryland DC (MD)	<a href="#">Website</a>	Michigan (MI)	<a href="#">Website</a>
Minnesota (MN)	<a href="#">Website</a>	Missouri (MO)	<a href="#">Website</a>	Montana (MT)		Nebraska (NE)	<a href="#">Website</a>
New England (NEWE)	<a href="#">Website</a>	North Carolina (NC)	<a href="#">Website</a>	New Jersey (NJ)	<a href="#">Website</a>	Nevada (NV)	<a href="#">Website</a>
Ohio (OH)	<a href="#">Website</a>	Oklahoma (OK)	<a href="#">Website</a>	Oregon (OR)	<a href="#">Website</a>	Pennsylvania (PA) (RTTY and PSK supported)	<a href="#">Website Setup</a>
South Carolina (SC)	<a href="#">Website</a>	South Dakota (SD)		Tennessee (TN)	<a href="#">Website</a>	Texas (TX)	<a href="#">Website</a>
Vermont (VT)	<a href="#">Website</a>	Virginia (VA)	<a href="#">Website</a>	Wisconsin (WI)	<a href="#">Website</a>	Washington State Salmon Run Contest (WA)	<a href="#">Website</a>
	<a href="#">Website</a>		<a href="#">Website</a>				

West Virginia (WV)		7QP (7th Call Area QSO Party)	
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### 48.3.2 Canada

<b>QSO party</b>	
Ontario (ON)	<a href="#">Website</a>

## 48.4 Supported VHF CW/SSB contests

<b>Contest</b>	<b>Log Type</b>	<b>Jump to</b>	<b>Website</b>	<b>Remarks</b>
ARRL January VHF Sweepstakes	ARRLVHFJAN	<a href="#">Setup</a>	<a href="#">Website</a>	January
ARRL June VHF QSO Party	ARRLVHFJUN	<a href="#">Setup</a>	<a href="#">Website</a>	June
ARRL September VHF QSO Party	ARRLVHFSEP	<a href="#">Setup</a>	<a href="#">Website</a>	September
IARU Region 1 50 MHz contest	VHFREG1	<a href="#">Setup</a>		Only 50 MHz – June
IARU Region 1 144 MHz September contest			<a href="#">Website</a>	Only 144 MHz – September
IARU Region 1 UHF/Microwaves October contest			<a href="#">Website</a>	UHF and Microwaves – October
Other Region 1 VHF and up contests				VHF and up – March, May, July
Marconi CW contest 144 MHz / 50 MHz	VHFREG1	<a href="#">Setup</a>	<a href="#">Website</a>	
NRAU Activity Contest	VHFNAC	<a href="#">Setup</a>	<a href="#">Website</a>	
REF Departments contest 50 MHz	DDFM50	<a href="#">Setup</a>	<a href="#">Website</a>	Only 50 MHz
VHF/UHF Helvetia 26 contest	VHFHELV26	<a href="#">Setup</a>	<a href="#">Website</a>	Swiss VHF and up contest
VHF HG OB contest	VHFHGOB	<a href="#">Setup</a>		Hungarian VHF contest
VRZA – Nederlandse Locator Contest NB selecteer: REGIOVHF	REGIOVHF	<a href="#">Setup</a>	<a href="#">Website</a>	WANLC – Dutch contest, every month NB selecteer: REGIOVHF
UKSMG sporadic-E competition	UKSMG	<a href="#">Setup</a>	<a href="#">Website</a>	

## 48.5 Supported RTTY/PSK contests

All contests are supported 'both' sides unless specifically mentioned.

<b>Contest</b>	<b>Log Type</b>	<b>Jump to</b>	<b>Website</b>	<b>Remarks</b>
ANARTS WW RTTY contest	ANARTSRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Second full weekend of June
Anatolian RTTY contest	ANATOLRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Third full weekend in May

ARRL RTTY Roundup	ARRLRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	First full weekend of January (not on January 1)
BARTG RTTY Spring contest	BARTGSRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Third full weekend in March
BARTG RTTY Sprint contest	BARTGRTTYS	<a href="#">Setup</a>	<a href="#">Website</a>	End of January
CQ World Wide DX contest – RTTY	CQWWRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Last full weekend of September (48 hours)
CQ World Wide WPX contest – RTTY	CQWPXRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Second full weekend of February
CIS DX RTTY contest	CISDXRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Commonwealth of Independent States
DL-DX RTTY contest	DLDXRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	First full weekend of July
EA PSK31 contest	EARTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Select EARTTY as contest . Set Mode Control as "Always PSK31"
EA RTTY contest	EARTTY	<a href="#">Setup</a>	<a href="#">Website</a>	First full weekend of April
EPC PSK63 QSO party	EPCPSK63QP	<a href="#">Setup</a>	<a href="#">Website</a>	
EU PSK DX contest	EUPSKDX	<a href="#">Setup</a>	<a href="#">Website</a>	
JARTS WW RTTY contest	JARTSWWRTY	<a href="#">Setup</a>	<a href="#">Website</a>	Third full weekend in October
Makrothen RTTY contest	MAKRORTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Second full weekend in October
NA Sprint – RTTY	SPINTRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Sunday of second full weekend in March Sunday of second full weekend in October
North American QSO Parties (NAQP) – RTTY	NAQPRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Last full weekend in February
OK DX RTTY contest	OKDXRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Third full weekend in December
LOTW RTTY contest	LOTWRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	
Quick PSK63 contest	SARTGRTTY	<a href="#">Setup</a>		PSK63. Uses SARTG rules. First Saturday of September
Russian DX RTTY contest	RUSDXRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	RTTY. First Saturday of September
Russian Cup RTTY	RUCUPRTTY	<a href="#">Setup</a>		For Russians only
SARTG New Year RTTY contest	SARTGNYRTY	<a href="#">Setup</a>	<a href="#">Website</a>	January 1st
SARTG WW RTTY contest	SARTGRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Third weekend in August
SCC RTTY Championship	SCCRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Last full weekend in August
SP DX RTTY contest	SPDXRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	4th full weekend of April
TARA Grid Dip contest	TARAGRID	<a href="#">Setup</a>	<a href="#">Website</a>	RTTY and PSK. First Saturday of August
TARA PSK Rumble	TARAPSK	<a href="#">Setup</a>	<a href="#">Website</a>	PSK31. First Saturday of October

TARA RTTY Melee	TARARTTY	<a href="#">Setup</a>	<a href="#">Website</a>	RTTY. First Saturday of December
Ukrainian DX RTTY contest	UKRAINRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	First full weekend of November
UK DX Contest – RTTY	UKDXRTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Second full weekend of July
Volta RTTY contest	VOLTARTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Second full weekend in May
WAEDC RTTY contest	WAERTTY	<a href="#">Setup</a>	<a href="#">Website</a>	Second full weekend in September
XE RTTY contest	XERTTY	<a href="#">Setup</a>	<a href="#">Website</a>	First full weekend of February

## 48.6 I'm missing my contest, what to do?

If the contest is not direct supported by the program there are two options

1. Use a 'general' contest like DXSERIAL, DX etc.

To run the contest and do the log creation after the contest using notepad or so. 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 way to go for the many small, mostly local, contests around.

2. Request that the contest becomes one of the supported contests by the program.

First, it would be good, whenever someone requests support for a particular contest, to have an indication of the number of entries the contest received during the previous year's running. I'm not suggesting 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.

Second, 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 in this context to test far enough in advance of the running of a contest so that any problems can be identified and fixed. So users will do well to check each contest as it is coming up.

And of course only when the programmer has time to create it! So do not ask days but better many weeks or months before the contest runs to have it implemented so there is time to create it and test it thoroughly.

If you identify bugs or propose contest-specific features during the running of a contest, don't expect them to be fixed immediately. 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 for score submission and are can be done in the weeks after the contest.

# 49 Contest Setup Instructions

## 49.1 General

When a contest has a specific mode (*SSB*, *CW* or *RTTY*) then the *Sent Exchange* is automatically changed to that mode. So when you select CQWSSB for the CQ World Wide SSB contest the *Sent Exchange* 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 *Sent Exchange* 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 in 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 used [serial number server](#) in the chapter Advanced Functions .



*Note: Always read the contest instruction 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.*

## 49.2 General contest logging

### 49.2.1 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.

### 49.2.2 DXpedition

Window: Select Log type

- Log Type: *DXPEDITION*
- Mode Category: *MIXED* If you want to have the possibility making 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

### 49.2.3 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

#### 49.2.4 DX satellite

Window: Select Log type

- Log Type: *DXSATELLIT*
- Mode Category: *MIXED* If you want to have the possibility making 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.

#### 49.2.5 VHF DX

Window: Select Log type

- Log Type: *VHF DX*
- Mode Category: *MIXED* If you want to have the possibility making SSB and CW contacts.

For VHF and up logging.

- Entered QSOs in VHF DX 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.

#### 49.2.6 VHF SERIAL

Window: Select Log type

- Log Type: *VHF SERIAL*
- Mode Category: *MIXED* If you want to have the possibility making 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.

### 49.3 Deleted QSOs

### 49.3.1 DELETEDQS "contest"

QSOs which you have deleted using 'Edit Contact' are moved to this 'contest'. This is in especially for multi-user support. The moved QSOs can be exported.

## 49.4 HF CW/SSB contests

### 49.4.1 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

### 49.4.2 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.*

### 49.4.3 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.*

### 49.4.4 ARCI QRP Contests & Michigan QRP Contest

*The ARCI contest supports 7 ARCI QRP Contests. The Michigan QRP Contest almost has the same rules.*

- 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...

#### 49.4.5 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.*

#### 49.4.6 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.

#### 49.4.7 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.

#### 49.4.8 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

#### 49.4.9 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 call signs 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.

#### 49.4.10 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.

- ◆ **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: Right click on the SSB message buttons and change F2 to:  
#wav\ssexch.wav or wav\number.wav#wav\ssexch.wav

Then you need to record 1.wav through 0.wav and put them in the \letters subdirectory.

It is pretty tough to get them as readable as real spoken serial numbers but if you need it, the capability is there.

- Spaces are required in the exchange except between the Nr & Prec. You may put the exchange elements in out of order and repeat them. The last one will be used.
- The cursor is positioned at the end of the exchange when swapping radios.
- Ambiguous exchanges are shown in blue (Nr > 9 & Nr < 100)

1. Select log type and mode
2. In the contest selection dialog, enter B 55 CT or whatever you Prec, Ck & Section are.
3. Set up the F2 keys (Run and S&P).
4. If you want or don't want leading T's for the numbers, check the appropriate box in the configurer.

Sweepstakes has different support in the logging program from any other contest because it is a five part exchange (call, nr, prec, ck, section). There are two text boxes for this and not six. The first is for the call. The second is for ALL five. The larger (second) textbox will allow you to enter any of the exchange elements in any order. There are some rules that are used to interpret ambiguous information, but you can always look at the frame above the textbox to tell what the program thinks you are trying to log.

Here are some examples of exchanges and what they mean:

261 A 55 CT	261A 55 CT
12B Q CT 61	12B 61 CT
12B Q CT 61 EMA 44	61Q 44 EMA
CO CT 12 13 B	12B 13 CT
12A W1XX CT 66	12A W1XX 66 CT W1XX overrides call in call textbox

Also possible is for the check and section "68NM", as well as "68 NM".

The rules are:

(You must enter a space between parts, except between Nr & Prec.)

Rule 1, parse from RIGHT to LEFT

Rule 2, when you find a token of a certain type, stop looking for that type

Rule 3, Nr = 1 or 3+ digit number

Rule 4, CK = 2 digit number

Rule 5, Section = 2 character or more alpha token

Rule 6, Prec = 1 digit alpha token

Rule 7, If there is one two digit and one three digit number, than the two digit is the ck & the three digit is the nr.

Rule 8, If there are just two numbers and they are both 2 digits, the first is the nr, the second the ck.

Try it. It's easier to use than it is to describe.

### Examples playing WAV files using ESM.

Example 1 – You speak the callsign from the station

- Put a 'single space' in the callsign button (mostly F5).
- Now what you do is speak the call, Nr 123, then press enter. Your exchange wav file should be something like "Bravo, N1MM, Check 61 Connecticut"

Example 2– The program speaks the callsign from the station

- Put ! in for the callsign wav file. That will speak the call.
- Put #wav\sssexch.wav in for the exchange wav file.
  - ◆ Don't forget the #, this will send the nr
  - ◆ wav\sssexch.wav will send your exchange file (obviously, substitute the name of your exchange wav file)
  - ◆ Now ESM will say when responding to W1AB this when pressing enter: **Whiskey One Alpha Bravo One Two Three Bravo, N1MM, Check 61 Connecticut**

### 49.4.11 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.*

### 49.4.12 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.*

### 49.4.13 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

#### 49.4.14 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*

#### 49.4.15 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.

#### 49.4.16 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.

#### 49.4.17 CQ World Wide WPX contest – CW / SSB

- Window: Select Log type
  - ◆ **CW**
    - ◇ Log Type: *CQWPXCW*
    - ◇ Mode Category: *CW*
    - ◇ Sent Exchange: *001* i.e Serialnumber 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–Two entries have a single set of serial numbers.
- 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.

#### 49.4.18 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*

#### 49.4.19 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**: *RFCSB*
  - ◆ Sent Exchange: *Grid* Example: 115

#### 49.4.20 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:

<i>File</i>	<i>How to make...</i>	<i>Exported</i>
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.

#### 49.4.21 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: *Serialnumber* + DOK Example: 001 A12
    - ◇ Non-DL stations: *Serialnumber* 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.

#### 49.4.22 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)

#### 49.4.23 European Sprint – CW/ SSB (EU sprint)

- 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.

#### 49.4.24 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)

### 49.4.25 Field Day Region I

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..

### 49.4.26 FOC marathon

- Window: Select Log type
  - ◆ Log Type: *FOCCW*
  - ◆ Sent Exchange: *membership number*

NB. 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 post contest routines to rescore the contest from a Cabrillo file to a fully correct (including the 5/6 band bonuses).

### 49.4.27 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.

### 49.4.28 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.

### 49.4.29 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.

### 49.4.30 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*

### 49.4.31 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.

### 49.4.32 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 pre-filled while typing the callsign to allow multipliers to be shown while typing the callsign.

### 49.4.33 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 own IOTA reference has to be in the form *XXYYY* 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 therefore 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.

#### 49.4.34 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.*

#### 49.4.35 JIDX contest

This JIDX contest 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.*

#### 49.4.36 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.

#### 49.4.37 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*

#### 49.4.38 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.

#### 49.4.39 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.

#### 49.4.40 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.

#### 49.4.41 Michigan QRP Contest

See the [ARCI contest](#) which uses the almost the same rules.

Supported are: January CW Contest ; Memorial Day CW Sprint ; July 4th CW Sprint ; Labor Day CW Sprint

#### 49.4.42 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 functionkeys can be found in the chapter '[Example Function keys](#)'.
- 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.
- How to prevent callsigns in the frame of the callsign field
  - ◆ During the sprint you can turn off the bandmaps, they are not very useful in this contest
  - ◆ If that is not sufficient, you can turn off "Show non-workable spots". Be sure to turn it back on for other contests. Showing dupes and non-workable stations is one of the best features of the program (but, unfortunately, not for Sprint).
  - ◆ Use Alt+D to remove the spot from the bandmap & call frame.
  - ◆ Do NOT turn on "QSYing wipes the call& spots QSO in bandmap (S&P)" for the Sprint. That is exactly what you don't want. It is a great feature, but only for contests where stations are allowed to run. It makes it easy to come back to a station that was taking too long to make a qso when you first found them.

#### 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/sprinrules.php>

73 and CU in the contest,

Setting the Exchange:	
File> Choose Which Contest to Log > Sent Exchange	"# <b>yourname yourstate</b> " (eg: # <b>KEN CA</b> )
In the Config > Configurer > Other window	I have changed the <b>CW Up/Down Arrow Incr = 1.5</b> 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.

#### 49.4.43 NCCC NS Ladder Competition

Window: Select Log type

- Log Type:
  - ◆ SPRINTLADD
- 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 (these contests are almost alike).

#### 49.4.44 North American QSO Parties (NAQP) – 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.

#### 49.4.45 NRAU – Baltic Contest

This contest is only for stations from the following countries: ES, JW, JX, LA, LY, OH, OHÃ?, 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, OHÃ?, 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 an another band than 7 or 3,5 MHz. A note is made with the logged qso.

#### 49.4.46 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).

#### 49.4.47 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.

#### 49.4.48 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:

<b>File</b>	<b>How to make...</b>	<b>Exported</b>
Log file	File, Export, Export to File (Generic)	[callsign].txt
Summarysheet	File, Export, Print Score Summary to File	[callsign].sum

#### 49.4.49 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 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:

<b>File</b>	<b>How to make...</b>	<b>Exported</b>
Log file	File, Export, Export to File (Generic)	[callsign].txt
Summarysheet	File, Export, Print Score Summary to File	[callsign].sum



PA stations: Vergeet niet op het **summarysheet** te vermelden de **klasse** waarin je mee doet en de **afdeling** voor het afdelingsklassement!



PA stations kunnen op 160 meter qso's met stations welke meedoen aan de RSGB 1.8 MHz CW contest welke in de avoinduren gelijktijdig plaats vind volledig loggen. N1MM accepteert na het volgnummer ook de districtcode. Voorbeeld: 599 123AA (NB, geen spatie tussen het ontvangen volgnummer en de district code)

### 49.4.50 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 Autonomie 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.

### 49.4.51 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 VE's 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.

### 49.4.52 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.

- Window: Select Log type
  - ◆ Log Type: RAEM
  - ◆ Mode Category: CW (it is a CW only contest)
  - ◆ Sent Exchange: 001 & Coordinates Example: 001 53N60
    - ◇ 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: 60
- As a total this makes: 53N60

**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

### 49.4.53 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.

#### **49.4.54 RSGB 1.8MHz 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 send 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.

#### **49.4.55 RSBG 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*

#### **49.4.56 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*

#### **49.4.57 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*

#### **49.4.58 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

#### 49.4.59 RSGB Commonwealth contest

The RSGB Commonwealth contest can be configured for Commonwealth stations and DX stations.

- Window: Select Log type
  - ◆ Log Type: RSGBJUBILE <----- Note: This is correct!!! select RSGBJUBILE
  - ◆ Exchange: 001

The callsign in the Station Information dialog ('Config | Change Your Station Data | Call') determines if you are in the Commonwealth or not.

#### 49.4.60 RSBG 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!

#### 49.4.61 RSBG 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

#### 49.4.62 RSBG 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}

#### 49.4.63 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 an Russian station or a DX station.

#### 49.4.64 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 an Russian station or a DX station.

Example: Default RU1A would have SP, in the call history RU1A could be added so it will give the correct 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

#### 49.4.65 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.

#### 49.4.66 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 an Scandinavian station or a DX station.

#### 49.4.67 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 an Polish station or a DX station.

#### 49.4.68 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.

#### 49.4.69 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!!!*

### **49.4.70 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.*

### **49.4.71 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.*

### **49.4.72 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.*

### 49.4.73 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.

### 49.4.74 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.

### 49.4.75 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".

### 49.4.76 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.

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. Ctrl+Z cycles through QSO, receive QTC and send QTC modes.

**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
- 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.

### 49.4.77 WAG contest

The WAG contest can be used by 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 an 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.

### 49.4.78 WRTC contest

The World Radiosport Team Championship (WRTC) contest is fully supported.

- 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.

### 49.4.79 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 an Romanian station or a non-Romanian station.

## 49.5 QSO parties

The program supports many US and Canadian QSO parties. There are some scoring anomalies though (there is a score disclaimer).

The QSO parties use a configuration file named 'QSOparty.sec' with the names of the counties for each qso party. The program recognizes whether you are operating from the selected contest state using the ARRL section in the station dialog, so make sure your ARRL section is entered in the station dialog.

The list of county abbreviations has been taken from the official site for your contest, if available. This list of counties can be found in 'Config | Change Exchange Abbreviations | Change QSO Party Abbreviations'. Note that you may add abbreviations for counties. For example, say there is a county TOL. If you wanted to enter TOL for the county, you are all set. If you want to enter TOLLAND for TOL, then you should ADD a line TOLLAND TOL. Whether you enter TOL or TOLLAND, the qso will be logged with TOL.

- 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) .
      - 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. Mostly serial number and location
    - ◇ Inside the selected State/Province – See contest instructions
    - ◇ Outside the selected State/Province – See contest instructions
    - ◇ If sent exchange is specified as "001" then a serial number will be sent
- The ARRL SECTION entered and the State field in the Station Dialog will be used to determine if you are **in or outside a state or province**.
  - ◆ Your correct ARRL section must be specified in the station dialog. Please fill it out completely.



**Note: In QSO parties rovers and county line contacts need to be entered with /M.**

Many QSO parties have different scoring rules for in-state and out-of-state participants. When creating a new log for a QSO party, a message box will inform you whether you are an in-state, or out-of-state participant, based on your ARRL section.

### 49.5.1 Same weekend: 7QP, Indiana QSO Party and the New England QSO Party

THREE major QSO parties -- the 7QP (7th Call Area QSO Party), the Indiana QSO Party and the

*New England QSO Party -- are all on the same weekend. Wondering how to operate in all three at the same time? Changing logs each time you find a station working one of "the other" QSO parties is cumbersome. A three-in-one list of sections will allow you to work counties in any of the three QSO parties (7QP, InQP and NEQP) and log them using N1MM Logger. Check out the website from VA7ST (Google for "va7st 7qp n1mm"). The scoring won't be correct, because you're logging all QSOs in the same log. However, you will be able to submit your all-in-one log to the 7QP and the NEQP.*

### **49.5.2 Florida 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.*

### **49.5.3 PA QSO party**

#### **Pennsylvania points work around.**

*The logging program does not handle fractional points for QSOs like this contest uses. The points are doubled to make it easy to divide final score by two. Also, the rule to assign multiple counties to a single serial number is not supported.*

### **49.5.4 Updating and importing the QSO party sections**

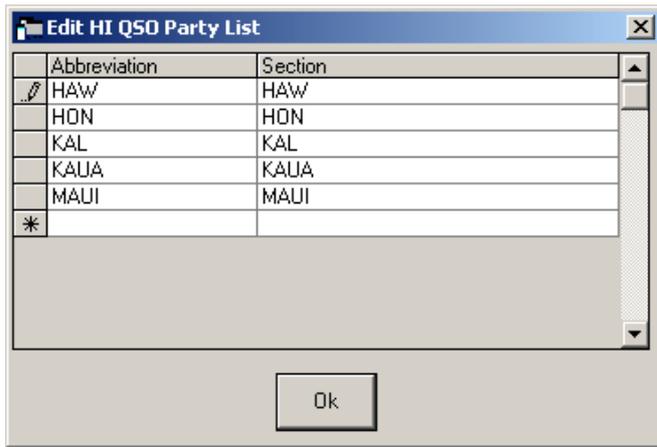
- Always try first on a test database.
- The 'QSOparty.sec' file located in the program directory has listed all the sections per QSO party.
- Importing is done automatically at the start of the program when the database has no QSO party section information (checked at startup).
- If the 'QSOparty.sec' 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...



## 49.6 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 field to the signal report fields. You will note that it highlights the strength to allow quick modification of that.



**Feature:** When a is grid entered but no call, all QSOs with that grid will show in the lower part of log window.

### 49.6.1 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!

### 49.6.2 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!

### 49.6.3 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!

### 49.6.4 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 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.

### 49.6.5 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

### 49.6.6 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 te scoring, bonus and mutlipliers 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 possiblities see the VHF Region 1 contest.

- Window: Select Log type
  - ◆ Select: Log Type: VHFNAC
  - ◆ Sent Echage: Nothing specific needed but the 6 digit grid would be fine to used it in the Sent Exchange macros.

### 49.6.7 REF Departments contest 50 Mhz

- Window: Select Log type
  - ◆ Log Type: DDFM50
  - ◆ Sent Exchange: Serial Number + Your four character grid Example: 001 JO33

### 49.6.8 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 Multip0lier sheet the Sect tab to view the worked Cantons (select VHF and auto).

### 49.6.9 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.

### 49.6.10 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!

### 49.6.11 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.

## 49.7 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

1. You have a call sign in Entry window
2. The contents of the database field that holds the time is empty for that callsign And one of the following is met..

- A. F2 is pressed or sent
- B. Insert is pressed and the code that is run from the insert key sends the contents of the F2 macro
- C. {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.

### 49.7.1 ANARTS WW RTTY contest

- Window: Select Log Type
  - ◆ Log Type: ANARTSRTTY
  - ◆ Sent Exchange: Zone Example: 14

### 49.7.2 ANATOLIAN RTTY contest

- Window: Select Log Type
  - ◆ Log Type: ANATOLRTTY
  - ◆ Sent Exchange: 001

### 49.7.3 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.

#### 49.7.4 BARTG RTTY Spring contest

- Window: Select Log type
  - ◆ Log Type: BARTGSRTTY
  - ◆ Sent Exchange:001

#### 49.7.5 BARTG RTTY Sprint contest

- Window: Select Log type
  - ◆ Log Type: BARTGRTTYS
  - ◆ Sent Exchange:001

#### 49.7.6 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!

### **49.7.7 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.

### **49.7.8 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

### **49.7.9 DL DX RTTY contest**

- Window: Select Log type
  - ◆ Log Type: DLDXRTTY
  - ◆ Mode Category: RTTY
  - ◆ Sent Exchange: 001

### **49.7.10 EA RTTY contest / EA PSK31 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.

For the EA PSK31 contest select EARTTY as contest and Set Mode Control as "Always PSK31".

### **49.7.11 EPC PSK63 QSO party**

- Window: Select Log type
  - ◆ Log Type: EPCPSK63QP
  - ◆ Sent Exchange:
    - ◇ EPC member stations: EPC membership number Example: EPC0001
    - ◇ Non-EPC member stations: 001

### 49.7.12 EU PSK DX contest

- Window: Select Log type
  - ◆ Log Type: EUPSKDX
  - ◆ Sent Exchange:
    - ◇ EU stations: EU Area Code Example: SC27
    - ◇ Non-EU stations: 001

### 49.7.13 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.

### 49.7.14 Makrothen RTTY Contest

- Window: Select Log type
  - ◆ Log Type: MAKRORTTY
  - ◆ Mode Category: RTTY
  - ◆ Sent Exchange: 4 digit grid Example: JO33

### 49.7.15 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

### 49.7.16 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.

Note: For RTTY only, the same station can be worked multiple times provided 3 contacts separate the contact in both logs, regardless of band.

### 49.7.17 North American QSO Parties (NAQP) – RTTY

- 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.

#### 49.7.18 OK DX RTTY Contest

- Window: Select Log type
  - ◆ Log Type: OKDXRTTY
  - ◆ Mode Category: RTTY
  - ◆ Sent Exchange: CQ zone

#### 49.7.19 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)

#### 49.7.20 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.

#### 49.7.21 Russian Cup RTTY contest

- Window: Select Log type
  - ◆ Log Type: RUCUPRTTY
  - ◆ Mode Category: RTTY
  - ◆ Sent Exchange: 001

This contest is for Russians only.

#### 49.7.22 SARTG New Year RTTY Contest

- Window: Select Log type
  - ◆ Log Type: SARTGNYRTTY
  - ◆ Mode Category: RTTY
  - ◆ Sent Exchange: 001 + name + "Happy New Year" in your native language

#### 49.7.23 SARTG WW RTTY Contest

- Window: Select Log type
  - ◆ Log Type: SARTGRTTY
  - ◆ Mode Category: RTTY
  - ◆ Sent Exchange: 001

#### 49.7.24 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.

### 49.7.25 SP DX RTTY contest

- Window: Select Log type
  - ◆ Log Type: SPDXRTTY
  - ◆ 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.

### 49.7.26 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

### 49.7.27 TARA PSK Rumble

- Window: Select Log type
  - ◆ Log Type: TARAPSK
  - ◆ Mode Category: MIXED
  - ◆ Sent Exchange: Name and Location Example: Tom CT

### 49.7.28 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)

### 49.7.29 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

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.

### 49.7.30 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.

### 49.7.31 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.

### 49.7.32 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 is 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. (Which ever is smaller)

### 49.7.33 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 an Mexican station or a non-Mexican station.

# 50 Supported Radios

Go look here for [Radio Computer interfacing](#)



**Note.** Not all the features listed in this Help/manual might be applicable to all the transceivers and brands mentioned below. Known settings for transceivers or features not applicable are mentioned below as far as we know them. Please inform us if you have information which should/could be mentioned here.

## 50.1 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).
  - ◆ 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"
  - ◆ The 10 second wait time is restarted after transmitting.
  - ◆ 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.
- 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.

## 50.2 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.

- Bandwidth button in the bandmap is not supported (and not shown).

## 50.3 Elecraft

- **K2**
  - ◆ Uses Kenwood alike commands but has it's 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.

### • K3

- ◆ Valid operating modes for the K3 are SO1V or SO2R with one entry window and one bandmap. Do not try to operate the K3 in SO2V mode. This matches the radio capabilities. If Elecraft fixes the VFOB issue in software SO2V radio control code will be added.
- ◆ ALT+F10 swaps VFO's.
- ◆ Using the program as a voice keyer with a K3 on SSB
  - ◇ 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.
  - ◇ Connect Mic to desired mic connection.
  - ◇ Select MIC with MENU:MIC SEL
  - ◇ PTT and set Mic Gain.
- ◆ "Now, if 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"

## 50.4 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.

## 50.5 Icom

- General Icom information
- - ◆ Almost every rig requires an ICOM CT–17 CI–V interface or compatible. A great list of CI–V interfaces can be found at the website from Ekki Plicht, DF4OR.
  - ◆ 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**. You will see frequency errors and have sluggish performance unless this is set to OFF (mostly on slower computers). On faster computers you could try to set it to ON when you need it.
    - ◇ "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.
  - ◆ VFO A=B is send to ICOM radios before setting split frequency.
  - ◆ Icom's don't report their VFO to the computer because of this clicking on the radio A/B VFO button reflects the frequency and mode on both bandmaps. Ctrl+Left arrow selects VFO–A and Ctrl+Right arrow selects VFO–B correct on bandmap.
  - ◆ 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:

- ◆ **IC-1275A/E** using address 18 hex and 9600 bps.
- ◆ **IC-275A/E/H** using address 10 hex and 9600 bps.
- ◆ **IC-475A/E/H** using address 14 hex and 9600 bps.
- ◆ **IC-703** using address 68 hex and 19200 bps.
- ◆ **IC-706** using address 48 hex and 19200 bps.
- ◆ **IC-706MKII** using address 4E hex and 19200 bps.
- ◆ **IC-706MKIIG** using address 58 hex and 19200 bps.
- ◆ **IC-718** using address 5E hex and 19200 bps.
  - ◇ Set N1MM Logger to 19200 bps and the radio to "AT" (AuTo).
- ◆ **IC-725** using address 28 hex and 9600 bps.
- ◆ **IC-728** using address 38 hex and 9600 bps.
- ◆ **IC-729** using address 3A hex and 9600 bps.
- ◆ **IC-735** using address 04 hex and 9600 bps.
  - ◇ 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, tarting 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

Those 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 though 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

- ◆ **IC-736** using address 40 hex and 9600 bps.
- ◆ **IC-737/737A** using address 3C hex and 9600 bps.
- ◆ **IC-738** using address 44 hex and 9600 bps.
- ◆ **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.
- ◆ **IC-746 PRO** using address 66 hex and 19200 bps.
- ◆ **IC-751/751A** using address 1C hex and 9600 bps.
  - ◇ CI-V transceive ON / OFF can be toggled via a hardware switch inside the radio. This must be set to **\*OFF\***.
  - ◇ The processor in this old trx is just to slow, if you switch it on tuning is no longer smooth.
  - ◇ Rig can not handle split frequency or duplex operation commands.
  - ◇ This rig actually uses the old CI-IV system and uses the UX-14 to convert to CI-V.
- ◆ **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.
- ◆ **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.
- ◆ **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.
- ◆ **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.
- ◆ **IC-761** using address 1E hex and 9600 bps.
  - ◊ Rig can not handle split frequency or duplex operation commands.
- ◆ **IC-765** using address 2C hex and 9600 bps.
- ◆ **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.
- ◆ **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.
- ◆ **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.
- ◆ **IC-7000** using address 70 hex and 19200 bps.
- ◆ **IC-7400** not directly supported.
  - ◊ The radio is not direct supported but seems fully compatible with the IC-746 PRO.
  - ◊ Select the IC-746 PRO as radio
- ◆ **IC-7700** using address 74 hex and 19200 bps.
- ◆ **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.

## 50.6 Kenwood

- 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.
  - ◆ 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 TS-940 has it's own entry in the radio selection dialog. Do not use Kenwood but select TS-940.



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. The workaround is to increase the 'transceiver timeout time' (right-click menu in the bandmap) in N1MM Logger. For example

to 120 seconds.

- **TS-50**
  - ◆ Select: TS-940
- **TS-140**
  - ◆ Select: TS-940
- **TS-440**
  - ◆ Select: TS-940
- **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
- **TS-680**
  - ◆ Select: TS-940
- **TS-711**
  - ◆ Select: TS-940
- **TS-790**
  - ◆ Select: TS-940
- **TS-811**
  - ◆ Select: TS-940
- **TS-850**
  - ◆ Select: Kenwood
  - ◆ Turn off AI on init
  - ◆ Speed: 4800 Baud; Parity: N ;Databits: 8; Stopbits: 2 (!)
  - ◆ Check out the possible communications issue above with this radio.
- **TS-940**
  - ◆ Select: TS-940 – Do not select Kenwood but select TS-940 for this radio!
  - ◆ Speed: 4800 Baud; Parity: N ;Databits: 8; Stopbits: 2 (!)
- **TS-950sdx**
  - ◆ Select: Kenwood
  - ◆ Some (older) TS-950sdx radios drops power when it's 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 above with this radio.
- **TS-2000**
  - ◆ Select: TS-2000 – There is a separate radio entry for TS-2000 to allow control of antenna RX 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.

## 50.7 TenTec

- General TenTec information
  - ◆ The models below are supported, other models are not supported.
- ARGONAUT V
- JUPITER
- 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.
- 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.
- 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.

## 50.8 Yaesu

- 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 (!)
- **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).
- 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.
- FT-450
  - ◆ Supported
- **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.
- **FT-757GXII**
  - ◆ Supported
- **FT-817**
  - ◆ 19200, N, 8, 1, Handshake, Handshake. FT-718 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.
- **FT-840**
  - ◆ Supported
- **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.
- **FT-857**
  - ◆ Select FT-897 as radio.
  - ◆ 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.
- **FT-890**
  - ◆ Supported
- **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.

- **FT-900**
  - ◆ Supported
- **FT-920**
  - ◆ PTT via CAT supported.
  - ◆ For filter settings see below.
- **FT-950**
  - ◆ Supported
- **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.
- **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
  - ◆ Please see also [Key Assignments](#) (Alt+F12)
- **FT-1000MP (Mark-V)(Field) (do not select when using a SteppIR antenna)**
  - ◆ Please see also [Key Assignments](#) (Alt+F12)
  - ◆ 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
- **FT-1000MPSteppIR**
  - ◆ Select this FT1000mp when using a SteppIR antenna.
  - ◆ This selection is optimized for the combination of an FT1000MP and the SteppIR antenna.
- **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.

- **FT-2000**

- ◆ Defaults to: 4800 baud, 8 bits, no parity, 2 stop bits. Set DTR to always off and RTS to Always on.
  - ◇ If the above does not work try to set also 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. Other radio settings like CAT TIME OUT = 10 msec and CAT RATE=4800 can stay as they are (default). A three wire cable should also work with USB serial adapters.

- **FTDX-9000**

- ◆ Supported.

## 50.9 Other brands

- No other brands are supported yet.

# 51 Third Party Software for N1MM logger

All programs below are freeware programs !

## 51.1 Integration to 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.

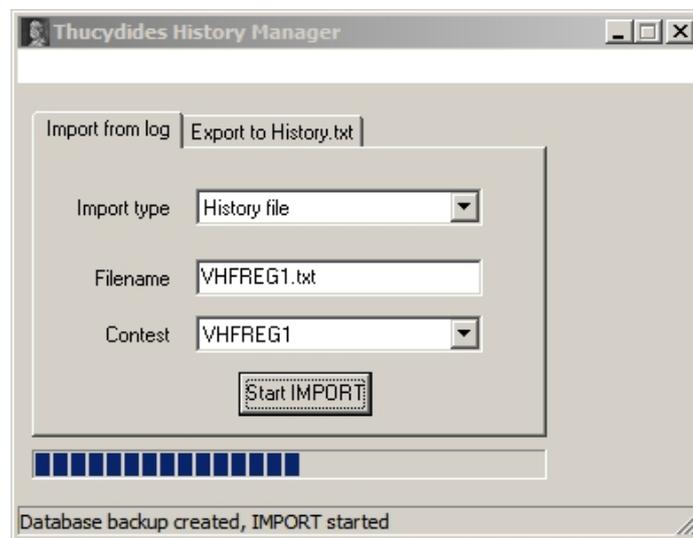
## 51.2 Thucydides

Always would like to update the history file with real contest QSOs ? Have an optimized history file for every contest ?

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.



### 51.2.1 Features

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.

## 51.3 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 \$5SO2R mode. A second com port is used to output on DTR and RTS the necessary data to switch external SO2R 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

## 51.4 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:

a) 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...

b) 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).

c) 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)

d) 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 A or B or C or D 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

## 51.5 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 Numpad7::Send !{F9} Numpad8::Send ^+i Numpad4::Send ^b Numpad9::Send !r Numpad5::Send ^{F1} Numpad6::Send !w Numpad0::Send {ESC}`` Numpad1::Send `` Return	Num Lock always on Numeric key 7 – toggle antennas for a band Numeric key 8 – toggle Advanced SO2R Numeric key 4 – toggle dueling CQs Numeric key 9 – toggle repeat CQs Numeric key 5 – send CQ on radio that does not have entry focus Numeric key 6 – wipe Numeric key 0 – return from S&P to work station calling on run radio Numeric key 1 – go back to S&P on opposite radio

Example AutoHotkey implementation for grabbing multipliers to VFO A and B:

'Script'	Description
#UseHook SetNumlockState, AlwaysOn Numpad7::Send ^!{Up} Numpad1::Send ^!{Down} Numpad9::Send ^+!{Up} Numpad3::Send ^+!{Down} Return	Num Lock always on Numeric key 7 – VFO A Go to next multiplier up the bandmap, Numeric key 1 – VFO A Go to next multiplier down the bandmap, Numeric key 9 – VFO B Go to next multiplier up the bandmap, Numeric key 3 – VFO B Go to next multiplier down the bandmap.

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 'AutoIt' version 3. Check out the [links](#) chapter for both urls.

Or use the wheel of the wheelmouse.

```
WheelUp::Send {Up}
WheelDown::Send {Down}
```

## 51.6 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.

# 52 Frequently Asked Questions

## 52.1 Program errors and requests

### Q. Where can I download the program?

A. All information for a first or a subsequent install can be found at the [installation page](#)

Q. Why the data is in a database...

A. Here is another reason why I put the data into Access. You can easily query the data and import into Microsoft Excel.

If you have Excel, look in the data menu for the option "Get External Data". You will want to use "New Database Query". The database type to choose is "MS Access Database" and I would recommend leaving "Use the Query Wizard to create/edit queries" checked if you are not a programmer. This will display a list of databases. Navigate to your N1MM directory and choose the one you want. The table you want to look at is DXLOG. Press > to move that to the right hand column. Here is the tricky part. You need to select rows to be included. The column that filters that is ContestNR. You could also use ContestName, but if you have two contests with the same name, you will have to filter some more. You could also filter with TS (timestamp) using greater than and less than. Choose your Sort by columns in the next window and continue. You will want to choose the option to return the data to Microsoft Excel. You now have the contest data in a spreadsheet.

The other way to get data into a spreadsheet is to open the contest log in the program, then right click on the log window. Choose "select all", then right click and choose Copy/Generic Print String. The data in the clipboard can be pasted into Excel, and the put into columns using Data/Text to Columns.

73, Tom Wagner – N1MM

### Q. N1MM logger change philosophy

A. I'm always happy to log Feature Requests, but folks need to be aware of the relationship between rapid evolution and the reliability of the software. Some changes are quick, easy, and involve relatively little chance of side-effects (that is, causing problems elsewhere in the program). Others are extremely risky. In some instances, the level of risk may not be known.

It is also important for users to understand that time is limited, and bugs that interfere with proper operation for many users always come first; bugs that affect relatively few people tend to wait, as do feature requests with similarly limited impact. 73, Pete N4ZR

### Q. What to do to get familiar with the program?

- Read the manual!
- At least read the Quick-Start Guide, Quick Tour, Using the program, the Entry Window and the Key Assignments chapters.
- You MUST print out and read the 'Key Assignments' and/or the 'Key Assignments Short List'. It is the quickest way to get a good idea of what the program can do. There are things that are not covered in key assignments, but if it is important for heads-down contesting, then there is a keystroke for it.
- Use the program as logging program in DX mode before entering a contest.
- Use the program with the contest set up and make 'dummy' QSOs before entering a contest.
- Use it and look in the manual if things are not clear.
- Still not clear? Get on the reflector and ask. There are many people there who can help.

### Q. The program displays an error. What should I do?

A. When the program displays an error or suddenly ends this may be a bug in the program or a problem on your computer. Here are some hints on how to determine if it is a bug and how to report it.

- Try to record what you did when it happened.
- If you do the same thing again does it happen again?
- If so, use a clean N1MM Logger.ini file (copy N1MM logger.ini.init to N1MM Logger.ini). You will reset many of your configuration settings, but this often fixes the problem. It's unlikely that a run-time type of error can be fixed by reinstalling the software.

- If the problem still exists, submit a bug report and give as much information as possible.
  - ◆ What operating system are you running?
  - ◆ How fast is your computer (processor speed, type of CPU)?
  - ◆ How much memory does the computer have?
  - ◆ What log are you using (DX, CQWW CW etc.)?
  - ◆ What radio are you using?
  - ◆ What are the steps to reproduce the problem?
  - ◆ Has it worked before (earlier version)?
  - ◆ Any information you think is necessary to help resolve the problem. What things are working, what is not.
  - ◆ Enter this information to the [bug form](#) on the N1MM logger website

**Q. The program displays an error. Would removing and installing the program again Help?**

A. Copying N1MM Logger.ini.init to N1MM Logger.ini is your best bet. Reinstalling the original software would only help if you installed some other software that overlaid a dll with a dll that caused a problem. Reinstalling might or might not fix the problem in that case. Copying the default N1MM Logger.ini file will remove all your settings. Make a backup copy of N1MM Logger.ini when the program is working fine.

**Q. The program gives an error opening the database..**

A. Microsoft has a utility to deal with corrupt databases. Before using any utility like this, **MAKE A BACKUP COPY OF THE DATABASE**. The database name is ham.mdb if you have not created a new one. Here is the link for the utility.

<http://support.microsoft.com/default.aspx?scid=kb:EN-US:q273956>

Use version type 4 when fixing.

**Q. Why isn't there an xyz feature?**

A. If you haven't at least looked at the key assignments in the help, please don't ask.  
 A. This is not a general logging program, and requests for features that don't fit with contesting, or add unnecessary bulk, won't be addressed.

**Q. Why isn't there a field to enter the QSL manager.**

A. This won't be added. You can add it to the comment field in DX mode or add it to the comment field during a contest by using Alt+N (note).

Why? If I tried to add every general logging feature people want, the program would be neither a good contest program, nor a good general logging program. I decided early on that this was to be a contest program with a few general logging features.

**Q. It seems like N1MM has favorites. Why do some users get almost all their requests implemented, and others don't?**

A. You are right, he does have favorites. Want to be a favorite? Follow these rules:

- Read the help before reporting a bug. I.e. understand what the program is supposed to do.
- Do some work to determine the circumstances that cause the bug. Don't report, "I start the program and it crashes, what's up?" Instead report, "I am running version 4.0.190. My radio is an FT-1000D, and I'm using the DX log. If I try to start with ESM mode, the program gets a runtime error xxx. If I start again everything is fine, but every time I set ESM mode, the runtime error returns." That is a problem that can be fixed. The first description can't.
- Don't ask for general logging features. This is a contest program.
- Don't install the program during CQWW, and then complain about it. This actually happened!
- Reports from the heat of a contest get the most attention. If they are serious bugs during the contest, they'll get fixed if possible. Feature requests that are a result of making a lot of QSOs in a contest get more weight than "wouldn't this be nice".
- Remember that this is a freeware project, and you are encouraged to help.

**Q. The contest I want to participate in is not listed, what to do?**

A. The N1MM logger does not have a contest setup program for new contests. So you can't create your own contests. Make a request you want this contest added. There are some possibilities to use a supported contest or general logging (DX) for the contest you want to participate in. Most of the times the multipliers are not correct but the dupes are checked. In some contests you could use an adapted CTY.DAT file (like the PACC contest). If the contest committee wants to have Cabrillo logs the multiplier and score will be calculated by them.

**Q. 'Out of memory' message under Win98SE with large RAM**

A. Some research on the illustrious 'Out of memory' message under Win98SE with large RAM (512MB) brings you to the Microsoft support site. Have a look at Q253912. This tells you to edit the System.ini and insert the variable MaxFileCache= <size in kB> at the [vcache] section. For 512 MB of RAM a shareware program advised a MaxFileCache from 98304 kB. This solved the problem.

Q. The program closes and a window pops-up asking if I want to report the error to Microsoft. No other error codes come up.

A. First make sure you have the latest updated drivers for your sound card. If its not coming out with a logger message box I am betting it is a driver or ms problem. If it does it again drill down in the little info links from that error box and find the location of the data file it wants to send to Microsoft and send it directly to me. Also, it is always a good idea to send those reports to Microsoft when it asks, often they will come back with a message that there is already a fix for the problem and give you the info of where to download it. If not then Microsoft accumulates them until they can determine if it is an Operating System problem or they can point a finger at the 3rd party software.

**Q. Errors and possible solutions.**

Error	Possible solution
EntryWindow (Program_Initialize) – 3265	The database is corrupt. Select a new one or repair.
Run time error '32555'Radio number error"	Corrupt / bad entries in N1MM logger.ini, select a 'clean' version.
Run-time error – Automation error	<p>Windows 95 – This is mostly a problem with OLEAUT32.DLL. The version on the computer is to old for N1MM logger, replace it with a newer version. Use a version from Windows 98 or download VBRUN60SP6.EXE from the N1MM website ('Download   Other Files) or download it from the Microsoft Download center.</p> <p>Windows 98 – This is mostly a problem with OLEAUT32.DLL. The version on the computer is to new for N1MM logger (probably a XP version).</p> <ol style="list-style-type: none"> <li>1. Select Start -&gt; Programs -&gt; Accessories -&gt; System Tools -&gt; System Information</li> <li>2. Select Tools / System File Checker from the System Information menu bar,</li> <li>3. A dialog box appears, select "Extract one file from installation disk" and type OLEAUT32.DLL and click OK.</li> <li>4. Insert your Microsoft Windows 98 installation disk, verify the default locations of Windows directory and CD drive are correct, and click OK.</li> <li>5. The file will be replaced, and you will be prompted to restart the PC.</li> </ol> <p>NB The same procedure works for Windows 95.</p> <p>– Try using using a clean N1MM Logger.ini file. You will reset many of your configuration settings, but this often fixes the problem. Sometimes this has something to do with wrong configuration of ports.</p>
When upgrading I get 'Error 429'	The 429 error is usually caused by having the wrong version of CW IF.exe in the directory where the logging program is installed. All the files in the NewexeV.x.xx.exe have to be installed in the program directory.
Run Time error 339 – Component RICHTX32.OCX.....	Install Richtx32.zip from the N1MM website ('Download   Other Files). Please read the instructions in the zip file.
Error message" DLPORTIO.DLL missing	Download Port95nt.exe, this is a port driver. A link to this file can be found in the <u>installation</u> section. To install just run the exe as the administrator of your computer.
A Telnet Communications Error Occurred. Error: 10061 Connection	The selected Telnet cluster declines your request to log in for some reason. Reasons could be:

is forcefully rejected	<ul style="list-style-type: none"> <li>- The maximum number of users are already connected.</li> <li>- You are trying to telnet to the wrong port.</li> <li>- The firewall on your pc (like ZoneAlarm) or in your router is blocking the program</li> <li>- The DX cluster's software isn't working properly.</li> <li>- The DX cluster has just rebooted and it not yet ready for users.</li> <li>- bad dns from your router that is sending the requests to an internal machine that isn't set up for telnet.</li> </ul>
Runtime error 339 – Component N1MMWave.ocx or one of its dependencies not correctly registered: a file is missing or invalid	<p>Win98 (as opposed to win98se) doesn't have the proper version of a couple dll's like mfc42.dl/msvcrt.dll etc.</p> <p>A work around could be to install Internet Explorer 5, then upgrade to version 6, and maybe next to install Office 97 and if that doesn't fix it upgrade to Office 2000. One or the other of those would add those dll's as they are common ones used by most Microsoft products.</p>
Runtime error 4 – Opening recording device – flagging Record QSOs	Configurer – Audio Tab: Select a lower bitrate for your soundcard. 8 or 16 bits will probably always work, 24 is probably to high for the selected soundcard.
Err 3 – Format not supported. Use PCM.	This error message occurs when trying to play a Wav recording that was made with some other sound recorder that saves the file in a non supported Wav recordingformat. Try to record with: Ctrl+Shift+Fx (Fx is a functionkey like F1)
429 – ActiveX component can't create > object" and "91 – Object variable or With block variable not set"	When running Windows Fundamentals for Legacy PCs (Windows FLP) you have to add and register "dao360.dll. This file does not exist at all on Windows FLP. See below in this FAQ how to fix this.
When creating a new database the error below occurs:  ...HamTemp.mdb already exists, rename...	<p>This happens because at some time in the past, something did happen during the create new database process that left a hamtemp.mdb file in the program directory. This is a temporary file needed during the database creation process but should be automatically removed when done. If it is already there, the database creation process fails.</p> <p>The solution is to use Windows explorer to locate and delete hamtemp.mdb from the N1MM logger program directory. After that creating a database from inside N1MM will work again.</p>
Err10 "playback fmt (format) not supported"	The OCX used to play .wav files in N1MM only supports uncompressed, basic .wav recordings. There are a number of other CODECs out there that produce files it doesn't recognize which gives this error message. Try to record using N1MM logger or record using Windows Sound Recorder and its default CODEC.

### Q. CW stutters (using lpt or serial port keying)

#### Q. Voice keying stutters

A. Mostly this means your pc is to busy handling other stuff during transmit or is underpowered. This could be outside N1MM logger. What to do, some 'tricks'.

- Try not to run other programs not needed for contesting.
- Try filtering spots at your packet cluster node so as to reduce the traffic that must be handled by N1MM logger.
- Set your telnet filters for the minimum number of spots consistent with your needs, particularly including only the current contest's mode and maybe only spots from areas near your own
- Zoom the bandmap in so that it covers only a relatively small frequency range around your current frequency.
- Limit the number of bands you try to cover with the Available Mults and Qs window's spot pane ( for the band that the particular PC is on).

Q. Running N1MMLogger under Windows Fundamentals for Legacy PCs (Windows FLP)

A. N1MMLogger requires the DLL file DAO360.DLL which is missing from a WinFLP installation (even if you selected a Complete installation). Since WinFLP is based on Windows XP Professional, you can obtain the required DLL from any computer running WinXP Pro but also from many (free) sources on the internet.

- Create the folder DAO under c:\program files\common files\microsoft shared
- Copy the file DAO360.DLL into the folder at c:\program files\common files\microsoft shared\dao
- Register the DLL by entering the following into the start\run window:
  - ◆ regsvr32 "c:\program files\common files\microsoft shared\dao\dao360.dll"

## 52.2 Installation/Upgrading

Q. Should I upgrade each time there is an update announcement? Would it be more prudent to wait a while to avoid surprises?

A. You are welcome to let a new version "stew in the pot" for a while. If you wait a day or two, and there is no uproar on the group, you should be fine. Generally, problems that are introduced are related to the changes made. If the problem is severe, and necessary for an upcoming contest, we will fix it right away. If not, you should just retreat to a prior version.

There are about 10 versions plus the base install on the web site. You should stay within that range. Feel free to keep older versions on your hard drive, but please don't expect support. The biggest problems you will find with returning to old versions (back to say 6.0 or so) is with section files. The program only updates section/county/ whatever files when a section is changed or added.

Please note that we do not support anything but the newest version. We don't keep old versions of the source files ready to fix a problem for you in 6.x.x. If you want a fix, you must wait until that fix is coded and install that version or a later version. Please don't report a problem with something other than the current version, unless it is to pinpoint at what version a problem started. That information is sometimes, but not always, useful. btw – I don't think any logging programs will support anything but their newest version. They just have fewer of them.

The cycle for changes in the program is centered around major contests. Example: N2AMG just whipped RTTY into shape for CQWW RTTY, and is now in the process of fixing the minor bugs that came out of that. Those of us supporting the rest of the program are working on things likely to be of importance in CQWW SSB & CW and ARRL SS. You will notice the rate of change slow down toward the end of this month, but there may be \*more\* smaller versions as the last fixes are pushed out. In the last week before the contest, we get very conservative about what changes we will make. A change to a QSO party will be made, but a change to how ESM (enter sends messages) will not be made, because we are certain that the QSO Party code \*never\* gets executed during CQWW or ARRL SS, but we are far less certain about code that is used for all contests.

We find this approach provides the most rapid rate of development while allowing users to choose their level of risk. If you are conservative, stay back a version or two until you are comfortable with what is being reported on the group. If you like to see the newest things and influence the development, go with latest with the knowledge that you can retreat if the version is not to your liking. In the case of major contests, download the latest about a week before the contest, and also the last one before the contest. If the latest one has a problem, you have your backup ready.

### Q. Should I update every inbetween version or is the latest update enough?

A. There is no need to load each version from the beginning. Updates are progressive which means that the current one incorporate all the fixes from day one. You can easily skip a bunch of versions if desired.

### Q. Why doesn't the help work? Why is it out of date?

A. The help changes on a schedule different from the program. You need to download it separately. Like all the other parts of the program, it can be downloaded from the N1MM homepage. The Help is also available in PDF format so it can be printed.

### Q. Where to get the latest country file for the program.

A. The country file used by the program is CTY.DAT in the program directory. Information about this file and how to update this file can be found on the [Download](#) page.

**Q. I installed PORT95NT.EXE/DLPORTIO but still no CW from the parallel/serial ports (NT, Windows 2000 & XP)**

A. Is the "CW/Other" box selected next to the 'Set' button.

**Q. I keep getting a "red" error message that says "Error sending CW. Check port selection in the Configuration dialog".**

A. Select a CW port in the Configurer. This could be a (virtual) serial port or a parallel port.

**Q. When ever I set the information for the rig in N1MM, the program slows to a crawl. I have other programs that use rig interface that work great with out any latency.**

A. What settings are you using for the serial connection? Is your serial adapter powered off the computer? If so, you need to specify "always on", "always on" for DTR and RTS. Also the radio should be turned on...

**Q. Each time I start Logger I get the error message below, any way to get this to stop appearing?**

**Setup Error**

**Wave is being muted.**

**It is being changed to Mic.**

A. Under Config|Ports etc.| Tab: Audio, you'll see an option for muting an output. For some reason, this defaults at first startup to muting the wav output when it really should mute the microphone. Change it to mute the microphone and the warning will not reappear.

## 52.3 Trouble–Shooting Sound Card Issues

by Dave, K1TTT

0. Close Audacity, Winamp, and any other sound recording or playback programs you may have open.

DO NOT OPEN THEM AGAIN DURING THIS PROCESS.

1. There is apparently an interaction between the windows control panel and N1MM logger that I hadn't noticed before. The key is, select the default device with the windows control panel to the one you want windows to use... then don't change it. If you change it windows apparently rennumbers the devices so the device index number that n1mm saves isn't valid any more. So if you ever change the windows default playback or recording devices you MUST go back into the n1mm configurer and reselect the cards AND ports if you use specific devices and not the 'default' card option.

The same rule also applies to MMTTY setup if you have selected a device other than –1 (default) in the Option/Setup/Misc tab.

2. Start N1MM logger and go into the 'Configurer / Audio' tab. Select '1 zero or single card' in the top list, then 'default' in the first 'select device' list. Save that settings. Close N1MM logger.

3. Plug your microphone directly into the mic input on the sound card, plug your headset directly into the speaker output.

4. Open the windows volume control, on the playback controls that come up first 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 and other sound sources.

5. In the volume control select options/properties, check the 'recording' box then make sure 'microphone' is checked in the list of controls. Do ok.

Check the box to 'select' the microphone and set it's slider mid range. On the advanced microphone settings check the 'mic boost' box if you have one.

6. Now, when you talk in your mic you should be able to hear yourself in the headset. If you can't then something is wrong with your hardware or drivers. Recheck volume and mute settings, check that the mic is plugged into the right spot, try a different mic, try different speakers, try playing other wave files using the sounds control panel app to make sure your headphones are working, get your 8 year old kid to help.

DO NOT PASS THIS POINT UNTIL YOU CAN HEAR YOURSELF!

7. Open the windows sound recorder, it is usually found in the accessories/entertainment, DO NOT open audacity, the 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.

8. Press the record button, say a couple words, then press the stop button. Press the play button and you should hear what you just said. If you didn't there is something wrong with your hardware or drivers. Check recording control settings, adjust volume, make sure the mic is selected as the recording source, get that 8 year old back to help again!  
DO NOT PASS THIS POINT UNTIL YOU CAN RECORD AND PLAY.

9. Close the windows sound recorder.  
DO NOT PASS THIS POINT UNLESS YOU CAN HEAR YOURSELF IN 6 AND 8 ABOVE.  
If those don't work then N1MM likely won't work and since n1mm is much more complicated it is harder to troubleshoot.

10. Start n1mm. Put the radio on ssb, make sure the entry window title bar says either USB or LSB. If you don't have a radio connected type in 14000 and then USB.

11. Right click on the f1 button. In the wav file column make sure it says "wav\cq-1.wav"... if not, type that in (without the quotes of course). Press ok to save it.

12. Watch the bottom of the entry window status bar. Press ctrl-shift-f1, status line should say 'recording started in wav\cq-1.wav', if it doesn't then check the error message and see if that helps and NOW you can ask for more help on the reflector or direct to me, but don't change any settings or open another sound program or be prepared to go back through this again to make sure everything is set properly for the defaults.

13. If you got the 'recording started' message say a few words and press ctrl-shift-f1 again. Bottom of status bar should say 'recording saved in wav\cq-1.wav'. If it gives an error message check out that or contact the reflector or me.

14. Press f1. you should hear what you just recorded. If not, check the status bar for an error message and check that one or contact the reflector or me. Now, if all that worked it is up to you to figure out how to get the audio to/from your sound card through whatever adapters, sound blasters, cabling, to the radio... I can't help with that except in very specific cases. But at this point if 11,12,13 worked then you have a working n1mm logger recording and playback system. Find the wav\cq-1.wav file which should be under the n1mm logger installation folder and that is where to put other recordings, and the f1 line in the setup is how the other paths should look to the files. If you are going to do multi-op look up in the manual how to set up the macros to let each operator record their own voices separately.

### **52.3.1 Strange radio/program behavior (a radio connection problem)**

When experiencing strange behavior and you think is happening with an N1MM interaction. I recommend the following:

- 1) Check your serial cable for pin to pin continuity of not only the data and common lines, but also the DTR and CTS connections.
- 2) Connect a bonding wire from the chassis of each piece of hamshack equipment (including your computer) to a common bus on the back of your operating desk.
- 3) Install ferrite beads on the serial cable. This puts an extra impedance in the shield or wire and reduces the noise current flowing on this path, which then lowers the noise voltage induced into inner connections. (You do have lots of beads don't you, for yourself and your neighbors audio systems?)
- 4) Especially with older computer hardware like mine, avoid using COM pairs 1 and 3, or 2 and 4.
- 5) Be very suspicious of using an old ISA comm expander card- find a different port

73, Chet N8RA

## **52.4 Program features**

### **Q. How can I see if I'm in Running or S&P mode?**

A. Look at the background color of the fields in the Entry window. A white background means Running, a light yellow background means S&P. Also the running indicator tells in what mode you are.

**Q. When I tune close to a station in the bandmap, the call appears in the frame around the callsign field. Do I have to retype the call to enter it?**

A. No. Press the space bar, and if the callsign field is empty, the call from the frame will be placed in the callsign field. You can use the space bar as your normal Tab key.

**Q. Is there any way I can avoid having the tab key jump to fields (like RST) that don't normally need to be changed?**

A. Yes. Use the space bar. 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.**

**Q. Why don't the calls of the stations that I have already worked show up in the Check window?**

A. They appear in the bottom portion of the Log window (the one with your contacts). Also, once you press the space bar, dupe will appear if the station is a duplicate.

**Q. CQ repeat not working on VFO B**

A. Make sure repeat (Alt+R) is on for both VFOs Make sure the SO2R CQ options are OFF.

**Q: In ESM mode, the cursor jumps to the report field after you press enter, but the station doesn't come back to you...**

A. If you don't usually get a station on the first call, go to Config/Function Keys and deselect 'ESM only sends your call once in S&P, then ready to copy received exchange '.

**Q: To get any frequency into the log, is no problem. But how can I customize the 'Available Multi's and Q's' window getting new frequencies in, others out?**

A. The program automatically shows HF and WARC bands for general logging. VHF bands if you are on VHF and HF band when on HF. No way to choose.

**Q: How can I customize general logging, that a WWL is (optional) included in the input window? How can the Log-Window be modified?**

A. It's not possible to change the entry or log fields. The fields are fixed in a contest.

**Q: How can I modify, what for bands during general logging will be used? Normally I am QRV from 160m up to 3 cm (10 GHz), all or most bands!?**

A. Connect to a radio that has computer control for those bands or type the frequency in the callsign field and press Enter.

**Q: Serial no. exchange starts at IARU VHF Reg.1 with 001, that means two or one leading zero(s) before the No. to exchange. This is up to 099. No. above 999 are simply 1000, 1223 etc. How can I modify N1MM logger, that leading No. were sent (CW-keyer, voice....)? This is usually here in EU with the leading zeros.**

A. In the configurer Function Keys tab. No leading 0's just T's.

**Q. The serial number given is not as expected.**

A. There are several possibilities that the serial number given is not what is expected after opening a log file again and you have changed something in the settings. Like opening the first time Multi-user on and the second time Multi-user off. Use "Reset Serial Numbers on all Stations" in the multi-user menu to straighten it out.

**Q: How can I modify the telnet time out? I want to set it higher/lower...**

A. Not currently settable.

**Q. I am trying to get the LPT1 port to send CW it works just fine in other Windows and DOS contesting programs.**

A. Make sure the LPT1 port address in the configuration menu matches the address listed under "Printer Port" properties in Device Manager. Go to Control Panel > System > Device Manager > Ports > Printer Port > Properties > Resources. The first number under Input/Output Range (minus the leading zero) is your port address, i.e. 3BC. Whatever that value is copy it to the LPT1 address box in configuration (the program uses 378 as a default). Also 03BC is a much used address.

**Q: Serial/PTT/CW: You can set COMx's pin 4 DTR for PTT or CW, but pin 7 RTS only for PTT. Is there a special reason for that RTS can not be set to CW?**

A. Not currently settable. No particular reason. No contest programs have that as a standard.

**Q. If a wrong Callsign is entered and later corrected the Exchange stays the same!**

**Example CQWW: I enter HA1M and press the spacebar, the exchange is automatically filled with (zone) 15. I made a mistake in the call so I correct it in PA1M and press the spacebar again. The cursor jumps to the Exchange field but this does not change to zone 14. The exchange is wrong now. Is this a bug?**

A. That's not a bug, that's the way it works. Once an exchange is filled in, the program won't change it. Delete it, and press space. The correct value will be inserted.

**Q. What will the program send when the exchange is a number?**

A. There are two possibilities. Let's assume the last qso had qso number 133

If the callsign field is filled with a call the next number will be sent. Example: 599 134

If the callsign field is empty the last number will be sent. When there is no callsign why give a new number, most probably the last worked stations asks his received number again. This number will be sent. Example 599 133

**Q. While sending CW my keying speed slowed but the display did not change. What is happening?**

A. It is possible in CW to send parts of a message faster (mostly in the exchange) than the normal text. This can be done with the characters < (increment CW speed by 2 wpm) and > (decrement CW speed by 2 wpm). When the speed slows down or increases without the display changing than there are probably unmatched < < < > > > characters in your exchange.

**Q. I connect to packet, do a SH/DX/30, but no spots show up in the bandmaps. What's up?**

A. A few things can be wrong. First, check to make sure that the spots are not older than the Packet Spot Timeout value in the right click menu. If this is not the cause of the problem, make sure that your system is set to the proper time zone (not GMT!), with the proper daylight savings time option in Windows (not in N1MM logger). Next, make sure the time on the PacketCluster is close to the time on your system. Make sure the dates of your system and the PacketCluster system are the same. Check the time on the title bar of the log window. Note, if you connect to a local, non-Internet connected PacketCluster early in the morning, often there are few, if any, current spots available. This is normal. Finally, right click on the packet window, check the filters.

**Q. How do I spot stations?**

A. Spotting stations may 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 with its correct frequency will be spotted.

- Alt+P spots stations
- Ctrl+P spots them with a comment.

It is also possible to spot every logged qso automatically. Only stations not already in the bandmap and stations that are worked while in S&P will be spotted. No spotting is done while Running.

**Q. Only ON stations show up after a SHow/DX**

A. The problem here is that the cluster you are using is not a DX-spider cluster but you told the program it is. Uncheck the "Format for DX Spider Cluster" box in Configurer (Other tab). DX-spider uses SH/DX on 20 to show spots on 20 meters. Non DX-spider clusters will think you send the command SH/DX on which means Show DX from ON (Belgium).

**Q. My friend wishes to use the same digital/SSB/cw button legends and contents as me. Is there a quick way of copying my buttons into his profile or do I need to re-type them in?**

A. First export you function keys. Select: *File, Export, Export Function keys to file*, Select: *SSB/CW/Digital function keys*. Import the exported file into the program on the other computer by doing: *File, Import, Import Function keys to file*, Select: *SSB/CW/Digital function keys*.

**Q. How to start a repeated CQ?**

A. Ctrl+R sets the repeat time (start with 2 or 3 seconds) . Alt+R toggles repeat mode on or off. The status bar from the Entry window should say: CQ Repeat is on (of off). Check the Running indicator (repeated CQ only when running). Press the CQ key (mostly F1).

**Q. There is a missing section or abbreviation for a section. Can I add it?**

A. Yes but only for a few contests. Check 'Config | Change Exchange Abbreviations'. ARRL sections,

VE and PA provinces, USA states and CQWW RTTY abbreviations can be updated here. Most others use section (.sec) files which are only imported once.

**Q. When in S&P mode hitting F1 should send CQ and automatically put me in Running mode. But not anymore...**

A. CQ has to be in the button caption or the text to send for this to happen. So change your S&P F1 band caption from "F1 {my call}" to "F1 CQ", and change your CW message to your callsign.

**Q. Is the score displayed anywhere?**

A. Yes, the last pane in the status bar at the bottom of the Entry Window is the score. The middle pane shows QSOs and multipliers.

**Q. Is my Sunrise and Sunset shown anywhere?**

A. Yes, it is shown in the About window (View, About). The times are shown in GMT. Also local standard time is shown.

**Q. I'm sure the shown score is not correct, what to do?**

A. Do a rescore (Select 'Rescore current contest' in 'Tools' menu), this is a slow process so do it after the contest or only when you have not too much QSOs. If the score is still off and the log to send is Cabrillo then there is no problem because the score will be calculated by the ARRL, CQ etc. If the log to send is not Cabrillo you have to edit the log file made by the program (you won't like that...)

**Q. How do I change (CW/SSB/RTTY etc.) messages without retyping them?**

A. Click on the message you want to change. The entire message will be highlighted. If you type now, the message will be deleted, and your typing will take its place. To insert characters or delete characters from the message, click once again at the position you want to edit. Alternatively, press F2 and the cursor will be placed at the end of the text, at which point you may edit the message. This technique can be used anywhere you are able to edit a grid in the program.

**Q. The program says: Can't find Master.dta etc.**

A. Are you starting the program in its own directory?  
I.e. if you have an icon for it, are you setting the Start in parameter to the directory in which the program is loaded? Master.dta must be in Program start-up directory (usually C:\Program Files\N1MM Logger).

**Q. When I start N1MM logger it changes the mode (LSB/USB/CW) on the transceiver.**

A. This is contest dependent. When a CW contest is selected (example: CQWW CW) the radio will automatically be placed in CW, the same for Phone contests but then it will be placed in SSB. When a contest is chosen which accepts both SSB and CW (Example: ARRL 10 Meter) the program changes nothing.

**Q. How do you delete contest databases you don't want anymore ... i.e. those used for testing purposes.**

A. A database is a .mdb file and contains multiple contests.

- Delete that file if you want all your contests to go away (I doubt it). You'll need to leave an empty ham.mdb around somewhere to replace it. Deleting a database can **\*\*usually\*\*** be undone by retrieving it from the recycle bin.
- A contest can be deleted by picking it in the contest selection dialog and pressing delete. Read the confirmation message and look at the number of rows carefully before deleting. Once a contest is deleted, it cannot be retrieved.

**Q. How to print a Summary Sheet?**

A. Go to 'View', 'Score Summary' and select 'Print Summary Sheet to File'. A file [callsign].sum will be made. Example: N1MM.sum  
This is a normal ASCII text file which can be edited with any text editor before being sent to the contest manager.

**Q. Why does Ctrl+Page-Up move the frequency UP, while Up-Arrow moves the frequency DOWN? (And vice versa)**

A. Because lower frequencies are at the top of the bandmap and higher ones at the bottom. Ctrl+Up jumps to a spot lower in frequency, but UP the bandmap. Ctrl+Down does the opposite, etc.

**Q. I added notes to some QSOs but how to find them again?**

A. Go to 'View | Notes' and all QSOs with a note are shown. The notes can be updated by updating the comment field when editing a contact. Finding a callsign in the log can be done using Ctrl+F and Ctrl+G. Right clicking on the QSO in the top part of the log window will give a menu, select 'Edit Contact' (or Ctrl+T).

**Q. How can I change the default mode to CW, on band maps, etc. I only use CW and would like to have that mode as default instead of having to go to the band maps to change from USB or LSB.**

A. If you are in a CW contest, you don't need to do anything. If you are using the DX "contest", set the mode in the contest selection dialog to CW.

**Q. I am going to run mobile (rover) in a qso party, how do I configure the program?**

A. Changing counties is not supported. Sorry.

**Q. Why is offtime 31 minutes and not 30?**

A. Let's say you worked the following stations, at the indicated times: N2IC 21:20:59 W5OV 21:50:01

If you leave out the seconds, like Cabrillo does, then it looks like you were off for exactly 30 minutes. However, a closer examination of the actual QSO times shows you have only taken a 29 minute, 2 second time-off. This is an example of "rubber clocking". And, yes, the log checkers have been this picky! The CW and SSB NAQP log checker and the SS log checker will ding you if your log only shows a 30 minute time-off. 73, Steve, N2IC

## 52.5 Digital Modes

**Q. The callsign to grab already scrolled of the screen (RX window), how to grab it now?**

A. You can pause the RX screen by clicking on the green strip on the side which will pause the input and scroll back to where you need to and click on the callsign. 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.

**Q. In Digital contests the window "Available multipliers and QSOs" does not show any multipliers or QSOs**

**Q. In Digital contests below the "Multiplier List box" no callsigns are shown.**

A. The Digital sub bands are not defined ('Config | Change Sub bands | Digital Sub Bands'). If they are not defined then nothing will show-up..

**Q. A message "lost sound" briefly appears in the MMTTY waterfall.**

A. Try to bring up the sound card buffers under Misc settings in the MMTTY setup or the combination of MMTTY and N1MM Logger may be too much for your processor.

**Q. The MMTTY RTTY Engine panel is always on top of the other windows.**

A. This can be changed in the configuration dialog (Config | Configure Ports, Telnet Address, Other | Digital Modes). There is also the ability to choose between Full-size (Normal) window and Small window (without control panel).

**Q. Strange things are happening on my 'slow' computer.**

A. Example: Occasionally, the RTTY receiver screen would flicker during reception. Reason: MMTTY requires a minimum of a 133 MHz processor that combined with the main logger which Tom sets as a minimum needed as a 500-800 MHz Pentium II/III computer with 128 MB memory and you could get strange things happening.

**Q. When exiting the program an "Error" window pops up with "C:/Program Files/MMTTY/061010(\*)&&%^%\$%\$#@#".**

A. It seems that one of the saved logged files for MMTTY has become corrupt. Go to the directory that you have pointing to that contains MMTTY. Double click on the MMTTY.exe file and open it up in stand alone then click file and uncheck Log RX File. That will stop the file trying to be written to.. Go in to the the MMTTY directory and look for text file that looks like 06xxxx these are the files that were recorded while using MMTTY each indicating the date .I would delete them... 73's Rick N2AMG

**Q. When opening the Digital Interface Window I get a Run Time error 7 – Out of memory**

A. For MMTTY to work you need the file XMMT.ocx in the program directory, if not it will show this

error.... 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.

**Q. Digital Interface file not found error**

A. If you are experiencing a file not found error when trying to load the digital interface please look and see that you have the following files in these locations

- Regsvr32.exe – This should be in the directory where your system files are kept. Mostly 'Windows/System' or 'Windows/System32'.
- PSKCore.dll – This needs to be in the N1MM logger program directory.
- XMMT.ocx – This needs to be in the N1MM logger program directory.
- MMTTY.exe – This file needs to be in the directory where MMTTY has been installed.
- MMTTY.ini – This file needs to be in the directory where MMTTY has been installed. If not found, MMTTY will create it.
- Userpara.ini – This file needs to be in the directory where MMTTY has been installed. If not found, MMTTY will create it.

**Q. I am able to transmit PSK or RTTY with MMTTY but I do not see any received signals displayed on the waterfall or any other screen.**

A. Review your hookup. For starters, plug a jumper from your transceiver's "line out" to your soundcard microphone input...no interface required. If that works, then you have a problem interfacing. If it doesn't work it looks like a more fundamental problem, like the microphone input on the soundcard is not working. As a last resort, make sure you can receive PSK with another program.

Maybe just the microphone input is deselected. Check the following in Windows:  
Open Control Panel, Open Multimedia, Click on Recording and make sure the microphone is selected and the slider not at the bottom..

**Q. The frequency readout does not match the incoming spots in the bandmap on my transceiver**

A. When using a transceiver with no dedicated digital mode for RTTY and the likes, you have to use the transceiver in LSB mode and soundcard RTTY. The problem is that the frequency readout does not match the incoming spots in the bandmap, and nor will the frequency be correct when spotting stations to the DX-cluster. The solution is to use a fixed mark frequency (ie. no or very limited AFC), and then subtract that frequency from the frequency readout by using the transceiver offset setting in the bandmap.

1. Set up for RTTY using LSB mode
2. Set mark frequency to 2000Hz (or the frequency of your choice)
3. Right-click in the bandmap
4.     ◆ Set Transceiver offset to -2
5. Now the spot frequencies will match.

**Q. It appears that CRLF's are displayed as a block character rather than going to the next line.**

A. There is a replacement richtext file on the website ('Download | Other files') that might correct seeing the block characters that represent a linefeed. This is why there are 2 macros: {ENTER} and {ENTERLF}. Some Windows versions would not properly show a linefeed. If something scrolls off the screen because of the use of many linefeeds it is easy to click on the Pause strip and scroll back to see what was missed. One more click brings you back to where you were..

Q. How can I make MMTTY remember my com port selection?

A. In the Main Config area On the hardware tab (Where you setup your radio,ect.) place a check in the digital box for com 3 and then click setup and set RTS=PTT. This will send the com port info to MMTTY automatically.

Q. Digital window won't open.

Q. Computer hangs when "Record QSOs" selected

A. Recording and running MMTTY at the same time could give a problem depending on the computer sound card drivers and/or operating system. Some combinations may not share nicely. Unselect "Record QSOs" and the digital Window should open. When "Record QSOs" selected during digital operation/MMTTY the computer could hang as the QSO recording wants to take over the soundcard in use.

## 52.6 Yahoo Discussion Groups

### Q. If you think you get to much e-mail.

A. Do you want to reduce or eliminate the number of e-mail's you are receiving about this program? Do the following: Go to: <http://groups.yahoo.com/group/N1MMLogger> then select "Edit my membership". It is on the right, near the top. Then choose from the four choices:

- Individual e-mail's – Send individual e-mail messages.
- Daily digest – Send many e-mail's in one message.
- Only special announcements – Only send me important update e-mail's from the group moderator.
- No e-mail – Don't send me e-mail. The messages can still be read on the Yahoo groups website. If this option is chosen e-mail can still be send when a really serious bug develops (like one that loses your log data). So far, I have never had to, but I think it is important to have that capability.

Make sure to save changes.

DO NOT SUSPEND YOUR YAHOO ID. I will get bounce messages about your id, and remove it.

Another way of handling many e-mail's is to use a filter to organize e-mail's into folders in your mail reader. Different readers will support this in different ways.

### Q. Are you no longer receiving e-mail's from the group?

A. The reason may be that you e-mail has been "bouncing".

Yahoo keeps track of how many e-mail's are returned/rejected from the e-mail address used. Yahoo is very strict in this, if too many are returned, you show up on a bounce list and no longer e-mail's will be send. Yahoo will try a few times to send an e-mail to inform that you have 'bounced'. Once you have corrected the problem with your e-mail address, you can reset your options to individual e-mail's or daily digest as you prefer (see "Edit My Membership", "Message Delivery"). Note that if you are bouncing from other groups within Yahoo, those bounces count towards putting you on the N1MMLogger "bounce" list. This can not be changed. Now that membership is no longer required to download, we delete all the bouncing id's from membership. You may rejoin at any time, but you'll need to correct the problem that caused you to bounce, or it will happen again.

### Q. I have problems downloading files (from Yahoo).

A. There are many possibilities, below some frequent problems

- Do you have enough room on your hard disk? Having more than 10 MB free would be nice
- Already tried to download with the 'Save as' function. Right click on the file to download and select 'Save as' or equivalent.
- When using Netscape disable/remove Netscape Smart Download
- If this not works but you are using a '*download manager*', disable it and try again.
- ...

## 52.7 Other

Q. How do I make the log to upload to LoTW?

A. Generate an ADIF file (File, Export, ADIF) from within N1MM and then process it using the tQSL.exe program. That program will generate an encrypted \*.TQ8 file which has to be uploaded into LoTW.

### Q. Logged some QSOs in the wrong mode. How to find them?

A. Display the mode in the log window (using right click menu, Show Mode) and click on the mode column header to sort the QSOs by mode, which will make it easier to find the wrong mode contact.

### Q. The program always transmits on VFO-A, how to transmit on VFO-B?

A. The program has two Entry windows, one for VFO-A (always open) and another for VFO-B. Making a qso on VFO-B, so transmitting on that VFO, you have to enter the info in the second Entry window. This window can be opened by entering a backslash \ in the callsign field of the standard Entry window.

### Q. I have lost radio communications, how to start it again.

A. You can restart the communication, by right-clicking in a bandmap, and choose "Reset Radios".

## Q. Importing an ADIF file (not generated by N1MM logger) does not import the serial numbers

- Does the ADIF file you used have the correct serial numbers in the file?
- Does it use STX and SRX?
  - ◆ N1MM logger uses:
    - ◇ <SRX:1>3 for the received serial number (example nr = 3)
    - ◇ <STX:1>8 for the sent serial number (example nr = 8)
  - ◆ Maybe the file to import has to be edited.. when other than SRX and STX are used or when they are missing in the ADIF file to import. A search and replace could solve this problem.

## Q. Delays with CW messages, would Winkey help?

A. The Winkey keyer will reduce your processor usage while sending CW to the same that it is while not sending CW. I.e. Winkey requires 0 CPU resource. (Not really zero, but so little you won't be able to see it.) If your system works adequately on SSB, then Winkey will solve your problems during CW. If it does not perform adequately during SSB operation, then Winkey will bring it to that SSB performance.

## Q. The program gives "Radio not working"

A. This means that the program has received a frequency of zero or an invalid mode from the radio. This could be caused by RFI interrupting the serial port or potentially by bad config options. If you do not have a power supply for your radio interface, you should usually specify "always on" "always on" for DTR and RTS. If you have specified "handshake" in this case, you can get erratic results.

## Q. The program won't accept the exchange send by the station.

A. This could be a bug or an operator error. The workaround is that you log the contact with whatever the program wants, then go edit it (Ctrl+Y) to make it what it should be. A faster way is it to log the QSO using Alt+Ctrl+Enter. A note has to be made and the qso with any exchange being logged. Fix the exchange after the contest.

## Q. The rig keys correctly with a direct paddle or keyer but not using the parallel circuit

A. Of course the circuit should be working (does it work with other programs?). Assuming the radio is attached to LPT1. Go to 'Control Panel | System | Device Manager | Ports | LPT1 | Resources and check the input/output range'.

Normally LPT1 is 378, LPT2 is 278 and LPT3 is 3BC. Note the address and update the address in N1MM logger the configurer 'Configurer | Hardware tab | Other' from LPT1,2,3)

## Q. How do I know if the port driver DLPORIO (installed by PORT95NT.EXE) is properly loaded?

A. Check 'Control Panel | System | Hardware | Device Manager | View | Show hidden devices | non-Plug&Play drivers'.

## Q. How to test BCD on the LPT port?

A. Take a Digital Volt Meter and measure the voltage on the BCD info pins with respect to ground. Look at what band you're on, measure voltages (0V for logic 0 and 5V for logic 1), compare with the table in the interfacing section of the N1MM website.

## Q. How does N1MM logger know the time difference between PC and UTC?

A. The program uses the Windows time settings. Basically you tell Windows the current time, and your time zone (including summer time / daylight saving), and from these two Windows can always calculate the UTC time.

## Q. How to setup the time on the computer.

A. There are two options

- Run your computer in *local time* with the correct daylight time choice selected (recommended). The GMT Time will change correctly in the middle of the contest.
- Run your computer with the time zone set to Monrovia (*GMT time*). There is a bug in some versions of Windows that makes the London time work incorrectly

## Q. I have used the wrong type of contest, what to do?

Q. Is there a quick way of converting the log or do I have to copy all the contacts by hand.

1. No not really but it can be done. This example is for converting from DX to CQWW SSB.
2. Back up your database. Omit this step at your peril.
3. Export the log using ADIF.
4. Edit the ADIF log until it has all of the columns you want. Use your editor and global change and replace to fix the types.
5. I'm sure your zones are probably in the wrong column, you'll need to change the type. To find the type, create a sample log for CQWW and export that (ADIF format). Make the CQWW SSB exported ADIF log look like the DX exported ADIF log.
6. Change all contest IDs in the entire ADIF file. For example, change from <CONTEST\_ID:2>DX into <CONTEST\_ID:7>CQWWSSB.  
Note: for the CQWW contests, Logger is looking for the ID CQWWSSB or CQWWCW, not CQWW as produced by some ADIF conversion programs. (See the sample log you made in the step above).
7. Start a new CQWW SSB contest in ANOTHER database (mdb file).
  - ◆ The start date in the New contest dialog does not matter.
8. Import the modified ADIF file into the new contest.
9. If the score is wrong, rescore.

**Q. How to import my contest log into my general logging program**

A. My general logging program is interacting nicely with N1MMLogger by means of the ADIF output/input! That's what ADIF was designed for, in the first place (amateur data INTERCHANGE format). You can edit the ADIF in a simple ASCII-editor to change field names and do an auto-search-and-replace if needed. Works great to import a few hundred QSOs after a contest and still keep track of DXCC, WAS, WAZ etc... as well as print QSL cards. Use in N1MM logger in the file menu Export / Export ADIF to file... Use the ADIF import function in the general logging program.

**Q. How to import a single contest out of the database to another database (could be on another computer)**

A. A database is an .mdb file. A database can hold any number of contests (including DX logs). If you want to copy a contest from one database to another, you must first recreate the contest in the new database.

1. Export the log (Export ADIF to file...).
2. Copy the ADIF file to a disk
3. Recreate an empty contest from the same type (example: CQWWSSB) on the new computer.
4. Import the ADIF file (Import ADIF from file...)

**Q. I use ADIF but it does not import in my logbook program**

A. When transferring data from N1MM logger to a logbook program the best choice would be the ADIF. Export from N1MM logger which will create a file with an extension of adi. Example: on5zo.adi. use the import function from your logbook program to import the records. A ADIF file is just a big text file which can be opened with a text editor like Notepad. Many series of lines will be shown with one qso (record) per line. Each field like call, name, band, etc is transferred with a descriptor, a length, and a data value. Example, if you work Frank, ON5ZO on 160 meters, the line corresponding record with the qso will show the following <call:5>ON5ZO <band:4>160M and more. The <call: means the data name is the callsign, the 5> means the value is 5 characters long and ON5ZO is the data. There is a standard for each field and if they don't match between the exporting and importing program, that data will not be transferred. Example: when the exporting program uses "grid" but the importing logbook program wants "gridsquare" this field won't be imported. Sometimes the exporting program uses ARRL\_sect when it should be state for the importing program. A possibility to import these information is changing all ARRL\_sect fields with state. This is called a global replace. Look for these differences when importing.

**Q. My computer lost a lot of time during the contest.**

A. During a 48 hours contest we lost about 10 minutes. Windows is known to do this during heavy usage of the computer. This is both a question and a warning. Check your time. I don't think 10 minutes will concern the log checkers, but it's just smart to watch it.

There are tools for resyncing your time with Internet time standards. Nice ones used by N1MM logger users are Dimension 4 and About Time. Check the Links chapter.

Q. USB port interface stops working when using USB CI-V CAT INTERFACE CABLE

Q. Communication with radio stops after a while (using USB to serial converter or USBCAT radio)

interface)

A. Two things to check:

1. Go into the control panel/Power settings and make sure you tell the system to not sleep or hibernate
2. In many Windows based computers, the operating system will turn off power to the "USB Root Hub" (the hardware interface that controls the USB ports) if it thinks the USB ports are not being used. There are some USB drivers that apparently do not properly report activity and this results in the "power down" symptoms. The quick solution is to enter Device Manager, select the USB Root Hub supporting the particular interface (or all USB Root hubs to be safe), select the "Power Management" tab and UNCHECK the option that says "Allow the computer to turn off this device to save power." Five to 15 minutes is the typical "power down" time for USB Hubs. Anytime there is a problem with USB ports "going away" after a few minutes, the power control should be the first suspect.

**Q. Dimension 4 and AboutTime give an error under Windows XP ('error binding socket address')**

A. Under Windows XP Dimension 4 and About Time have a conflict with the internal timesync program which is included in Windows XP. Dimension 4 and About Time can be set up to update much often than the internal timesync from Windows XP.

Below how to get Dimension 4 and About Time working under Windows XP. Disable the internal Windows timesync, this action can be reversed..

- In Control Panel go to: Date and Time/Internet Time.
  - ◆ Check that "Automatically synchronize with an Internet time server" is *not* checked
- In Control Panel go to: *Admin Tools* and select *Services*
  - ◆ Select in Services: *Windows Time*
  - ◆ Right click for properties.
    - ◇ Disable the *Set Startup Type*
    - ◇ Stop the *Service Status*

**Q. The internal Windows XP timesync function only updates once every day. How to let it update more often?**

A. To change the interval, a change has to be made in the registry. If you are not comfortable with that use Dimension 4 or any other program.

- Start Regedit
- go to: HKEY\_LOCAL\_MACHINE\SYSTEM\ControlSet001\Services\W32Time\TimeProviders\NtpClient
- Select "SpecialPollInterval" and select to show Decimal values (not Hex).
- The value shown is the value in seconds
  - ◆ Default value: 604800 (one week)
  - ◆ Update every day = 86400 (seconds)
  - ◆ Update every hour = 3600 (seconds)

## 53 Example Function Keys

Below some example function keys for some CW and RTTY contests.



**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.

SSB	CW	RTTY
WPX SSB	Default	RTTY General
	SPRINT CW	WPX RTTY
		SPRINT RTTY

### 53.1 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 wav\[filename]. If in another, for example ARRL DX, it would read arrldx\[filename].

#### 53.1.1 WPX SSB example by Pete N4ZR

Here is an excerpt from my macro list that I used in WPX SSB with ESM.

Run		S&P	
F1 CQ	WAV\cq_general.wav	F1 {MYCALL}	WAV\mycall.wav
F2 Exch	WAV\59.wav#	F2 Exch	
F3 TU	WAV\tnx.wav	F3 TU	
F4 {MYCALL}	WAV\mycall.wav	F4 {MYCALL}	
F5 His Call	!WAV\pause.wav	F5 His Call	
F6 Rpt Exch	WAV\number.wav#	F6 Rpt Exch	
F7		F7	
F8		F8	
F9		F9	
F10		F10	
F11		F11	
F12		F12	

#### Message Notes

Note that 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. There are no doubt other syntaxes that work, but I know this does, with no spaces, commas or other punctuation in the part on the right.

### 53.2 CW

### 53.2.1 CW program default

Below the default function keys as setup in the program. The F3 up to F12 keys under S&P are not filled which means the F3 up to F12 from Run will be used.

Run		S&P	
F1 CQ	cq~test~de~*	F1 {MYCALL}	*
F2 {Exch}	<<<5nn >>>{EXCH}	F2 5NN {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			

### 53.2.2 Sprint CW examples

#### 53.2.3 Example 1

This Functionkey set is based on a set posted by Kenny, K2KW.

Run		S&P	
F1 CQ	** <<<NA>>>	F1 CQ	** <<<NA>>>
F2 Exch	* {EXCH}	F2 Exch	! {EXCH} *
F3 TU	EE{S&P}	F3 TU	EE{RUN}
F4 {MYCALL}	*	F4 {MYCALL}	*
F5 His Call	!	F5 His Call	!
F6 QSO B4	B4 E E	F6 QSO B4	B4 E E
F7 ?	?	F7 ?	?
F8 Agn	AGN	F8 Agn	AGN
F9		F9	
F10		F10	
F11		F11	
F12		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

### 53.2.4 Example 2

This Functionkey set is based on a set posted by Pete, N4ZR.

Run		S&P	
F1 CQ	* * NA{CLEARIT}	F1 CQ	* * NA{CLEARIT}
F2 Exch	* {EXCH}	F2 Exch	! {EXCH} * {RUN}
F3 TU	E~E {CLEARIT}	F3 NR	#
F4 {MYCALL}	*	F4 {MYCALL}	*
F5 His Call	!	F5 His Call	!
F6 QSO B4	B4 *	F6 Name	PETE
F7 Rpt Exch	{EXCH}	F7 State	WV
F8 ?	?	F8 ?	?
F9		F9	
F10		F10	
F11		F11	
F12		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 VE3IAY

### 53.2.5 Example 3

This Functionkey set is an example how to use the Single Operator Cal Stacking macros in CW. Posted by John, K3CT.

Run	
F9 Stack	{SOCALLSTACK}
F10 Log Pop	{LOGTHENPOP} TU NW {F5}{F2}
F11 RxAnt	{ANTTRX1TOGGLE}
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.

## 53.3 RTTY

### 53.3.1 General RTTY contests

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.

Run		S&P	
F1 CQ	{TX} CQ TEST DE ** CQ {RX}	F1 CQ	{TX} CQ TEST DE ** CQ {RX}
F2 Exch	599 {EXCH} ! BK {RX}	F2 Exch	{TX}{ENTERLF} DE * TU 599 {EXCH} {EXCH} BK {RX}
F3 TU	{TX}{ENTERLF} ! TU DE * QRZ? {RX}	F3 TU	{TX} ! TU {RX}
F4 {MYCALL}	{TX} DE * K {RX}	F4 Call Him	{TX} DE * * K {RX}
F5 His Call	{TX}{ENTERLF} !	F5 1x1	{TX} ! DE * K {RX}
F6 QSO B4	{TX} B4 DE * CQ {RX}	F6 0x1	{TX} DE * K {RX}
F7 Rpt Exch	{TX} {EXCH} {EXCH} {EXCH} {EXCH} K {RX}	F7 Rpt Exch	{TX} {EXCH} {EXCH} {EXCH} {EXCH} {EXCH} BK {RX}
F8 Agn	{TX} AGN AGN DE * K {RX}	F8 Agn	{TX} AGN AGN de * K {RX}
F9		F9	
F10		F10	
F11		F11	
F12		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&Ping, this is why I put those keys to better use by programming them different 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.

Another RTTY example for a contest where the time is part of the exchange (like ANARTS).

Run		S&P	
F1 CQ	{TX} CQ ANARTS DE ** CQ {RX}	CQ	{TX} CQ TEST DE ** CQ {RX}
F2 Exch	599 {TIME2} {TIME2} {EXCH} ! KN {RX}	F2 Exch	{TX}{ENTERLF} DE * TU 599 {TIME2} {TIME2} {EXCH} {EXCH} {RX}
F3 TU	{TX}{ENTERLF} QSL ! TU DE * QRZ? {RX}	F3 TU	{TX} ! TU {RX}
F4 {MYCALL}	{TX} DE * {RX}	F4 Call Him	{TX} DE * * K {RX}
F5 His Call	{TX}{ENTERLF} !	F5 1x1	{TX} ! DE * K {RX}
F6 QSO B4	{TX} B4 DE * CQ {RX}	F6 0x1	{TX} DE * K {RX}
F7 Rpt Exch	{TX} 599 {TIME2} {TIME2} {TIME2} {EXCH} {EXCH} K {RX}	F7 Rpt Exch	{TX} 599 {TIME2} {TIME2} {TIME2} {EXCH} {EXCH} K {RX}
F8 Agn	{TX} AGN AGN DE * K {RX}	F8 Agn	{TX} AGN AGN de * K {RX}
F9 TIME?	{TX} TIME AGN PSE? {RX}	F9 TIME?	{TX} TIME AGN PSE? {RX}
F10 TIME	{TX} TIME {TIME2} {TIME2} {TIME2} K {RX}	F10 TIME	{TX} TIME {TIME2} {TIME2} {TIME2} K {RX}
F11 QSY Up	{PGDN}	F11 QSY Up	{PGDN}
F12 QSY Dn	{PGUP}		{PGUP}

		F12 QSY Dn
--	--	---------------

73, Rich VE3IAY

### 53.3.2 Example WPX RTTY

Here is a freely "translated" set from the AA5AU's messages at <http://www.rttycontesting.com/rttymessages.htm> The examples mentioned are for a different contesting program. For those who are not familiar with the macro commands in that program, here is a freely "translated" set for N1MM's Entry window buttons using ESM, for contests with exchanges similar to WPX RTTY. These are based on AA5AU's suggestions but with a couple of twists of my own. Those of you who have been using N1MM in RTTY contests for a while will already have messages set up that suit you better, but for anyone starting out in RTTY maybe this will help get you going:

Run		S&P	
F1 CQ	{TX} CQ TEST DE * * CQ {RX}	F1 CQ	{TX} CQ CQ DE * * CQ {RX}
F2 Exch	599 {EXCH} {EXCH} ! BK {RX}	F2 Exch	{TX}{ENTERLF} DE * TU 599 {EXCH} {EXCH} {EXCH} BK {RX}
F3 TU	{TX}{ENTERLF} ! TU DE * QRZ? {RX}	F3 TU	{TX} ! TU {RX}
F4 {MYCALL}	{TX} DE * K {RX}	F4 Call Him	{TX} DE * * * K {RX}
F5 His Call	{TX}{ENTERLF} !	F5 1x1	{TX} ! DE * K {RX}
F6 QSO B4	{TX} B4 DE * CQ {RX}	F6 0x1	{TX} DE * K {RX}
F7 Rpt Exch	{TX} {EXCH} {EXCH} {EXCH} {EXCH} K {RX}	F7 Rpt Exch	{TX} {EXCH} {EXCH} {EXCH} {EXCH} {EXCH} BK {RX}
F8 Agn	{TX} AGN AGN DE * K {RX}	F8 Agn	{TX} AGN AGN de * K {RX}
F9		F9	
F10		F10	
F11		F11	
F12		F12	

For other contests and wherever they are different from WPX, making the corresponding changes. You can save each different set of messages in a separate file and load the desired set before the contest – the set above is my WPX\_RTTY.mc file.

I made a distinction between the exchange you use while running and the one you use S&Ping. N1MM does, and I have taken advantage of this.

Running, AA5AU's (F3) exchange becomes my F5 + F2. If you are not using ESM, or even if you are but you want to program a similar exchange message in the Digital Interface window buttons, combine my F5 and F2 into a single message. I have taken the liberty of adding the ! at the end. AA5AU does this in his (F8) tail-ender exchange, but not in his dual-purpose (F3) exchange message.

S&Ping, you do not need the other guy's call sign in the exchange, so in the S&P F2 I have replaced it with a third copy of the serial number. AA5AU suggests adding DE \* for the S&P exchange, and I have taken the additional liberty in my example of putting this at the beginning instead of the end – sometimes one is better, sometimes the other, so use what you are most comfortable with.

AA5AU has two different requests for repeats, one for the call sign (F6) and one for the exchange (F10). I have combined these into a single purpose "Agn" message in F8, mainly because in Run mode the number of free Entry window buttons is limited. If you have "Work dupes" selected, you don't need a B4 message and you could use F6 for this. In the Digital Interface window, you have lots of room and you can easily program separate buttons for all sorts of things.

AA5AU's set has a tail-end message, (F8). I would put this in a Digital Interface button, where it would look something like:

{TX}{ENTERLF} {LASTCALL} QSL TU NOW ! 599 {EXCH} {EXCH} ! BK{RX}

This assumes you have already logged the last QSO – if not, maybe the message should start out with {LOG}. You might also experiment with using {GRAB} in place of the first ! . Warning: I have not tried this out yet, and "correct" behavior is not guaranteed. This is an area where experimentation may pay off.

When S&Ping, I like to have lots of different choices for calling the CQer, so in addition to putting AA5AU's (F5) in F4 (S&P) and his (F7) in F4 (Run) and F6 (S&P), I have added a 1x1 call in F5 (S&P). You may have better uses for these keys; you should change them to suit your preferences.

73, Rich VE3IAY

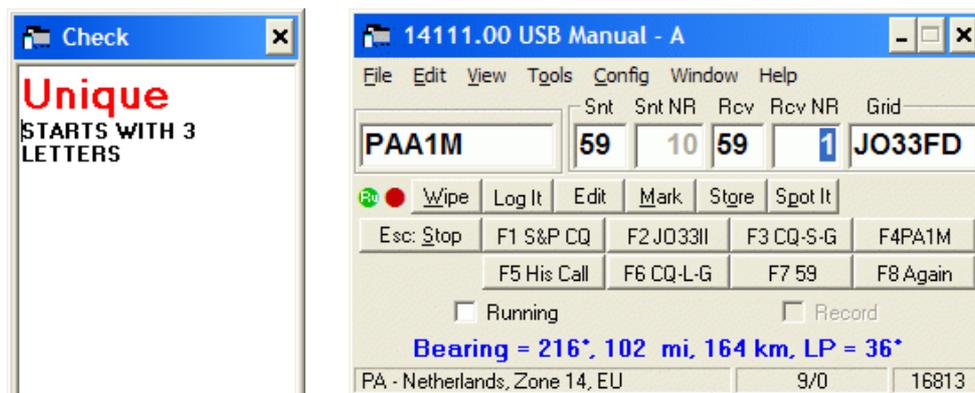
### 53.3.3 Example RTTY Sprint

Run		S&P	
F1 CQ	{TX} CQ NA DE ** NA {RX}	F1 CQ	{TX} CQ NA DE ** NA {RX}
F2 Exch	* {EXCH} BK {RX}	F2 Exch	{TX}{ENTERLF} ! {EXCH} * K {RX}
F3 TU	{TX} TU {ENTERLF}{RX}	F3 His Call	{TX} ! {RX}
F4 {MYCALL}	{TX} DE * K {RX}	F4 {MYCALL}	{TX} DE ** K {RX}
F5 His Call	{TX}{ENTERLF} !	F5 NR	{TX} # # # K {RX}
F6 QSO B4	{TX} B4 DE * CQ {RX}	F6 NAME	{TX} RICH RICH RICH BK {RX}
F7 Rpt Exch	{TX} ! DE * {EXCH} {EXCH} K {RX}	F7 QTH	{TX} ON ON ON BK {RX}
F8 Agn	{TX} AGN AGN DE * K {RX}	F8 Agn	{TX} AGN AGN DE * K {RX}
F9		F9	
F10		F10	
F11		F11	
F12		F12	

73, Rich VE3IAY

## 54 Call Checking

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!

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.**

### 54.1 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.



**Please do not to make up rules just for oneself. This is a golden opportunity to give back to the group with your knowledge of your home country's call sign standards.**

## 54.2 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.

### 54.2.1 Components

The components that make up a 'rule' are:

#### Single characters:

- A** match the letter 'A'
- 1** match the number '1'
- Etc.

Repetition flags	These must be followed by a character type specifier:	To make up phrases like:
<b>:</b> Match one	<b>N</b> match any character (A–Z, 0–9)	<b>:D</b> match one of any digit
<b>+</b> Match one or more	<b>A</b> match any letter(A–Z)	<b>+A</b> match one of any digit
<b>*</b> match zero or more	<b>D</b> match any digit (0–9)	<b>*N</b> match zero or more letters or digits
<b>-</b> optional match		<b>-D</b> optionally match one digit

Groups of characters to match:	Which can make up phrases like
<b>[]</b> match	<b>[ABCFXZ]</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.

### 54.2.2 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

### 54.2.3 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. Call 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.

# 55 Links

## 55.1 N1MM links

<p><b>N1MM Free Contest Logger Home Page.</b></p> <ul style="list-style-type: none"><li>• An overview with all the latest information on the program</li><li>• View and download Help files / Manuals (many languages)</li><li>• Report bugs and request features</li><li>• Testimonials</li><li>• more</li></ul>	<p><a href="http://pages.cthome.net/n1mm">http://pages.cthome.net/n1mm</a></p>
<p><b>N1MM logger General discussion group</b></p> <ul style="list-style-type: none"><li>• This group discusses features, bugs, and ideas for the N1MM Free Contest Logger regarding general program issues including CW and SSB contests.<ul style="list-style-type: none"><li>◆ Do you have questions/remarks</li><li>◆ Here you want to go.</li></ul></li><li>• To discuss the general program issues you have to join first:</li></ul>	<p><a href="http://groups.yahoo.com/group/N1MMLogger">http://groups.yahoo.com/group/N1MMLogger</a></p> <p><a href="http://groups.yahoo.com/group/N1MMLogger/join">http://groups.yahoo.com/group/N1MMLogger/join</a></p>
<p><b>N1MM logger Digital discussion group</b></p> <ul style="list-style-type: none"><li>• This group discusses features, bugs, and ideas for the N1MM Free Contest Logger regarding Digital modes issues including digital mode contests.<ul style="list-style-type: none"><li>◆ Do you have questions/remarks</li><li>◆ Here you want to go.</li></ul></li><li>• To discuss the digital program issues you have to join first:</li></ul>	<p><a href="http://groups.yahoo.com/group/n1mmlogger-Digital">http://groups.yahoo.com/group/n1mmlogger-Digital</a></p> <p><a href="http://groups.yahoo.com/group/n1mmlogger-Digital/join">http://groups.yahoo.com/group/n1mmlogger-Digital/join</a></p>
<p><b>Download</b></p> <ul style="list-style-type: none"><li>• <b>Program (base install)</b> – <i>N1MM-FullInstaller.exe</i></li><li>• ◆ <i>Includes Serial, parallel and USB port support for 32 bit Operating Systems – PORT95NT.EXE</i></li><li>• <b>Program Updates</b> – <i>N1MM-NewexeVx.x.xxx.exe</i></li><li>• <b>Other files</b> – <i>Country files, Master Callsign database</i></li><li>• <b>Windows Help file</b> – <i>N1MMLoggerHelp.chm</i></li><li>• <b>Manual in PDF format</b> – <i>N1MMLogger.pdf</i></li><li>• <b>RTTY engine</b> – <i>MMTTY</i></li></ul>	<p><a href="#">Go to the Download page</a></p>
<p><b>N1MM video display by N6NC</b></p> <ul style="list-style-type: none"><li>• <b>Explanation of screens</b><ul style="list-style-type: none"><li>◆ Part 1 – Screen configuration, Using two monitors</li></ul></li></ul>	<p><a href="#">N1MM Video Part 1.wmv</a> (5 MB) or <a href="#">N1MM Video Part 1.wmv</a> (5 MB)</p> <p><a href="#">N1MM Video Part 2.wmv</a> (5 MB) or <a href="#">N1MM Video Part 2.wmv</a> (5 MB)</p>

<ul style="list-style-type: none"> <li>• ♦ Part 2 – Packet/telnet window, Available Mults and Q's window, Bandmaps</li> <li>• ♦ Part 3 – (first part) Multiplier window, Info window</li> <li>• <b>Demonstration N1MM logger in contest operation</b></li> <li>• ♦ Part 3 – (second part) Action window (VFO A/B), Enter frequency, ESM mode, Mult hunting with Available Mults and Q's display</li> <li>• ♦ Part 4– Bandmaps and Mult hunting, VFO B action window, Packet/Telnet window and functions</li> </ul>	<p><a href="#">N1MM Video Part 3.wmv</a> (5 MB) or <a href="#">N1MM Video Part 3.wmv</a> (5 MB)</p> <p><a href="#">N1MM Video Part 4.wmv</a> (5 MB) or <a href="#">N1MM Video Part 4.wmv</a> (5 MB)</p>
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## 55.2 Support file links

<p><b>HF Country files (by Joe Reisert, AD1C)</b></p> <ul style="list-style-type: none"> <li>• Country files which can be imported in the program (cty.dat or wl_cty.dat). The better choice is <a href="#">wl_cty.dat</a></li> <li>• Import this country file by selecting 'Import country list from downloaded file' in the 'Tools' menu.</li> <li>• Look for install information on: <a href="#">Customizing the DXCC list</a></li> </ul>	<p><a href="http://www.country-files.com/cty/">http://www.country-files.com/cty/</a></p>
<p><b>Super Check Partial Database Files for HF contests</b></p> <ul style="list-style-type: none"> <li>• Randy, K5ZD, creates a few times a year several types of Check Partial Database files (also called Master files):</li> <li>• ♦ Master.dta – for international contests (all calls)</li> <li>• ♦ masterdx.dta – for DX contests (non US/VE calls)</li> <li>• ♦ masterusve.dta – For US/VE contests with W/VE calls</li> <li>• ♦ masterss.dta – for ARRL sweepstakes contests</li> <li>• 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'.</li> <li>• The calls in these database master files appear in the Check window after entering at least two letters of the callsign field.</li> </ul>	<p><a href="http://www.k5zd.com/scp">http://www.k5zd.com/scp</a></p>
<p><b>Super Check Partial Database Files for VHF and up contests (North America only)</b></p> <ul style="list-style-type: none"> <li>• 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'.</li> </ul>	<p><a href="http://www.gsl.net/k1tr/master.htm">http://www.gsl.net/k1tr/master.htm</a></p>
<p><b>Real time scoring</b></p> <ul style="list-style-type: none"> <li>• Upload software to upload your score by Dave, K1TTT. Works automatically with N1MM logger.</li> <li>• The source code for this software is free.</li> </ul>	<p><a href="#">K1TTT upload software (zip file)</a></p> <p><a href="#">K1TTT upload software source code (zip file)</a></p> <p><a href="#">Standardize real time score reporting</a></p>

<ul style="list-style-type: none"> <li>• Efforts to standardize real time score reporting can be found at</li> </ul>	<a href="#">info</a>
<p><b>Thucydides A history manager for N1MM logger by Carel, PC5M</b></p> <ul style="list-style-type: none"> <li>• A great tool to create import files from previous contest logs for the N1MM logger Call History function.</li> <li>• More info about this program in the chapter '<a href="#">Third Party Software</a>'</li> </ul>	Program: <a href="#">Thucydides v1.0.zip</a> (444 kB) Manual: <a href="#">Thucydides Manual v1.0.pdf</a> (310 kB) (right click on link and choose: Save As) Mapping file: <a href="#">Mapping_20060114.xls</a> (right click on link and choose: Save As)
<p><b>MakeHistory by Howard, N4AF</b></p> <p>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.</p>	<a href="#">MakeHistory 1.0.9</a> (16 kB)
<p>AB_Switcher by Dan, WR0DK</p> <p>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.</p>	<a href="http://wr0dk.home.comcast.net/abswitcher.html">http://wr0dk.home.comcast.net/abswitcher.html</a>

## 55.3 Rotator interfacing links

Rotator control supported by N1MM logger.

<p><b>Antenna Rotator System ( ARS ) by EA4TX</b></p> <ul style="list-style-type: none"> <li>• ARS universal antenna rotor interface by EA4TX</li> </ul>	<a href="http://www.ea4tx.com/inde.htm">http://www.ea4tx.com/inde.htm</a>
<p><b>LP-Rotor by Larry Phipps – N8LP</b></p> <ul style="list-style-type: none"> <li>• Standalone freeware rotator control program for use with Microsoft Windows.</li> <li>• Designed to be used with the Hy-Gain DCU-1 or RotorEZ interfaces for Hy-Gain rotators, or the RotorCard interface for Yaesu rotators.</li> </ul>	<a href="http://www.telepostinc.com/LP-Rotor-Html/">http://www.telepostinc.com/LP-Rotor-Html/</a>

## 55.4 Hardware links

Hardware supported by N1MM logger.

<p><b>Ham Radio Solutions</b></p> <ul style="list-style-type: none"> <li>• EZmaster           <ul style="list-style-type: none"> <li>◆ WinKey serial keyer</li> <li>◆ Band decoder</li> <li>◆ SO1R &amp; SO2R controller</li> </ul> </li> </ul>	<a href="http://www.hamradiosolutions.com/">http://www.hamradiosolutions.com/</a>
<p><b>K1EL</b></p> <ul style="list-style-type: none"> <li>• WinKey serial keyer</li> </ul>	<a href="http://www.k1el.com">http://www.k1el.com</a>

<b>microHAM</b> <ul style="list-style-type: none"> <li>• Band decoder (serial and parallel)</li> <li>• USB Micro keyer using the WinKey keyer from K1EL</li> <li>• SO2R boxes</li> <li>• and much more</li> </ul>	<a href="http://www.microham.com/">http://www.microham.com/</a>
<b>Top Ten Devices, Inc.</b> <ul style="list-style-type: none"> <li>• Band decoder</li> <li>• DX Doubler SO2R controller</li> </ul>	<a href="http://www.qth.com/topten/">http://www.qth.com/topten/</a>
<b>Interfacing links</b> <ul style="list-style-type: none"> <li>• <a href="http://www.gsl.net/wm2u/interface.html">http://www.gsl.net/wm2u/interface.html</a> – sound card interfacing</li> <li>• <a href="http://users.skynet.be/ON4AOI/keyer.shtml">http://users.skynet.be/ON4AOI/keyer.shtml</a> – simple CW, RTTY interfaces</li> </ul>	

## 55.5 Software links

<b>MM Software Page</b> (freeware) <ul style="list-style-type: none"> <li>• <b>MMTTY</b> <ul style="list-style-type: none"> <li>◆ The MMTTY software engine is used in N1MM logger.</li> <li>◆ Official English Website for JE3HHT (MMTTY)</li> </ul> </li> <li>• ◆ Internet group by Bill, KB4IJ</li> <li>• <b>MMVARI</b> <ul style="list-style-type: none"> <li>◆ The MMVARI software engine is used in N1MM logger.</li> </ul> </li> </ul>	<a href="http://mmhamsoft.amateur-radio.ca/">http://mmhamsoft.amateur-radio.ca/</a>  <a href="http://groups.yahoo.com/group/MMTTY">http://groups.yahoo.com/group/MMTTY</a>
<b>Master.dta Editor</b> (freeware) <ul style="list-style-type: none"> <li>• 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.</li> </ul>	<a href="http://www.netvampire.com/ham/">http://www.netvampire.com/ham/</a>
<b>Dimension 4</b> (freeware) <ul style="list-style-type: none"> <li>• Time synchronization tool for re synchronizing your computer time with Internet time standards. This program is successfully used by many N1MM logger users.</li> <li>• Doesn't work direct under Windows XP, a fix can be found in the <a href="#">FAQ</a>.</li> </ul>	<a href="http://www.thinkman.com/dimension4">http://www.thinkman.com/dimension4</a>
<b>AboutTime</b> (freeware) <ul style="list-style-type: none"> <li>• Time synchronization tool for re synchronizing your computer time with Internet time standards. This program is successfully used by many N1MM logger users.</li> <li>• Doesn't work direct under Windows XP, a fix can be found in the <a href="#">FAQ</a>.</li> </ul>	<a href="http://www.arachnoid.com/abouttime/">http://www.arachnoid.com/abouttime/</a>
<b>Cool Edit</b> (shareware) <ul style="list-style-type: none"> <li>• Record, clean up, mix, master, and export to MP3 and other formats with this audio editor. Many, many features.</li> </ul>	<a href="http://www.syntrillium.com/">http://www.syntrillium.com/</a>
<b>Audacity</b> (freeware)	<a href="http://audacity.sourceforge.net/">http://audacity.sourceforge.net/</a>

<ul style="list-style-type: none"> <li>• 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</li> </ul>	
<p><b>QuickMix</b> (freeware)</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Just set the different settings including mute etc. before saving the setting and give the setting a name *.qmx</li> </ul>	<p><a href="http://www.msaxon.com/quickmix/">http://www.msaxon.com/quickmix/</a></p>
<p><b>Sound Mixer</b> (freeware from PA1ARE)</p> <ul style="list-style-type: none"> <li>• Mixer is a program to set and restore the settings of the soundcard.</li> <li>• 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.</li> </ul>	<p><a href="http://www.qsl.net/pa1are/software.html">http://www.qsl.net/pa1are/software.html</a></p>
<p><b>Audiograbber</b> (freeware)</p> <ul style="list-style-type: none"> <li>• Program which can record (among many other things) whatever the soundcard is playing in a variety of formats including MP3 at various bit rates.</li> </ul> <p>Tips from Patrick, F6IRF</p> <ul style="list-style-type: none"> <li>• Schedule 1 hour files to start at 00:00 and end at 00:59:55</li> <li>• Files are named, according to day/time.</li> <li>• MP3 11 kbps quality is more than enough for SSB, CW and RTTY <ul style="list-style-type: none"> <li>◆ about 3MB/hour mono, or 6MB/hour stereo,for SO2R.</li> </ul> </li> <li>• If you have "Fraunhofer" codec on you PC, just use this one, it's the best for non-musical applications.</li> </ul>	<p><a href="http://www.audiograbber.com-us.net/">http://www.audiograbber.com-us.net/</a></p>
<p><b>AutoHotKey</b> (freeware)</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Example script in the <u>'Third Party Software'</u> chapter</li> <li>• Almost AutoIt version 2 compatible</li> </ul>	<p><a href="http://www.autohotkey.com/">http://www.autohotkey.com/</a></p>
<p><b>AutoIt</b> version 3 (freeware)</p> <ul style="list-style-type: none"> <li>• 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</li> </ul>	<p><a href="http://www.autoitscript.com/autoit3/">http://www.autoitscript.com/autoit3/</a></p>

combination can become a hotkey.	
<b>KeyTweak</b> (freeware) <ul style="list-style-type: none"> <li>• Free keyboard remapper</li> </ul>	<a href="http://webpages.charter.net/krumsick/">http://webpages.charter.net/krumsick/</a>
<b>AR Cluster User</b> (freeware from Lee, VE7CC) <ul style="list-style-type: none"> <li>• 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.</li> <li>• It is specifically for AR-Cluster, but I would guess it works to a lesser degree with other cluster software.</li> </ul>	<a href="http://www.bcdxc.org/ve7cc/default.htm">http://www.bcdxc.org/ve7cc/default.htm</a>
<b>TelMgr</b> (freeware from LU7DID) <ul style="list-style-type: none"> <li>• Interface between telnet client (N1MM logger) and AGWPE (packet via soundcard).</li> </ul>	<a href="http://www.qsl.net/lu7did/">http://www.qsl.net/lu7did/</a>
<b>Telnet interface</b> (freeware from IZ4AFW) <ul style="list-style-type: none"> <li>• Interface between telnet client (N1MM logger) and AGWPE (packet via soundcard).</li> </ul>	<a href="http://www.qsl.net/iz4afw">http://www.qsl.net/iz4afw</a>
<b>CBS</b> (freeware from K5KA) <ul style="list-style-type: none"> <li>• Post-contest statistics program.</li> <li>• This program creates qso statistics from a Cabrillo input file.</li> <li>• It is really great for breaking out QSOs by hour.</li> </ul>	<a href="http://www.kkn.net/~k5tr/software/Cbs.exe">http://www.kkn.net/~k5tr/software/Cbs.exe</a>
<b>SH5</b> (freeware from UA4WLI) <ul style="list-style-type: none"> <li>• Post-contest statistics program using Cabrillo input files.</li> <li>• Revealing of potential mistakes in reception of callsigns.</li> <li>• Search of partial calls.</li> <li>• Many, many more features</li> </ul>	<a href="http://rescab.nm.ru/">http://rescab.nm.ru/</a>

## 55.6 Contest Calendar links

<b>ARRL Contest Calendar Page</b>	<a href="http://www.arrl.org/contests/">http://www.arrl.org/contests/</a>
<b>SM3CER Contesting service</b>	
<b>VK4DX Contest Calendar</b>	<a href="http://www.vk4dx.net/">http://www.vk4dx.net/</a>
<b>WA7BNM Contest Calendar Main Page</b>	<a href="http://www.hornucopia.com/contestcal/">http://www.hornucopia.com/contestcal/</a>

## 55.7 RTTY links

RTTY contesting (by Don AA5AU)	<a href="http://www.rttycontesting.com/">http://www.rttycontesting.com/</a>
Also by Don AA5AU, a VERY good RTTY Primer on using MMTTY and understanding how RTTY works	<a href="http://aa5au.com/gettingstarted/rtty_start_intro.htm">http://aa5au.com/gettingstarted/rtty_start_intro.htm</a>
World RTTY Contest Scene (by DJ3NG)	<a href="http://www.rtty-contest-scene.com/">http://www.rtty-contest-scene.com/</a>

RTTY.com	<a href="http://www.rtty.com/">http://www.rtty.com/</a>
Jim's Gazette	<a href="http://www.n2hos.com/digital/">http://www.n2hos.com/digital/</a>

## 56 DX Clusters

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.

### 56.1 Overview

Cluster	AR-Cluster	CLX	DXnet	DXSpider	Wincluster	Clusse	PacketCluster(tm)
<b>By</b>	AB5K	DJ0ZY and DL6RAI	F5MZN	G1TLH	KH2D	OH7LZB	AK1A
<b>Operating System</b>	Windows 32 bits	Linux	Linux, Windows, Dos	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
	\$\$\$	Freeware	Freeware	Freeware	\$\$	Freeware	\$\$
<b>Multilingual</b>	?	?	Yes	Yes	No	Yes	?
<b>Website</b>	<u>Website</u>	<u>Website</u>	<u>Website</u>	<u>Website</u>	<u>Website</u>	<u>Website</u>	No
<b>Help file</b>	<u>Web</u>	<u>Web</u>	Not found	<u>Web PDF file from FRC</u>	Not found	Not found	Not found
<b>Help on DX spots</b>	<u>Web</u>	<u>Web</u>	Not found	<u>Web</u>	Not found	Not found	Not found
<b>Help on Filters</b>	<u>Web</u>	<u>Web Web</u>	Not found	<u>Web PDF file By Jim – W3BG</u>	Not found	Not found	Not found
<b>Command Reference</b>	<u>Web</u>	<u>Web</u>	Not found	<u>Web</u>	Not found	Not found	Not found

### 56.2 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	
		SHOW/DXDEDX				

Show DX Spot Origination Filters						
Enable DX Spot Origination Filter		SET/DXDEDX				
Disable DX Spot Origination Filter		SET/NODXDEDX				
Show other languages						
Set other language						-
Search the help database				apropos <string>		

### 56.2.1 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)

## 56.3 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](#)).

### 56.3.1 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**

### 56.3.2 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

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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.

## 56.3.3 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](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.

## 56.4 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/>

# 57 Customizing the DXCC list

## 57.1 Updating the country file – CTY.DAT

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.

### 57.1.1 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'.

### 57.1.2 CTY.DAT file format

The format from CTY.DAT is as follows:

<b>Column</b>	<b>Length</b>	<b>Description</b>
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.



Note: 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

### 57.1.3 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.

### 57.1.4 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).

### 57.1.5 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:

# 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;

# 58 Technical Information

## 58.1 General Information

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**

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).

## 58.2 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!  
N.B. Multiplier information and qso points will be updated after a rescore so these 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!

## 58.3 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\Letters	Directory to store all wav files to 'speak' numbers and letters. Example files can be downloaded from the N1MM website, under 'Downloads', select in the menu: 'Other Files'.
C:\Program Files\N1MM Logger\Wav	Directory to store all wav files used in the SSB function keys. You have to make these yourself.

## 58.4 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)

## 58.5 The Access database

A database has tables with in it the data.

<b>Table</b>	<b>Contents</b>
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 anymore (empty)

## 58.6 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.

### 58.6.1 Functions section

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]		

#### 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**

### 58.6.2 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*

## 58.7 Configuration files

After installation the files below are stored in the N1MM logger program directory.

### 58.7.1 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 per 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 contesters.
- 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.
- Nice to have a clean ham.mdb at your disposal (ham.mdb.init) or a clean 'N1MM loffer.ini' settings file.

## 58.7.2 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

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)

## 58.7.3 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

## 58.7.4 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

## 58.7.5 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)

## 58.8 ADIF fields

N1MM logger complies to the latest ADIF standard. However in the N1MM logger database there is more information stored than 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.

## 58.9 Callsign checking in the Digital Interface

Below 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 check to see if there are no invalid characters in it. Then if it all that passes it goes thru 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 not 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 thru 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 and 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

## 58.10 Routers and Firewalls

A router provides your principal defense against the wild, woolly 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.

### **58.10.1 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.

## 59 External UDP broadcasts

External broadcasts can be used by third party software to get info from a contest in progress to make for example reports or have an up-to-date web site with all information on it. UDP broadcasts stay in the same network (same subnet) and can't be broadcasted directly over the internet. Mostly this information has to be kept within the contest station due to contest rules or ethics.

There are more UDP broadcasts in the program but not very useful for users. Like the broadcasts to the N1MM rotor program and the score reporting program, they are not explained here.

### 59.1 Main program

For external UDP broadcasts there are some lines to add to the N1MM logger. ini file. This has to be done with an external text editor (there is no UI for this option). Not a wordprocessor! When the section **[ExternalBroadcast]** is not there it has to be added. An example is:

```
[ExternalBroadcast]  
DestinationIPs=127.0.0.1 192.168.1.56  
DestinationPort=12060  
IsBroadcastAppInfo=True  
IsBroadcastContact=True  
IsBroadcastRadio=True
```

DestinationIPs=	Start with IP address 127.0.0.1 (the pc you are running on) and add other PC's IP-addresses. You can send to only one destination port.
DestinationPort=	The UDP port to use. Defaults to 12060
IsBroadcastAppInfo=True	Broadcast Application Info. Defaults to False
IsBroadcastContact=True	Broadcast Contact Info. Defaults to False
IsBroadcastRadio=True	Broadcast Radio Info. Defaults to False

The dots in the example UDP broadcasts are TAB characters.

#### 59.1.1 IsBroadcastAppInfo=True

This code is broadcasted 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
<pre>&lt;?xml version="1.0"?&gt; &lt;appinfo&gt; .&lt;dbname&gt;C:\Program Files\N1MM logger\contests-2007.MDB&lt;/dbname&gt; .&lt;contestnr&gt;71&lt;/contestnr&gt; .&lt;contestname&gt;CQWWSSB&lt;/contestname&gt; &lt;/appinfo&gt;</pre>

#### 59.1.2 IsBroadcastContact=True

This code is broadcasted when IsBroadcastContact=True in the section [ExternalBroadcast] from the file N1MM logger.ini at the moment a qso is logged.

Example UDP broadcast
<pre>&lt;?xml version="1.0"?&gt; &lt;contactinfo&gt; .&lt;contestname&gt;CQWWSSB&lt;/contestname&gt;</pre>

```

.<contestnr>71</contestnr>
.<timestamp>22-6-2008 7:04:00</timestamp>
.<mycall>PA1M</mycall>
.<band>14</band>
.<rxfreq>1420100</rxfreq>
.<txfreq>1420100</txfreq>
.<operator>PA1M</operator>
.<mode>USB</mode>
.<call>K1TTT</call>
.<countryprefix>K</countryprefix>
.<wprefix>K1</wprefix>
.<stationprefix>PA1M</stationprefix>
.<continent></continent>
.<snt>59</snt>
.<sntnr>233</sntnr>
.<rcv>59</rcv>
.<rcvnr>0</rcvnr>
.<gridsquare></gridsquare>
.<exchange1></exchange1>
.<section></section>
.<comment></comment>
.<qth></qth>
.<name></name>
.<power></power>
.<misctext></misctext>
.<section>14</section>
.<zone>5</zone>
.<prec></prec>
.<ck>0</ck>
.<ismultiplier1>1</ismultiplier1>
.<ismultiplier2>0</ismultiplier2>
.<ismultiplier3>0</ismultiplier3>
.<points>3</points>
.<radionr>1</radionr>
</contactinfo>

```

### 59.1.3 IsBroadcastRadio=True

This code is broadcasted 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

```

<?xml version="1.0"?>
<RadioInfo>
.<RadioNr>2</RadioNr>
.<Freq>2120000</Freq>
.<TXFreq>2120000</TXFreq>
.<Mode>CW</Mode>
.<OpCall>PA1M</OpCall>
.<IsRunning>False</IsRunning>
</RadioInfo>

```

## 60 Off Topic, but nice to know

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.

### 60.1 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  
e-mail: <mailto:k1ttt@arrl.net>  
web: <http://www.k1ttt.net>

### 60.2 Types of operating

**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.

**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.

**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

## 60.3 A qso speedup tip (how is your typing speed?)

Being raised as a contester using CT, I was thought 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'.

## 60.4 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

## 60.5 USA and Canada Daylight Savings Time Changes

In 2007, the US & Canada change 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.

Other 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.

## 60.6 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 moreso. 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

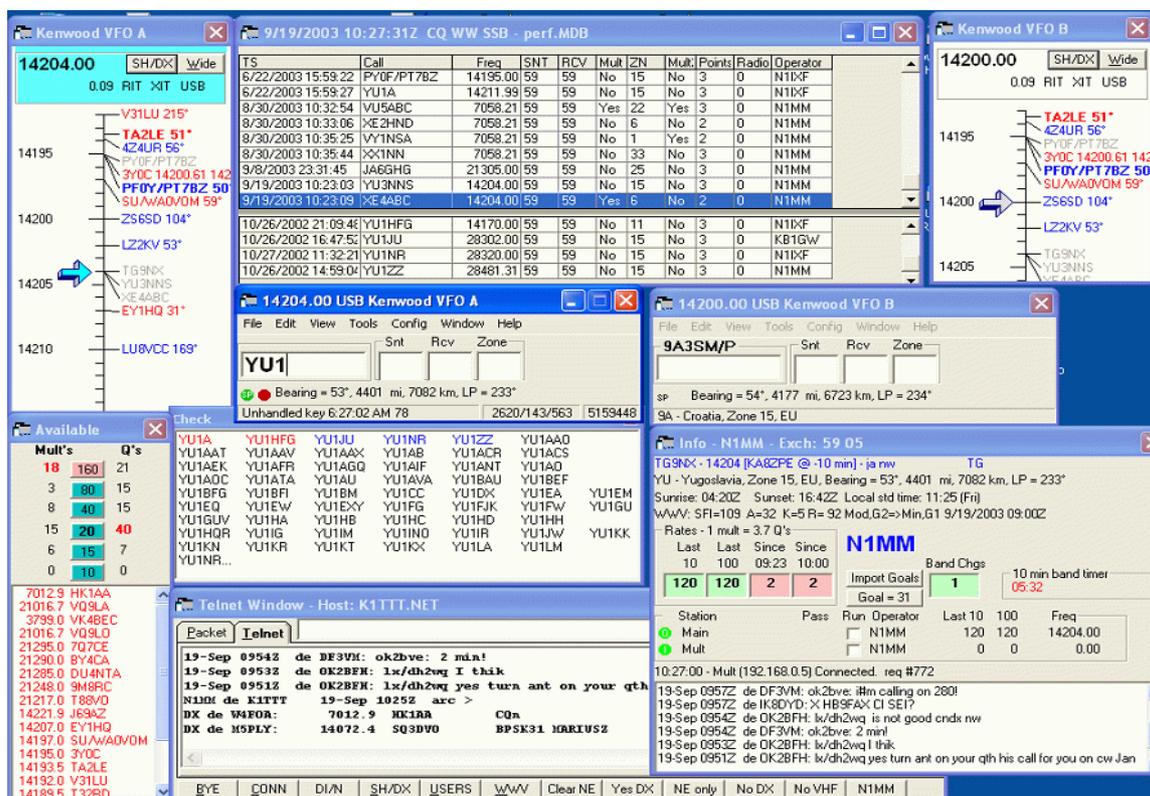
Gerald Boutin, VE6WA

# 61 Example Screen Layouts

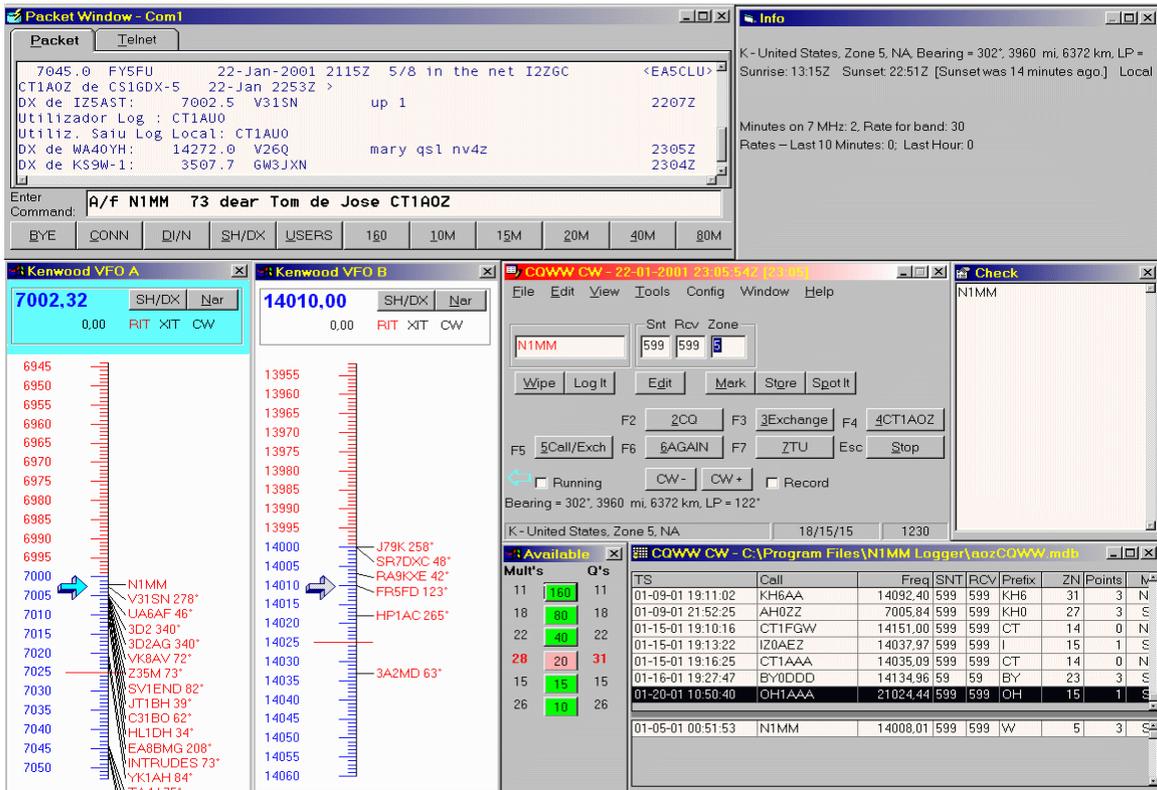
Below are shown some possible screen layouts which can be a little help when setting up the windows. These examples are for 1024 by 768 pixels (17 and bigger) screens and one for 800 by 600 pixels (14/15 inch screen). When using 800 by 600 pixels mostly users seem not to show the Packet/Telnet window and one of the bandmap windows. Setting up the windows with a lower resolution is hardly possible.

After starting the program you have to setup up all the windows in such a way that the ones used are on a logical place on the screen. Like the left radio bandmap on the left side of the screen or VFO A left and VFO B right etc. Two SO2R example screens can be found in the SO2R chapter.

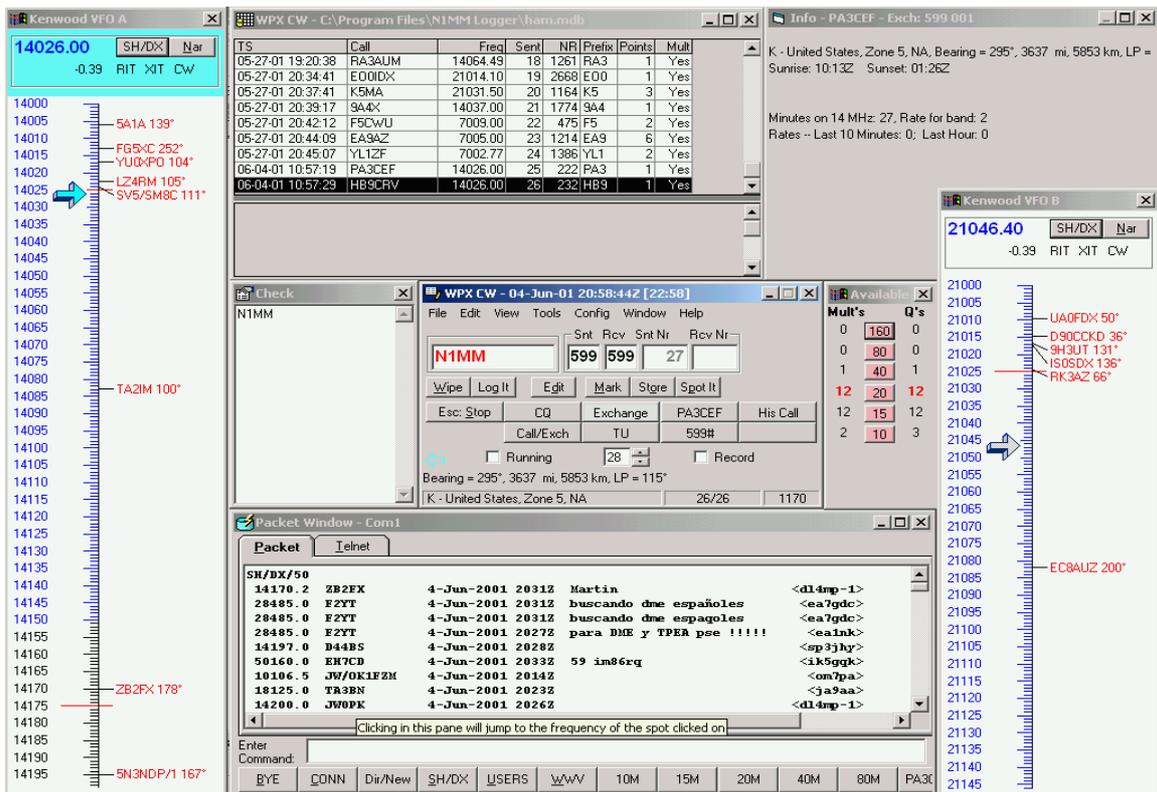
These screen layouts are not in the Windows Help file because of their size.



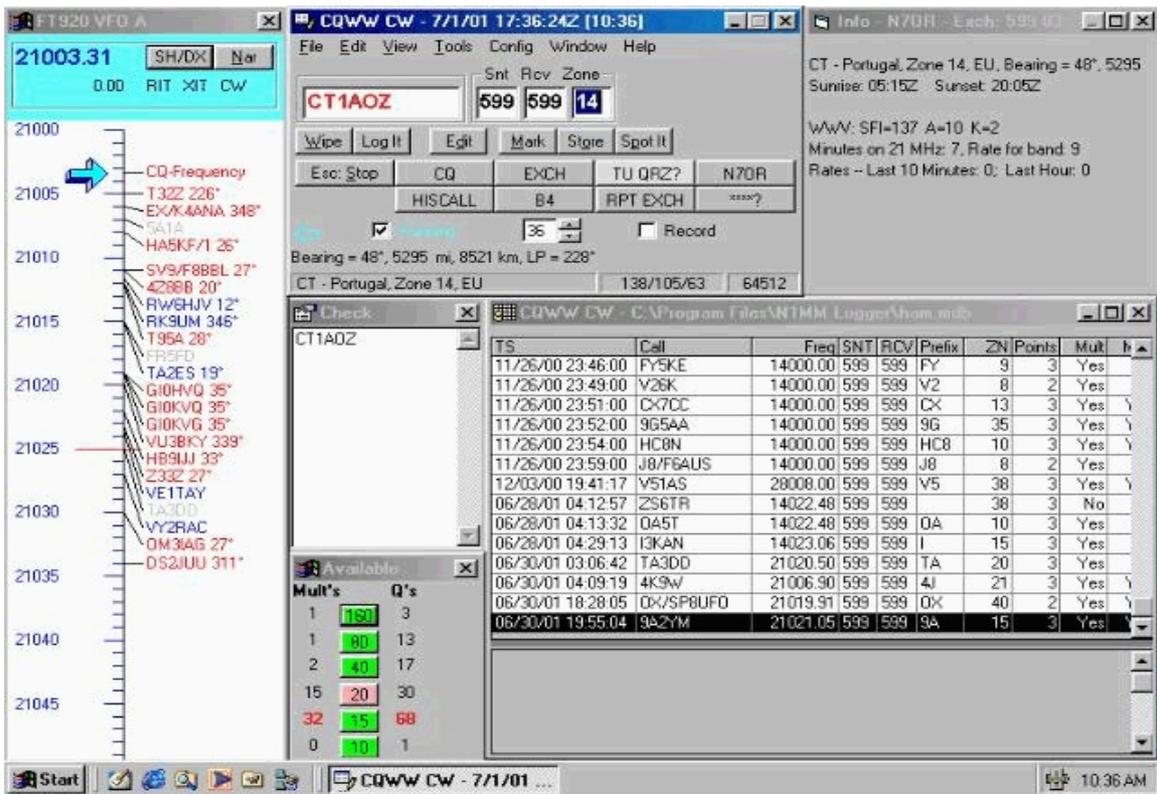
This is a possible screen layout from Tom, N1MM (1024 by 768 pixels)



This is a possible screen layout from Jose, CT1AOZ (1024 by 768 pixels)



This is a possible screen layout from Thomas, PA1M (1024 by 768 pixels)



This is a possible screen layout from Craig, N7OR (800 by 600 pixels)