

TR4W User Manual [English Version]

Version 2.24

April 9, 2012

Preliminary

TABLE OF CONTENTS

TABLE OF CONTENTS	2
1 Introduction	6
1.1 Typographical Conventions	10
1.1.1 Configuration Statements.....	10
1.1.2 File names	10
1.1.3 Window Names.....	10
1.1.4 Special Keys and Short Cut or Hot Keys.....	10
1.1.5 Function Keys	10
1.2 System Requirements	11
1.3 Files used by the Program	12
1.4 Folders used by the Program	12
1.5 Program Installation	13
1.6 Program Startup Screens.....	14
1.7 Program Windows -- Names and Colors	16
1.8 Configuring TR4W for your station.....	17
1.8.1 Configuring the Radio	17
1.8.2 Configuring the Station Control.....	19
1.8.3 Configuring the Computer-Sound Interface	20
1.8.4 Testing the Configuration Setup.....	20
2 Beginning Operating.....	21
2.1 First QSO in CQ Mode.....	21
2.2 First QSO in S&P Mode.....	24
2.3 Regular Operation.....	28
2.3.1 Selecting a Supported Contest.....	28
2.3.2 Custom Messages.....	29
2.3.3 Sending Messages to the Rig.....	34
1.1.1 Other Kenwood transceivers CAT commands.....	34
2.3.4 Personalized Greetings.....	38
3 Alarms and Notes.....	39
4 Special Operating Modes.....	40
4.1 Using the Bandmap	40
4.2 SO2R -Two Radio Mode	44
4.2.1 SO2R - Configuration	44
4.2.2 SO2R - BASIC OPERATION	45
4.2.3 SO2R - Advanced Operation	47
4.3 Using the DXCluster	50
4.4 Multi Operation.....	52
4.5 RTTY Operation	58
4.6 Recording and Using DVP Contest Messages audio	60
4.6.1 Audio file format.....	60
4.6.2 The location of audio files	60

4.6.3	Using the DVP	61
4.6.4	Record and edit sound files	63
4.6.5	Automatic generation of DVP audio messages.....	63
4.6.6	The process of working on the air	65
4.7	VHF/UHF.....	65
4.8	Farnsworth CW.....	66
4.9	Recording Contests	67
4.10	Foot Switch.....	70
4.11	Rotator Control.....	72
4.12	Country List Changes	73
4.13	Creating a non-supported Contest Configuration	74
4.13.1	Selecting Contest Parameters	74
4.13.1.1	Multiplier Types	74
4.13.1.2	QSO Point Methods	74
4.13.1.3	Exchanges.....	74
4.13.1.4	Initial Exchanges	76
4.14	TRMASTER Database	77
2	Right click on <i>MASTER.DTA</i>	77
3	Choose "SAVE AS" and save to TR4W directory.....	77
4.15	Entering a Hand Log.....	100
5	Post-Contest Reports & Log Utilities	100
5.1	Reports.....	100
5.2	Export Files.....	104
5.2.1	ADIF File.....	104
5.2.2	Cabrillo File.....	104
5.2.3	Initial Exchanges List.....	104
6	Main Window	105
6.1	Menus and Sub Menus of Main Window	106
6.1.1.1	File Menu.....	107
6.1.1.2	Settings Menu.....	108
6.1.1.3	Window Menu.....	109
6.1.1.4	Alt- Menu.....	110
6.1.1.5	Ctrl- Menu.....	111
6.1.1.6	Commands Menu	112
6.1.1.7	Tools Menu.....	112
6.1.1.8	Net Menu.....	112
6.1.1.9	Help Menu.....	113
7	Appendix B. Suggested Interface Circuits.....	114
7.1	CW Interface.....	114
7.1.1	CAT Control.....	114
7.1.2	Serial Port keying and PTT control.....	114
7.1.3	Parallel Port [LPT] keying and PTT control	115
8	Appendix C.	118
8.1	Alt+ keys	119
8.2	Ctrl+ keys	120
8.3	Additional Ctrl + keys.....	121
8.4	Shift+Ctrl Keys.....	121
8.5	Ctrl+Alt+ Keys.....	121
8.6	Special Keys.....	122

8.7	Supported Transceivers.....	123
8.8	Supported Contests.....	125
8.9	Sub Window default colors.....	130
10	Appendix A. Configuration Statements.....	130

Preliminary

LIST OF FIGURES

Figure -1.....	12
Figure -2.....	13
Figure -3.....	14
Figure -4.....	14
Figure -5.....	15
Figure -6.....	16
Figure -7a Figure -9b	16
Figure -8.....	17

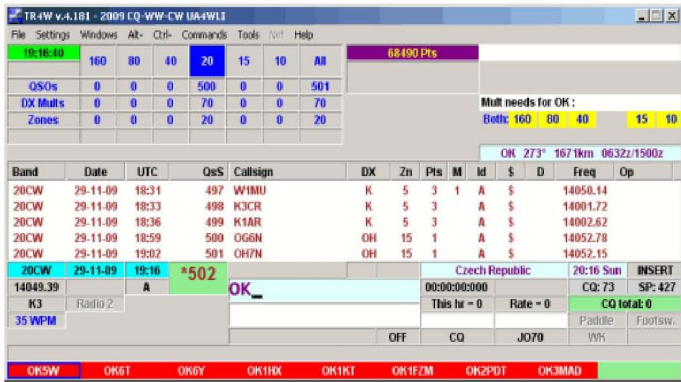
1 Introduction

TR4W Con\\TEST Logger

TR4W Features Download Documentation CFG files Inital.Ex files Files SH5

TR4W

TR4W (TR for Windows) is a freeware program for operating in amateur radio contests. Program is based on source code of the TR LOG MS-DOS program, kindly provided by Larry Tyree, N6TR (author of TR LOG). The basic idea of the TR4W project is porting TR LOG code to the Windows environment. TR4W is written in pure Windows API (application programming interface) and designed to be as **small** and **fast** as possible. Size of the executable file is only **160** kB. At the same time, the program contains almost 40 windows and consists of more than 100,000 lines of code. The TR4W project was started in March 2006, by Dmitry Gulyaev, UA4WLI.



Current version - 4.239

Download

[Release notes](#)

- Support of more then 140 contests.
- Radio interface with HF/VHF transceivers including Yaesu, Icom, Kenwood and TenTec. Interface via serial (COM) ports or USB <-> RS-232 serial adapters.
- Support of Winkeyer USB.
- Built-in telnet DX cluster.
- Super Check Partial.
- Support of Two Radio mode (SO2R).
- Support of networked mode. Clientâ€server model, TCP protocol.
- Control of antenna band decoder via LPT port.
- Antenna rotators control.
- Scalable size of the main window - depending on your monitor resolution.
- Built-in on-fly MP3 recorder.
- CW manipulation via COM and LPT ports. CW monitor via computer speaker.
- Log backup to USB Flash drive.

The TR4W web site information gives only an outline of the many, many options for computer, radio, station and operator interaction during a contest. Like other very sophisticated contest programs such as N1MM, TR Log, NA, CT, etc. there are many ways to set up the interactions between operator, station equipment and the program to achieve maximum satisfaction with the contest logging, scoring and post contest reporting. Any of the mentioned programs requires much study of alternatives and experimenting to get the best configuration for a particular operator. TR4W is almost identical in use to TR Log [a DOS program] but it has the advantage that it will run on all of the newer Windows Operating System platforms. [Windows XP, Windows Vista and Windows 7].

TR4W is a high performance software package suitable for contests, DXpeditions or day-to-day operation. Some of its features are:

1. Unsurpassed flexibility lets you tailor the program to your personal operating taste.
2. Over 140 contests supported by the program - others can be added easily.

3. Capacity for more than 50,000 QSOs.
4. Simple operation with intelligent <ENTER> key – TR4W knows what you want to do.
5. CW keying via Serial Port or LPT Port. CW speed from 1 to 99 WPM
6. Paddle input via LPT lets the program act as your keyer. Touching a paddle aborts computer-generated CW.
7. Support for PTT with programmable delay to ensure that antenna relays are cold-switched.
8. Support of Winkeyer USB
9. Automatic super check partial and possible call checking.
10. Expanded .DTA database format supports names, QTH, grid, SS check and other information.
11. Band map with color-coded aging information.
12. Built in telnet DXCluster interface with automatic insertion of spots into band map.
13. Provision for responding to tail ending stations on CW.
14. Dynamic speed and weight control adjustments during sending of stored CW messages.
15. Support for RTTY using MMTTY engine.
16. Support for working rover stations in VHF/UHF contests. All amateur bands from 160 to Light supported.
17. Beam headings and sunrise/sunset times displayed for countries as you work them.
18. WAE QTC support for both inside and outside Europe.
19. POST program used to create summary sheets, maintain .DTA database, reports and QSL labels
20. Remembers exchange information from band to band.
21. Radio interface for Elecraft, Icom, Japan Radio, Kenwood, Ten-Tec and Yaesu rigs. Can use Serial Port [COM] or USB to Serial adapters.
22. Support of networked multiple rigs; client server model with TCP/IP protocol.
23. Footswitch input via an LPT port can be used for several different operating functions.

24. Antenna Band decoder output using LPT port.
25. Antenna rotators control
26. Integrated two-radio support [SO2R].
27. Built in “on-the-fly” MP3 recording of contests.
28. Supports log backup using USB drive or selected HDD folder.
29. Uses standard CTY.DAT file for country and beam heading information.
30. Powerful domestic templates allow easy updates and addition of new contests.
31. Programmable list of remaining country multipliers.
32. User programmable window and sub-window colors.

Through the use of a configuration file (TR4W.INI), the program can be tailored to meet your specific requirements. Most of the operating parameters used in the program can be modified using the Configuration Statements window. [Appendix A](#) lists all the parameters that may be programmed. Many of them can be changed while the program is running using the handy <Ctrl-J> command to open the Configuration Statements window.

The *TRMASTER.DTA* database allows you to remember the name, QTH and other information for stations that you have worked before. When the name feature is enabled on CW, the program greets people as you work them. It even will send GM, GA, GE or another appropriate greeting depending on the country of the station.

Care has been taken to create an efficient way to search and pounce on CW. When you are in the search and pounce mode, typing a call and then pressing <ENTER> will either send your call (if it is a new station) or tell you that it is a dupe. Pressing <ENTER> after copying the exchange will send your exchange and log the contact. (It is worth reading that last sentence again, slowly, to make sure that you understand how easy it is to make a QSO in TR4W.)

Other useful tools for efficient search and pounce operation include a color coded band map and the way that the program highlights duplicate callsigns when using the partial call or super check partial features.

The program is also efficient when running stations. A contact can be completed by typing a call, pressing <ENTER>, waiting for the station to send their exchange (e.g., 599 and a zone which is already automatically entered for you by the program), and then pressing <ENTER> to log the contact and send a QSL message. That is a total of just six keystrokes for a four- character callsign. Some operators even eliminate the first <ENTER>, because the program can start sending the call after you have typed a programmable number of characters from the call, and it will start the exchange when it has caught up to your typing. See [AUTO SEND CHARACTER COUNT](#) and [AUTO CALL TERMINATE](#) for details. And just to make things insanely easy, you can even use a footswitch instead of the <ENTER> key.

A band map can be displayed, showing stations for which you have recently performed dupe checks. The display shows the calls sorted in frequency for the band on which you are active, and color-coded to show the time that has elapsed since they were last checked. Spots received via the DXCluster interface will also be shown on the band map.

Additionally, you have a choice of two different QSL messages that can be sent while the contact is being logged.

When working a station, you will automatically be shown the bands on which you need a QSO or multiplier from the station. This is very useful when you might want to move the station to other bands. You also are continuously shown a list of missing multipliers for your current band and mode. For domestic multipliers, a complete list of remaining multipliers is shown. When the contest uses country multipliers, a programmable list of more than 90 countries can be shown. The multiplier status of countries not displayed can be checked explicitly by simply performing a dupe check. You can switch between displays showing remaining zones, domestic multipliers and countries with a single keystroke.

As you enter a callsign, matching partial calls from the dupe sheet will be displayed automatically. After entering the call, a list of other stations with similar calls is displayed. These calls may be easily selected if you discover that one of them is the correct call.

Exchange parameters such as domestic QTH, age, power, name, ITU Society and field day class are stored and recalled automatically when working the station on another band. ITU and CQ zones are automatically entered for you in contests that include them as part of the exchange.

With just the standard configuration settings the program allows operators to be effective in contests even without very complex stations. In fact, it is not necessary to control the radio with the program to have it function as a very efficient contest logging program that logs contacts, keeps track of duplicate QSO's, scores the contest as you are working and provides excellent post contest reporting and log submission routines for use after the contest is completed.

With practice the user can improve their facility with the program and at the same time increase their proficiency as a contester. This manual has many tables and figures that describe the program configuration alternatives. As a result it looks as though it will be very difficult to set up and use. That is far from the actual situation. The good news is that unless you choose to do something 'extraordinary' you can set things up and start using the program very quickly. Then, as time permits, you can study the tables and figures, ask questions of other users and try some of the alternatives that are available for yourself. In the end you can select the things you need for your type of contest operation and save that configuration. Once that is done you need only 'tweak' things when you feel like doing something different. The rest of the time you will be able to 'load and go' using your personal configuration for a contest.

Don't expect to be an expert during the first contest season of using this program, or any logging program for that matter. It takes time to get the feel of the program and then make the small adjustments that you think will work best for you. With time you will find that it can do everything

that you might imagine you want to do as you operate. If not, you can always suggest 'improvements' to the program author via the TR4W user reflector that is found on tr4w@googlegroups.com .

1.1 Typographical Conventions

1.1.1 Configuration Statements

These statements are in all capitals and are bold. For example:

TWO RADIO MODE = TRUE

1.1.2 File names

These names are in all capitals, bold, italicized and have a ". " followed by an extension [extent]. For example:

TR4W.INI

1.1.3 Window Names

These names have each word in the name capitalized, bold and italicized. They generally have the word 'window', 'sub-window' or 'box' following the actual name of the window, sub window or box. Sub-windows and boxes are located inside windows. Examples of these names are:

Possible Calls window, ***Call*** window, ***Exchange*** window
Operating Mode box

1.1.4 Special Keys and Short Cut or Hot Keys.

The special keys are the control, shift, alternate, end, return, delete, insert. In the text they are written as [CTRL], [SHIFT], [ALT], [END], [RETURN], [INS], [DEL], [TAB].

The terms 'short cut key' and 'hot key' are used interchangeably. They are represented by < **Key1** + **key2**> or < **Key1** + **Key2** + **key3**> where **Key1** is [CTRL], [ALT] or [SHIFT]. The '+' indicates that these keys are to be pressed at the same time, with **Key1** to be pressed slightly ahead of **key2**. For cases where there are three keys, the first two should be pressed slightly before pressing the last key. In the three key case, **Key1** will generally be [SHIFT] and **Key2** will be [CTRL] or [ALT].

Examples are <Ctrl+A> , <Alt+M> , <Ctrl+Shift+1>

1.1.5 Function Keys

These are represented as:

<F3> for function key **F3** held down alone.

<Ctrl+F3> for [CTRL] and the function key **F3** held down at the same time.

<Alt +F3> for [ALT] and the function key **F3** held down at the same time.

1.2 System Requirements

Supported Operating Systems

Windows 98SE, 2000, XP, Vista, Windows 7

Memory Requirements

16 MB of memory, more is desirable

CPU Requirements

200 MHz CPU clock; faster is desirable – especially if using DVP recording of contests.

COM, LPT, USB, internet and sound requirements

One COM port per Radio controlled by program.

One LPT port per radio if Band selection is done by program.

One Com port for rotator control if used.

One Com port for Network if used (probably already active for internet access)

USB to COM adapters can be used. USB to LPT adapters can be used but not all of these adapters will control all of the LPT lines.

Internet connection required for DX Cluster use.

Internal sound card or USB sound card required for DVP messages and DVP recording.

The sound card should allow line-in [or mic] and line-out [or speaker]

The computer speaker used for CW monitor output.

1.3 Files used by the Program

File (extension)	Application
TR4W.INI	Command Statement settings which are applied to all contests (text)
*. cfg.	Contest configuration file (text)
*. TRW	TR4W Log file (binary)
*. RST	TR4W restart file (binary)
*. DOM	File of internal factors . (text)
tr4w.pos	Window position data (binary)
bandmap.bin	Spots for stations (binary)
trcluster.dat	DX cluster internet addresses (text)
dxcluster_alert_list.txt.	Call signs monitored in DX Cluster (text)
cty.dat	Country prefixes and geographic parameters (text)
cursor.bmp	Graphic image specified by CUSTOM CARET statement
commands_help_xxx.ini	Command Statement help xxx in the file name – specifies the language. (text)
Winkeyer.bin	Winkeyer configuration (binary)
luconsz.ttf	If present slashed zeros in program Change .ttf to .tt to disable

1.4 Folders used by the Program

Folder	Application
[SETTINGS]	TR4W.INI AND TR4W.POS
[DOM]	Multiplier files (text)
[DXCLUSTER]	Dxcluster –xxxx.txt (text)
[SERVER]	Tr4wserver.exe
[DVP]	.wav files and FULLCALLSIGNS, FULLSERIALNUMBERS and LETTERSANDNUMBERS
[FULLCALLSIGNS]	call.wav files
[FULLSERIALNUMBERS]	serial.wav files
[LETTERSANDNUMBERS]	number.wav & letter.wav files

1.5 Program Installation

To get started go to the TR4W homepage at: <http://www.tr4w.com/> and download the most current version of the program.

Click on “DOWNLOAD” to bring up a list of TR4W versions for several languages. Select the latest release in the language that you wish to use. This manual is written for users of the English version but may be useful to those using TR4W in other languages, As of this writing the current English TR4W version release is 4.242. Click on “tr4w_setup_4_242.zip” to initiate a download of a compressed (zip) file which you should save. When the download is completed and saved, extract the file and you will see a window like this:

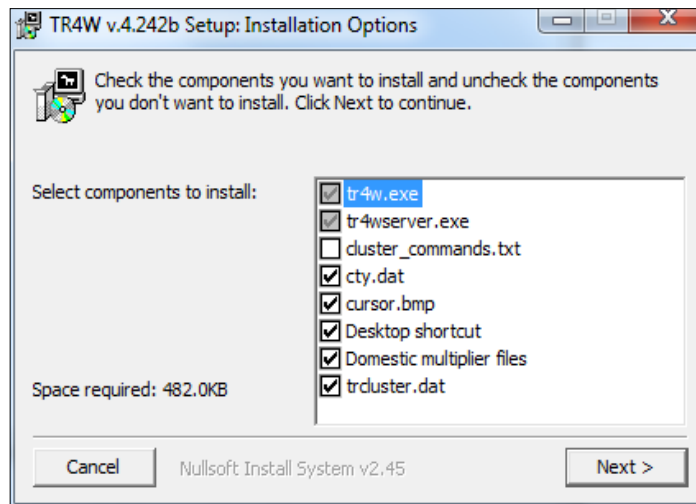
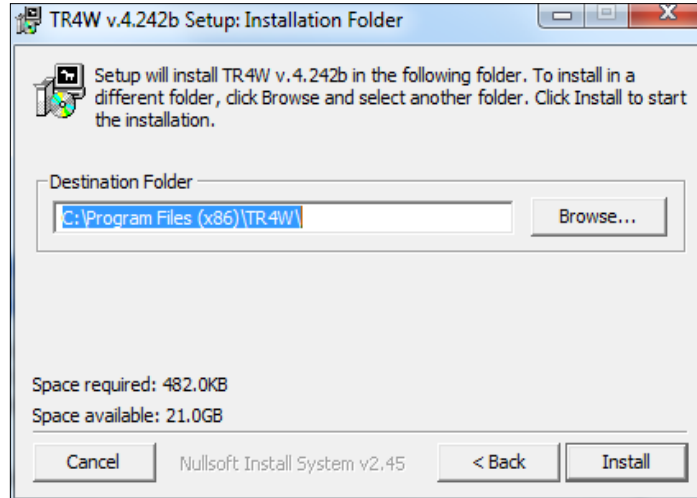


Figure 0-1

Click on next to continue the installation.

When click on next you will be asked where you want to store the TR4W program. Windows suggests that you store it in the Program Files folder



Click on the Install button and the program will install. When the installation is completed a TR4W icon will appear on your desktop. Clicking on the icon starts the program.



Figure 0-2

1.6 Program Startup Screens

The window below is the one that will appear each time you start. You will be asked to enter your call and select a contest to initiate. After the first time you use the program the window on the left will contain additional folders; one for each contest that you have selected previously. Once you have made and started using a particular contest selection then next time you start TR4W you can simply double click on the Contest Folder you wish to use. The program will start that contest using the configuration settings that you had previously entered when you last used it.

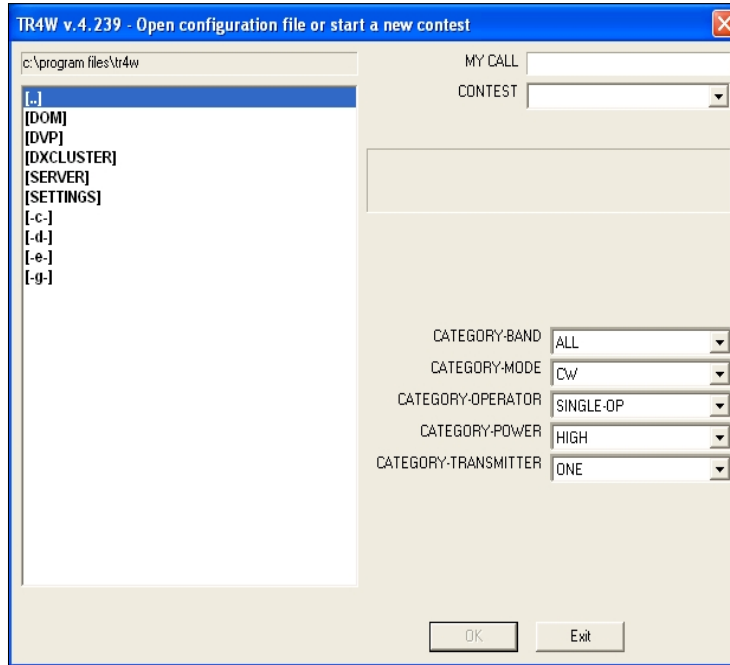


Figure 0-3

To make a new contest selection fill in your call and select a contest from the pull down list in the CONTEST box. If you are starting TR4W for the very first time we suggest that you start by selecting General QSO in the pull down list. Then select the desired value for each of the CATEGORY boxes in the lower left part of the window. If everything has been entered correctly you will be able to click on the OK and the program will open two windows: the **Main Window** and the **Function Keys** Window.

Main Window

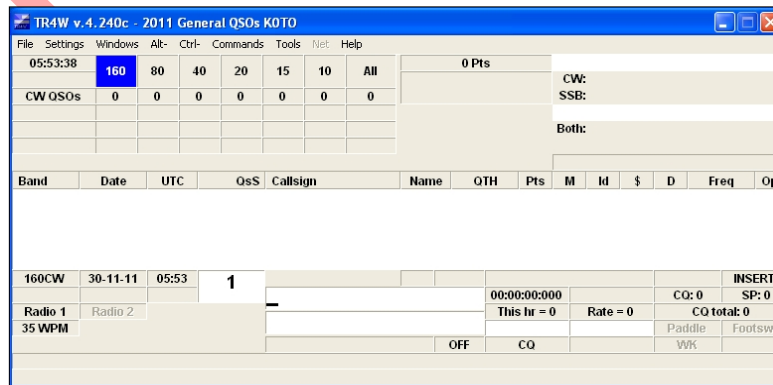


Figure 0-4

Function Keys window

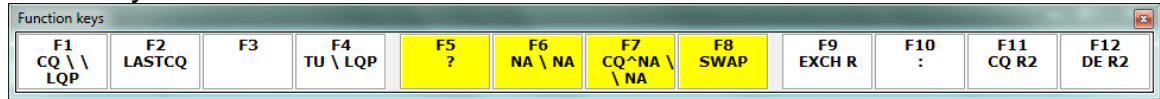


Figure 0-5

The **Main Window** name shows the version number of TR4W that is running and the name of the contest that has been selected together with the year and the call sign entered into the MY CALL box of the initial window.

Inside the Main Window is a number of sub-windows or boxes. Some of these boxes already have values and others are greyed out or blank. They are waiting for additional configuration statements or contest activity at which time they will have values placed into them by the program.

The cursor is located in the **Call** sub-window. The **Band** box shows 160CW, the **Date** box shows 30-11-11 [DD-MM-YY], the **Clock** box shows 05:53 [UTC] and the **QSO Number** box shows 1. These values are shown just below the bottom of the **Editable Log** sub-window. These are the values that will be logged into that sub-window when a QSO is completed.

Near the center bottom of the Main Window we see the **PTT** box is OFF, the **MODE** box shows CW meters, the **Operating Mode** box shows CQ.

Although Radio 1 is shown the box above it shows no frequency. That tells us that TR4W has not yet been interfaced with a radio. However, we could use the program to log QSO's even though we did not have a control interface established between the computer and the radio.

The cursor is in the **Call** window and we simply type the call we wish to enter and then press the **[ENTER]** or **[RETURN]** key. The cursor will move to the **Exchange** window. Next we can enter a name and QTH [state, prefix, city, etc] with a space separating name and QTH. Then press ENTER to have it logged.

We can change the Band by using **<Alt+B>** or **<Alt+V>** and we can change the transmitting Mode by using **<Alt+M>**. We can delete the last log entry by hitting **<Alt+Y>**. If we delete it by mistake then we can restore it using **<Ctrl+Y>**. These commands and others are found in the sub-menus under the **Alt-** and **Ctrl-** headings of the Main Window menu.

1.7 Program Windows -- Names and Colors

1.8 Configuring TR4W for your station

To set up TR4W to interface with your radio we will open the Settings menu heading and show the sub menus.

Settings menus

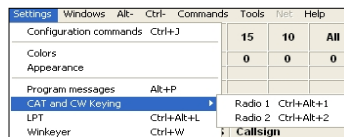


Figure 0-6

The Settings menu has several choices of sub menus. The 'CAT and CW Keying' sub menu has been selected because we wish to set up the control of a radio by the program. That sub menu has two alternative choices: 'Radio 1' or 'Radio 2'

1.8.1 Configuring the Radio

We start by selecting the Radio 1 sub-menu and clicking on it to bring up the window that is used to select the radio type set the COM port and the hand shaking between the computer and the radio. Every box which has a small, downward pointing triangle contains a list of choices for that particular box. By clicking on the triangle you will be shown the choices and you can click on one of them to select your choice for that box.

Before selecting values

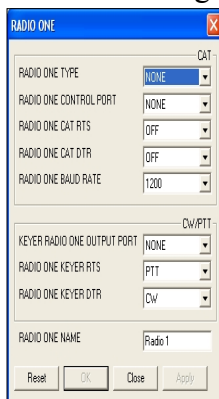


Figure 0-7a

After selecting values

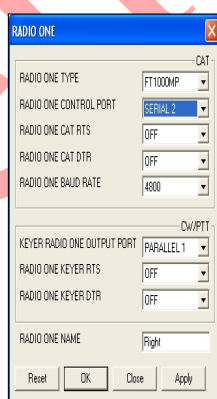


Figure 0-9b

The Figure 10a shows the initial settings when the program is opened for the first time and no Radio configurations have been selected.

The first time a change is made from any of the default values a corresponding Configuration Statement will be created and stored in the *TR4W.INI* file. Successive changes of that entry will modify that Configuration Statement. In Figure 1.10b shown above when the RADIO ONE TYPE

box was changed from 'NONE' to 'FT1000MP' the following Configuration Statement was generated and stored in *TR4W.INI*.

RADIO ONE TYPE = FT1000MP

The other changes between Figures 1.10a and 1.10b produce the following Configuration Statements which are also stored in *TR4W.INI*

RADIO ONE CONTROL PORT = SERIAL ONE

RADIO ONE CAT RTS = OFF

RADIO ONE CAT DTR = OFF

RADIO ONE BAUD RATE = 4800

KEYER RADIO ONE OUTPUT PORT = LPT1

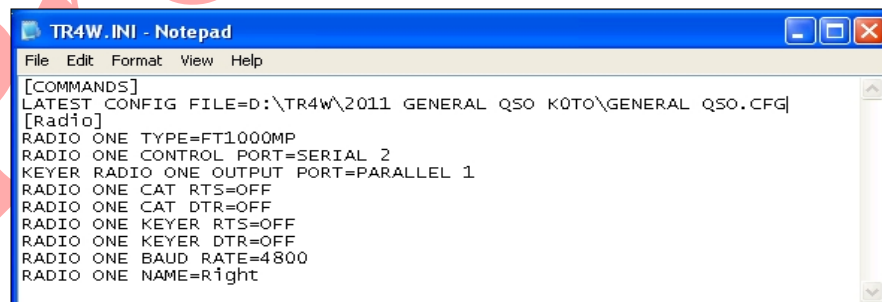
RADIO ONE NAME = Right

The next time that you start the program these saved Configuration Statements will be read during startup and their values rather than the default values will be used. You will not need to change these Configuration Statements values until you change the radio type or control port or the keying port.

In the example above Figure 1.10b shows that Serial Port 2 was selected to communicate with the radio. The FT1000MP value was selected from the pull down Type list. The RTS and DTR lines are not used to communicate between the radio and the computer so they were set to OFF. Radio 1 will be keyed using LPT1 which means there are no Serial Port lines used in controlling PTT or keying the radio. Therefore the RTS and DTR lines are set to OFF. We have changed the Radio One Name from 'Radio 1' to 'Right' to indicate its position on the operating desk. We could have picked any other text we wished instead of 'Right'.

When we have finished making configuration selections we click on the 'Apply' button and Configuration Statement entries are made into the *TR4W.INI* file which is stored in the [SETTINGS] folder that is in the [TR4W] folder located on the hard drive.

At this point there is very little information that has been placed into the *TR4W.INI* file. However, if we open the [SETTINGS] folder which is inside the [TR4W] folder and then open *TR4W.INI* using Notepad or a similar text editor we will see:



```
TR4W.INI - Notepad
File Edit Format View Help
[COMMANDS]
LATEST CONFIG FILE=D:\TR4W\2011 GENERAL QSO KOTO\GENERAL QSO.CFG
[Radio]
RADIO ONE TYPE=FT1000MP
RADIO ONE CONTROL PORT=SERIAL 2
KEYER RADIO ONE OUTPUT PORT=PARALLEL 1
RADIO ONE CAT RTS=OFF
RADIO ONE CAT DTR=OFF
RADIO ONE KEYER RTS=OFF
RADIO ONE KEYER DTR=OFF
RADIO ONE BAUD RATE=4800
RADIO ONE NAME=right
```

Figure 0-8

The [COMMANDS] and [Radio] lines are comments. Comments are enclosed in [] .

The next line,

LATEST CONFIG FILE = D:\TR4W\2011 GENERAL QSO K0TO\GENERAL QSO.CFG

was created when we selected the Contest earlier. The current year and the MY CALL entry were added to the name of the contest and used to create a new folder with that name. This new folders contains the **GENERAL QSO.CFG** file. By putting this line in TR4W the program knows which folder is being used for the contest you desire to operate. If we locate the [2011 General QSO K0TO] folder, which is in the [TR4W] folder, and then open the **GENERAL QSO.CFG** file inside it with notepad we will see:

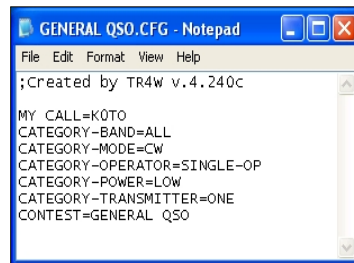


Figure 1.12

These are Configuration Statements that were created when we place the Call we wanted to use in the contest in the MY CALL box, made the CONTEST selection and then filled in the CATEGORY boxes when we were viewing the window shown in Figure 1.4 as we started the TR4W program.

1.8.2 Configuring the Station Control

In the previous Section we configured the program to be able to communicate with the radio to read and control the settings of the radio. In this section we will configure the program to control when the radio transmits and control the sending of CW and SSB <DVP> messages.

To configure the station control from the computer we go back to the SETTINGS menu and then select the LPT sub menu. That will bring up the LPT window.

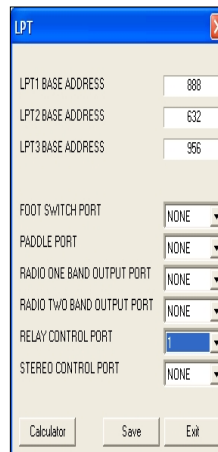


Figure 1.13

The default LPT1, LPT2, LPT3 BASE ADDRESSES are the standard ones and should not need to be changed. In this example there is no Foot Switch, no Paddle Port, and the Band data is not being supplied by the LPT1 port lines to other station equipment so no entry changes are made for those choices.

The station in this example uses a Top Ten DXDoubler for controlling the microphone and key connections to the radios in the station. When changing from Radio 1 to Radio 2 a relay in the DXDoubler unit needs to be activated. This is done using one of the LPT control lines. The Relay Control Port is specified as 1 which means that LPT Port 1 will supply the signal that will tell the Top Ten unit when to change the radio inputs. If there was only one radio there would be no need to select radios and this entry would be NONE.

Clearly, there are many options because contemporary Radio Contest stations may have very elaborate station control that is managed by the computer as the contest activity happens.

1.8.3 Configuring the Computer-Sound Interface

1.8.4 Testing the Configuration Setup

2 Beginning Operating

The TR4W Main Window, Figures 1.7 and 1.8, shows a lot of information which you can use to keep you abreast of your status within the contest. This information is presented within the Main Window in a collection of sub windows and boxes. To see the names of all of the sub windows and boxes you can examine Figures 1.7 and 1.8 preceding or look in the TR4W Reference Manual. In the sections following we show the names and locations of the sub windows that are of primary interest when you are either using the CQ operating mode or using the Search and Pounce [S & P] operating mode.

2.1 First QSO in CQ Mode

TR4W has two operating modes; CQ operating mode and Search and Pounce [S & P]. What this means in practice is that the responses of the TR4W program will be different to the things you type depending on which of the modes it is in at the time you do the typing. Initially this may sound confusing but, fortunately, the learning curve for becoming accustomed to the two modes is neither steep nor long. You can count on being able to handle most of the things you wish do in either mode without much effort. Almost certainly as you begin to use the program you will find that something you wish to do will cause you frustration because it does not seem to be part of the regular pattern of operation in that mode.

An example of this might be the first time that you make a logging entry error and you realize is incorrect just after you type [ENTER] to record it in the log. Naturally, if you make no typing errors and you never miss something that is being sent to you by the station you are working, you will never experience such a situation. For the rest of us there is a quick procedure for making a correction to a previous entry – particularly one of the last five or so log entries. For now, let's assume we are members of the 'golden log' group and have never made an error in our logging entries. Later we will consider what to do if somehow it is imperative that we change a log entry before it becomes permanent.

The screen below is one for a CQ WWDX CW contest. The name of the contest is on the top line of

The screenshot shows the TR4W software interface for a 2011 CQ-WW-CW KOTO contest. The window title is "TR4W v.4.241 - 2011 CQ-WW-CW KOTO". The interface includes a menu bar (File, Settings, Windows, Alt-, Ctrl-, Commands, Tools, Net, Help), a status bar (20:00:18, 160, 80, 40, 20, 15, 10, All, 0 Pts), and a main display area with a table for logging entries. The table has columns: Band, Date, UTC, QsS, Callsign, DX, Zn, Pts, M, Id, \$, D, Freq, Op. A single entry is visible: 160CW, 22-12-11, 20:00, 1. Below the table, there are fields for Radio 1 (35 WPM), Radio 2, and a mode selector (OFF, CQ). Summary statistics at the bottom show: 00:00:00:000, This hr = 0, Rate = 0, CQ: 0, SP: 0, CQ total: 0, Paddle, Footsw., WK. The text "[Type t" and "xt]21" is partially visible at the bottom left and right respectively.

Figure1.14

the Main Window together with the TR4W version number. This is typically the window that will appear whenever you start TR4W in a contest. This is the CQ operating mode. You can see that displayed in the Op Mode sub window. Also shown on startup is the CW Speed and the UTC time. The cursor is initially at the left edge of the Call window.

Let's log an imaginary QSO in CQ Mode. The first thing you need to do is to call CQ.

For now, assume that this is a CW contest. How do you call CQ? Easy! Just press <Enter>. You should hear the following transmission coming from your PC's speaker at 35 wpm:

CQ TEST K0TO K0TO TEST
<The call sign sent will be your call sign, not K0TO >

If you have your radio configured so that it is controlled by the computer and the keying is also controlled by the computer and the radio is turned on you should see that the radio is being keyed and that is the message being sent.

Now, pretend that someone has come back to your CQ. For now, let us assume that the station is G4AMJ. Type this callsign on the keyboard and as you do you will see the letters and numbers appear in the Call window. If you make a mistake, just use the backspace key on the keyboard to erase the most recent letter, then enter the correct letter. As soon as you have finished typing the callsign, press <Enter>. Now you should hear the following from the PC speaker: [and being sent by the radio if it is configured correctly and is turned on].

G4AMJ 5NN 03

Note: The 03 is the Zone that was entered when the CQ WWDX contest was selected. You may see it by <CTRL+J> **MY ZONE** parameter.

As soon as you pressed the [Enter] key, the Exchange window will have entered into it TR4W's guess at what the station will send you (without the RST, which is assumed to be 599). In this case it will be a zone that has been selected based upon the country prefix.

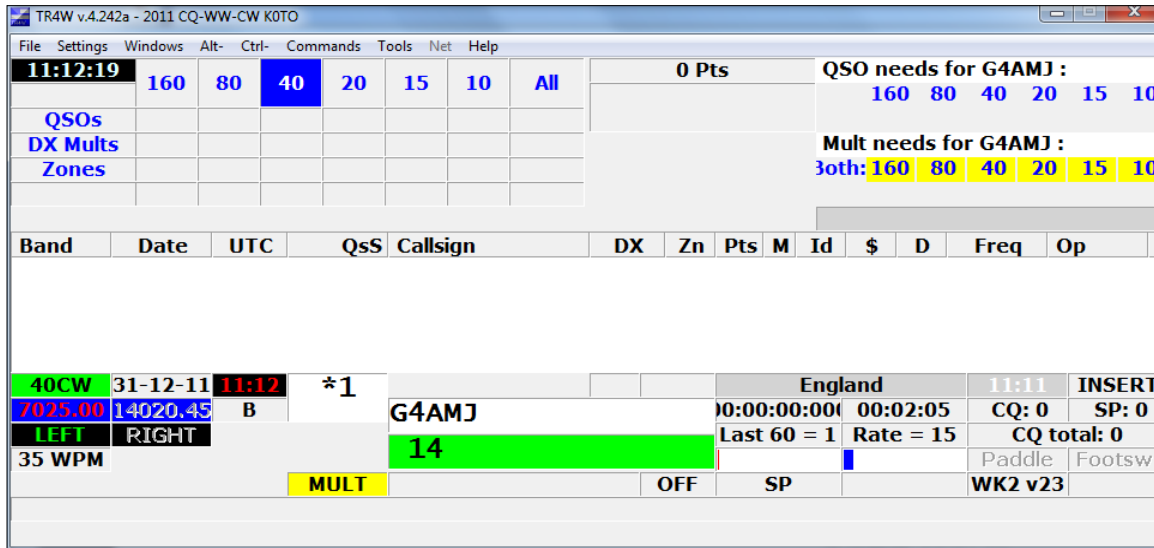


Figure 1.15

Additional information will have been entered into several different sub windows and boxes based upon the callsign you just typed. The name 'England' has been loaded into the *QTH* box. The *Multiplier Needs* sub-window and the *QSO Needs* sub-window have been activated. The *MULT* box has been loaded and the color changed to show this is a needed multiplier. The QSO Matrix sub-window has the QSO's, DX Mults and Zones rows identified. The *OP Mode* box is now showing SP to indicate that we are no longer in CQ Mode but rather in Exchange mode. The *PTT* box is showing OFF to indicate you are not transmitting at the moment. The LOG Entries sub-window is still blank because we have not logged the contact yet. But on the left side, just below that sub-window we see the entries that will be logged when we are finished. From left to right we see the band, date, time and number. [40CW, Dec 31, 2011, 11:12 UTC, 1]. The Call window has the call and the Exchange window shows the zone that TR4W thinks this station will be sending.

After the computer has finished sending, pretend that you have received an exchange from the station you are working. If the information is different from what the computer has guessed it to be, then simply replace the guess with the received information. If you made a mistake with the other station's call, you can enter the correct call in the Exchange window and the program will automatically correct the other station's call before logging the QSO. If the received information matches the guess, you need do nothing. Now press <Enter>, which will cause the computer to send a brief message to end the QSO. That's all there is to it. The QSO is complete and has been logged. It has been written to your disk, and it also appears on the line above the Call Window, a section of the screen called the "editable log".

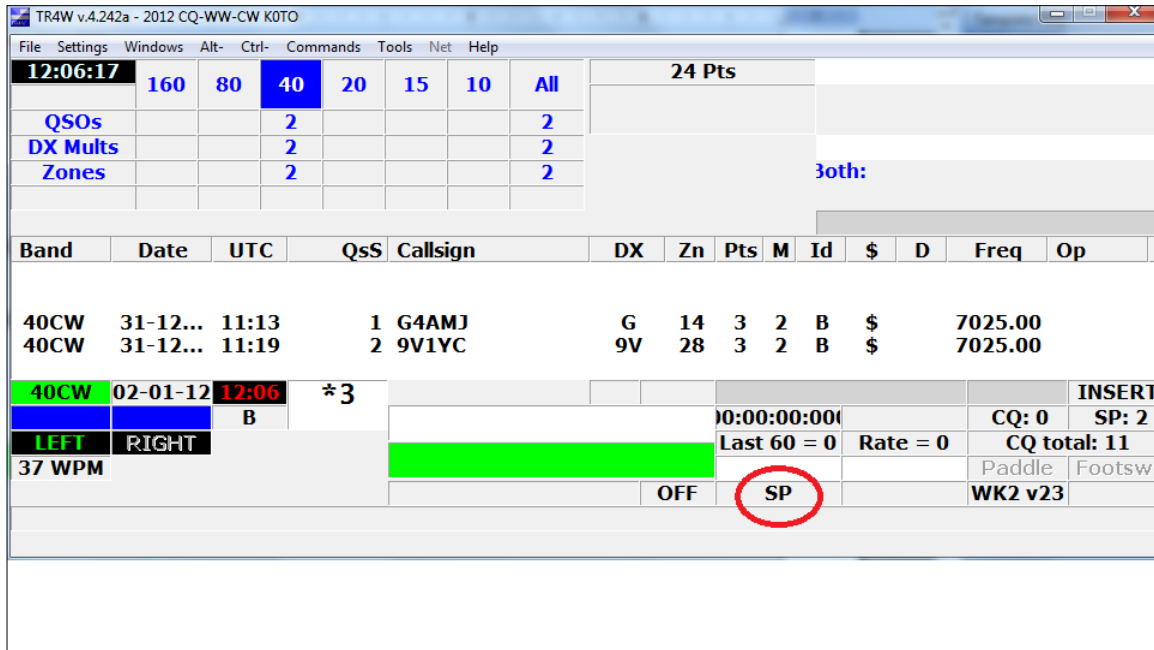
The editable log is important. It shows the last few QSOs. Every time that you make a new QSO, the editable log scrolls upward by one line, and the topmost QSO disappears off the screen. If you need to change the contents of a QSO that has scrolled off the top of the screen, you may press <ALT-L> to bring up the search facility. If the searched for call is found, you may then edit the exchange or correct the call.

Band	Date	UTC	QsS	Callsign	DX	Zn	Pts	M	Id	\$	D	Freq	Op
40CW	31-12...	11:...	1	G4AMJ	G	14	3	2	B	\$		7025....	

Other things that happen once your QSO is complete are that the Exchange Window disappears and the cursor returns to the left edge of the Call Window. You will also notice that several other windows on the screen now display updated information, to reflect the QSO you just made. But what are you waiting for? The cursor is sitting there blinking, waiting for you to make another QSO. Quick! Time is awasting. Somebody will steal your frequency if you don't hurry. Call CQ again by pressing <Enter>. And now you're off, running stations for the first time with TR4W.

2.2 First QSO in S&P Mode

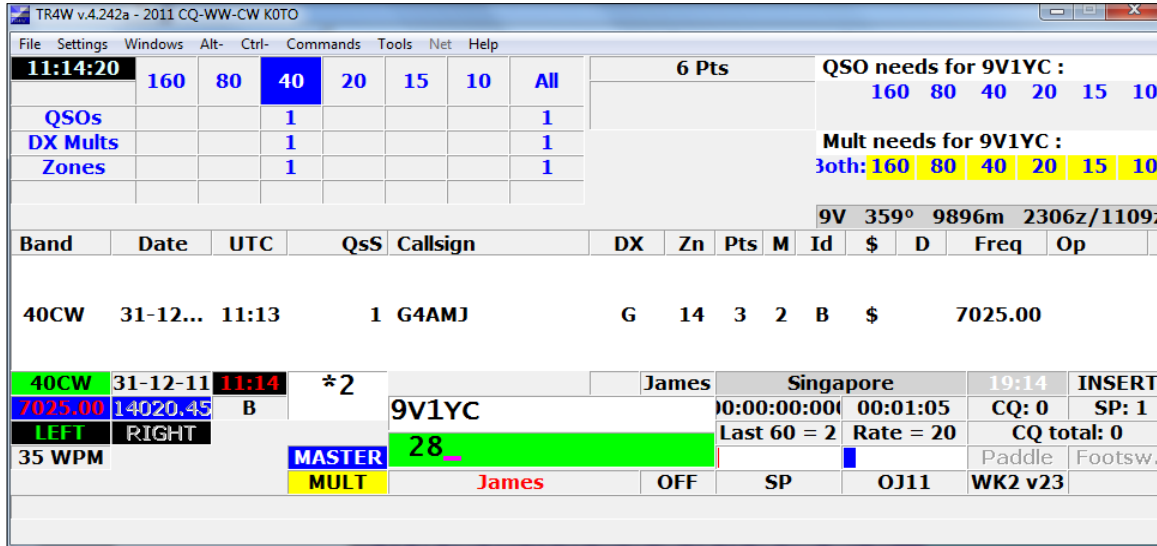
What if you want to call a station instead of calling CQ? That's what S&P Mode is for. To put yourself in S&P Mode, simply press the <Tab> key. The Exchange window appears (if you are using a color monitor, this window will be in a different color than it has in CQ Mode, to remind you that you are in S&P Mode), as shown in Figure 2.23. Also, the **OP MODE** Window will switch from **CQ** to **SP**. Notice that your cursor has not yet moved from the Call Window (since TR4W does not yet know whom you intend to call).



Now, let's pretend that you have just come across a needed multiplier. Enter his callsign and then hit <Enter> . As soon as you press the <Enter> key, TR4W will instantly check to see if the station is a dupe. If it is not a dupe, TR4W will call the station for you, and the cursor moves down to the Exchange window.

Just as in CQ Mode, you now type the exchange (if it's necessary; as before, the default RST is 599 and TR4W can usually enter the correct exchange information in the Exchange Window for you), followed by <Enter>.

If you happen to have a valid TRMASTER.DTA file in your path, you will see activity in the line below the Call Window as you enter the call. The meaning of what is happening will be explained later, although you may find it interesting to watch carefully to see if you can decide for yourself just what TR4W is telling you.



The default installation does not install a TRMASTER.DTA file, so this activity will not normally be visible. Reference the TRMASTER basic and advanced sections for more information.

If the station is a dupe, TR4W will not call the station; also, the program will clearly display the word DUPE on the screen.

The exchange will be sent and, as it is being transmitted, the QSO is logged. To return to CQ Mode from S&P Mode, you may press either <Esc> or <Shift-Tab> .

In general, the <Esc> key is used to perform an emergency halt to whatever task TR4W is currently performing. With only a couple of exceptions, if TR4W is sending a CW or DVP message, pressing <Esc> once will instantly abort the transmission. The two exceptions are: if you are performing some other action inside TR4W at the same time that the message is being sent (such as changing the CW memories or setting the alarm).

Sometimes, you will want to switch to S&P Mode and send your call, all in a single operation. This typically happens when you are scanning the band and have found a place you want to drop your call (perhaps to call someone). You can do this by simply pressing the space bar. This also works if you are in CQ Mode and there are no characters in the Call window. If you know the callsign of the station you are calling, you can type it into the Call Window while your call is being sent. After you type it in, you should type alt-Z. This will move the cursor down to the Exchange Window (Unless); the default, though, is TRUE.

Now enter any initial exchange information you receive (e.g., name and QTH). Note that if you have a rig interfaced to the computer, you can cause TR4W to switch automatically to S&P Mode as soon as you begin to scan the band by using the **AUTO S&P ENABLE** command.

As we have seen, when TR4W begins to run, it reads a configuration file (usually <contest_name>.CFG contained therein to set many of its internal parameters. You can make changes to the configuration file, either within TR4W itself or by using an editor like Notepad.

In this way you can personalize the operation of TR4W so that it works in a way that suits you.

Note: TR4W uses configuration files. The global file is **TR4W.CFG** in the main TR4W directory and

<contest_name>.CFG in the contest directory below \TR4W.

Detailed information on how to make these changes is provided in chapter 5.

The <CTRL-J> key is used to display and control many of the program's operating parameters, including most of those that are initialized by the configuration files. If you change a parameter with the <Ctrl-J> command, TR4W will ask if you want to make that change in the configuration file, so that it will be remembered the next time that you start TR4W.

Almost all the parameters that can be changed in the configuration file will be given a default reasonable value if TR4W finds no specific entry for that parameter in the file. You may examine a configuration file by using an editor to view the *TR4W.CFG* in your \TR4W directory or <contest_name>.CFG in the contest_name directory (For example . "*CQ-WW-CW.CFG*"- also accessible by **FILE** then **OPEN LOG DIRECTORY**).

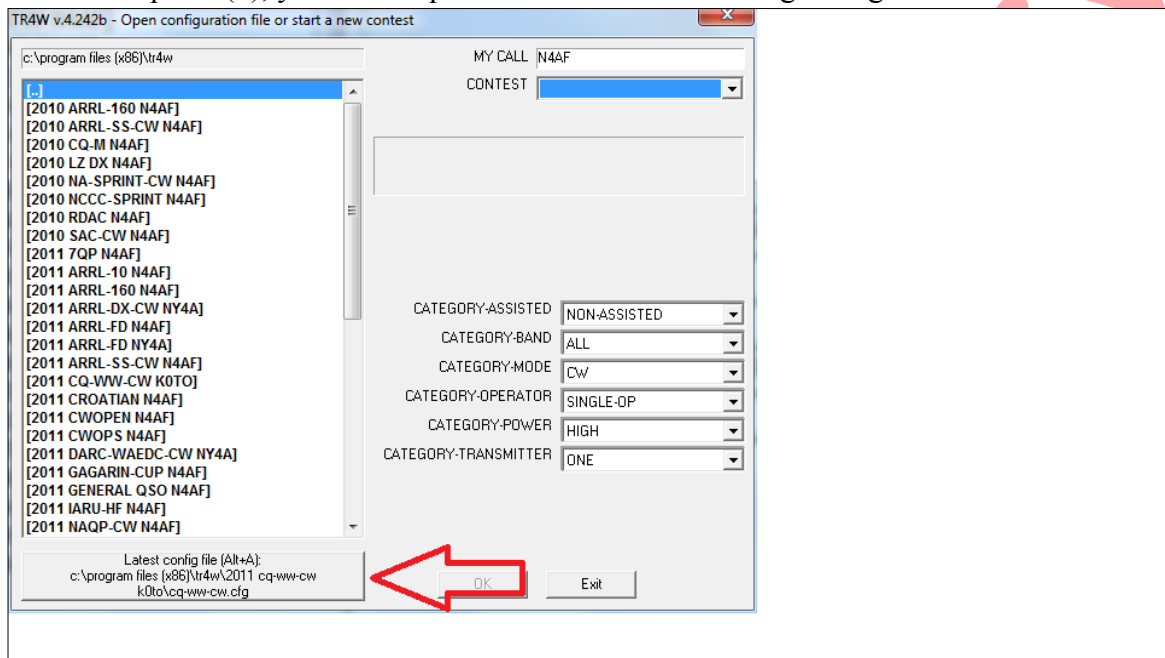
2.3 Regular Operation

2.3.1 Selecting a Supported Contest

Contest selection occurs at TR4W initialization. You have two options.

1. Select an contest (directory) that already exists on your PC
2. Select a new contest

In the case of option (1), you will be presented with the following dialog:

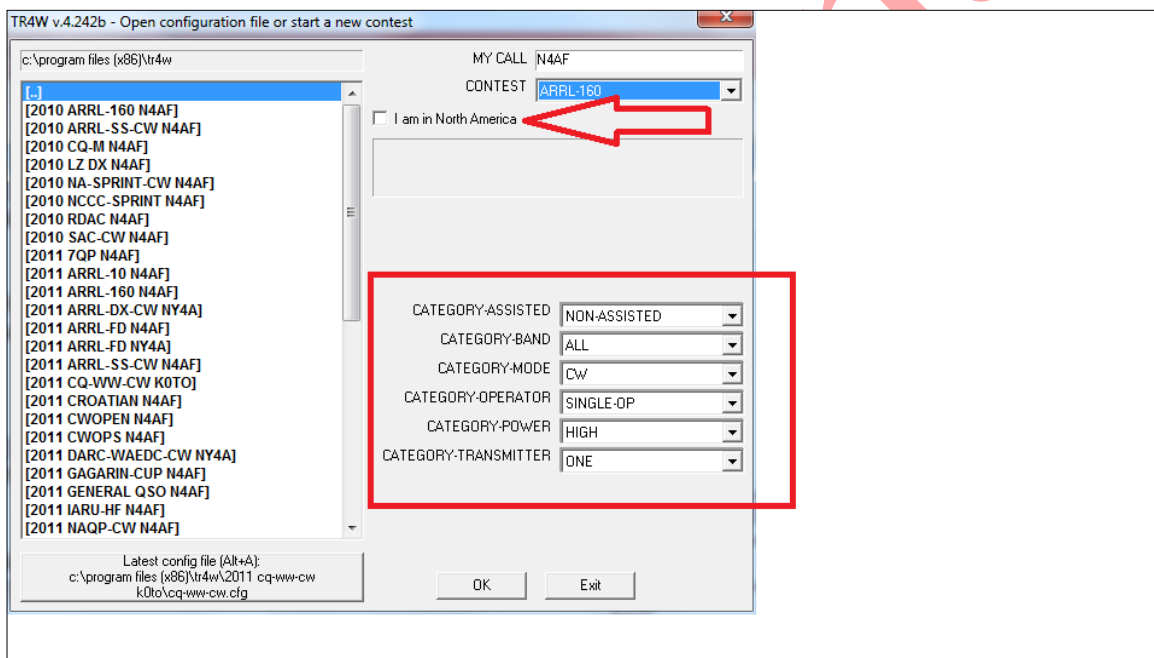
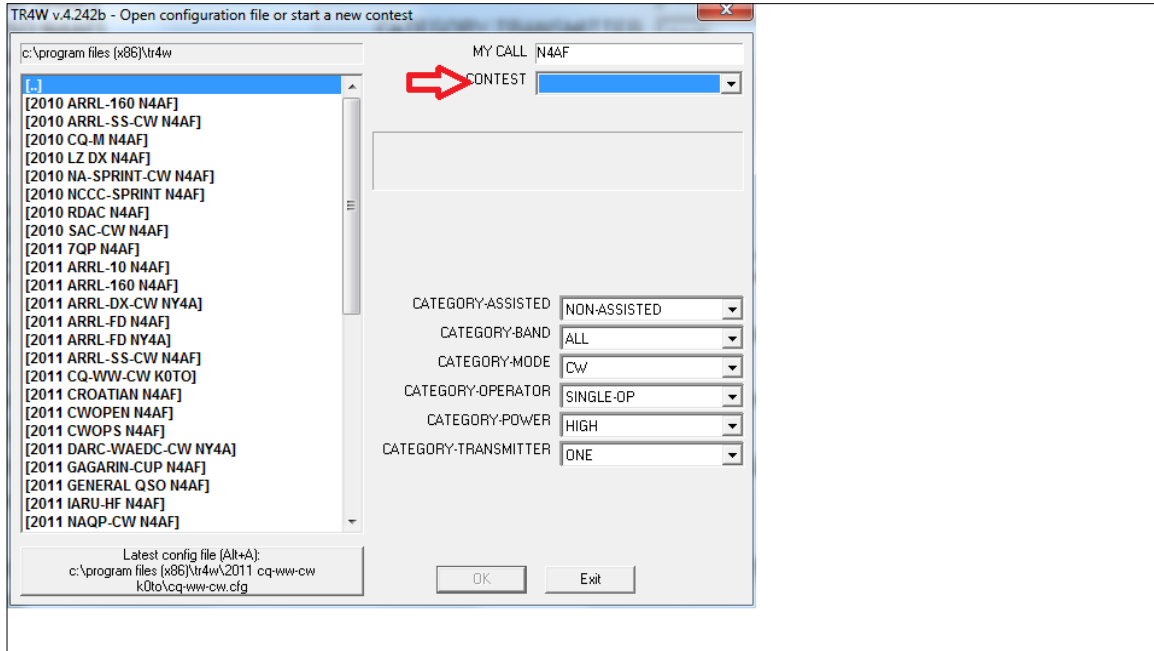


Note that the LAST active configuration is listed at the bottom. You may just select this to go back to the last contest entered.

It is *extremely important* that attention be paid to all prompts on this initial dialog. It governs HOW your Cabrillo log will be generated !

When you select a contest, you will be presented with the configuration file name found in the contest directory. Normally you can just select it and TR4W will initialize.

Option (2) will start the new contest dialog. This occurs when you make a selection with the CONTEST radio button.

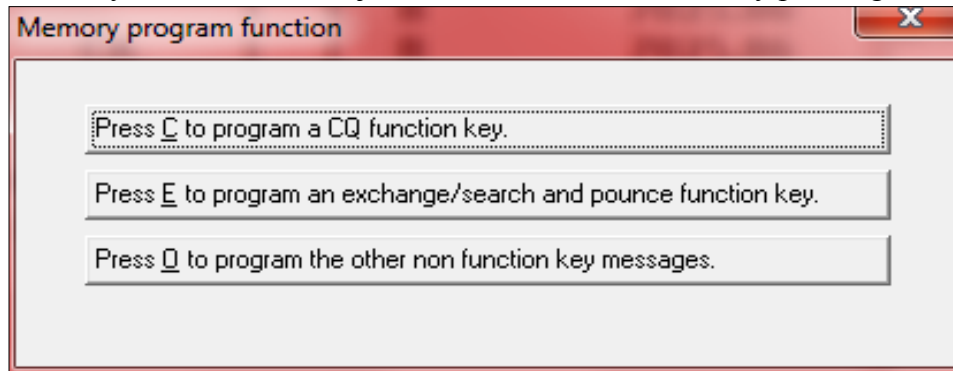


It is important to note the checkboxes. In this case “I AM IN NORTH AMERICA”. Failure to check it will not produce the follow on dialog that requests your state. This will not produce the correct Cabrillo ! Likewise the CATEGORY fields are what will be filled into your Cabrillo headers.

TR4W will now check for an extant directory for the contest and warn you that you are going to overlay the existing config file if you proceed. Normally, you can safely overlay the config file and proceed to initialize TR4W.

2.3.2 Custom Messages

TR4W will use default messages for a contest but it usually makes sense to customize messages. You may customize messages with a text editor by editing your local contest messages in <CONTEST_NAME.CFG> file. Where CONTEST_NAME is one of the TR4W CONTESTs. Normally, customization is just done from within TR4W by pressing <ALT+P>



Messages are broken down by their function:

- CQ
- Exchange
- Other

Special characters in messages are summarized as follows:

A complete list of message characters follows:

Symbol	Function
#	Passes the number of QSO. May be accompanied by + or - and a single integer to change the number
@	Sends the callsign entered in the callsign box
\$	Sends greetings and name if known (ie, GM JOHN). Adds a space at the end of message
%	Passes the name of the database name (add a space at the end, if there is a name)
:	Sends the characters from the keyboard until you press ENTER or ESCAPE
~	Transmits the appropriate greetings with no name (GM, GA or GE) based on callsign
\	Sends call sign used in the competition (as determined by MY CALL =)
	Passes the name that has been copied to the exchange window (RST QTH NAME Exchange)
[Expects the number to be entered to use as RST - and give it to CW
]	Repeats the complete RST, as the team was transferred to [
_	Space (used at the beginning or end of your message, as gaps in the *. CFG ignored)
^	Half of the space in any location messages
}	Transmits a prefix or suffix callsign only corrected
)	Sends call sign in the last QSO editable window
(Passes the name obtained in the previous Sprint QSO (at the bottom of the editable window)
>	Clears the detuning RIT - be associated with the radio interface and works with Kenwood and Yaesu transceivers some
+	End of message (AR)
<	End of (SK)
=	The double dash (BT)
!	QRL? (SN)
&	Wait (AS)

Lets code up a cq message. <ALT+P> as above.
 Now press <C> to view present CQ message settings:

Command	Message	Caption
CQ CW MEMORY F1	CQTEST \ \ TEST	
CQ CW MEMORY F2	LASTCQREQ	LASTCQ
CQ CW MEMORY F3	5NN NC	
CQ CW MEMORY F4	TU \ TEST	
CQ CW MEMORY F5		
CQ CW MEMORY F6	DE \	
CQ CW MEMORY F7	SRI QSO B4 TU \ TEST	
CQ CW MEMORY F8	SWAPRADIOS	SWAP
CQ CW MEMORY F9	EXCHANGERADIOS	EXCH R
CQ CW MEMORY F10	:	
CQ CW MEMORY F11		
CQ CW MEMORY F12	SWAPRADIOS SAPMODE \	DE R2
CQ CW MEMORY CONTROLF1		
CQ CW MEMORY CONTROLF2		
CQ CW MEMORY CONTROLF3		
CQ CW MEMORY CONTROLF4		
CQ CW MEMORY CONTROLF5		

We presently have F1 assigned to “CQTEST \ \ TEST” where “\” represents MYCALL as set on the initial CONTEST dialog.

So lets try to change the F1 CQ message to insert a half space between CQ and TEST.
 You can press enter whilst F1 line is selected or double click on it.

Program message

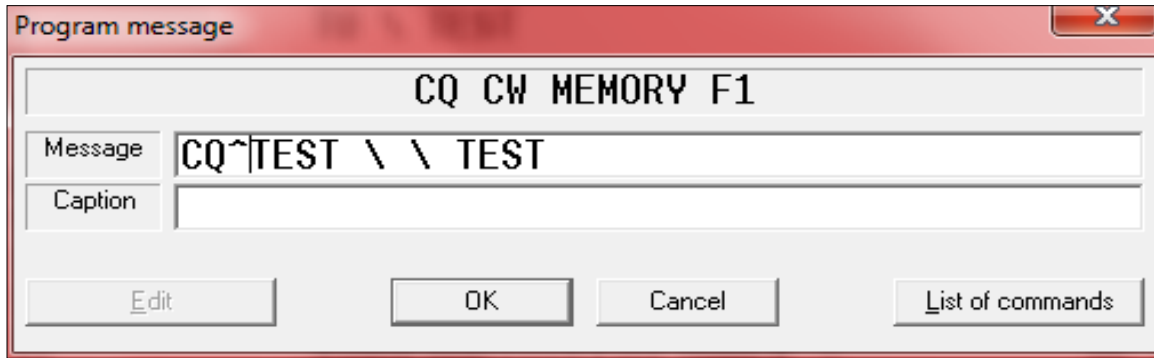
CQ CW MEMORY F1

Message: CQTEST \ \ TEST

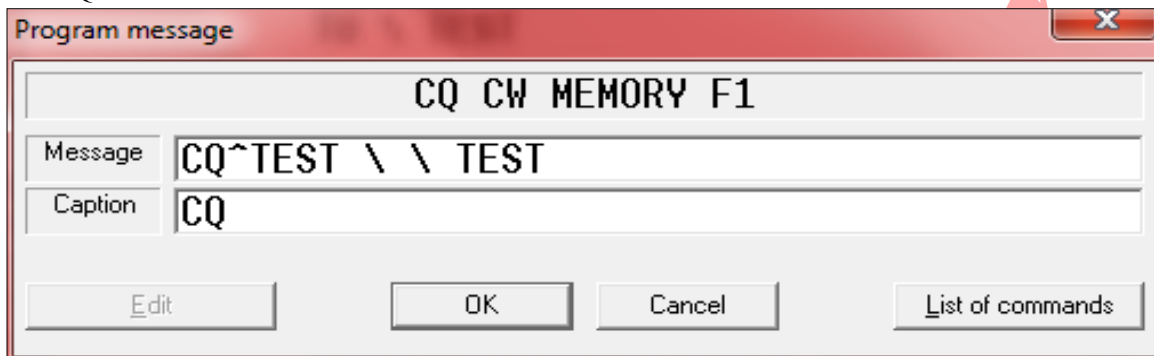
Caption:

Buttons: Edit, OK, Cancel, List of commands

Select the line with your mouse and change “CQTEST” TO “CQ^TEST”



Note the “OK” button is now selectable. Before selecting it, give the F1 CQ key a caption by typing in “CQ”



Now select “OK”. And X out of the **Program message** window. Assuming you have your function keys displayed you should see the new caption.
TIP: Hotkey = <CTRL+SHIFT+2>



One more example. We want to change the defaults for the QSL message so that our RIT is reset. Again <ALT+P> to enter the **MEMORY PROGRAM FUNCTION** window. But this time we will choose (O)ther.

Command	Message	Caption
CALL OK NOW CW MESSAGE	} OK %	
CQ CW EXCHANGE	5NN NC	
CQ CW EXCHANGE NAME KNOWN	5NN NC	
QSL CW MESSAGE	TU \ TEST	
QSO BEFORE CW MESSAGE	SRI QSO B4 TU \ TEST	
QUICK QSL CW MESSAGE	TU	
REPEAT S&P CW EXCHANGE	5NN NC	
S&P CW EXCHANGE	~ %5NN NC	
TAIL END CW MESSAGE	R	
SHORT 0	T	
SHORT 1	A	
SHORT 2	2	
SHORT 9	N	

Now select “QSL CW MESSAGE”

Program message

QSL CW MESSAGE

Message:

Caption:

and add

the “RESET RIT” command (>)

Program message

QSL CW MESSAGE

Message:

Caption:

Note that (O)ther programmed messages do not have a caption, so select “OK” and X out.

Note: Not all transceivers support the ‘reset rit’ command.

Please note that messages must be entered in UPPER CASE.

More message customization is covered in the SO2R Advanced and TRMASTER.DTA Advanced sections.

2.3.3 Sending Messages to the Rig

If your radio is connected through an interface to the computer, then using the control characters <03> and <04> can send commands. Use the following sequence:

```
; To pass "string" on the active radio
<03>SRS=string<04>
; Pass "string" on non-active radio<
<03> SRSI = string <04>
; Pass "string" to radio 1
<03>SRS1=string<04>
; Pass "string" to radio 2
<03>SRS2=string<04>
```

For example, for most Kenwood transceivers FL ... switch filters.

```
<03>SRS=FL010009;<04>
```

switch the narrowband filter. If you program a command while the program is using <ALT+P>, then to enter control characters using <CTRL+P>. The hexadecimal value <CTRL+C> = 3, <CTRL+D> = 4. The program takes a sequence of commands between the two characters and <CTRL+C> <CTRL+D>. So it will not execute commands that contain the code 4 - it will be perceived as the end of the command sequence. For example, the message

```
CQ CW MEMORY AltF8 = <03>SRS1=xxx<01><04><04>
```

will be interpreted as SRS1 = xxx <01>.

1.1.1 Other Kenwood transceivers CAT commands

Reconstructed above. Is equivalent to pressing the UP button on the microphone

```
;UP  
<03>SRS=UP;<04>
```

Reconstructed below. Equivalent to pressing DOWN on the microphone

```
;DOWN  
<03> SRS = DN; <04>
```

Filter width 8.83 MHz - 500 Hz and 445 kHz filter width - 500 Hz

```
;FILTER 1 = 0.5kHz, FILTER 2 = 0.5kHz  
<03>SRS=FL009009;<04>
```

Filter width 8.83 MHz - 2.4 kHz, 445 kHz filter width - 500 Hz

```
;FILTER 1 = 2.4kHz, FILTER 2 = 0.5kHz  
<03>SRS=FL007009;<04>
```

Filter width 8.83 MHz - 2.4 kHz filter width 445 kHz - 2.4 kHz

```
;FILTER 1 = 2.4kHz, FILTER 2 = 2.4kHz  
<03>SRS=FL007007;<04>
```

Select VFO A mode

```
;VFO A MODE  
<03>SRS=FR0;<04>
```

Select VFO B mode

```
;VFO B MODE  
<03>SRS=FR1;<04>
```

Select MEMORY mode

```
;MEMORY MODE  
<03>SRS=FR2;<04>
```

To include FINE STEP On

```
;FINE STEP ON  
<03>SRS=FS1;<04>
```

Отключить FINE STEP Off

```
;FINE STEP OFF  
<03>SRS=FS0;<04>
```

Transceiver block

```
;LOCK ON  
<03>SRS=LK1;<04>
```

Unlock the transceiver

```
; LOCK OFF  
<03>SRS=LK0;<04>
```

Set the memory channel 2

```
; SET MEMORY CHANEL 2  
<03>SRS=FR2;MC 02;<04>
```

Set the memory channel 75

```
; SET MEMORY CHANEL 75  
<03>SRS=FR2;MC 75;<04>
```

Set the type of radiation LSB

```
; SET LSB MODE  
<03>SRS=MD1;<04>
```

Set the type of radiation USB

```
; SET USB MODE  
<03>SRS=MD2;<04>
```

Set the operating mode CW

```
; SET CW MODE  
<03>SRS=MD3;<04>
```

Set the type of radiation FM

```
; SET FM MODE  
<03>SRS=MD4;<04>
```

Set the type of radiation AM

```
; SET AM MODE  
<03>SRS=MD5;<04>
```

Set the type of radiation FSK

```
; SET FSK MODE  
<03>SRS=MD6;<04>
```

Set the operating mode CW-R

```
; SET CW-R MODE  
<03>SRS=MD7;<04>
```

Set the operating mode FSK-R

```
Set; FSK MODE-R  
<03>SRS=MD9;<04>
```

Insert AIP

```
;AIP ON  
<03>SRS=MX1;<04>
```

Disable AIP

```
;AIP OFF  
<03>SRS=MX0;<04>
```

Set the minimum PITCH

```
;LOW PITCH  
<03> SRS = PT00; <04>
```

Set the maximum PITCH

```
;HIGH PITCH  
<03> SRS = PT08; <04>
```

PITCH value changes discretely and can have 9 values - from 00 to 08.

Clear frequency RIT / XIT (works w/ K3 also)

```
;CLEAR RIT/XIT  
<03>SRS=RC;<04>
```

Increase the frequency of RIT / XIT (K3 Also)

```
;RIT/XIT UP  
<03>SRS=RU;<04>
```

Reduce the frequency of RIT / XIT (K3 Also)

```
;RIT/XIT DOWN  
<03>SRS=RD;<04>
```

Set the display mode of SWR

```
;DISPLAY SWR  
<03>SRS=RM1;<04>
```

Set the display mode of ALC

```
;DISPLAY ALC  
<03>SRS=RM3;<04>
```

Set the display mode dB

```
;DISPLAY dB  
<03>SRS=RM6;<04>
```

Turn RIT

```
;RIT ON  
<03>SRS=RT1;<04>
```

Disable RIT

```
;RIT OFF
<03>SRS=RT0;<04>
```

Turn the transceiver on the transfer

```
;TX ON
<03>SRS=TX;<04>
```

Turn the transceiver to receive

```
;RX ON
<03>SRS=RX;<04>
```

Reproduction of synthesized voice

```
;GENERATION OF SYNTHESIZED VOICE
<03> SRS = VR; <04>
```

Include XIT

```
;XIT ON
<03>SRS=XT1;<04>
```

Disable XIT

```
;XIT OFF
<03>SRS=XT0;<04>
```

2.3.4 Personalized Greetings

Messages can be programmed so as to include the names of station operators and appropriate greetings:

Symbol	Function
%	name (must be customized in TRMASTER)
~	GM, GA, GE (depends on the local time correspondent)
\$	GM and name

If the name specified CLUB, this name is ignored. Greetings may also depend on local time and the individual values determined from the file **HELLO.DAT**. It should be a simple text file from the working directory TR4W as follows: the abbreviation of the country - a gap - a greeting, such as:

```
DL MOIN
EA GRS
EU ZDR
F BJR
The HELLO
LA HEI
OH HEI
OK AHOJ
OM AHOJ
SM HELLO
AU ZDR
UR ZDR
VK GDAY
```

More data on TRMASTER customization may be found in the TRMASTER Advanced section.

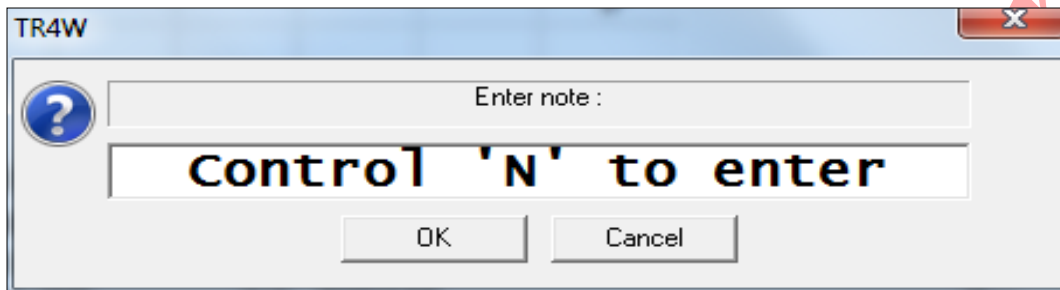
3 Alarms and Notes

TR4W tracks how many minutes have passed since your last QSO. By setting <CTRL+J> **WAKE UP TIME OUT = X** where “X” is the number of minutes elapsed, TR4W will sound a beep every minute until you work another station.

NOTES

The NOTE facility allows entry of notes into the log via <CTRL-N>.

At the end of the contest notes can be read by selecting **EXPORT** then **NOTES**. This will produce a screen listing NOTES with the option to write it to *NOTES.TXT* in the current contest directory. In the heat of a contest, this can be very useful for noting conditions or a busted call.



4 Special Operating Modes

4.1 Using the Bandmap

The bandmap is central to identifying calls and their frequencies on a band. The entries in the bandmap are from the DXCluster spots or from entries made by the contest operator as he tunes across the band.

Bandmap may be activated via **<CTRL+J> BAND MAP ENABLE = TRUE.**



The Bandmap window may be toggled via **< Ctrl+Shift+` >**. By default, it shows the stations on the current band and mode.

By pressing the right mouse button in the window the Bandmap menu appears. Additional commands allow you to change the options:

- ALL BANDS BAND MAP - display spots on all bands.
- BAND MAP ALL MODES - display all types of modulation (CW and SSB).
- BAND MAP DISPLAY CQ - display the last run frequency.
- BAND MAP Dupe DISPLAY - display repeats (dupes).
- SELECTED SPOT DELETE - to delete the selected spot.
- REMOVE ALL SPOTS - remove all the spots.
- SEND INACTIVE RIG TO THE FREQUENCY (SO2R), set the inactive radio to the frequency of the spot. At ranges up to 144 MHz, the program allocates two modes - CW and SSB, determining the value of the frequency (above SSB, following CW) with respect to a "high" point. By default, set SSB to the following frequencies (in Hz):

Band	Freq (Hz)
160 m	1840000
80 m	3700000
40 m	7100000
30 m	10150000
20 m	14100000
17 m	18110000
15 m	21200000
12 m	24930000
10 m	28300000
6 m	50100000
2 m	144200000

The frequencies can be changed using CUTOFF FREQUENCY BAND MAP . Some transceivers (e.g .Kenwood) do not support the change of VFO B, when using the VFO

frequency setting.

If the local computer is connected via Telnet to one of the DX Clusters via the internet, spots should appear in the band map window. Spots are automatically sorted by frequency left to right, up to down. At the top of the column - the most low-frequency, at the bottom – the highest. When filling in the leftmost column, subsequent columns will appear to the right of the first.

Each spot in this window contains information about the frequency and callsign of the station. If you have not worked the station and it is a new multiplier the letter " M " will be displayed. If the call is already in your log for a given mode, then the letter " D "- Dupe will display. If the station is operating split frequency (SPLIT) - an icon " + " is shown. You may navigate the band map in two ways:

- Using the mouse, moving the cursor to the desired call and clicking the left mouse button.
- By pressing <Ctrl + End> and moving with the keyboard arrow keys (**left, right, up, down**).

Information on the spot that currently has the "focus" [selected] is displayed in the band map window information line located at the bottom of the Main Window. This line is displayed from left to right as follows:

- Call spotted
- Time elapsed since the spot
- The country of the call.
- Station sending the spot
- Any comments sent with the spot
- The total number of spots in the band map

As spots age they change color. The most recent spots are highlighted in *white letters* on a contrasting black background. Then they gradually "fade" becoming first *blue*, then *black on white*, then *gray* and finally disappear altogether. The duration that a spot will show in the band map window is by a Configuration Statement.

BAND MAP DECAY TIME = MM, where MM is the number of minutes.

Double-clicking on the spot (or pressing ENTER, when the spot has the "focus") sets the active radio to the frequency of spot (assuming that the radio is connected to the program via the CAT interface) and enters the call sign of the spotted station in the CALL window of the Main Window. By default the map shows all call signs, including dupes.

You may disable the dupe display via <CTRL+J> **BAND MAP Dupe DISPLAY = FALSE.**

If the bandmap exceeds the screen, changing the frequency of the transceiver or when you move the map cursor keys, will scroll automatically scroll the bandmap. Bandmap works best when the transceiver is connected through an interface with the computer (CAT) so that the program can read the frequency at which the radio is tuned. If you want/need to not exploit CAT, the program will ask for the frequency every time you add a new call. If you do not use CAT set **<CTRL+J> ASK FOR FREQUENCIES = TRUE**.

When you are in S&P mode, and tune in a station that is already in the bandmap, the call will load into the **CALL** window. Usually you have to be within 200 hertz of this point, this value can be adjusted via **<CTRL+J> BAND MAP GUARD BAND=NNN [HZ]**. The callsign will be displayed in the callsign window, you can update your information simply by pressing the spacebar.

If you set the command **<CTRL+J> BAND MAP CALL WINDOW ENABLE = FALSE** or do not have a CAT connection, this feature will be disabled. But you may still update the timestamp for a callsign by pressing **<Ctrl+Y>**.

If you are tuned to a station callsign that is already in the bandmap and the callsign is displayed, the keys **<CTRL+DEL>** will remove the entry from the bandmap.

If you're tuned to a station which is not on the map and you do not want to work the station now, you can enter his call and press the space bar. His call will be entered into the bandmap for future reference. When tuning parts of a band, the bandmap will automatically switch to the frequency range where you are tuning.

When a callsign is first listed, it will be white on black, and a minute later turns yellow and then gradually changes to the background color. After 60 minutes (or values **BAND MAP DECAY TIME**) it fades away. This helps to quickly visually keep track of how much of the map you have recently visited.

You can change the frequency of the radio to the frequency of a particular bandmap entry by using the **<Control+End>**, to place the cursor in the bandmap. Then using the cursor keys, select the desired callsign.

Press **<ENTER>** and the active radio VFO will be set to the frequency of the selected callsign. If the callsign spot had QSX information, the transceiver will be placed in a split-frequency mode and will be ready to transmit on the split frequency.

When the cursor is in the bandmap window, there are several additional keyboard commands:

- **<Control+End>** moves the cursor into the bandmap window.
- The UP,DOWN,LEFT, RIGHT arrow keys move the cursor when it is in the window.
- **<ENTER>** sets the active radio VFO to the selected spot frequency & loads the callsign into the Call Window
- **<DELETE>** deletes the callsign entry that is selected.
- **<ESCAPE>** moves the cursor out of the bandmap window

- < D > toggles Dupe display
- < M > toggles all Mode
- < B > toggles all Bands

If you are checking for a second spot (by pressing the <SPACE>) for the station which is already in the bandmap, the previous call will be removed and new call will be added to the map.

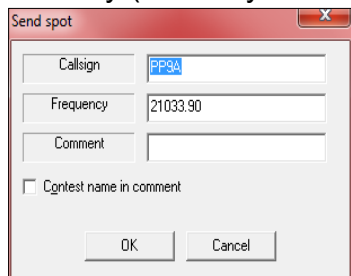
If you qso another station on the same frequency, the new call will overwrite the old callsign.

A record of the frequency of a CQ will also be added to the bandmap in the form of CQ / #, where # is the latest issue CQ. If you exit, the bandmap is saved in file BANDMAP.BIN in the current contest directory . This means that the bandmap will not be lost, if you want to stop and restart the program.

Note some bandmap fonts are not advisable because of their width (example: Verdana), potentially causing the bandmap display to scroll.

SPOTTING

When connected to DX Cluster, spotting may be accomplished via pressing the tilde key (normally extreme upper left of the keyboard).



Note that you may check "contest name in comment" to automatically comment the Spot.

4.2 SO2R -Two Radio Mode

4.2.1 SO2R - Configuration

To enable full two radio support, ensure that TWO RADIO MODE is set to TRUE, This can be set in your configuration (CTRL+J) via **TWO RADIO MODE**. Additionally ensure that **ALT-D ENABLE** is set TRUE.

For SO2R to work properly, TR4W should correctly display the frequency of *BOTH* radios (reference basic SETUP section and figure below).

Hotkeys:

CTRL-Alt-1 = Radio 1 setup

CTRL-Alt-2 = Radio 2 setup

CTRL-W = Winkey setup

You may verify proper SO2R hardware setup by pressing <ALT-R>.

This should allow you to switch radios and be evidenced by the active radio display going gray and the inactive no longer grayed out (reference figure so2r-1)

IMPORTANT; *The radio display shown in the figures identifies which radio has the focus*

Figure SO2R-1 Focus on Radio1 then on Radio2 (below)

Band	Date	UTC	QsS	Callsign	DX	Q1
160CW	04-12-11	11:44	1117	KB0LF		N
160CW	04-12-11	11:45	1118	N2WN		T
160CW	04-12-11	11:46	1119	K1GU		T
160CW	04-12-11	11:47	1120	W7YAQ		C
160CW	04-12-11	11:51	1121	W5LE		O
160CW	04-12-11	11:44	*1122			
1809.19	3640.53	B				
RADIO 1	RADIO 2					
37 WPM						OFF

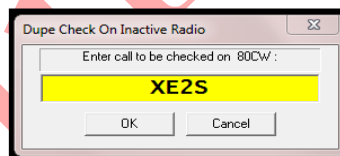
160CW	04-12-11	11:44	1117	KB0LF		
160CW	04-12-11	11:45	1118	N2WN		
160CW	04-12-11	11:46	1119	K1GU		
160CW	04-12-11	11:47	1120	W7YAQ		
160CW	04-12-11	11:51	1121	W5LE		
160CW	04-12-11	11:44	*1122			
1809.19	3640.53	B		XE2S		
RADIO 1	RADIO 2					
37 WPM				MASTER		
				MASTER		

4.2.2 SO2R – BASIC OPERATION

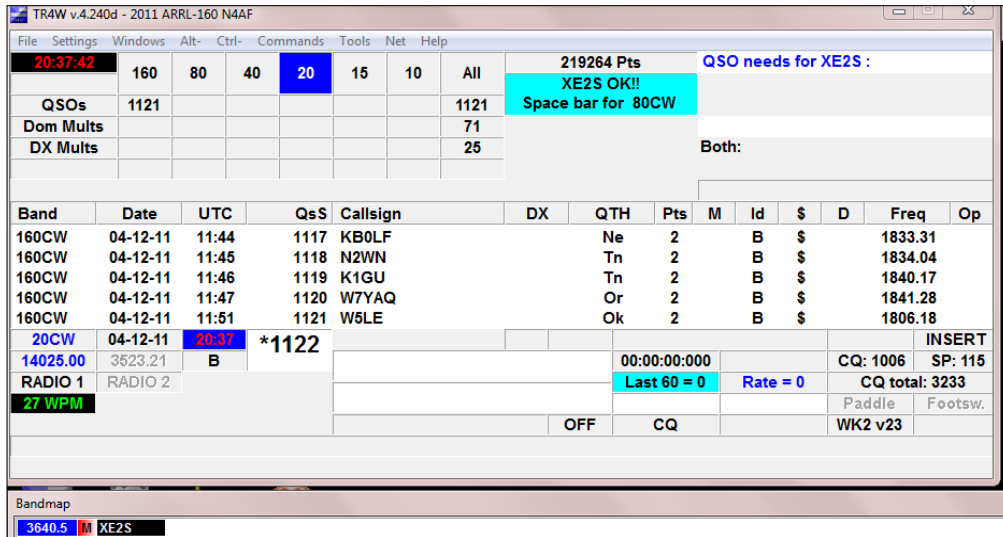
Basic SO2R is built into TR4W. It can be deployed by using the conventional dupe check feature of ALT-D-- *except* with <CTRL+J> **TWO RADIO MODE** set to TRUE in your CONFIG file and TR4W displaying correct frequencies from both radios.

On the run/active radio, dupe checking is achieved by entering a call or pressing the space bar after call entry. For S&P/inactive radio press <Alt+D>

Dupe check will now display a dialog box looking like the screen below.



While CQ'ing on the run radio, when you tune across a call on the S&P radio, if you enter the callsign via <ALT-D>, not only will the call be dupe-checked but, if not a dupe, you will receive confirmation the call is good to work on the S&P radio ! (see the screen below).



NOTE: Additionally bandmap entries will automatically load into the Alt-D window. When you are ready (timing is everything), press the spacebar and TRlog will halt your run CQ and simultaneously call the station on the S&P rig for you.

Tip: whether "DE" is sent is controlled by your <CTRL+J> **DE ENABLE**

What happen next depends on whether the station comes back to you. If he does not you can either wait (easiest) on the S&P freq whilst continuing to CQ on run, or move on. To continue to CQ, press escape to terminate focus on the S&P and press enter.

TIP: the moment you Alt-D the call, TR4W will build a bandmap entry for you. This makes coming back to the station later a LOT easier!

TIP: SO2R bandmap works the same as SO1R—with the following **exception**: you must be aware of which radio presently has the focus when you click on a bandmap spot. Just clicking on the spot will send the ACTIVE focus radio to the spot. If that is not what you wish, you may right click on the spot and choose "Send inactive rig to the frequency". Alternatively you can execute **SWAPRADIO** before clicking on the spot (described in Advanced SO2R).

Now assume you are waiting to call a new station (S&P radio) and CQ'ing on run and the timing is right for another spacebar try- OR that you got the station when you called the first time.

Tip: Timing should optimally be that you just finished a CQ and the S&P target has just paused for a caller. Reality check-you may need to 'break' your CQ.

This time he came back to you! Once you enter his exchange, pressing enter will not only log and send your exchange on the S&P radio but switch you back to the run radio and send a CQ as defined by CQ Memory Key F1.

Tip: Program Memory Key F2 to your exchange, If you are not confident the station will qsl your exchange, do not press enter, press F2- which you can repeat as needed.

However in the Advanced section we will discuss how to press enter and program for A potential repeat request. Why ? Because you may need to keep CQ active on the run frequency to hold it !

*TIP: RE: F2 repeat. Check <CTRL+J> **AUTO QSO NUMBER DECREMENT** if the contest involves a serial number. Normally change this to TRUE.*

4.2.3 SO2R – Advanced Operation

This section documents programming SO2R function- specifically, setting up F-keys [Function Key Memories] to control radio selection, focus, mode, and messages.

*Tip: Those function key settings which are NOT contest specific can be stored in the folder **COMMONMESSAGES.INI** which should be created in the main TR4W folder.*

One of the advantages of programming SO2R Function Keys is the degree of granularity it affords the user. On the other hand, TR4W is designed to permit minimal keystrokes. This means using basic SO2R when it will suffice but *having advanced SO2R available in your SO2R arsenal*.

Perhaps the most common scenario is calling a new station on the S&P, getting a comeback, receiving a long exchange, and wanting to hold your run frequency on the run radio. <Ctrl+A> to the rescue !

Since we need to QSL the exchange, it makes sense to keep focus on the S&P radio. Solution ? <Ctrl+A> can send CQ on the run (inactive) radio but NOT switch to it. So lets get started !

Firstly note there are two ways to program the F keys. You can enter the codes as CTRL-A, CTRL-B, CTRL-C, CTRL-D or use <03><04><05><06> (for simplicity, we will use the latter). If you use the CTRL-X method, you must first hold down the control key and press ‘p’ then ctrl-x, where x is the control character selected. This should apply to all control programming. So that CW message speed up would be ctrl-p ctrl-f, as an example.

To send the CQ on the inactive radio (typically copying long exchange on S&P radio) you can simply do a <CTRL-P> to enter Function key programming, then specify ‘C’ to specify a CQ function. Now choose an un-occupied key and double click on it. To the right of “MESSAGE” type <01>CQ \ and then press TAB to move the cursor to the “Caption” entry.

Note: Mode set of CQMODE or SAPMODE was not set here. *If the function key command will change mode, mode set is mandatory*. Additionally, you *must ensure* that you are setting the right function key. Did you want (C)Q, (E)xchange, or (O)ther ?

Now give the Function Key a meaningful title, something like “CQ R2”, and select “OK”.

*Tip: <SHIFT+CTRL+2> toggles the **Function Keys** display*

Note: this is germane to TR4W messages, not SO2R but is worth repeating: **ENTER THE ACTUAL MESSAGE IN UPPER CASE**. So, in this case, “CQ” needs to be upper case.

When you test this you should see that a CQ is sent on your *other* radio but the radio selection (see figures in SO2R setup) did not switch focus.

Ok, I tried a CQ from the inactive radio and got a caller, but I am receiving an exchange. Now what ??

Typically the caller will dump his call in again, your job is to QSL the active radio exchange and answer the caller on the inactive radio. Note in your head the callsign calling, then press enter to QSL the active exchange, press the Function Key that executes **SWAPRADIOS**, enter his call, and press ENTER. It takes practice but is doable for a good typist. It is also advisable to have a Function Key set to “?”

Well, what if I call a guy on the S&P, he gives me his exchange, I give him mine, basic so2r initiates a CQ on the run radio --BUT the S&P station needs a repeat ??

Although this scenario was all basic so2r, the remedy is best handled with a programmed Function Key. Set an unused function key to **<01>5nn #** and label it something like 'Exch R2'. Recall that your Function Keys should be displayed **<CTRL+SHIFT+2>** so this makes things easier.

Pressing this Function Key will now halt your CQ and send the repeat exchange on the inactive radio. Assuming he now QSL's, you want to return to CQ on the RUN-radio.

Since your focus remained on run, just press enter.

--YES, you can just F2 the S&P exchange to start with. This way you are set to repeat. The only problem is the possibility of losing your run frequency (partly depends on length of the exchange).

Before we move on to the special case of Sprint contests, let's cover **EXCHANGERADIOS**. Few of us have a totally balanced installation. That is to say there will times when you want the OTHER radio to be your run radio or S&P radio. The Command Codes string

<03>EXCHANGERADIOS<04>

does just that. You should see your radios switch bands with each other!

TR4W does not formally support dueling CQ's. Want it ?

**<03>SWAPRADIOS<04>CQ **

Assign that to a free F key and launch the CQ. When it ends immediately press the F key again to launch your CQ on the other radio.

Sprint contests are a special challenge as they tend to be high speed, with short exchanges, and a QSY rule that nullifies bandmap usage. TR4W addresses them in several ways; firstly dupesheets for both radios were added so the operator can visually determine if a station is a dupe on either radio without typing in a call- a faster form of Alt-D.

But if not in the dupesheet, how to call without the Alt-D spacebar ?

<03>SWAPRADIO<04><03>SAPMODE<04> will swap radios, place you in S&P mode, and send your call in one keystroke!

Normally, after you are called by another station you are required to qsy. But an alternative is to generate a CQ on the inactive radio:

**<03>SWAPRADIO<04><03>CQMODE<04>CQ **

Tip: When programming keys you must be aware of initiating mode and final mode. Eg, The above would not work if you are in S&P but wrote the sequence to a CQ Memory Key. Likewise the Mode setting must be appropriate to whether you want to end up in S&P or CQ mode.

TR4W is set to present a message warning that Sprint QSY rules apply. Additionally TR4W will switch modes automatically in accordance with sprint rules. REF: **<CTRL+J> SPRINT QSY RULE**

SO2R takes a lot of practice but can pay dividends !

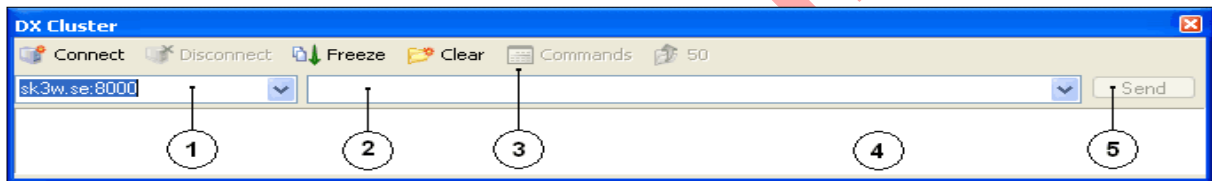
TIP: Weekly NCCC sprints every Thursday are perfect for honing SO2R skills!

Advanced SO2R Command Codes String examples

Action Taken	Command Codes string
Send CQ on R2; Focus stays on R1	<01>CQ \
Send MyCall on R2; Focus stays on R1	<01><03><SAPMODE><04>\
Repeat Exchange on R2	<01>5NN #
Swap; set Op Mode and send MyCall	<03>SWAPRADIO<04><03>SAPMODE<04>\
Swap; set Op Mode and send CQ	<03>SWAPRADIO<04><03>CQMODE<04>CQ
Swap Radios with no Op Mode Change	<03>SWAPRADIO<04>
Exchange Radios; transfer all settings	<03>EXCHANGE RADIO<04>
Dueling CQs	<03>SWAPRADIO<04>CQ TEST \

4.3 Using the DXCluster

The DX Cluster window is opened through the menu **Windows> DX Cluster**.



The composition window consists of:

The drop-down list with the addresses of DX Cluster

Command Line

Toolbar

A window that displays the information sent and received from the server

Button sending commands

Buttons in the toolbar:

Connect	Connect to the server at the address given in the address bar.
Disconnect	Disable the already established connection.
Freeze	"Freeze" window that displays information from the cluster. In this case, when a new spot, a window with the spots will not scroll down, something would display the last spot.
Clear	Clear the window with the spots.
Commands	Clicking this button pops up a menu of commands that can be sent to the server. The default list contains three commands: HELP, SHOW / USERS, SHOW / WWV and SHOW / FILTER. If desired, the list can be added to their team. To do this in the program directory, you must create and register CLUSTER_COMMANDS.TXT the commands. Each team must start a new line. This file may contain no more than 100 teams.
50	Send a command to the server sh / fdx 50 that displays the last 50 spots. Depending on the

cluster can be derived at least 50 spots.

To connect to the cluster, select the server (cluster node) from the drop-down list (the default server sk3w.se) and click **Connect**. This will connect you to the selected server. To start working with a cluster - to receive information and send your need to log in, ie authenticate. Login is needed to tell the server your call. Simply enter your callsign into the command line **2** (by default the program will automatically default to the value of the command there **<CTRL+J> MY CALL**), and click the **Send** button (**5**). When this authentication process is complete, and you will receive information from the cluster.

Note: To automatically login, set the <CTRL-J> CONNECTION COMMAND Window Configuration command to your call. After that, the authentication will happen automatically.

Information on the air any station (spot) will be displayed in a window around the following form:

```
DX de HA2RX: 14025.0 9G5TT Vy strong. 0841Z JN87
```

This line suggests that at this point at a frequency of 14025.0 kHz radio works 9G5TT. This was reported by a radio amateur with callsign in HA2RX 0841 UTC. Also, as a comment, he indicated that 9G5TT heard very loudly.

To access Reverse Beacon Network, **<CTRL+J> TELNET SERVER** should be set to telnet.reversebeacon.net:7000 (or you can just select it off the dropdown list (1) above)

4.4 Multi Operation

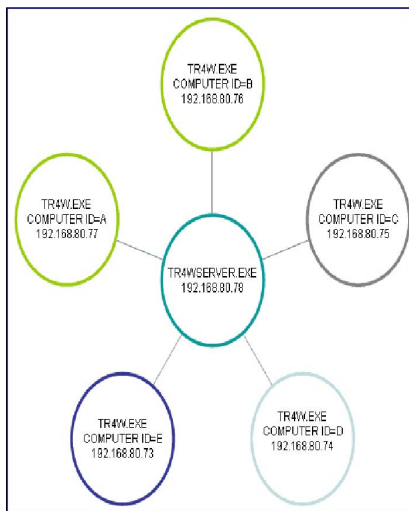
Reference NETWORKING

Preliminary

5.5 Network Operation

TR4W network operation is based on the use of the built-in program TR4WSERVER . This program, uses a TCP connection to relay all incoming messages on the network to TR4W clients. The program TR4WSERVER.EXE is included with TR4W, and located in a directory TR4W \ SERVER . The maximum number of concurrent computers on the network is 26.

There may be only one server on the network. The server can run on a single computer as LOCALHOST - on a computer that is also running the program TR4W . Identifying computers in a network is determined by the CTRL-J COMPUTER ID parameter. This parameter must be a unique ID for each TR4W PC. For example, "A" or "B".

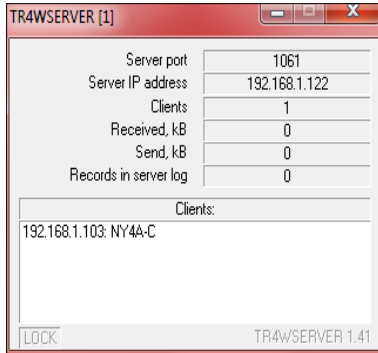


First of all, one of the computers must be running TR4WSERVER.EXE. After starting, TR4WSERVER immediately goes into the server, waiting for client connections. Server settings reside in TR4WSERVER.INI.

To configure for Networking use CTRL-J and specify the following:

- COMPUTER ID
- COMPUTER NAME
- SERVER ADDRESS (IP address of computer, use IPCONFIG from CMD Prompt to determine)
- SERVER PORT

After opening the windows Network program TR4W automatically connects to the server TR4WSERVER .



When attempting to connect, as well as any breakage of the connection the program will automatically try to connect to the server every 5 seconds. When you close the Network already existing connections will be terminated. All information displayed in the window **Network**, comes from a server over a TCP connection, even if the server is started locally.

Each computer must now run WINDOWS/NETWORK to successfully connect.

In case of unsuccessful attempts to connect:

- Check the command parameters SERVER ADDRESS and SERVER PORT and ensure the server port is not blocked by a firewall.
- Make sure that the COMPUTER ID is a unique value on each PC.
- Ensure that the program TR4WSERVER is running.
- Make sure you can ping the server address. You can use the menu item Tools > Ping [SERVER ADDRESS] . When you click this item will ping the address specified in the command SERVER ADDRESS .
- Make sure that the port is not blocked by firewall.

The Network connection window provides the following information about each station in the network:

- identifier (ID COMPUTER)
- network name TR4W (COMPUTER NAME)
- current range and type of modulation
- current frequency
- mode - CW or SSB
- status of the work - CQ or S&P
- state PTT - ON or OFF
- number of connections
- current call sign in the window CALLSIGN WINDOW

The screenshot shows a window titled "Network: Connected to LOCALHOST:1061". It contains a table with the following data:

Name	I	Band	Freq	St	PTT	Qs	Callsign	D
POS-B	B	20CW	14...	E...	0...	9		
		15CW	21...	E...	0...	9		

If you change one of these parameters, in any station, this information will be passed immediately to all computers on the network.

When you connect your fastest computer the cluster, spots will be relayed to all computers on the network.

In operation, the program TR4WSERVER.EXE besides relaying information, saves to file SERVERLOG.TRW in the \SERVER directory under \TR4W .

RECOVERY

When you first bring the network up you should find everything is synch'd.

The screenshot shows the TR4W v.4.242a - 2011 Russian DX Contest N4AF interface. A network connection window is open, showing 'Network : Connected to LOCALHOST:1061'. Below it, a table lists log entries:

Name	I...	Band	Freq	St.	PTT	Qs	Callsign	D
POS-B	B	20CW	14...	C...	O...	0		
		15CW	21...	C...	O...	9		

The main interface shows a grid with columns: Band, Date, UTC, QsS, Callsign, QsR, DX, QTH, Pts, M, Id, \$, D. A red oval highlights the text 'Server and local logs are identical.' in the log area.

But assume a PC failure.

You may always select NET pulldown item “Compare and synchronize logs”.

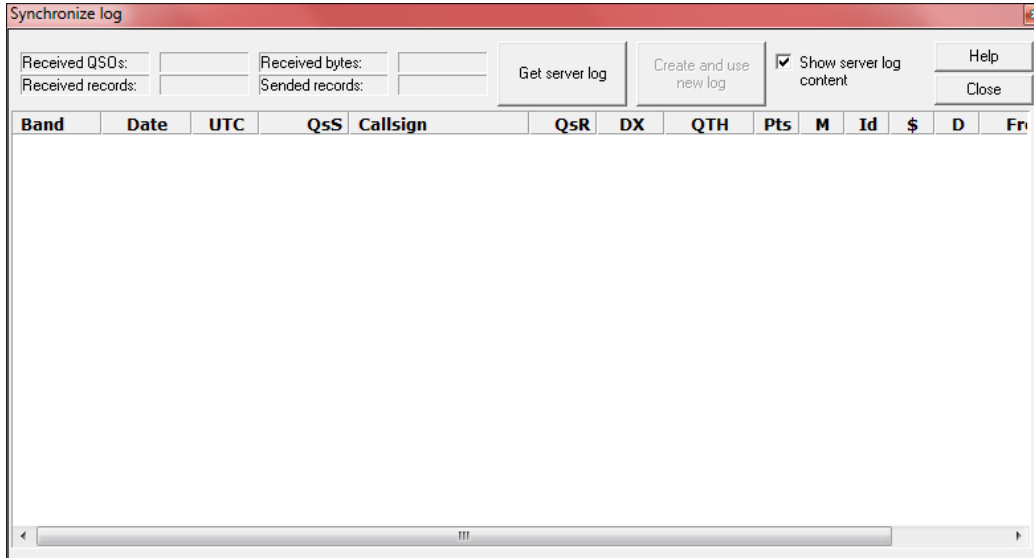
If the client and server logs do not match, the following dialog will pop up:

The 'Difference in logs' dialog box compares the SERVER LOG and LOCAL LOG. The data is as follows:

	SERVER LOG	LOCAL LOG
Size, bytes	15104	256
Records	58	0
CRC32	0x3f9c718d	0x135b353d
USQ		0
USQE		0
Contest	RDAC	RDXC

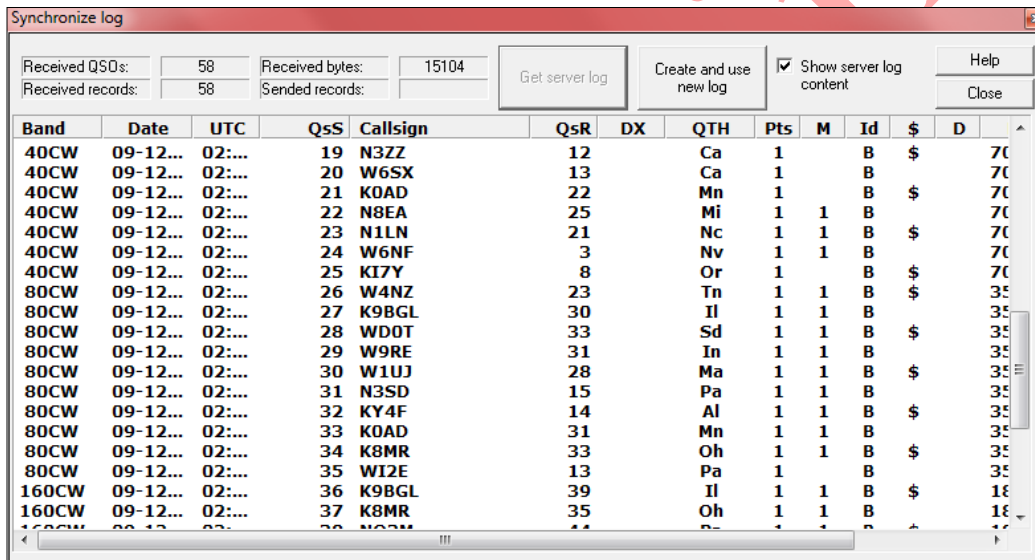
Buttons: Synchronize, Exit, Clear all logs in network.

You may either clear all logs to begin over, or Exit. Exit will produce the following sync Dialog:



Select **“GET SERVER LOG”**:

You will now see the Server log and can copy it to your local log via **“CREATE AND USE NEW LOG”**



Create and use new log does the following:

The current log file will be renamed to **LOGBACKUP_#.TRW** (where # is consecutive nr)

- The current RESTART file will be renamed to the name of RESTART_#_BACKUP.RST
- File SERVERLOG.TMP will be renamed to the current log file (TRW)
- Rescore will recalculate score of the new log file

You should now be synchronized again.

TIME SYNCHRONIZATION

Net pulldown **SYNCHRONIZE TIME ON ALL COMPUTERS** or hotkey <CTRL-ALT-T> will send the UTC time on the invoking PC to all PC's on the network.

NUMBER LOCKOUT

You may lock serial numbers by adding the following section to the PC's **TR4WSERVER.INI** file which must reside in the windows directory.

```
[tr4wserver]
```

```
SERIAL NUMBER LOCKOUT = 1
```

Note:

If SERIAL NUMBER LOCKOUT=1 in tr4wserver.exe settings then locked numbers will be displayed with the "L" suffix in "QSO NUMBER" window. You should exploit serial number lockout when operating a multi station and not using separate serial numbers by band.

It is critical you test the multi (TR4WServer) setup carefully.

Try removing each PC from the network and make qsos on the other PCs while removed. Power down the PC holding TR4WSERVER, make qsos on the other PCs, and test how you can resync to recover your logs.

4.5 RTTY Operation

1. Download and install special version of TR4W (with _mmtty suffix) from <http://www.tr4w.com/download/mmtty/>
3. Download and install MMTTY in the TR4W folder. Install add-ons if necessary. Start the MMTTY program and set the correct settings for the type of operation that you plan; AFSK or FSK. You will select the Serial Port that you want to use for FSK control and also to provide the PTT line control. The audio from the radio should go to the sound card line in jack. Test the MMTTY settings prior to starting TR4W to be sure that you can copy the signals you are able to hear on your radio. You may need to read the MMTTY manual to get everything adjusted. You should also test the transmission settings of MMTTY.

The best way to assure that MMTTY is operating correctly is to set it up and make on the air tests and contacts. Once it is functional you are ready to proceed to starting the TR4W MMTTY version.

3. Run TR4W, select or create new contest (e.g CQ-WW-RTTY). There are very few RTTY contests that have been established as supported contests so you can expect that you may need to modify an existing RTTY contest to become the pattern for the RTTY contest you wish to participate in. See Section 4.13 Creating a non-supported Contest.

4. In **<Ctrl+J>** window set value of MMTTY ENGINE - full filename of mmtty.exe (with path).

MMTTY ENGINE = path [MMTTY.EXE in TR4W]

4. Open "Windows" -> "MMTTY" in TR4W.

The special MMTTY version of TR4W is compiled with the following settings:

LEADING ZERO CHARACTER = 0
SHORT 0 = 0
SHORT 1 = 1
SHORT 9 = 9
DIGITAL MODE ENABLE = TRUE

The MMTTY window shows the text that is copied by the program . Callsigns appear in **BOLD FACE**. A callsign can be captured from the MMTTY window and loaded into the **CALL** window by using a special Message Command, **MM_GRABLASTCALL**. TR4W loads this command into function key F11 for bot CQ and S&P modes.

Use F11 function key to grab the latest callsign from MMTTY window:

EX CW MEMORY F11 = <03>MM_GRABLASTCALL<04>
CQ CW MEMORY F11 = <03>MM_GRABLASTCALL<04>

5. To add Carriage Return and Line Feed in a message use **<0D><0A>**.

For example:

CQ CW MEMORY F1=<0D><0A>CQ \ \<0D><0A>

This will force a Line Feed and a Carriage Return before and after the CQ MyCall MyCall is sent.

6. New function key message commands for this version are:

<03>MM_GRABLASTCALL<04>
<03>MM_CLEAR_THE_TX_BUFFER<04>
<03>MM_SWITCH_TO_TX<04>
<03>MM_SWITCH_TO_RX_IMMEDIATELY<04>
<03>MM_SWITCH_TO_RX_AFTER_THE_TRANSMISSION_IS_COMPLETED<04>

4.6 Recording and Using DVP Contest Messages audio

TR4W has a built in DVP feature. This feature uses pre-recorded ***.WAV** files to generate audio which can be used as an alternative to microphone input to the radio. The DVP audio output is available from the Line Out jack of the audio card. The routing of the audio from the Line Out jack to the radio is the responsibility of the user. A circuit that will accept both microphone input and computer generated audio and route them to the microphone input of the radio is required. Users build their own circuit or buy a commercial unit that will do this. It is crucial that these audio circuits not be affected by RF and not introduce hum or distortion to the audio going into the radio.

The audio files that will be 'played' by TR4W are selected by Configuration Statements located in the ***.CFG** file. Some of these statements are invoked by Function Keys, others are declared in the Configuration Statements and invoked as a part of the contest logging sequence of TR4W. The contest logging sequence audio files have default names which can be changed if desired.

The audio files are stored in the DVP folder which is located in the TR4W folder. This is discussed in more detail later in this section.

When using the DVP on a computer running Vista TR4W program should be run in Administrator mode.

4.6.1 Audio file format

The audio files must be in WAVE (PCM) format and have the extension ***.WAV**. The main parameters that determine the quality of the sound file are the sampling frequency (number of samples per second) and the sample size (number of bits used to encode one sample). For high-quality playback of the file on the air, these two parameters should be set to at least 22,000 Hz and 16 bits, respectively. The length of audio files should not exceed 30 seconds.

4.6.2 The location of audio files

The default folder in which to place the sound files is the folder named DVP which is located in the TR4W folder. The DVP folder is created automatically when you install the program. The program looks in this folder for the files you specify to be played. If desired the folder looked for by the program can be changed by modifying the Configuration Statement

DVP PATH =

For example, to work in an international competition, you can use the default folder, DVP, in which the files will reside with messages in English. When operating in Russian

contests you can create a folder named DVPRUS in the TR4W directory. Then, to tell the program where to find the Russian contest files you use <Ctrl+J> to open the Configuration Statement window. Then locate the **DVP PATH =** and modify it to read

DVP PATH = DVPRUS.

The recorded Russian audio files must be placed in the DVPRUS folder and that folder must be in the TR4W folder.

If you have a multiple operator station operating in a contest you can have each operator create their own audio files and then change the **DVP Path =** statement when each different person is operating. Each person's audio files should be stored in a folder with their name inside the TR4W folder

4.6.3 Using the DVP

To enable DVP playing of messages you must set the Configuration Statement **DVP ENABLE =** to **TRUE**. In SSB Mode when that Configuration Statement is

DVP ENABLE = FALSE

the DVP Status window displays 'DVP DIS' showing that the DVP function is disabled.

When **DVP ENABLE = TRUE** and no DVP Message is being sent the DVP Status window displays DVP OFF. When **DVP ENABLE = TRUE** and a message is being sent the window displays DVP ON.

The default audio files corresponding to each Function Key are shown in the table below.

CQ Mode	S & P Mode
F1 CQF1.WAV	MYCALL.WAV
F2 CQF2.WAV	S & P SSB XCHANGE
F3 CQF3.WAV	EXF3.WAV
F4 CQF4.WAV	EXF4.WAV
F5 CQF5.WAV	EXF5.WAV
F6 CQF6.WAV	EXF6.WAV
F7 CQF7.WAV	EXF7.WAV
F8 CQF8.WAV	EXF8.WAV
F9 CQF9.WAV	EXF9.WAV
F10 CQF10.WAV	EXF10.WAV
F11 CQF11.WAV	EXF11.WAV
F12 CQF12.WAV	EXF12.WAV

The default audio files for the Contest Logging messages are

Contest Logging Message	Audio file name
--------------------------------	------------------------

/	MyCall.WAV
SSB S & P Exchange	SAPEXCHNG
QSL SSB MESSAGE	QSL.WAV
CQ SSB EXCHANGE	CQEXCHNG.WAV

In CQ Mode pressing the F4 key will play the file CQF4.WAV. In S & P Mode pressing the F4 key will play the file EXF4.WAV.

You can change the message audio file associated with a specific function key the way you change the message text string associated with a specific function key when operating in CW. Type <Alt+P> to open the Program Messages window. Select C, E or O to access the function key group you wish to change. Once you are in the desired group select the function key and change the name in the function window to the desired audio file name. Remember, all audio files must have a **.WAV** extension as a part of the filename to be recognized as a DVP file.

You can set up the function key audio messages so that more than one file is played when the key is pressed. This allows you to record message fragments and then concatenate them into a single message. To do this you separate the names of each of the audio files by one space. For example if you have audio files named **CQ.WAV**, **CONTEST.WAV** and **MYCALL.WAV** which have only one word in each file you can string them together to get "CQ CONTEST CQ CONTEST K0TO CONTEST" for use as a CQ.

When you enter them into the CQ Mode F1 function key window a statement will be stored in the ***.CFG** file that looks like this-

CQ SSB MEMORY F1 = CQ.WAV CONTEST.WAV CQ.WAV CONTEST.WAV MYCALL.WAV CONTEST.WAV

In this case, when you press F1 the audio files **CQ.WAV**, **CONTEST.WAV**, **CQ.WAV**, **CONTEST.WAV**, **MYCALL.WAV** and **CONTEST.WAV** will be played one after the other with no time separation between them. For this particular set of files that would be confusing to hear. It is desirable to add some amount of time between each of the words. To do that we insert an "*" between the filenames. Each "*" is a delay of 20 milliseconds. If our entry for function key F1 is **CQ.WAV ** CONTEST.WAV ** CQ.WAV ** CONTEST.WAV ** MYCALL.WAV ** CONTEST.WAV** then the Configuration Statement would be created as :

CQ SSB MEMORY F1 = CQ.WAV ** CONTEST.WAV ** CQ.WAV ** CONTEST.WAV ** MYCALL.WAV ** CONTEST.WAV

Which will be understood much easier when played.

This ability to concatenate files allows us to record small parts of messages one at a time and then merge them into the desired message. It also allows one to do some other things that take advantage of the DVP program's ability to string together audio files into a desired audio message. We will talk about this a little later.

4.6.4 Record and edit sound files

Creating, playing and editing WAVE (PCM) files for your computer requires a program that performs these actions. It must be capable accepting the filename as an input and then playing that file using a sound card. There are many such programs, but a recommended one is the free program, Audacity. It can be downloaded from <http://audacity.sourceforge.net/> .

Once you have downloaded and installed Audacity or a similar program you must tell TR4W its name and where it is located. To do this type **<Ctrl+J>** to enter the Configuration Statements window and set the statement **DVP RECORDER**. This value must specify the drive, the folder and the name of the program that you have installed on your computer to handle DVP recording, editing and playback. For example, the likely placement of the Audacity program is on the C: drive and in the Program Files folder and in the sub folder Audacity. You would make the following entry for that case:

DVP RECORDER = C: \ Program Files \ Audacity \ audacity.exe

Save the Configuration Statement change and exit from the Configuration Commands window.

Now open the window for editing function key messages by typing **<Alt-P>>** **<C or E or O>>**. Then click on the function key you want to create, play or edit. If the **filename.WAV** already exists and is stored in the DVP folder, press **<Alt+E>** [EDIT] and the program specified in command DVP RECORDER will be opened and the **filename.WAV** file will be loaded into the Audacity program and the program will be ready to run. This allows you to you to listen, write or edit the file specified by the function key. If this **filename.WAV** does not already exist, pressing **<Alt+E>** will produce the statement " This file does not exist. Create an empty file for Editing? ". If you type 'yes' an empty file with a duration of zero seconds will be created in the directory specified by the DVP Path Configuration Statement

DVP PATH = (the default value is DVP)

You can now record, edit and display this file using the program you specified.

4.6.5 Automatic generation of DVP audio messages.

During a contest the program itself can generate a message from previously recorded

words. You can have TR4W use your logging entries to generate the message for the calling station. To do this, it must generate and play a callsign and exchange for that station. The callsign sent will be the one you enter into the CALL window. If you have a serial number in the exchange it will be generated from the logged serial number. The balance of the exchange will need to be pre-recorded. To enable automatic generation of audio messages you set the Configuration Command

USE RECORDED SIGNS = TRUE

Then you create 37 audio message files, each of which has one letter of the alphabet or one digit from 0 to 9 pre-recorded. Generally the letters should be pronounced phonetically to help the listener.

For example, the **A. WAV** file might be 'Alpha' (letter A), the **B. WAV** file would be 'Bravo' (letter B), etc. Similarly, **1.WAV** file would be the digit 'One', etc. For the slash in a callsign create a file named **_.WAV**.

These files are stored in the folder LETTERSANDNUMBERS, which is a sub folder of the folder specified by the command

DVP PATH = (default is DVP).

In addition full callsigns and numbers can be played if the full call sign and number was previously recorded and stored with filenames which correspond to the callsigns and numbers stored in them

For example files with the call sign must have a name **filename.WAV** such as **UA4WLI.WAV**. Files with serial numbers must have a **filename.WAV** such that there will be a **1.WAV, 2.WAV .. 11.WAV, 12.WAV** etc.

Tip: Remember you can concatenate the files so you could have **98.WAV** be formed from concatenating **9.WAV** with **8.WAV**. It still will take a long time to record all the files if you expect to work over 1000 Q's in a contest

The files with the call sign should be placed in the folder FULLCALLSIGNS . Files with serial numbers should be placed in the folder FULLSERIALNUMBERS. As was the case with the LETTERSANDNUMBERS folder, these folders should be located in the directory specified in the Configuration Statement

DVP PATH = (default DVP).

Below is a sample of the Configuration Statements needed to produce automatically generated exchanges.

The Configuration Statements must be located in the CONTESTNAME.CFG file.

CONTEST = CQ-WW-SSB
USE RECORDED SIGNS = TRUE
CQ SSB MEMORY F1 = CQF1.WAV
QSL SSB MESSAGE = QSL.WAV
CQ SSB EXCHANGE = CQEXCHNG.WAV
CQEXCHNG.WAV «Five Nine One Six»
QSL.WAV «Thanks United Alpha Four Whiskey Lima Italy Contest»
CQF1.WAV «United Alpha Four Whiskey Lima Italy Contest»

Note that except for the words “Thanks” and “Contest” the last three statements are composed of elements that were recorded previously are then stored in the LETTERSANDNUMBERS folder. The words are separated only by spaces, there are no “*” delays built into the message which will cause it to sound natural if the recorded files have been recorded to sound continuous and have no pre or post audio silence. Getting these files to produce natural phonetics such as you might generate in speaking the calls requires a lot of practice with the recording and much editing.

4.6.6 The process of working on the air

operation	Audio sent
Send CQ by pressing Function Key F1	CQF1.WAV «United Alpha Four Whiskey Lima Italy Contest»
Types YU1QQ in Call & presses ENTER	Y.WAV U.WAV 1.WAV Q.WAV Q.WAV «Yankee Uniform One Quebec Quebec»
The exchange is sent after the call above	CQEXCHANGE.WAV «QSL, Five Nine One Five»
YU1QQ provides his exchange	
When his exchange is entered press Enter to log the QSO	QSL.WAV «Thanks United Alpha Four Whiskey Lima Italy Contest»

4.7 VHF/UHF

Several features of TR-LOG have been tailored for the VHF/UHF contest operator. TR-LOG allows you to work rovers as they change grid squares. Rover stations are logged with the suffix /R added to their call. When you work a rover for the second time on a given band/mode, you will be shown a list of grid squares for which you already have QSOs. If the grid square you enter into the exchange field is different, you will receive full QSO points for the QSO. If it is a duplicate grid, you will receive zero QSO points for the contact.

When working the station in a new grid square, you can simply type the new information over the initial exchange entry that TR-LOG automatically enters from the earlier QSO.

When operating on VHF/UHF, TR4W adds FM as a supported mode. This allows you to separate FM QSOs from SSB ones. FM QSOs are treated just like SSB QSOs for dupe and multiplier checking. Use the <Alt+M> hot key command to switch to/from FM.

You can disable the HF bands by setting the Configuration Statement

HF BAND ENABLE = FALSE.

This is the default for VHF/UHF contests. TR-LOG allows operation on all VHF/UHF bands, including light.

4.8 Farnsworth CW

TR4W allows you to send CW with Farnsworth spacing when sending messages or sending the contents of a file using the SENDCW command.

Farnsworth CW adds additional space between characters in order to achieve slower CW speeds, while using a constant speed for the characters themselves (typically 18 WPM). This is useful for training purposes and in some situations on the air.

The Configuration Statement FARNSWORTH ENABLE controls whether or not Farnsworth spacing is used. The Configuration Statement FARNSWORTH SPEED controls the code speed at which the Farnsworth feature is enabled. As you decrease your code speed below this rate, you will find more and more space added between CW characters. The characters will be sent at the displayed code speed, so your actual code speed will be less than that displayed. The default value for FARNSWORTH SPEED is 25 WPM. If you want the Farnsworth effect to be more pronounced, increase this value.

You can dynamically control both of these parameters during the process of sending CW from a memory or file by using the Configuration Statements listed in the table below

Command	Action
Ctrl + [2	Toggle FARNSWORTH ENABLE value
Ctrl + [3	Set Farnsworth speed to 25 WPM
Ctrl + [4	Set Farnsworth speed to 35 WPM
Ctrl + [5	Set Farnsworth speed to 45 WPM
Ctrl + [6	Set Farnsworth speed to 55 WPM
Ctrl + [7	Set Farnsworth speed to 75 WPM
Ctrl + [8	Set Farnsworth speed to 95 WPM

These commands can be entered when editing a CW message with the <Alt+P> hot key command. by pressing ctrl-P then ctrl-[(or Alt-027 on the keypad), and then pressing the integer shown (2 through 8).

For example, if you wanted to send code characters at 18 WPM, you would set the code speed to 18 WPM, then adjust the Farnsworth speed to result in the desired code speed. The higher the Farnsworth speed, the slower your CW speed will be.

These commands may also be embedded in a text file that is being sent with the TR SENDCW command

**** NOTE ****

The ctrl-[character is the “escape” character, its ASCII code value is 27 [this is 1B in hexadecimal]. It may not be easy to produce this character on some non-English keyboards. On all keyboards, however, you should be able to produce the correct character by pressing the sequence “027” with the keypad keys while keeping the Alt key pressed.

4.9 Recording Contests

TR4W can record the contest activity using audio input to the sound card from the radio. This recording is done using a compressed audio format, MP3. and the files are saved with the extent .mp3.

The recording function is based on the use of the .dll library routine ‘lame_enc.dll’. This library should be located in the TR4W folder or in the Windows \ System32 folder. This .dll Library can be downloaded at: <http://tr4w.com/otherfiles>.

You must provide the interface between the radio and the sound card. There are some commercial units that are available and you can use the UU2JJ interface shown in the Appendix references if you wish to build you own.

In extreme cases, you may be able to connect the audio output of the transceiver directly to the input of your sound card. In general you should anticipate that you will want to adjust the signal levels and impedances using transformers and potentiometers to reduce hum and avoid over driving or under driving the sound card audio input.

To start recording use the Main Window menu WINDOWS => MP3 Recorder or press <Shift+Ctrl+0>. That will bring up the MP3 Recorder window



Window MP3 Recorder contains the following elements:

Enable Button - enables / disables the MP3 recording mode.

Window Elapsed Time - displays the duration of the current MP3 audio file.

Window Level - shows the relative level of the input signal.

Preset entries can make a selection from the menu <Alt+J>.

The method of starting the MP3 recording is determined by the Configuration Statement

ENABLE MP3 RECORDER = (default is FALSE)

If the Value is TRUE, recording will start immediately after you open the MP3 Recorder window. When the Value is FALSE you must click the Enable Button to start the recording

The Configuration Statement

MP3 RECORDER DURATION = (EACH QSO, EACH HOUR, NON-STOP)

You can select one of three recording modes:

EACH QSO (every QSO creates an .mp3 file),

EACH HOUR (every hour creates an .mp3 file),

NON-STOP (a single .mp3 file is created).

The Configuration Statement

MP3 PATH = specifies the folder in which the MP3 files will be stored.

If you wish, you can set the path to a folder for MP3, other than the default folder.

The Configuration Statement

MP3 RECORDER BITRATE = (default = 8)

Specifies how many kbps will be used when recording the contest. The default value of 8 is sufficient to record CW signals. For SSB the recording bit rate should be increased to 32 to get adequate quality. That will, of course, increase the number of bytes recorded each second and increase the storage required for the contest audio. In this case by a factor of four.

The Configuration Statement

RECORDER MP3 SAMPLE RATE = (default=8000).

If you have selected the MP3 recorder duration to be

EACH QSO writes a new file for each logged contact. The file is named using the format:

YYYYMMDD_HHMMSS_BANDm_CALLSIGN. MP3 , where:

YYYYMMDD - date of the QSO,
HHMMSS – logged time of the QSO
BANDm – band in meters,
callsign – station worked.

EACH HOUR writes a new file for each operated hour. If you operate a couple minutes in the hour and do not exit the program when you take a break, the file will continue recording and be filled with silence until you start operating again. If you exit the program you will need to restart the recording process when you restart the program. A new file will be created . The file is named using the format TEMP_HH_DD. MP3 where

HH - hour recording starts,
DD - day of the month.

NON-STOP writes one file for the entire contest. If you take a break and exit the program the recording file is closed and when you return you will need to restart the recording process. A new file name will be created for this new time segment. The file is named using the format TEMP_HH_DD. MP3 where

HH - hour recording starts,
DD - day of the month.

You can listen to the recorded files using any program that can play .mp3 files. Audacity can play such files so it can be used to review the recorded contest. You may wish to convert the files to other formats such as .wav which can be sent to people as email attachments and can generally be read without a special program. Such files will be larger than the compressed mp3 files however.

4.10 Foot Switch

A foot switch can be interfaced to your computer and used to help make TR4W more efficient. The foot switch connects to a parallel port as shown in Appendix B. Some computers might require a pull-up resistor similar to the one used for the paddle input. The foot switch needs to be a normally open switch that closes when pressed. The program de-bounces the switch, so you should not see action occur when releasing the switch.

The Configuration Statement FOOT SWITCH MODE will determine what will happen when you press the foot switch. The supported modes are listed below. You can change the FOOT SWITCH MODE value by using <Ctrl+J> to open the Configuration Statements window then selecting that statement and assigning one of values shown in the table following. Only one Value can be selected at a time.

Foot Switch Mode Values

CONTROLENTER	Acts as if the ctrl-<Enter> key was pressed, advancing the QSO one step without sending any CW.
CW GRANT	When you try to send CW the PTT signal will be asserted, but no CW will be transmitted until you depress the footswitch.
DISABLED	Disables all actions associated with the foot switch.
DUPECHECK	Executes the alt-D command when the foot switch is pressed.
F1	Acts just as if you had pressed the F1 key.
LAST CQ FREQ	Returns you to the last frequency on which you called CQ.
NEXTBANDMAP	Advances you to the frequency of the next (i.e., higher frequency) entry in the band map for the current band and mode and which you have not yet worked. Also puts you into S&P Mode.
NEXTDISPLAYEDBANDMAP	Advances you to the frequency of the next (i.e., higher frequency) displayed entry in the band map that you have not yet worked, regardless of the band and mode of that entry. Also puts you into S&P Mode.
NEXTMULTBANDMAP	Advances you to the frequency of the next (i.e., higher frequency) displayed entry that is a needed multiplier in the band map for the current band and mode. Also puts you into S&P Mode.
NEXTMULTDISPLAYEDBANDMAP	Advances you to the frequency of the next (i.e., higher frequency) displayed entry that is a needed multiplier in the band map, regardless of the band and mode of that entry. Also puts you into S&P Mode.
NORMAL	The normal mode makes the foot switch behave just as if it was connected to the PTT of the active transmitter. This allows you to use TR4W to route your foot switch to the proper radio.
QSO NORMAL	In this mode, the foot switch is used to advance the normal QSO process one step. This means that hitting the footswitch will behave just as if you pressed the <Enter> key.
QSO QUICK	Same as QSO NORMAL, except when finishing a CQ Mode QSO, when the QUICK QSL MESSAGE will be sent in place of the QSL MESSAGE .
SWAP RADIOS	Acts just as if you pressed the alt-R key.
START SENDING	Acts just as if the START SENDING NOW KEY was pressed. This will start sending the characters in the Call Window, and allows you to continue entering characters until you press <Enter>.

4.11 Rotator Control

Rotator control is useful for a remote site operation. To exploit this feature you need a separate port and a rotator controller.

<CTRL+J> **ROTATOR PORT** must be set to # 1-6 signifying the serial port used.

<CTRL+J> **ROTATOR TYPE** may be set to supported types of DCU1, ORION or YAESU.

Upon entering a call, TR4W provides the azimuth setting for the station in the **BEAM HEADING** window.

Replace the call with the three digit beam heading and press <CTRL+P> to send the new heading to the rotator controller over the **ROTATOR PORT**.

4.12 Country List Changes

Country file **CTY.DAT** resides in the main **TR4W** directory. Proper identification of a country is dependent on the contents of this file. Typically it is updated when you install a new release. However it can be manually updated at any time:

- Navigate to <http://www.country-files.com/cty/index.htm>
- Right click on TR4W
- Choose "SAVE LINK AS"
- Save the **CTY.DAT** file to your **TR4W** directory

4.13 Creating a non-supported Contest Configuration

TR4W presently supports 140 contests but can be configured for additional contests. Before attempting to customize, navigate to <http://tr4w.com/configurationfiles/index.html> to check if there is already a configuration file built for you (move this file into your specific contest directory).

4.13.1 Selecting Contest Parameters

The CONTEST statement in *<contest name>.CFG* tells TR4W what parameters to use. Keep it near the top of your *<contest name>.CFG* file. When customizing you may want to use **CONTEST=GENERAL QSO** and then set **CONTEST NAME = <my contest name>**.

4.13.1.1 Multiplier Types

Specify whether multipliers are by band: **MULT BY BAND=TRUE** or **FALSE** whether DX multipliers are used in the contest: **DX MULTIPLIER=** where valid parameters are:

(NONE, ARRL DXCC WITH NO USA OR CANADA, ARRL DXCC WITH NO ARRL SECTIONS, ARRL DXCC WITH NO USA CANADA KH6 OR KL7, ARRL DXCC WITH NO I OR IS0, ARRL DXCC WITH NO JT, ARRL DXCC, CQ DXCC, CQ DXCC WITH NO USA OR CANADA, CQ DXCC WITH NO HB9, CQ DXCC WITH NO OK, CQ EUROPEAN COUNTRIES, CQ UBA EUROPEAN COUNTRIES, CQ NON EUROPEAN COUNTRIES, NORTH AMERICAN ARRL DXCC WITH NO USA CANADA OR KL7, NON SOUTH AMERICAN COUNTRIES, PACC COUNTRIES AND PREFIXES, CQ NON EUROPEAN COUNTRIES AND WAE, BLACK SEA COUNTRIES)

^ Default **value:** NONE

4.13.1.2 QSO Point Methods

Specifies how many points per qso. For example, if each qso is one point, then **QSO POINT METHOD = ONE POINT PER QSO**.

4.13.1.3 Exchanges

Exchange format is controlled via **<CTRL-J>EXCHANGE RECEIVED** valid data is:

^ CHECK **AND CHAPTER OR QTH EXCHANGE**

^ **CLASS DOMESTIC OR DX QTH** (ARRL-FD)

^ **KIDS DAY EXCHANGE** (KIDS DAY)

^ NAME **AND POSSIBLE** GRID SQUARE (GRID LOC)

^ NAME **DOMESTIC OR DX QTH** (MINNESOTA QSO PARTY, NAQP-CW, NAQP-SSB, COLORADO QSO PARTY)

^ NAME **QTH AND POSSIBLE** TEN TEN **NUMBER** (TEN TEN)

^ NONE

- ^ NZ FIELD DAY (NZ FIELD DAY)
- ^ QSO **NUMBER AND AGE** (SRR-JR)
- ^ QSO **NUMBER AND COORDINATES SUM** (AS-CHAMP-CW, AS-CHAMP-SSB)
- ^ QSO **NUMBER AND GEO COORDINATES** (RAEM)
- ^ QSO **NUMBER AND GRID** (RF-CUP-CW, RF-CUP-SSB)
- ^ QSO **NUMBER AND NAME** (EU SPRINT)
- ^ QSO **NUMBER AND POSSIBLE DOMESTIC QTH**
- ^ **QSO NUMBER AND PREVIOUS QSO NUMBER** (RADIO-YOC)
- ^ QSO **NUMBER AND ZONE** (RF-CHAMP-CW, RF-CHAMP-SSB, R4N-CHAMP, R9W-UW9WK-MEMORIAL)
- ^ QSO NUMBER **DOMESTIC OR DX QTH** (CALIFORNIA QSO PARTY)
- ^ QSO NUMBER **DOMESTIC QTH** (URAL-CUP, MICHIGAN QSO PARTY, R4W-CHAMP, UKRAINE CHAMPIONSHIP)
- ^ QSO **NUMBER NAME CHAPTER AND QTH** (QCWA, QCWA GOLDEN)
- ^ QSO **NUMBER NAME DOMESTIC OR DX QTH** (INTERNET SPRINT, NA-SPRINT-CW, NA-SPRINT-SSB, NCCC-SPRINT, LQP)
- ^ QSO **NUMBER PRECEDENCE CHECK SECTION** (ARRL-SS-CW, ARRL-SS-SSB)
- ^ RST **AGE AND POSSIBLE SK** (RADIO-MEMORY)
- ^ RST **AGE** (ALL-ASIAN-DX-CW, ALL-ASIAN-DX-SSB, RADIO-ONY)
- ^ RST ALL JA PREFECTURE **AND PRECEDENCE** (ALL JA)
- ^ RST **AND CONTINENT** (SOUTH AMERICAN WW)
- ^ RST **AND GRID** (WWL)
- ^ RST **AND OR GRID** (STEW-PERRY)
- ^ RST **AND POSTAL CODE** (ROPOCO)
- ^ RST **DOMESTIC OR DX QTH** (7QP, ARRL-160, FCG-FQP, NEQP, SALMON RUN, TEXAS QSO PARTY)
- ^ RST **DOMESTIC QTH OR QSO NUMBER** (ARRL-10, CIS, HA DX, RDAC, RSGB 1.8, RDXC, SP DX, UN DX, KING-OF-SPAIN-CW, KING-OF-SPAIN-SSB)
- ^ RST **DOMESTIC QTH** (ARRL-VHF-QSO, ARRL-VHF-SS, CQ VHF, KCJ, TOEC, WISCONSIN QSO PARTY, NEW YORK QSO PARTY, TENNESSEE QSO PARTY)
- ^ RST LONG JA PREFECTURE (JA LONG PREFECT)
- ^ RST **NAME QTH** (GENERAL QSO)
- ^ RST **POSSIBLE DOMESTIC QTH AND POWER** (ARCI)
- ^ RST **POWER** (ARRL-DX-CW, ARRL-DX-SSB)
- ^ RST **PREFECTURE**
- ^ **RST QSO NUMBER AND DOMESTIC QTH** (NRAU-BALTIC-CW, NRAU-BALTIC-SSB, OHIO QSO PARTY, RADIO-160)
- ^ RST **QSO NUMBER AND GRID SQUARE** (EUROPEAN VHF, RADIO-VHF-FD)
- ^ RST **QSO NUMBER AND POSSIBLE DOMESTIC QTH** (HELVETIA, RSGB-IOTA, UBA-CW, UBA-SSB, TAC)
- ^ RST **QSO NUMBER AND RANDOM CHARACTERS** (XMAS)
- ^ RST **QSO NUMBER OR DOMESTIC QTH** (ARI, ALRS-UA1DZ-CUP, OK-OM DX, PACC, RAC CANADA WINTER, UKRAINIAN, DARC-XMAS, WAG, YO DX, ARKTIKA-SPRING)
- ^ RST **QSO NUMBER** (AP-SPRINT, BALTIC, CQ-M, CQ-WPX-CW, CQ-WPX-SSB, CROATIAN, MINITEST, OCEANIA-DX-CW, OCEANIA-DX-SSB, REGION 1 FIELD DAY, REGION 1 FIELD DAY-RCC-CW, REGION 1 FIELD DAY-RCC-SSB, SAC-CW, SAC-SSB, UCG, DARC-WAEDC-CW, DARC-WAEDC-SSB)
- ^ RST **QTH NAME AND FISTS NUMBER OR POWER** (FISTS)
- ^ RST **QTH** (COUNTY HUNTER)
- ^ RST **ZONE AND POSSIBLE DOMESTIC QTH**
- ^ **RST ZONE OR DOMESTIC QTH** (CQ-160-CW, CQ-160-SSB, LZ DX)
- ^ RST **ZONE OR SOCIETY** (IARU-HF, OZCHR-TEAMS, OZCHR, WW PMC, WRTC)
- ^ RST **ZONE** (CQ-WW-CW, CQ-WW-SSB, EUROPEAN HFC, GACW-WWSA-CW, GAGARIN-CUP, JIDX-CW, JIDX-SSB, MONGOLIAN DX, KVP, YUDX)
- ^ UNKNOWN (DUMMY CONTEST)

Typically EXCHANGE RECEIVED resides in <contest name>.CFG configuration file and is set by default for a known contest.

4.13.1.4 Initial Exchanges

The **INITIAL EXCHANGE** (filename **INITIAL.EX**) controls prefill data loaded into the EXCHANGE WINDOW of TR4W. *NOTE: Unlike TRMASTER POST file input, the INITIAL.EX file is space delimited -not fixed column.*

INITIAL EXCHANGE is not controlled by the CUSTOM INITIAL EXCHANGE STRING or CUSTOM USER STRING. Rather, it is set by INITIAL EXCHANGE FILENAME pointing to its location in the contest directory.

What resides in the INITIAL EXCHANGE file dictates what will be prefilled into the exchange field.

If a given callsign resides in both TRMASTER.DTA and INITIAL.EX, INITIAL.EX receives precedence over TRMASTER.DTA.

At completion of a contest, selection of **EXPORT/INITIAL EXCHANGE LIST** will result in writing a sorted **CUSTOM.INITIAL.EX** file to the contest directory that includes both any extant **INITIAL.EX** file used in the contest PLUS a list of the stations/exchanges from the just concluded contest.

NOTE: The **INITIAL EXCHANGE FILENAME** controls what is read in for INITIAL EXCHANGE. It can be set to, for example, **CUSTOM INITIAL.EX**

An example of Initial Exchange creation may be found at the end of the TRMASTER Advanced Usage section.

4.14 TRMASTER Database

Basic Usage:

TRMASTER.DTA contains the callsigns of known contest active stations and is presently maintained by WA1Z. **TRMASTER.DTA** is NOT shipped with TR4W as it is not maintained by any single logging program.

The master file (what TR4W calls TRMASTER) is closely connected to the System Check Partial function used by practically every logging program. The seasoned operator tends to observe the SCP window while a call is entered. If the SCP does not show a match, it is doubly important to check that the “unique” call is valid, since this can lead to a penalty when the contest sponsor initiates log checking.

To download and install:

- 1 Navigate to <http://www.supercheckpartial.com/>
- 2 Right click on **MASTER.DTA**
- 3 Choose “SAVE AS” and save to TR4W directory
- 2 Ensure the FILENAME is **TRMASTER.DTA** –NOT **MASTER.DTA**

Note: a customized **TRMASTER.DTA** may be stored in the contest directory under \TR4W. This allows customized **TRMASTER.DTA** files specific to individual contests.

When you next bring up TR4W, ensure the **System Check Partial window** is active. It is selectable from **WINDOWS/SCP** or toggled via hotkey <**SHIFT+CTRL+3**>

Now when you enter a callsign the SCP window will show whether there is a known callsign matching what was entered. The automatic callsign partial check will commence when you have entered the number of characters specified by <**CTRL+J**> **SCP MINIMUM LETTERS**. For example, with **SCP MINIMUM LETTERS = 3**, “G3U” is entered. SCP looks for any match for G3U and finds/displays none. As you enter the next letter of the call (“F”) the following will be presented, indicating there are two calls matching “G3UF” in **TRMASTER.DTA**



Preliminary

TRMASTER ADVANCED USAGE

TRMASTER.DTA may also be customized. The TRMASTER.DTA d/b may be either placed in a contest directory and read specific to the contest or in the TR4W directory for global reference.

Customization permits either display or prefill of a wealth of data by callsign. To customize TRMASTER.DTA (the TR4W SCP file) you will need to download the TRLOG **POST.EXE** program. A copy may be obtained by navigating to <http://trlog.com/free.shtml>, right clicking on <http://www.trlog.com/post672a.zip> and saving to a directory, perhaps \TRLOG. Now you may extract **POST.EXE** and **POST.OVR**

A partial list of what you might want to exploit TR POST to build into **TRMASTER.DTA** (by callsign) is :

- Name max char = 12
- Old Call - up to (12) char
- ARRL Section (5)
- CQ Zone (2)
- FOC Number (5)
- Grid (6)
- ITU Zone (5)
- Sweepstakes check (2)
- QTH (10)
- Code Speed (2)
- Ten Ten Number (6)
- User Defined 1-5 (12)

Before actually doing a build it might be worth mentioning that although **TRMASTER.DTA** can both display and prefill data into TR4W, in most cases prefill can be more easily accomplished by exploiting an INITIAL EXCHANGE file. For that reason, emphasis will be placed on display of data.

*Note: prefill is where the EXCHANGE data is actually inserted into the exchange field of TR4W, whilst DISPLAY refers to insertion of data into the **USER INFO WINDOW** or the **NAME WINDOW** (both being sub-windows of the Main Window of TR4W).*

Also note that POST will not run under Win7 X64. It must be run in Windows 32 bit.

We now start POST.EXE which looks like this:

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
TR POST CONTEST PROGRAM Version 6.72A

Welcome to the TR Post Contest Program. You will find many procedures and
utilities here to help you after the contest. There are a number of procedures
under the Log procedures menu. These will perform various things to your log
file. The QSL procedures menu has everything you need to support QSLing. The
Report procedures menu has a number of different reports that can be generated
and finally the Utility procedures menu has a number of little programs to make
your life easier. To get more information on any of these, go into the desired
menu and execute the procedure you are interested in. An explanation of the
procedure will be displayed and you will always be able to exit the procedure
before actually doing anything (use ESCAPE or RETURN with no input).

Free memory = 382880

F - Change active log filename (active logfile = LOG.DAT).
C - Create Cabrillo File.
L - Log procedures menu.
P - Post contest log processor (steps you through most everything).
Q - QSL procedures menu.
R - Report procedures menu.
U - Utility procedures menu.
X - Exit program.

Enter command :

```

We now will enter “UEFF” which will directly take us to the dialog for adding a file to TRMASTER.DTA:

This provides a prompt for the file name and whether it is a TR log file. We will respond with “myfile.txt” and “n” which produces this screen:

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
type of data. (ie: once for names and again for QTHs).

Old data will be over-written if the overwrite flag for the data field is set
to true. Execute the O command on the menu to view/edit these flags.

Enter the name of the file to process (none to quit) : myfile.txt
Is this a TR log file? (Y/N) : n

You can use most any ASCII format with this routine. The only requirement
is that the callsign and data must appear on the same line and there must
be one entry per line. Lines with no data - or calls that does not look
like a callsign will be ignored. You will need to specify the character
positions to use for the callsign and any data you want to save. If there
is a space found at the data position, the data is assumed to be blank.

Also, I can get fancy and ignore a certain number of entries starting at
the data position. You would need to do this if you wanted to access the
third entry in the exchange, and the first two entries were not always the
same length.

4X1DF Karl 599
123456789112345678921234567893123456789412345678951234567896123456789712345678
0 0 0 0 0 0 0

Enter cursor position for callsign :

```

This panel is the “heart” of customizing TRMASTER.DTA.

Notice the column indicator below the first line that POST located in the file. The column indicator is

showing the column numbers of the data. We now want to enter the beginning column for callsigns- in this case it is "1" so we will enter that and press <ENTER>.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
type of data. (ie: once for names and again for QTHs).

Old data will be over-written if the overwrite flag for the data field is set
to true. Execute the O command on the menu to view/edit these flags.

Enter the name of the file to process (none to quit) : myfile.txt
Is this a TR log file? (Y/N) : n

You can use most any ASCII format with this routine. The only requirement
is that the callsign and data must appear on the same line and there must
be one entry per line. Lines with no data - or calls that does not look
like a callsign will be ignored. You will need to specify the character
positions to use for the callsign and any data you want to save. If there
is a space found at the data position, the data is assumed to be blank.

Also, I can get fancy and ignore a certain number of entries starting at
the data position. You would need to do this if you wanted to access the
third entry in the exchange, and the first two entries were not always the
same length.

4X1DF Karl 599
123456789112345678921234567893123456789412345678951234567896123456789712345678
      0      0      0      0      0      0      0      0

Enter cursor position for callsign : 1
```

Post now requests the column number that data we wish to display in TR4W is located in. The column display shows the NAME begins in column 8 so we will type "8" and press <ENTER>.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
Old data will be over-written if the overwrite flag for the data field is set
to true. Execute the O command on the menu to view/edit these flags.

Enter the name of the file to process (none to quit) : myfile.txt
Is this a TR log file? (Y/N) : n

You can use most any ASCII format with this routine. The only requirement
is that the callsign and data must appear on the same line and there must
be one entry per line. Lines with no data - or calls that does not look
like a callsign will be ignored. You will need to specify the character
positions to use for the callsign and any data you want to save. If there
is a space found at the data position, the data is assumed to be blank.

Also, I can get fancy and ignore a certain number of entries starting at
the data position. You would need to do this if you wanted to access the
third entry in the exchange, and the first two entries were not always the
same length.

4X1DF Karl 599
123456789112345678921234567893123456789412345678951234567896123456789712345678
      0      0      0      0      0      0      0      0

Enter cursor position for callsign : 1
Enter cursor position to start looking for data (zero for none) : 8
Enter number of entries to ignore (zero for none) :
```

Post now asks whether we want to skip any lines. For example a log file might have Cabrillo header information which you want to skip. In our case we will enter "0" for none.

Post now prompts for the TYPE of data that will be customized into TRMASTER.DTA. We will

respond that it is NAME by entering “7”

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
is a space found at the data position, the data is assumed to be blank.

Also, I can get fancy and ignore a certain number of entries starting at
the data position. You would need to do this if you wanted to access the
third entry in the exchange, and the first two entries were not always the
same length.

4X1DF Karl 599
123456789112345678921234567893123456789412345678951234567896123456789712345678
 0 0 0 0 0 0 0

Enter cursor position for callsign : 1
Enter cursor position to start looking for data (zero for none) : 8
Enter number of entries to ignore (zero for none) : 0

Here are the available places to save your data. Choose none if you only
want to process the callsigns :

0 - None          5 - CQ Zone      A - TenTen Number  F - User 5
1 - ARRL Section  6 - ITU Zone     B - User 1
2 - Grid          7 - Name         C - User 2
3 - Check         8 - Speed        D - User 3
4 - QTH           9 - FOC Number   E - User 4

Select field (0-12 or escape to quit) :
```

In a more complex scenario, our file could contain many types of fields we wish to add to TRMASTER.DTA. This provides us the opportunity to process extra fields.

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
is a space found at the data position, the data is assumed to be blank.

Also, I can get fancy and ignore a certain number of entries starting at
the data position. You would need to do this if you wanted to access the
third entry in the exchange, and the first two entries were not always the
same length.

4X1DF Karl 599
123456789112345678921234567893123456789412345678951234567896123456789712345678
 0 0 0 0 0 0 0

Enter cursor position for callsign : 1
Enter cursor position to start looking for data (zero for none) : 8
Enter number of entries to ignore (zero for none) : 0

Here are the available places to save your data. Choose none if you only
want to process the callsigns :

0 - None          5 - CQ Zone      A - TenTen Number  F - User 5
1 - ARRL Section  6 - ITU Zone     B - User 1
2 - Grid          7 - Name         C - User 2
3 - Check         8 - Speed        D - User 3
4 - QTH           9 - FOC Number   E - User 4

Do you want to process another data field at the same time? (Y/N) :
```

In this simple case, we respond that we only want to add the names so we respond “n” to the option of processing more fields. We are next asked about setting overwrite flags, answer “y” to better understand this setting:

[Type text]

[Type text]

[Type text]82

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
OVERWRITE FLAG STATUS

(A)RRL Section = FALSE      The flags listed determine what will
  CQ(Z)one = FALSE          happen if there is data found in the
  (F)OC = FALSE             file being processed and there is
  (G)rid = FALSE            existing data for the same field
  (H)its = TRUE              already in the database.  If the flag
  (I)TUZone = FALSE         is TRUE, the data will be updated to
  Chec(k) = FALSE          value found in the file.
  (N)ame = FALSE
  (O)ldCall = FALSE         The H flag determines if the hits count
  (Q)TH = FALSE             is incremented for each log a call is
  (S)peed = FALSE           found in.  You can later filter out the
  (T)enTen = FALSE         calls that only appear in 1 or 2 logs.
  User(1) = FALSE
  User(2) = FALSE           To change the value of one of the flags,
  User(3) = FALSE           just press the key of the highlighted
  User(4) = FALSE           letter.
  User(5) = FALSE

Enter field ID to change, RETURN to start or ESCAPE to exit : _

```

This shows that (N)ame is set to FALSE. What this means is if there is an existing entry for the call being processed, it would be skipped. Without changing this to TRUE, EXISTING data will not be overwritten. In this case we will change this to TRUE. This states that, as an example, if AA3B was already in the database as "ALAN" it will be overwritten to "BUD". For something like Sweepstakes SECTION it is probably advisable to set (A) to TRUE if you are using current data. Eg, a stations QTH is somewhat dynamic, could have changed and we want the latest data written. OTH, if using an older log as input, this may NOT be appropriate.

As soon as "n" is pressed, the screen changes:

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
OVERWRITE FLAG STATUS

(A)RRL Section = FALSE      The flags listed determine what will
  CQ(Z)one = FALSE          happen if there is data found in the
  (F)OC = FALSE             file being processed and there is
  (G)rid = FALSE            existing data for the same field
  (H)its = TRUE              already in the database.  If the flag
  (I)TUZone = FALSE         is TRUE, the data will be updated to
  Chec(k) = FALSE          value found in the file.
  (N)ame = TRUE
  (O)ldCall = FALSE         The H flag determines if the hits count
  (Q)TH = FALSE             is incremented for each log a call is
  (S)peed = FALSE           found in.  You can later filter out the
  (T)enTen = FALSE         calls that only appear in 1 or 2 logs.
  User(1) = FALSE
  User(2) = FALSE           To change the value of one of the flags,
  User(3) = FALSE           just press the key of the highlighted
  User(4) = FALSE           letter.
  User(5) = FALSE

Enter field ID to change, RETURN to start or ESCAPE to exit :

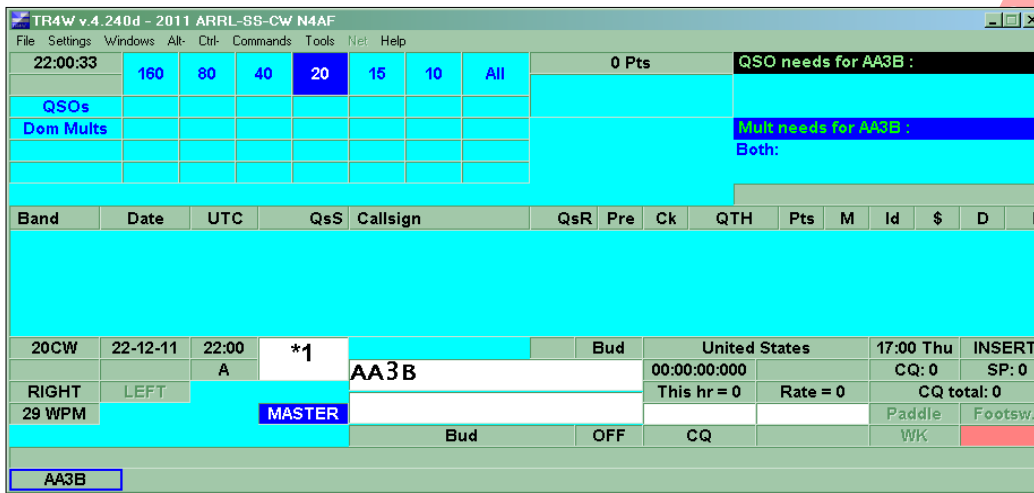
```

We may now press the <ENTER> key to begin processing the file. This will show the new size of the TRMASTER.DTA file created.

Additionally, TRMASTER.ASC was generated –which gives you an opportunity to explore the TRMASTER database file in a text processor such as NOTEPAD.

Now, navigate to your TR4W directory and RENAME TRMASTER.DTA to TRMASTER.DTA.BAK and copy the new TRMASTER.DTA into the \TR4W directory. (If something went wrong we will still have the original TRMASTER)

Now when we start TR4W (and there is not a TRMASTER.DTA in our specific contest directory), the TRMASTER.DTA file in \TR4W is read into memory and upon entering a callsign that was customized into the database we see:



You will note the NAME appears in both the USER INFO and NAME windows because we had <CTRL+J> **USER INFO SHOWN=NAME** set. Please also note that TR4W displays an error message if TRMASTER.DTA cannot be located.

It is worth noting that you could program an FKey to say “HI %” or you could program your CQ EXCHANGE KEY to do something like “% # B \ 52 ID” and then set <CTRL+J> **SAY HI RATE CUTOFF** to a value to limit greetings. Or (default) just display the name so you can respond in kind, should the situation warrant.

OK, we will now move to a new scenario. This time we want to process a Sweepstakes log, reading the CHECK and SECTION into TRMASTER.DTA. Building on the previous scenario some similar steps will be skipped.

NOTE: TR4W logs are NOT in TR log format

We now start POST back up and again specify “ueff”. We give POST the location of the contest log and also will assume the log is not a TR log.

Since the header information has not been removed, we need to edit the file from another window with an editor that will show columns (Notepad++ is recommended). Now we can see calls begin in CC 56 and data begins in CC74:

```

1 START-OF-LOG: 2.0
2 APRL-SECTION: NC
3 CALLSIGN: N4AF
4 CLUB: Potomac Valley Radio Club
5 CONTEST: APRL-SS-CW
6 CATEGORY: SINGLE-OP ALL HIGH CW
7 CLAIMED-SCORE: 193280
8 OPERATORS: N4AF
9 NAME: Howie Hoyt
10 ADDRESS: 549 Bluebird Tr
11 ADDRESS: Blounts Creek, NC 27814
12 ADDRESS: USA
13 CREATED-BY: N1MM Logger V4.0.168
14 QSO: 28036 CW 2004-11-06 2100 N4AF .....0000 B 58 NC N6RC 0001 M 61 SCV
15 QSO: 21050 CW 2004-11-06 2102 N4AF 0002 B 58 NC KA6SAR 0003 U 86 LAX
16 QSO: 21047 CW 2004-11-06 2102 N4AF 0003 B 58 NC KX7M 0006 U 81 EB
17 QSO: 21046 CW 2004-11-06 2103 N4AF 0004 B 58 NC N6TV 0005 B 72 SCV
18 QSO: 21041 CW 2004-11-06 2104 N4AF 0005 B 58 NC K6PB 0004 U 58 SCV
19 QSO: 21040 CW 2004-11-06 2104 N4AF 0006 B 58 NC N6NI 0003 B 77 IA
20 QSO: 21038 CW 2004-11-06 2105 N4AF 0007 B 58 NC W7OM 0003 A 49 WWA
21 QSO: 21037 CW 2004-11-06 2106 N4AF 0008 B 58 NC W0ZP 0007 U 72 CO
22 QSO: 21027 CW 2004-11-06 2106 N4AF 0009 B 58 NC W1SPD 0010 B 74 SV
23 QSO: 21024 CW 2004-11-06 2107 N4AF 0010 B 58 NC WD0T 0014 A 77 SD
24 QSO: 21016 CW 2004-11-06 2107 N4AF 0011 B 58 NC VE1AI 0008 B 60 MAR
25 QSO: 21019 CW 2004-11-06 2108 N4AF 0012 B 58 NC K7JA 0012 A 63 ORG
26 QSO: 21020 CW 2004-11-06 2109 N4AF 0013 B 58 NC W7WA 0014 A 70 WWA
27 QSO: 21023 CW 2004-11-06 2109 N4AF 0014 B 58 NC K1AR 0015 B 69 NH
28 QSO: 21027 CW 2004-11-06 2110 N4AF 0015 B 58 NC N5AW 0011 M 55 STX
29 QSO: 21028 CW 2004-11-06 2111 N4AF 0016 B 58 NC K7RC 0014 U 79 NV
30 QSO: 21034 CW 2004-11-06 2111 N4AF 0017 B 58 NC W0UA 0017 B 62 CO
31 QSO: 21037 CW 2004-11-06 2112 N4AF 0018 B 58 NC K6LL 0020 U 59 AZ
32 QSO: 21039 CW 2004-11-06 2113 N4AF 0019 B 58 NC N5DO 0020 A 60 WTX
33 QSO: 21040 CW 2004-11-06 2113 N4AF 0020 B 58 NC W6DRC 0017 U 69 FD

```

We also tell POST to skip the first 13 rows of Cabrillo header data.

Ok, that is the hard(er) way. An alternative is to edit the file with, say, Notepad, delete the first 13 lines and SAVE AS “*MY2004.TXT*”. Now we can let POST do the work by pointing it to the new file that exists without the header. Just be sure not to save your file to it’s existing name if you wish to preserve the Cabrillo headers !

Either way we are now here (note the # entries skipped- 13 indicates this had headers)

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
is a space found at the data position, the data is assumed to be blank.

Also, I can get fancy and ignore a certain number of entries starting at
the data position. You would need to do this if you wanted to access the
third entry in the exchange, and the first two entries were not always the
same length.

START-OF-LOG: 2.0
123456789112345678921234567893123456789412345678951234567896123456789712345678
      0          0          0          0          0          0          0

Enter cursor position for callsign : 1
Enter cursor position to start looking for data (zero for none) : 56
Enter number of entries to ignore (zero for none) : 13

Here are the available places to save your data. Choose none if you only
want to process the callsigns :

0 - None          5 - CQ Zone          A - TenTen Number   F - User 5
1 - ARRL Section  6 - ITU Zone          B - User 1
2 - Grid          7 - Name              C - User 2
3 - Check         8 - Speed             D - User 3
4 - QTH           9 - FOC Number        E - User 4

Select field (0-12 or escape to quit) :

```

Here is the easier to understand the log (w/o header):

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST

Old data will be over-written if the overwrite flag for the data field is set
to true. Execute the O command on the menu to view/edit these flags.

Enter the name of the file to process (none to quit) : 04.log
Is this a TR log file? (Y/N) : n

You can use most any ASCII format with this routine. The only requirement
is that the callsign and data must appear on the same line and there must
be one entry per line. Lines with no data - or calls that does not look
like a callsign will be ignored. You will need to specify the character
positions to use for the callsign and any data you want to save. If there
is a space found at the data position, the data is assumed to be blank.

Also, I can get fancy and ignore a certain number of entries starting at
the data position. You would need to do this if you wanted to access the
third entry in the exchange, and the first two entries were not always the
same length.

QS0: 28036 CW 2004-11-06 2100 N4AF          0000 B 58  NC N6RC          0001 M 61  SCV
123456789112345678921234567893123456789412345678951234567896123456789712345678
      0          0          0          0          0          0          0

Enter cursor position for callsign : 56
Enter cursor position to start looking for data (zero for none) : 74

```

We have told POST to read column 74 which is the CHECK field. We choose “3” for Check , and are asked if we want to process more. This time we say (y)es. Post now knows to provide the column display again:

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST

0 - None          5 - CQ Zone      A - TenTen Number  F - User 5
1 - ARRL Section  6 - ITU Zone     B - User 1
2 - Grid          7 - Name         C - User 2
3 - Check         8 - Speed        D - User 3
4 - QTH           9 - FOC Number   E - User 4

Do you want to process another data field at the same time? (Y/N) : y
You can use most any ASCII format with this routine. The only requirement
is that the callsign and data must appear on the same line and there must
be one entry per line. Lines with no data - or calls that does not look
like a callsign will be ignored. You will need to specify the character
positions to use for the callsign and any data you want to save. If there
is a space found at the data position, the data is assumed to be blank.

Also, I can get fancy and ignore a certain number of entries starting at
the data position. You would need to do this if you wanted to access the
third entry in the exchange, and the first two entries were not always the
same length.

QS0: 28036 CW 2004-11-06 2100 N4AF          0000 B 58  NC N6RC          0001 M 61  SCV
123456789112345678921234567893123456789412345678951234567896123456789712345678
      0          0          0          0          0          0          0

Enter cursor position for callsign : _

```

We again provide the column for callsign “56” but this time we want to process the SECTION:

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
0 - None          5 - CQ Zone      A - TenTen Number  F - User 5
1 - ARRL Section  6 - ITU Zone     B - User 1
2 - Grid          7 - Name         C - User 2
3 - Check         8 - Speed        D - User 3
4 - QTH           9 - FOC Number   E - User 4

Do you want to process another data field at the same time? (Y/N) : y
You can use most any ASCII format with this routine.  The only requirement
is that the callsign and data must appear on the same line and there must
be one entry per line.  Lines with no data - or calls that does not look
like a callsign will be ignored.  You will need to specify the character
positions to use for the callsign and any data you want to save.  If there
is a space found at the data position, the data is assumed to be blank.

Also, I can get fancy and ignore a certain number of entries starting at
the data position.  You would need to do this if you wanted to access the
third entry in the exchange, and the first two entries were not always the
same length.

QS0: 28036 CW 2004-11-06 2100 N4AF          0000 B 58  NC N6RC          0001 M 61  SCV
123456789112345678921234567893123456789412345678951234567896123456789712345678
          0          0          0          0          0          0          0

Enter cursor position for callsign : 56
Enter cursor position to start looking for data (zero for none) : 77

```

So we enter “77” and press <ENTER>. We are again prompted for entries to ignore. Since this is the version of the log with headers removed, we specify “0” and press <ENTER>.

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
is a space found at the data position, the data is assumed to be blank.

Also, I can get fancy and ignore a certain number of entries starting at
the data position.  You would need to do this if you wanted to access the
third entry in the exchange, and the first two entries were not always the
same length.

QS0: 28036 CW 2004-11-06 2100 N4AF          0000 B 58  NC N6RC          0001 M 61  SCV
123456789112345678921234567893123456789412345678951234567896123456789712345678
          0          0          0          0          0          0          0

Enter cursor position for callsign : 56
Enter cursor position to start looking for data (zero for none) : 77
Enter number of entries to ignore (zero for none) : 0

Here are the available places to save your data.  Choose none if you only
want to process the callsigns :

0 - None          5 - CQ Zone      A - TenTen Number  F - User 5
1 - ARRL Section  6 - ITU Zone     B - User 1
2 - Grid          7 - Name         C - User 2
3 - Check         8 - Speed        D - User 3
4 - QTH           9 - FOC Number   E - User 4

Select field (0-12 or escape to quit) :

```

Post now prompts for the FIELD which is “1”
This time we are done processing CHECK and SECTION and thus can tell POST we are done:

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
is a space found at the data position, the data is assumed to be blank.

Also, I can get fancy and ignore a certain number of entries starting at
the data position. You would need to do this if you wanted to access the
third entry in the exchange, and the first two entries were not always the
same length.

QS0: 28036 CW 2004-11-06 2100 N4AF          0000 B 58  NC N6RC          0001 M 61 SCU
123456789112345678921234567893123456789412345678951234567896123456789712345678
      0          0          0          0          0          0          0          0

Enter cursor position for callsign : 56
Enter cursor position to start looking for data (zero for none) : 77
Enter number of entries to ignore (zero for none) : 0

Here are the available places to save your data. Choose none if you only
want to process the callsigns :

0 - None          5 - CQ Zone          A - TenTen Number   F - User 5
1 - ARRL Section  6 - ITU Zone          B - User 1
2 - Grid          7 - Name              C - User 2
3 - Check         8 - Speed             D - User 3
4 - QTH           9 - FOC Number        E - User 4

Do you want to process another data field at the same time? (Y/N) : _

```

We now say “y”es to checking the overwrite flags:

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: POST
OVERWRITE FLAG STATUS

(A)RRLL Section = TRUE          The flags listed determine what will
  CQ(Z)one = FALSE             happen if there is data found in the
  (F)OC = FALSE                file being processed and there is
  (G)rid = FALSE               existing data for the same field
  (H)its = TRUE                already in the database. If the flag
(I)TUZone = FALSE             is TRUE, the data will be updated to
  Chec(k) = TRUE               value found in the file.
  (N)ame = FALSE

(O)ldCall = FALSE             The H flag determines if the hits count
  (Q)TH = FALSE                is incremented for each log a call is
  (S)peed = FALSE              found in. You can later filter out the
(T)enTen = FALSE              calls that only appear in 1 or 2 logs.
  User(1) = FALSE
  User(2) = FALSE
  User(3) = FALSE
  User(4) = FALSE
  User(5) = FALSE

To change the value of one of the flags,
just press the key of the highlighted
letter.

Enter field ID to change, RETURN to start or ESCAPE to exit :

```

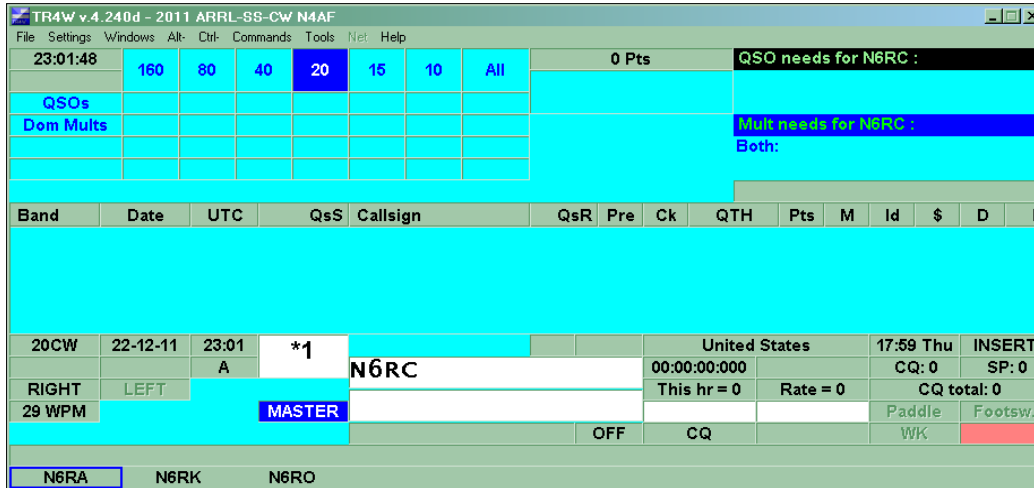
And can change (A)RRLL Section and Chec(k) as appropriate. Normally you want to change these to TRUE to guarantee, if an entry exists it WILL be overwritten. At this point the database is updated and we are ready to rename the old TRMASTER.DTA and move the new database in for testing.

Note that the “x” (3 times) entered to exit POST are skipped in this scenario, but you will need to do that – or simply press the top right corner “X”.

This time we are going to copy the TRMASTER.DTA file into our SWEEPSTAKES directory.

This is because the customized data is specific to the SS.

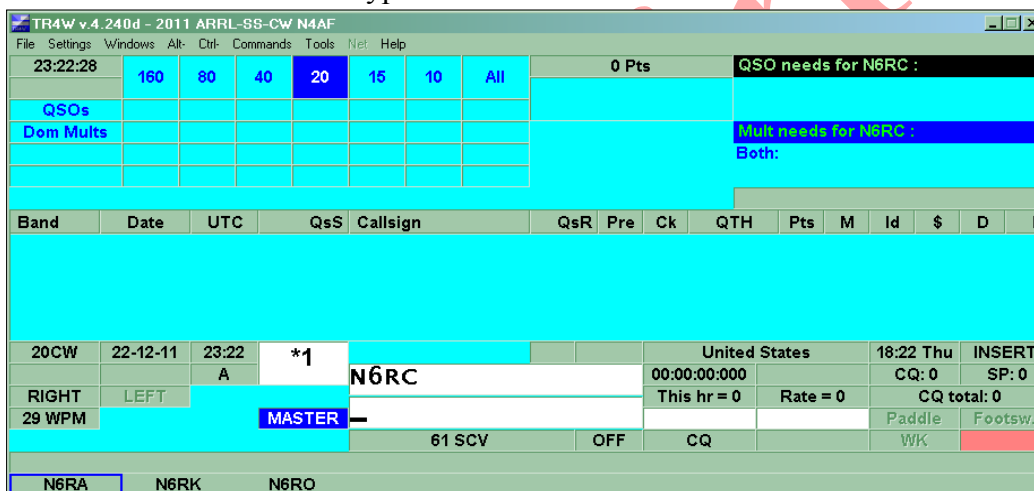
When we bring up TR4W and enter N6RC, here is what happens:



Nada ! Hmm, perhaps it is time to examine our settings ?

Aha, the problem is <CTRL+J> **USER INFO SHOWN** is still set to **NAME**.

For maximum flexibility, we set it to **CUSTOM**. We now must specify <CTRL+J> **CUSTOM USER STRING** where we type in “CHECK SECTION” :



You should now observe the **User Info Window** contains “61 SCV”.

What if we want to prefill ??

Ensure that <CTRL+J> **INITIAL EXCHANGE** is set to **CUSTOM**. Now set <CTRL+J> **CUSTOM INITIAL EXCHANGE STRING** by double clicking it and entering “CHECK SECTION” and saving:

TR4W v.4.240d - 2011 ARRL-SS-CW N4AF												
File Settings Windows Alt- Ctrl- Commands Tools Net Help												
23:30:43	160	80	40	20	15	10	All	0 Pts			QSO needs for N6RC :	
QSOs												
Dom Mults								Mult needs for N6RC :				
								Both: 160 80 40 20 15 10				
Band	Date	UTC	QsS	Callsign	QsR	Pre	Ck	QTH	Pts	M	Id	\$ D F
20CW	22-12-11	23:30	*1	N6RC				United States	18:30 Thu	INSERT		
		A						00:00:00:000	CQ: 0	SP: 0		
RIGHT	LEFT			61 SCV				This hr = 0	Rate = 0	CQ total: 0		
29 WPM			MASTER	61 SCV	OFF					Paddle	Footsw.	
			MULT	61 SCV						WK		
N3RC	N6RA	N6RK	N6RO	N7RC								

That did it! Note that we still are set to display in the **USER INFO** Window also.

Tip: you should already be aware you can "add" to the exchange field corrections like "1a 60eb" after "61 scv" to update the exchange (when the d/b is wrong). Likewise with <CTRL+J> CALLSIGN UPDATE ENABLE=TRUE we could type "1a 60eb n6ac" into the exchange field to correct not only the exchange but the call also.

Tip: Ensure <CTRL+J> SCP MINIMUM LETTERS is NOT set to zero.

Now we will show a scenario where we used TR4W as our general logging program and want to propagate TRMASTER.DTA with the names of the stations we have qso'd. We will choose the simple case where only signal report and NAME were logged. Otherwise you will need to use something like a spreadsheet to select out call and names, or at least ensure they are consistently in the same columns.

So the first step will be to export our GENERAL QSO log to INITIAL.EX:

```

C:\Program Files (x86)\TR4W\2011 GENERAL QSO N4AF\CUSTOM_INITIAL.EX
File Edit
;callsign      exchange
DJ5AZ          KIEL
DJ6ZC          DAN
DL2DSL        JOERG
DL4ME          RON
DL7UPN        AXEL
G3ICH         PETE
G3KTZ         RON
G4OIV         DON
HA2AL         LACI
HA2MI         PISTA
HA5FA         JINCI
I1HLP         LUC
IK0IXI        FABIO
LZ1FAX        GEO
LZ2TW         TOM
OE1HFC        HERMANN
OM3CFF        KAROL
OM3LL         IVAN
ON5LX         PROS
ON6PQ         ED
PA3EDC        ROY
RA3RLP        GENE
RA4ATZ        ALEX
RA4HP         ALEX
RD3FF         ALEX
RU3IF         VIC
RU3KA         ALEX
RV6AMS        VLAD
RW4WN         LEE
RX3ACD        VIC
RX3ZL         ALEX
RZ3GO         SERGEY
S57YK         BOJAN
SP2CQF        JERY
SP8BBK        JUREK
U5WK          NICK
UA1COU        ALEX
UA3AQM        ALEK
UA3QDJ        ALEX
UA3TCQ        VAL
UA4NE         MIKE
UA6G          VIC

```

Now using an editor select all but the header and <CTRL+C> it onto your clipboard memory. From START enter "notepad.exe" and when it initializes, press <CTRL+V> to paste the data in. Now save the data wherever your POST is located.

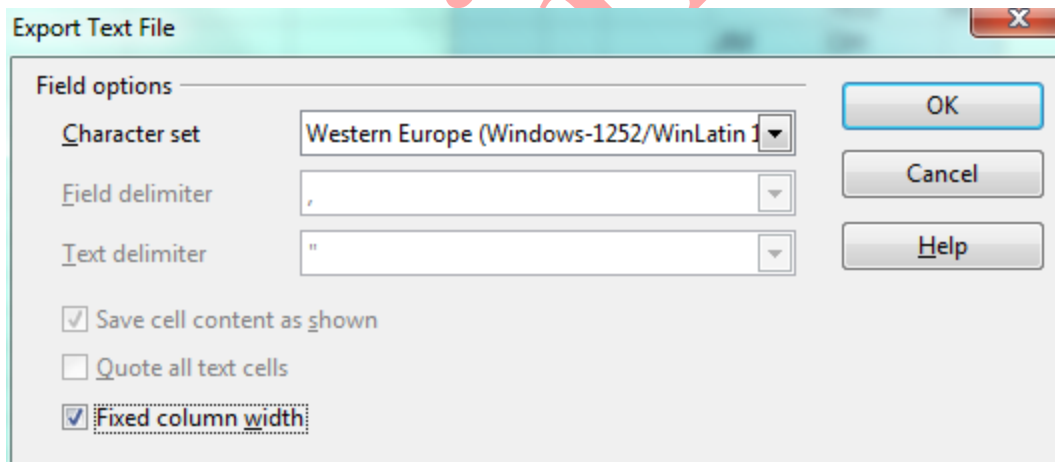
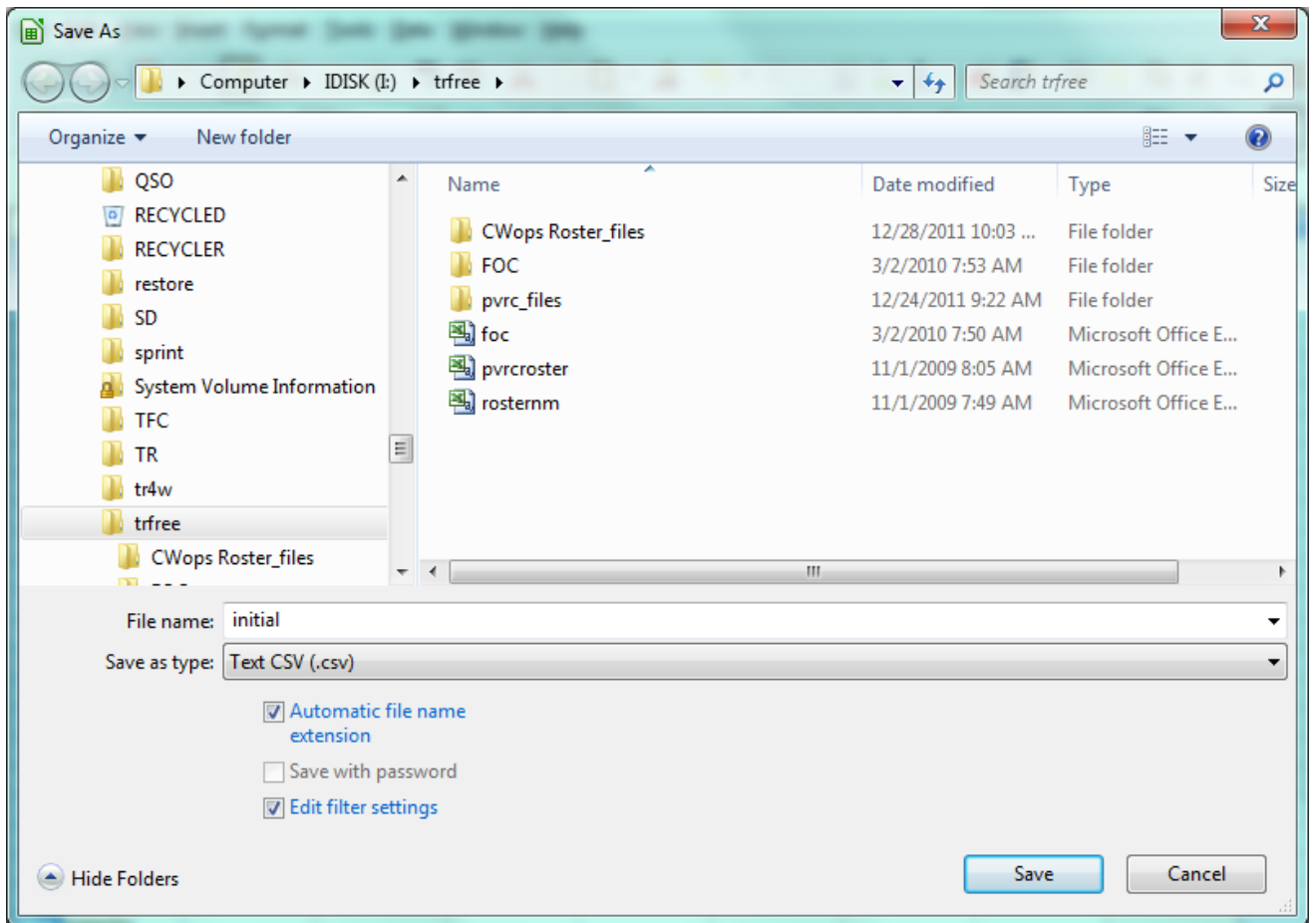
You can now write the data into TRMASTER.DTA and copy it into your \TR4W directory. Note that TR4W must not be initialized as he enqueues TRMASTER.DTA and you cannot overwrite it when TR4W is up.

Now with <CTRL+J> **INITIAL EXCHANGE=CUSTOM** and <CTRL+J> **CUSTOM USER STRING=NAME** you should see the stations name display when you enter their call:

TR4W v.4.242b - 2012 General QSOs N4AF															
File Settings Windows Alt- Ctrl- Commands Tools Net Help															
11:38:34		160	80	40	20	15	10	All	55 Pts					CW:	
CW QSOs		1	3	1	48			2	55						SSB:
															Mult needs for DJ5AZ :
															3oth:
										DL 46° 4259m 0722z/1530z					
Band	Date	UTC	QsS	Callsign	Name	QTH	Pts	M	Id	\$	D	Freq	Op		
20CW	05-01...	13:10		RW4WN	LEE		1					14022.03			
20CW	05-01...	13:11		RX3ZL	ALEX		1					14022.03			
20CW	05-01...	13:13		RD3FF	ALEX		1					14022.03			
20CW	05-01...	13:14		G3ICH	PETE		1					14022.03			
20CW	05-01...	13:16		US5VX	GENE		1					14022.03			
20CW	07-01-12	11:38	*56		1	Kiel	Germany					12:38	OVERRID		
	14025.00	B		DJ5AZ_			00:00:00:00					CQ: 55	SP: 0		
LEFT	RIGHT						Last 60 = 0	Rate = 0				CQ total: 0			
35 WPM			MASTER									Paddle	Footsw.		
				KIEL		OFF	CQ		J051			WK2 v23			
DJ5AZ															

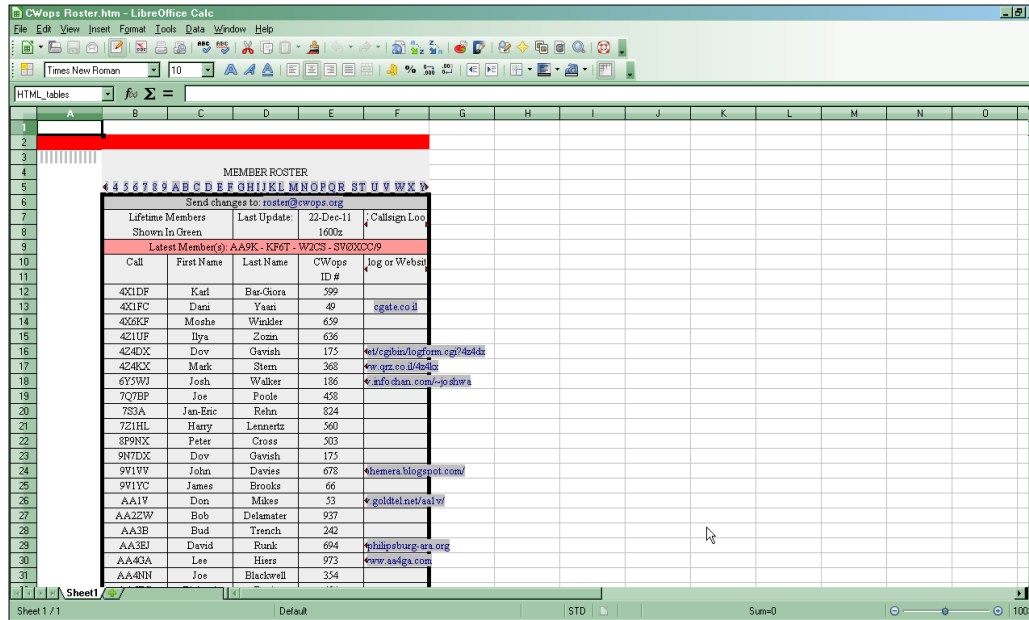
Hopefully, this illustrates some of the power of the **TRMASTER.DTA** customization. One caution: POST is looking for data in columns you specify. *This implies the data being read by POST must be in fixed columns.* Not a problem for contest logs but something to be careful about regarding ascii files that delimit by x'20' spaces or x'09' tabs – like perhaps a club roster.

Tip: Using Open Source spreadsheet LibreOffice, you can read in variable column data then SAVE AS with 'Edit filter settings' checked. This will produce the following dialog where you can specify fixed columns:

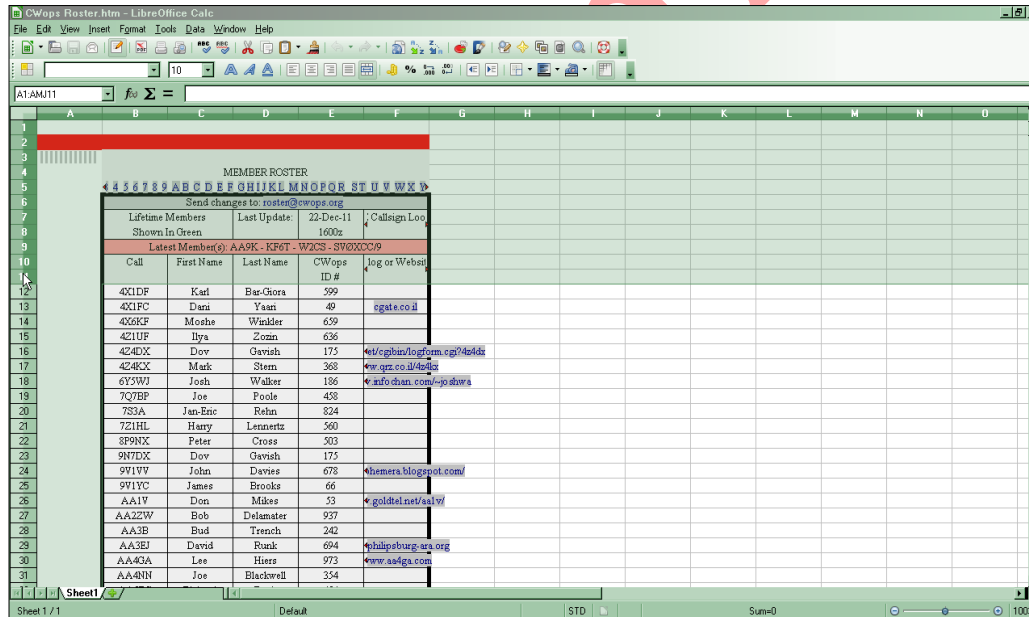


For our next scenario, we will try to load the TRMASTER.DTA database with a club roster. We navigate to <http://cwops.org/roster.html> and view the complete current roster for CWOPS. The roster appears to be in some sort of table. Firstly we right click on the roster, choose SAVE AS, and save the roster as **CWops Roster.htm** in the directory where POST is located.

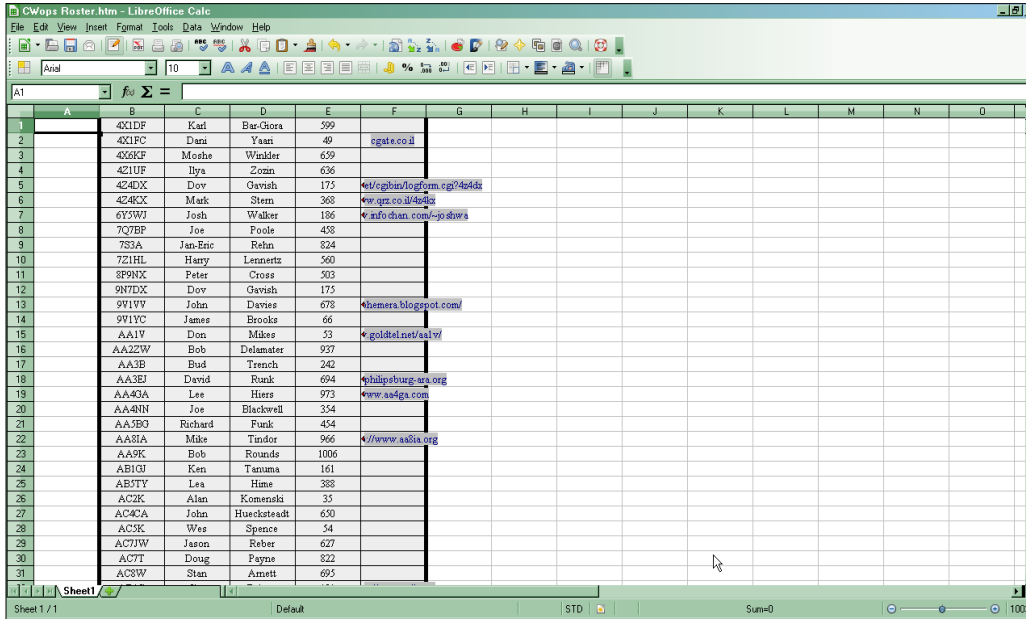
Now open CWops Roster.htm with your spreadsheet program. We will choose Free Open Source Software LIBREOFFICE:



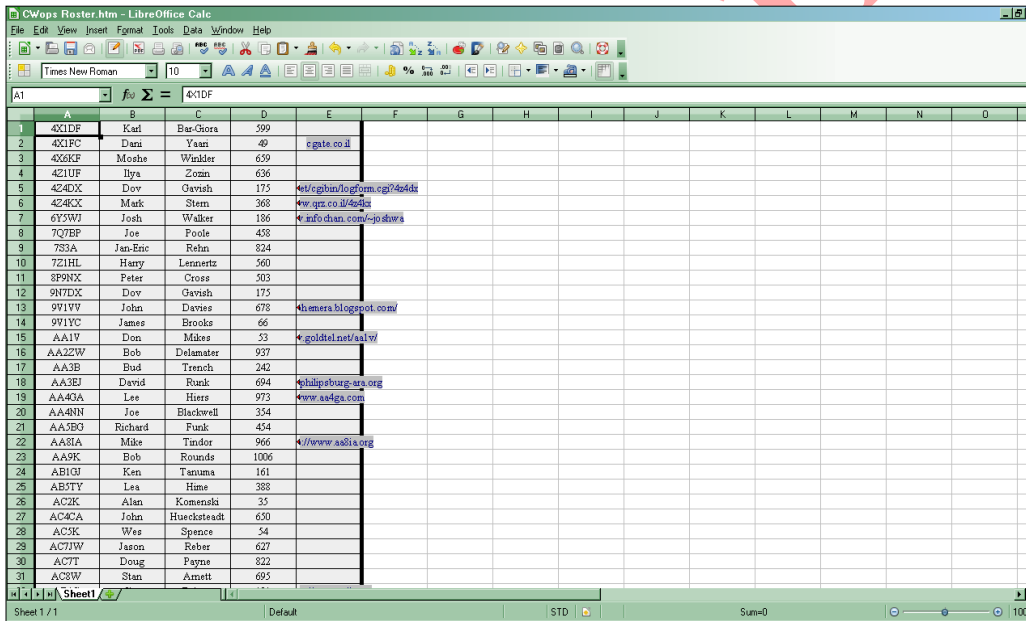
Ok, you should now see the roster, something like above. What we now want to do is remove the headers (much like we did with logs). Hold down your <CTRL> key and click on 1-11 so they are all highlighted. (whilst holding down <CTRL> I 'pulled' my mouse pointer from 1 to 11 producing below):



With the area still highlighted, do a < CTRL + - > (holding down ctrl press '+' and '-')



Let's get rid of the cells in column 'A' (whilst holding down <CTRL> click on header 'A' and press <CTRL + ->

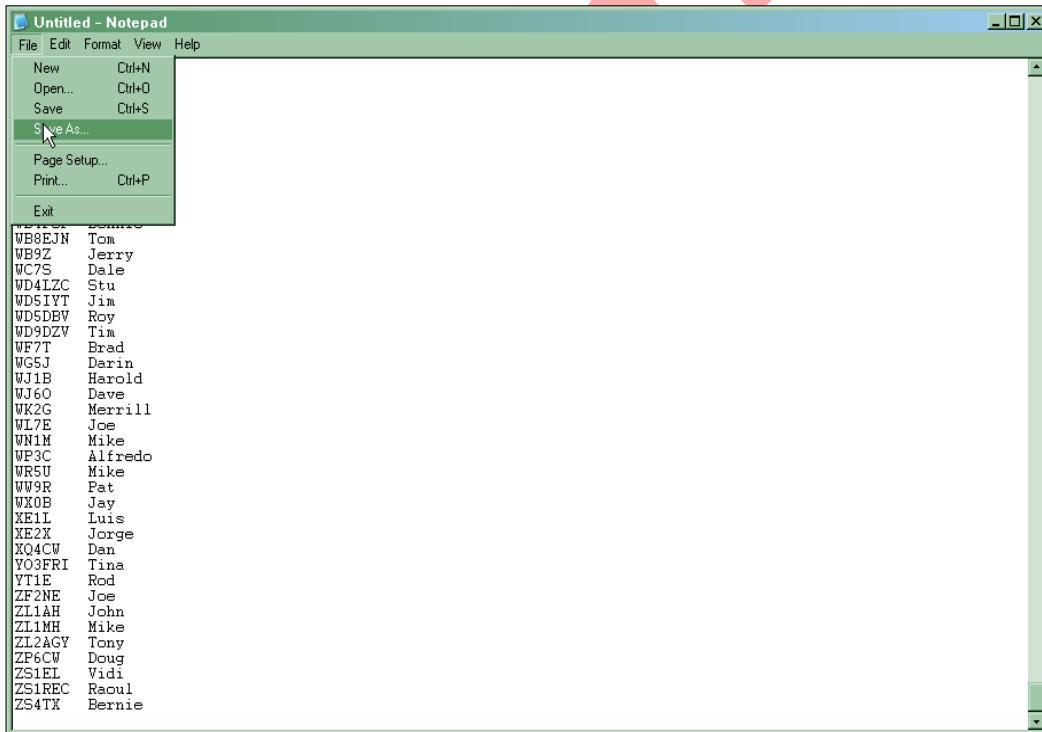


While again holding down the <CTRL> key drag your mouse across the row 1 columns A and B so that they highlight. Do not release the <CTRL> key, rather drag it down column B all the way to the bottom of your screen and let the spreadsheet scroll to the bottom of the table:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
907	XQ4CW	Den	Lars	965											
908	Y03FRI	Tina	Müller	475											
909	YT1E	Rod	Pankovic	946											
910	ZF2NE	Joe	Staples	924											
911	ZL1AH	John	Wightman	25											
912	ZL1MH	Mike	Hutchins	230											
913	ZL2AGY	Tony	Marr	927											
914	ZP6CW	Doug	Woolley	215											
915	ZS1EL	Vidi	Le Grange	13											
916	ZS1REC	Raoul	Coetzee	338											
917	ZS4TX	Bernie	van der Walt	41											

Good! We have now selected all CALLS and NAMES. Now you can <CTRL+C> to COPY the data onto your system clipboard. Now go to Windows START/RUN and enter “notepad” to bring up the system editor. Once notepad is up, <CTRL+V> will paste the data into the editor.

Now you can “SAVE AS” the listing as, say “CWOPS.TXT” to the directory where you placed POST.



Note that source formatting may be lost during copy/paste. *Scroll down to ensure longer (usually portable) calls are still aligned ok.*

Also note that you may be able to *avoid dragging the cursor*. In LibreOffice you can select DATA and DEFINE RANGE. Ensure the range at the bottom is correct, select OK and you are ready to copy/paste.

TIP: Because POST requires fixed columns, an easy way to convert a file is to open it in a spreadsheet and copy/paste the contents out. You will need to scroll the results to guarantee you do not have calls that 'overflow' their allotted space (like portables).

You can now load TRMASTER.DTA database with the complete/current listing of CWOPS names.

NOTE: unlike INITIAL.EX format, POST can handle intervening extraneous data, so you could create an ascii table with extra data you did not remove between columns POST will read.

Since we have the CWops spreadsheet still open, why not build something that would PREFILL the exchange for CWops contest ? (NAME #). Here we drag the cursor over all four fields:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
914	2F6CW	Doug	Woolley	215											
915	2S1EL	Vidi	Le Grange	13											
916	2S1REC	Raoul	Coetzee	338											
917	2S4TX	Bernie	van der Walt	4											
918															
919															
920															
921															
922															
923															
924															
925															
926															
927															
928															
929															
930															
931															
932															
933															
934															
935															
936															
937															
938															
939															
940															
941															
942															
943															
944															

<CTRL+C> will now load the data into our clipboard and we can paste to file using Notepad and <CTRL+V> as before. We then save the file as **CWO.TXT** into the directory where POST resides.

This illustrates how POST does not care about intervening data (LAST NAME column), so the capture can include extraneous data- as long as it is always in the same fixed column. Use the above procedures to build TRMASTER to PREFILL NAME and #.

But what if you want to build an **INITIAL.ex** INITIAL EXCHANGE file ??

This time we click on column C header and press <CTRL + -> (3 keys CTRL,+,-) to remove the column:

We will do the same with column D, leaving us with CALL, NAME, and #. We can now Copy/Paste the data into a file we will name **INITIAL.EX** and save the file to our TR4W CWops contest

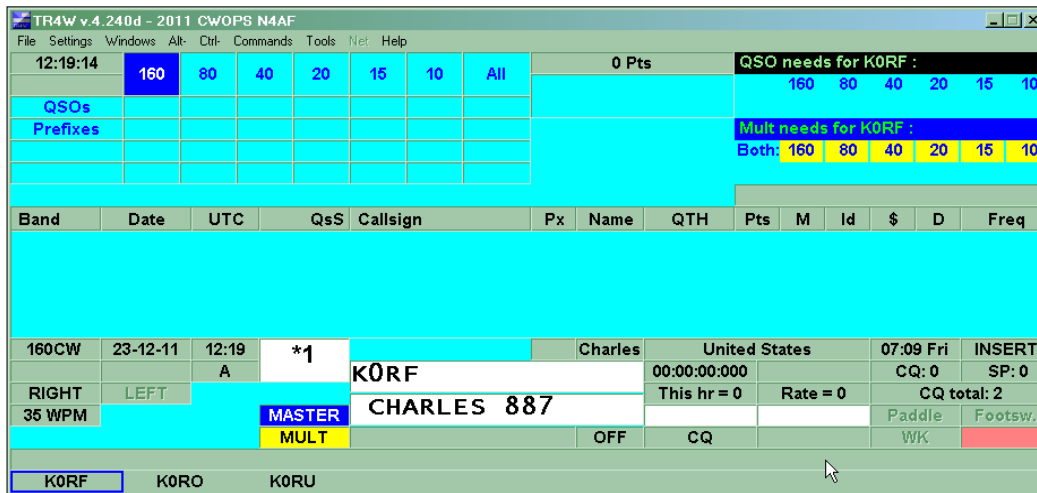
directory. Now bring up TR4W and <CTR+J>INITIAL EXCHANGE FILENAME When you double click it you will be prompted to browse for the initial.ex file to use.”

Note: INITIAL.EX will prefill what it contains for a given call, so ensure you capture data you want plugged into the EXCHANGE field of TR4W.

Double click on the entry and point it to the location of your INITIAL.EX in the CWops directory.

Below is an example of exchange being built directly from the *INITIAL.EX* file.

NOTE: INITIAL.EX will override TRMASTER.DTA when both contain the same call and both are activated via their respective <CTRL-J> settings.



Preliminary

4.15 Entering a Hand Log

When entering a log after the contest you may set **<CTRL+J> AUTO TIME INCREMENT** to increment the time x minutes after each logged qso.

You may also wish to set **<CTRL+J> AUTO DUPE ENABLE=FALSE** to allow entry of dupes.

You probably also want to set **<CTRL+J> INCREMENT TIME ENABLE=TRUE** to allow time increment via the ALT key.

5 Post-Contest Reports & Log Utilities

5.1 Reports

On contest conclusion, TR4W can generate a number of useful reports:

- All callsigns
- Bandchanges
- Continent list
- First callsign worked in each country
- First callsign worked in each zone
- QSOs by country by band
- Score by hour
- Summary

All callsigns produces a sorted list of calls worked by # times worked:

2012 CWOPS N4AF

unique callsigns: 63

3 QSOs:

1. VE3KI

2 QSOs:

1. AA3B

- 2. AC4CA
- 3. AD4EB
- 4. DL1NKS

etc thru 1 QSOs.

Bandchanges

Lists the # of changes:

- 1. Band change from 40CW to 80CW at 03:15.
- 2. Band change from 80CW to 40CW at 03:15. *
- 3. Band change from 40CW to 80CW at 03:16. *
- 4. Band change from 80CW to 40CW at 03:17. *
- 5. Band change from 40CW to 80CW at 03:18.
- 6. Band change from 80CW to 40CW at 03:18. *
- 7. Band change from 40CW to 80CW at 03:21.
- 8. Band change from 80CW to 40CW at 03:26.
- 9. Band change from 40CW to 80CW at 03:27.
- 10. Band change from 80CW to 40CW at 03:27. *
- 11. Band change from 40CW to 80CW at 03:28.
- 12. Band change from 80CW to 40CW at 03:52.

There were 5 second radio QSOs made.
Where the asterisk denotes second radio band change.

Continent List

Will list a matrix of continents vs bands:

2012 CWOPS N4AF

		Continent List								
		160	80	40	20	15	10	30	17	12
ALL		---	---	---	---	---	---	---	---	---
66	USA calls =	0	31	35	0	0	0	0	0	0
5	Canada calls =	0	3	2	0	0	0	0	0	0
0	NA calls =	0	0	0	0	0	0	0	0	0
0	SA calls =	0	0	0	0	0	0	0	0	0
17	Euro calls =	0	7	10	0	0	0	0	0	0
0	African calls =	0	0	0	0	0	0	0	0	0
1	Asian calls =	0	0	1	0	0	0	0	0	0
0	Japan calls =	0	0	0	0	0	0	0	0	0
2	ocean calls =	0	1	1	0	0	0	0	0	0
0	Unknown calls =	0	0	0	0	0	0	0	0	0
91	Total calls =	0	42	49	0	0	0	0	0	0

The summary report may be copy/pasted into the 3830 submittal page to alleviate recalling qso by band, mult by band, final score type information.

First Callsign worked in each country produces another matrix by band:

COUNTRIES WORKED - WITH CALL OF FIRST STATION WORKED

Prefix	2012 CWOPS N4AF					
	160	80	40	20	15	10
4X			4X4FC			
DL		DL1NKS	DL1NKS			
G		G3VTT				
K		WW9R	W1UU			
KH6		K9FD/KH6	K9FD/KH6			
OK		OK1RR	OK1RR			
SM		SM6CNN	SM6CNN			
UA		RW3PK	UA4CNJ			
UR		UR5MM	UR5MM			
VE		VE3KI	VX2AWR			

Likewise **First callsign worked in each zone** produces a matrix of zone vs band.

QSO's by country by band produces information on country stats by band:

2012 CWOPS N4AF

QSOS MADE IN EACH COUNTRY

Country	Prefix	160	80	40	20	15	10	Total
1 Israel	4X	-	-	1	-	-	-	1
2 Germany	DL	-	1	1	-	-	-	2
3 England	G	-	1	-	-	-	-	1
4 United States	K	-	31	35	-	-	-	66
5 Hawaii	KH6	-	1	1	-	-	-	2
6 Czech Republic	OK	-	2	1	-	-	-	3
7 Sweden	SM	-	1	2	-	-	-	3
8 European Russia	UA	-	1	2	-	-	-	3
9 Ukraine	UR	-	1	4	-	-	-	5

10 Canada VE - 3 2 - - - 5
 5.49

Score by hour can produce running totals by hour:

CWOPS N4AF

HR	160	80	40	20	15	10	HR TOT	CUM
TOTAL	SCORE							
3	---	42/14	48/48	---	---	---	90/62	
90/62	0.006 M							
4	---		1/1	---	---	---	1/1	
91/63	0.006 M							
D1	0/0	42/14	49/49	0/0	0/0	0/0		
91/63								
TO	0/0	42/14	49/49	0/0	0/0	0/0		
91/63								

Here Day1 and Total are the same.

Summary gives a nice overview that is suitable for cut/paste to 3830:

CWOPS SUMMARY SHEET

CONTEST: CWOPS
 START DATE: 29-12-11
 CALLSIGN USED: N4AF
 LOCATOR: FM15

CATEGORY-ASSISTED: NON-ASSISTED
 CATEGORY-BAND: ALL
 CATEGORY-MODE: CW
 CATEGORY-OPERATOR: SINGLE-OP
 CATEGORY-POWER: HIGH
 CLUB: Potomac Valley Radio Club
 NAME: Howard Hoyt
 ADDRESS: 549 Bluebird Trail
 ADDRESS-CITY: Blounts Creek
 ADDRESS-STATE-PROVINCE: NC
 ADDRESS-POSTALCODE: 27814
 ADDRESS-COUNTRY: USA
 EMAIL: n4af@blountscreek.org

OPERATING TIME: 01:00:00
 CQ COUNTER: 0
 RUN/SEARCH: 91/0 Qs
 UNIQUE CALLSIGNS: 63

BAND	Raw QSOs	Valid QSOs	Points	Prefixes
80CW	42	41	41	14
40CW	49	49	49	49
Totals	91	90	90	63

Final Score = 5670 points.

5.2 Export Files

5.2.1 ADIF File

Amateur Data Interchange Format can be imported at any time into TR4W to recreate the log. It's more global function is to move log data BETWEEN programs. For example to export data from TR4W for import to Logger32 or LOTW processing. *It is a good practice to export your log to a unique named ADIF file at the conclusion of a contest.* TR4W export will normally be to the specific contest directory under name of <your call.ADI>. It is worth noting the ONLY way to re-load contest information back into TR4W, at a later date, is via IMPORT of the ADIF.

5.2.2 Cabrillo File

Cabrillo serves as the interface between the logging program and the contest sponsor. The Cabrillo file will be what you email to the contest sponsor.

At contest conclusion the log should always be renamed to a unique Cabrillo name. TR4W will export to the specific contest directory using filename <your call.LOG> but you may wish to give it a more unique name. You also must ensure that, upon export, you fill out the STATION INFORMATION accurately as it serves as Cabrillo header data used by the contest robot to validate your entry and most of the fields are required.

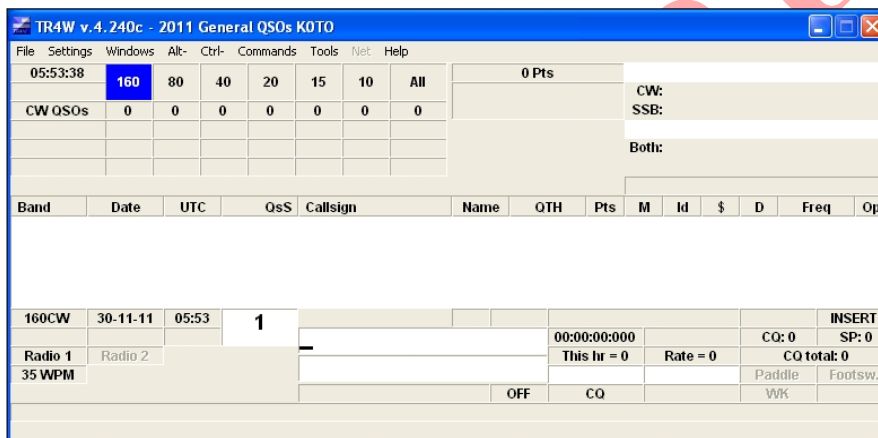
5.2.3 Initial Exchanges List

TR4W will export a listing of calls and exchange data that may be used as PREFILL data in future logs submitted for the same contest. If there is no specific-to-callsign data (for example, only serial number), TR4W will only export a header. If an **INITIAL.EX** file already existed, TR4W will export a file named **CUSTOM INITIAL.EX** which contains BOTH the original initial.ex data and new data extracted from the log.

Upon next running of the contest, if you want prefills, point <CTRL+J>**INITIAL EXCHANGE FILENAME** to the newly created **CUSTOM.INITIAL.EX** file.

6 Main Window

The window below is the Main Window. It is what appears when you start the program and select the name of a contest.



The Main Window has a number of sub-windows located within it. Some of these sub-windows already have values and others are blank waiting for additional configuration statements to be set or for some activity to be initiated by the user.

In this Main Window the Band is 160 meters, the Mode is CW, the Date is 11-30-2011 [Nov 30, 2011]. The CW speed set as 35 WPM. The Time is 05:53:38 UTC. Although Radio 1 is shown, there is no frequency associated with it. That tells us that the program has not yet been interfaced with a radio.

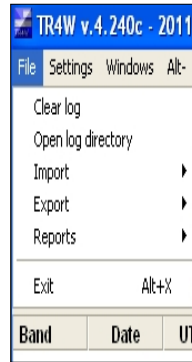
We can use the program to log contacts [QSO's] even though we do not have any interface established between the computer and the radio. We can change the Band by using <alt-B> or <alt-V> and we can change the Mode by using <alt-M>. These and other operations are listed under the

Menu items of the Main Window which are described in the section following.

6.1 Menus and Sub Menus of Main Window

Preliminary

6.1.1.1 File Menu



Preliminary

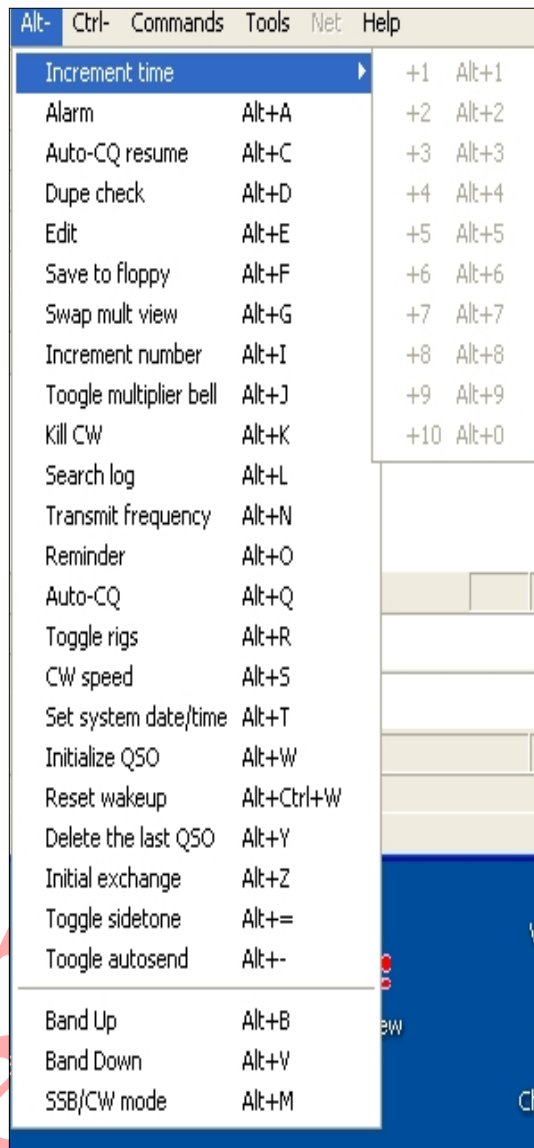
6.1.1.2 Settings Menu

Settings	Windows	Alt-	Ctrl-	Commands	Tools	Net	Help
Configuration commands				Ctrl+J	15	10	All
Colors					0	0	0
Appearance							
Program messages				Alt+P			
CAT and CW Keying					Radio 1	Ctrl+Alt+1	
LPT				Ctrl+Alt+L	Radio 2	Ctrl+Alt+2	
Winkeyer				Ctrl+W	Call sign		

6.1.1.3 Window Menu

Windows	Alt-	Ctrl-	Commands	Tools	Net	Help
Bandmap			Shift+Ctrl+`	15	10	All
Dupesheet						
Function keys			Shift+Ctrl+2	0	0	0
SCP			Shift+Ctrl+3			
Remaining mults						
Radio 1			Shift+Ctrl+5			
Radio 2			Shift+Ctrl+6			
DX Cluster						
Network						
Intercom			Shift+Ctrl+7			
Post score			Shift+Ctrl+8			
Stations			Shift+Ctrl+9			
MP3 Recorder			Shift+Ctrl+0			

6.1.1.4 Alt- Menu



6.1.1.5 Ctrl- Menu

The screenshot displays the 'Ctrl-' menu with the following items:

- Send Keyboard Input Ctrl+A
- Communicate with packet port Ctrl+B
- Clear multsheet Ctrl+C
- Auto QSL Interval (Decrease) Ctrl+D
- Auto QSL Interval (Increase) Ctrl+I
- Clear dupesheet Ctrl+K
- View / Edit log Ctrl+L
- Note Ctrl+N
- Missing mults report Ctrl+O
- Redo possible calls Ctrl+P
- QTC functions Ctrl+Q
- Recall last entry Ctrl+R
- SH/DX [callsign] Ctrl+S
- Execute configuration file Ctrl+V
- Refresh bandmap Ctrl+Y
- Dualing CQs Ctrl+-
- Cursor in bandmap window Ctrl+End
- Cursor in DX Cluster window Ctrl+Home
- QSO with no CW Ctrl+Enter
- CT1BOH info screen Ctrl+]
- Add bandmap place holder Ctrl+Ins

The 'Additional information' section includes:

- QSO number Ctrl+1
- Callsign Ctrl+2
- CW Speed Ctrl+3
- Band Ctrl+4

The background window shows a table with columns 'Name', 'QTH', and 'Pts', and a timer displaying '00:00:00:00' with the text 'This hr = 0' below it.

6.1.1.6 Commands Menu

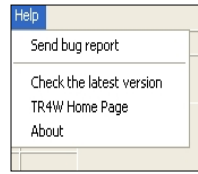
Commands	Tools	Net	Help
Focus in main window			Pause
Toggle insert mode			Ins
Escape			Esc
CW Speed Up			PgUp
CW Speed Down			PgDn
CW Speed Up for the inactive radio			Ctrl+PgUp
CW Speed Down for the inactive radio			Ctrl+PgDn
CQ Mode			Shift+Tab
Search & pounce mode			Tab
Log in			Ctrl+Alt+I
Send spot			.
Rescore			

6.1.1.7 Tools Menu

Tools	Net	Help
Synchronize PC time		Ctrl+Alt+N
Beacons monitor		
Windows control		Ctrl+Alt+M
Set time zone		
Device Manager		
Ping [SERVER ADDRESS]		
Run TR4WSERVER		
DVP volume control		
Recording control		
Rules for GENERAL QSO contest on WA7BNM Contest Calendar		
Rules for GENERAL QSO contest on QRZ.RU		
WA7BNM's Contest Calendar		
Calculator		

6.1.1.8 Net Menu

6.1.1.9 Help Menu



Preliminary

7 Appendix B. Suggested Interface Circuits

7.1 CW Interface

7.1.1 CAT Control

Table B.1: TNC/Radio/Network Wiring

DB-25 Pin	DB-9 Pin	Signal
2	3	Serial output from CPU
3	2	Serial input to CPU
7	5	Ground

7.1.2 Serial Port keying and PTT control

Table B.2: Serial Port Keying and PTT Interface

DB-25 Pin	DB-9 Pin	Signal
20	4	CW key output (use circuit A)
4	7	PTT out (use another circuit A)
7	5	Ground

Some TNCs or radio interfaces may require one or both of the following jumpers to work properly (these jumpers are not necessary on the computer side of the serial interface cable):

DB-25: Connect pin 6 to 8; connect pin 4 to 5;

DB-9: Connect pin 1 to 6; connect pin 4 to 7.

It has also been reported that some rigs (notably the Kenwood TS-870) require that the CTS and RTS lines be carried between the rig and the computer. On a DB25, these are pins 4 and 5; on a DB9 they are pins 7 and 8.

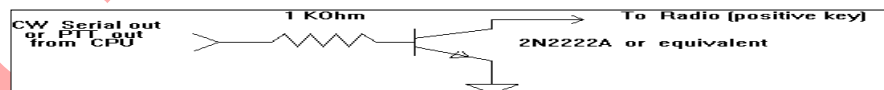


Figure B.1: Circuit A; Use this for serial port CW and PTT

7.1.3 Parallel Port [LPT] keying and PTT control

Table B.3: Parallel Port Interface

DB-25 Pin	Signal
1	Strobe. Goes to emitter of all Circuit B transistors
2	Band Data output bit 0 (*)
3	
4	
5	
6	
7	Band Data output bit 1 (*)
8	Band Data output bit 2 (*)
9	Band Data output bit 3 (*)
12	Paddle Dit contact input. Connect a 10K pull up resistor between this pin and pin 14
13	Paddle Dah contact input. Connect a 10K pull up resistor between this pin and pin 14
14	+5 V pull up. (**) Connect to Paddle and Footswitch inputs using 10K resistor. Alternatively, the Pin 14 voltage can be used to control an external relay to switch between two transmitters.
15	Foot switch input. Connect a 10K pull up resistor between this pin and pin 14
16	PTT output. Use separate circuit B; goes to 1K resistor
17	CW output. Use separate circuit B; goes to 1K resistor
18	Ground for CW and PTT (connect to rig)
25	Ground for paddle

(*) See [RADIO ONE BAND OUTPUT PORT](#) .These lines supply information for band decoding used to select filters and/or antennas.

(**) See [RELAY CONTROL PORT](#) . This line is used to select between Radio 1 and Radio 2

(***)See [FOOT SWITCH PORT](#)

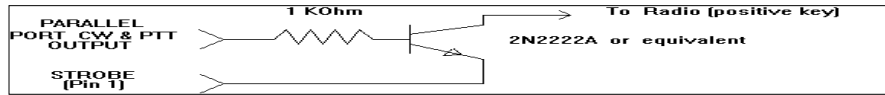
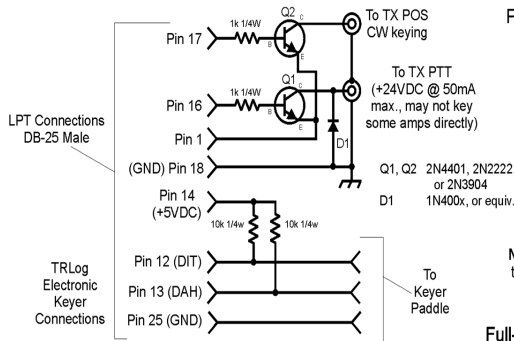


Figure B.2: Circuit B; Use this for parallel port CW and PTT

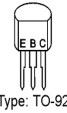
The next two pages contain details of an adapter from NOSS (SK). Thanks to NOSS for the bitmap files used to generate these two pages.

Preliminary

Parallel Port CW and PTT Keying Adapter and Paddle Input for TRLog Keyer



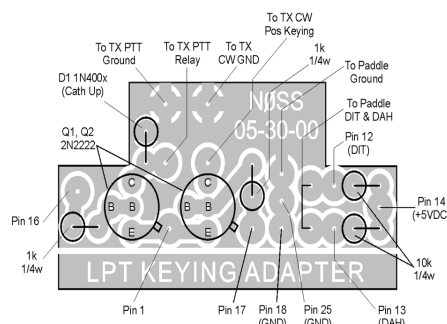
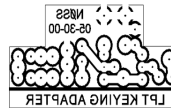
Pinouts for transistors



NOTE: For TO-92 (plastic) transistors, use the three holes which are in-line

Full-size PC board drawing

(PC board size is 1-7/16" x 3/4". Adjust the size of your negative to obtain these measurements.)



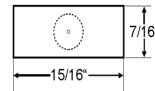
Enlarged (X2) PC board w/parts layout (shown from foil side of PC board, components mount on non-foil side)

Pre-cut & stripped wire lengths for connecting this PC board to a male DB-25 connector: (Strip 1/8" of insulation from each end, then tin the wire)

Pin number:	1	12	13	14	16	17	18	25	TX Key	TX GND
Wire Length:	3/4"	3/4"	7/8"	1-3/4"	3/4"	1"	3/4"	7/8"	1-1/4"	1-1/4"

Wire Color: _____

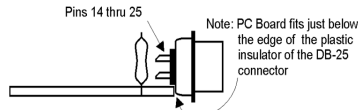
TX Key Output Conn. Mtg. Plate (see text)



To prepare the DB-25 male connector: With the connector assembled, drill holes in the center of the two diagonal sides. The size of the holes should be no larger than the outside diameter of the wires to be used for the PTT output and Electronic Keyer paddle input.

The TX Keying Output Jack is a chassis-mount RCA jack. Cut a mounting plate (15/16" x 7/16") out of left over PC board and drill a hole in the middle of this plate. The hole should be just large enough to pass the mounting shank of the chassis-mount phono connector. This connector and mounting plate will slip in the space immediately behind the normal cable hole in the D-25 connector, with the RCA connector protruding out of the cable hole for easy access.

The PC board connects to the DB-25 via short, flexible, wires (see wire lengths table). Once completed, the DB-25 should be positioned (with respect to the PC board) so pins 1-13 are at the bottom and pins 14-25 are on the top. Solder the wires to ALL of the PC board holes first, and then solder the wires to D-25 pins 1, 12 & 13 first (with DB-25 pins 1-13 on top and the PC board upside down). Then turn both the DB-25 and the PC board over and complete soldering the wires to pins 14, 16, 17, 18 & 25.

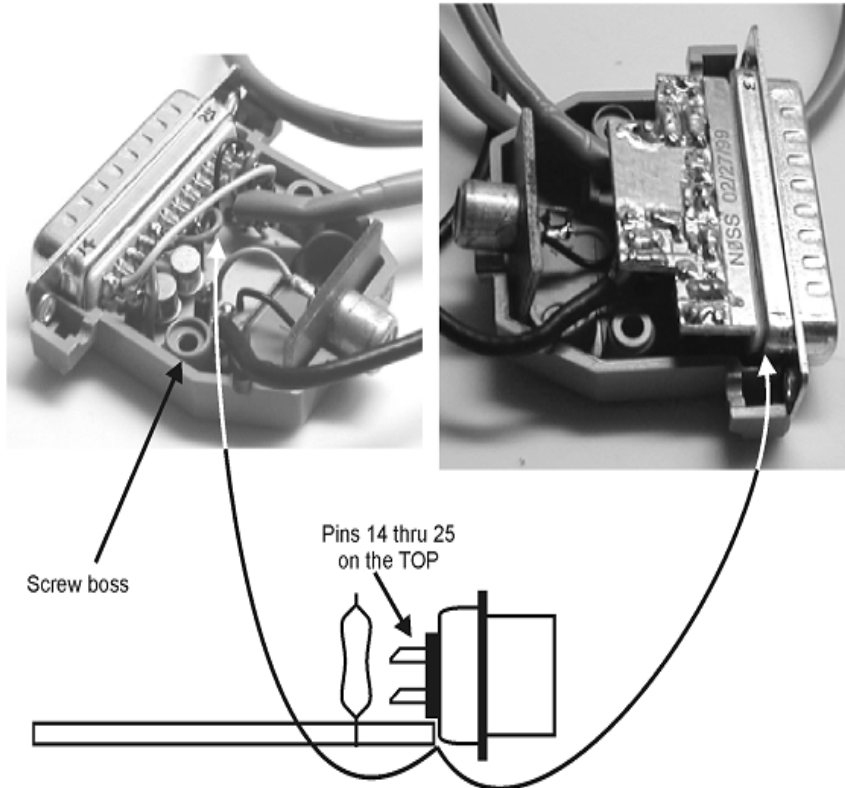


Complete the assembly by installing the two wires going to the TX key output jack and the PTT and Paddle input wires. Attach connectors appropriate to your installation to the ends of these wires.

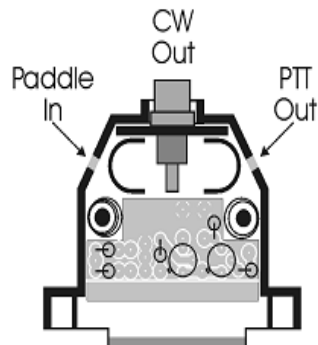
d:\cd\lpt_keying_adapter.cdr 01/01/2002 NISS

Parallel Port CW and PTT Keying Adapter and Paddle Input for Internal Keyer from N0SS

NOTE: if you use a METAL (or a 'METALIZED' plastic hood), BE SURE TO place some form of insulator between the top AND bottom of the PC board and the metal inside of the hood to prevent the components from shorting to the hood. NON-METALLIC hoods are strongly recommended!



Note: The PC Board does NOT fit between the DB-25 pins, but just below the edge of the plastic insulator of the DB-25 connector. It will be held in place by the two screw bosses in the shell of the connector once the shell has been fitted to the connector.



8 Appendix C.

8.1 Alt+ keys

Alt- Sub menu	Shortcut Keys	Description
Increment time	Alt + A	Set Alarm
Alarm Alt+A	Alt + B	Band Up
Auto-CQ resume Alt+C	Alt + C	Resume Auto-CQ
Dupe check Alt+D	Alt + D	Check Dupes
Edit Alt+E	Alt + E	Edit
Save to floppy Alt+F	Alt + F	Backup log to disk
Swap mult view Alt+G	Alt + G	Switch Multiplier View
Increment number Alt+H	Alt + H	User's Guide
Toggle multiplier bell Alt+J	Alt + I	Increment number
Kill CW Alt+K	Alt + J	Config Com Window
Search log Alt+L	Alt + K	Disable CW
Transmit frequency Alt+N	Alt + L	Search Log
Reminder Alt+O	Alt + M	Set Mode
Auto-CQ Alt+Q	Alt + N	Set Transmit Frequency
Toggle rigs Alt+R	Alt + O	Set Reminder
CW speed Alt+S	Alt + P	Program Messages
Set system date/time Alt+T	Alt + Q	Setup Auto CQ
Initialize QSO Alt+W	Alt + R	Toggle Radios
Reset wakeup Alt+Ctrl+W	Alt + S	Set CW Speed
Delete the last QSO Alt+Y	Alt + T	Set Time
Initial exchange Alt+Z	Alt + V	Band Down
Toggle sidetone Alt+=	Alt + W	Clear Call Window
Toggle autosend Alt+~	Alt + X	Exit program
Band Up Alt+B	Alt + Y	Delete last entry
Band Down Alt+V	Alt + Z	The exchange number
SSB/CW mode Alt+M	Alt + -	Toggle Auto-CQ
	Alt + =	Toggle sidetone

8.2 Ctrl+ keys

<u>Ctrl- Sub menu</u>	<u>Shortcut Keys</u>	<u>Description</u>
Send Keyboard Input Ctrl+A	Ctrl + A	Transfer from the keyboard
Communicate with packet port Ctrl+B	Ctrl + B	Communicate with Packet port
Clear multsheet Ctrl+C	Ctrl + C	Clear the table of multipliers
Auto QSL Interval (Decrease) Ctrl+D	Ctrl + D	Reduce Auto QSL Interval
Auto QSL Interval (Increase) Ctrl+I	Ctrl + I	Increase Auto QSL Interval
Clear dupesheet Ctrl+K	Ctrl + K	Clear the list of repetitions
View / Edit log Ctrl+L	Ctrl + L	View / Edit log
Note Ctrl+N	Ctrl + N	Create note
Missing mults report Ctrl+O	Ctrl + O	Show missing Mults
Redo possible calls Ctrl+P	Ctrl + P	possible call signs
QTC functions Ctrl+Q	Ctrl + Q	QTC functions
Recall last entry Ctrl+R	Ctrl + R	Restore last entry
SH/DX [callsign] Ctrl+S	Ctrl + S	SH / DX [call sign]
View packet spots Ctrl+U	Ctrl + U	Show packet spots
Execute configuration file Ctrl+V	Ctrl + V	Refresh band map
Refresh bandmap Ctrl+Y	Ctrl + Y	Refresh band map
Dualing CQs Ctrl+-	Ctrl + -	Alternate CQ on two radios
Cursor in bandmap window Ctrl+End	Ctrl + End	Cursor in the band map window
Cursor in DX Cluster window Ctrl+Home	Ctrl + Home	Cursor in the window DX Cluster
QSO with no CW Ctrl+Enter	Ctrl + Enter	QSO enter with no sending
CT1BOH info screen Ctrl+]	Ctrl +]	Open CT1BOH window
Add bandmap place holder Ctrl+Ins	Ctrl + Ins	Toglgc insert/delete
Additional information		

8.3 Additional Ctrl + keys

<u>Shortcut Keys</u>	<u>Description</u>
Ctrl +1	Number of QSO
Ctrl +2	Call
Ctrl +3	Speed CW
Ctrl +4	Range
Ctrl +5	
Ctrl +6	
Ctrl +7	Clear the table of multipliers
Ctrl +8	Reduce Auto QSL Interval
Ctrl +9	Cursor in the map window range
Ctrl + PgDn	Reduce CW speed to idle radio
Ctrl + PgUp	Increase CW speed to idle radio

8.4 Shift+Ctrl Keys

<u>Shortcut Keys</u>	<u>Description</u>
Shift + ' 	Send a message
Shift + Ctrl + `	Map of the range
Shift + Ctrl +0	Open MP3 recorder
Shift + Ctrl +1	Sheet repeats
Shift + Ctrl +2	Function keys
Shift + Ctrl +3	TRMASTER.DTA
Shift + Ctrl +4	By default
Shift + Ctrl +5	Radio 1
Shift + Ctrl +6	Radio 2
Shift + Ctrl +7	Intercom
Shift + Ctrl +8	Send a report to GETSCORES.ORG
Shift + Ctrl +9	Station
Shift + Tab	CQ mode

8.5 Ctrl+Alt+ Keys

<u>Shortcut Keys</u>	<u>Description</u>
Ctrl + Alt +1	Radio 1
Ctrl + Alt +2	Radio 2
Ctrl + Alt + M	Tiling
Ctrl + Alt + S	Compare and synchronize the logs
Ctrl + Alt + T	Time Synchronization
Ctrl + Alt + W	Reset the Alarm

8.6 Special Keys

<u>Shortcut Keys</u>	<u>Description</u>
Del	Delete the selected spot
Enter	Enter QSO and transmit
Esc	Exit S & P mode
Ins	Toggle insert/replace
Pause	The focus in the main program window
PgDn	Reduce CW speed
PgUp	Increase CW speed
Tab	Enter S & P mode
`	Send spot to cluster

8.7 Supported Transceivers

#	Transceiver	Polling	PTT VIA COMMANDS	Baud Rate	Radio Address
1	K2	OK	OK	4800	-
2	K3	OK	OK	4800	-
3	TS850	OK	OK	4800	-
4	FT100	OK	OK	4800	-
5	FT450	OK	OK	4800	-
6	FT736R	-	-	4800	-
7	FT747GX	OK	OK	4800	-
8	FT767	OK	-	4800	-
9	FT817	OK	OK	4800	-
10	FT840	OK	OK	4800	-
11	FT847	OK	OK	4800	-
12	FT857	OK	-	4800	-
13	FT890	OK	OK	4800	-
14	FT897	OK	-	4800	-
15	FT900	OK	OK	4800	-
16	FT920	OK	-	4800	-
17	FT950	OK	OK	4800	-
18	FT990	OK	OK	4800	-
19	FT1000	OK	OK	4800	-
20	FT1000MP	OK	OK	4800	-
21	FT2000	OK	OK	4800	-
22	FTDX9000	OK	OK	4800	-
23	IC706	OK	-	1200	48
24	IC706II	OK	-	1200	4E
25	IC706IIG	OK	-	1200	58
26	IC707	OK	-	1200	3E
27	IC718	OK	-	1200	5E
28	IC725	OK	-	1200	28
29	IC726	OK	-	1200	30
30	IC728	OK	-	1200	38
31	IC729	OK	-	1200	3A
32	IC735	OK	-	1200	04
33	IC736	OK	-	1200	40
34	IC737	OK	-	1200	3C
35	IC738	OK	-	1200	44
36	IC746	OK	-	1200	56
37	IC746PRO	OK	-	1200	66
38	IC756	OK	-	1200	50
39	IC756PRO	OK	-	9600	5C
40	IC756PROII	OK	-	9600	64
41	IC756PROIII	OK	-	9600	6E
42	IC761	OK	-	9600	1E

#	Transceiver	Polling	PTT VIA COMMANDS	Baud Rate	Radio Address
43	IC765	OK	-	9600	2C
44	IC775	OK	-	19 200	46
45	IC781	OK	-	9600	26
46	IC910H	OK	-	9600	60
47	IC970D	OK	-	9600	2E
48	IC7000	OK	-	9600	70
49	IC7600	OK	-	9600	7A
50	IC7700	OK	-	19 200	74
51	IC7800	OK	-	9600	6A
52	OMNI6	OK	-	9600	04
53	ORION	-	OK	57 600	-

8.8 Supported Contests

#	CONTEST	QSO BY BAND	QSO BY MODE	MULT BY BAND	MULT BY MODE	EXCHANGE RECEIVED
1	7QP	TRUE	TRUE	FALSE	FALSE	RST DOMESTIC OR DX QTH
2	ALL JA	TRUE	FALSE	TRUE	FALSE	RST ALL JA PREFECTURE AND PRECEDENCE
3	ALL-ASIAN-DX-CW	TRUE	FALSE	TRUE	FALSE	RST AGE
4	ALL-ASIAN-DX-SSB	TRUE	FALSE	TRUE	FALSE	RST AGE
5	ALRS-UA1DZ-CUP	TRUE	TRUE	TRUE	FALSE	RST QSO NUMBER OR DOMESTIC QTH
6	AP-SPRINT	TRUE	FALSE	FALSE	FALSE	RST QSO NUMBER
7	ARCI	TRUE	FALSE	TRUE	FALSE	RST POSSIBLE DOMESTIC QTH AND POWER
8	ARI	TRUE	TRUE	TRUE	FALSE	RST QSO NUMBER OR DOMESTIC QTH
9	ARKTIKA-SPRING	TRUE	TRUE	TRUE	FALSE	RST QSO NUMBER OR DOMESTIC QTH
10	ARRL-10	FALSE	TRUE	FALSE	TRUE	RST DOMESTIC QTH OR QSO NUMBER
11	ARRL-160	FALSE	FALSE	FALSE	FALSE	RST DOMESTIC OR DX QTH
12	ARRL-DX-CW	TRUE	FALSE	TRUE	FALSE	RST POWER
13	ARRL-DX-SSB	TRUE	FALSE	TRUE	FALSE	RST POWER
14	ARRL-FD	TRUE	TRUE	FALSE	FALSE	CLASS DOMESTIC OR DX QTH
15	ARRL-SS-CW	FALSE	FALSE	FALSE	FALSE	QSO NUMBER PRECEDENCE CHECK SECTION
16	ARRL-SS-SSB	FALSE	FALSE	FALSE	FALSE	QSO NUMBER PRECEDENCE CHECK SECTION
17	ARRL-VHF-QSO	TRUE	FALSE	TRUE	FALSE	RST DOMESTIC QTH
18	ARRL-VHF-SS	TRUE	FALSE	TRUE	FALSE	RST DOMESTIC QTH
19	AS-CHAMP-CW	TRUE	FALSE	FALSE	FALSE	QSO NUMBER AND COORDINATES SUM
20	AS-CHAMP-SSB	TRUE	FALSE	FALSE	FALSE	QSO NUMBER AND COORDINATES SUM
21	BALTIC	FALSE	TRUE	FALSE	FALSE	RST QSO NUMBER
22	BLACK SEA CUP	TRUE	TRUE	TRUE	FALSE	RST ZONE OR SOCIETY
23	CALIFORNIA QSO PARTY	TRUE	TRUE	FALSE	FALSE	QSO NUMBER DOMESTIC OR DX QTH
24	CIS	TRUE	FALSE	TRUE	FALSE	RST DOMESTIC QTH OR QSO NUMBER
25	COLORADO QSO PARTY	TRUE	TRUE	FALSE	TRUE	NAME DOMESTIC OR DX QTH

#	CONTEST	QSO BY BAND	QSO BY MODE	MULT BY BAND	MULT BY MODE	EXCHANGE RECEIVED
26	COUNTY HUNTER	FALSE	FALSE	FALSE	FALSE	RST QTH
27	CQ-160-CW	FALSE	FALSE	FALSE	FALSE	RST ZONE OR DOMESTIC QTH
28	CQ-160-SSB	FALSE	FALSE	FALSE	FALSE	RST ZONE OR DOMESTIC QTH
29	CQ-M	TRUE	TRUE	TRUE	FALSE	RST QSO NUMBER
30	CQ-VHF	TRUE	FALSE	TRUE	FALSE	RST DOMESTIC QTH
31	CQ-WPX-CW	TRUE	FALSE	FALSE	FALSE	RST QSO NUMBER
32	CQ-WPX-SSB	TRUE	FALSE	FALSE	FALSE	RST QSO NUMBER
33	CQ-WW-CW	TRUE	FALSE	TRUE	FALSE	RST ZONE
34	CQ-WW-SSB	TRUE	FALSE	TRUE	FALSE	RST ZONE
35	CROATIAN	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER
36	DARC-10M	FALSE	TRUE	FALSE	FALSE	RST QSO NUMBER OR DOMESTIC QTH
37	DARC-WAEDC-CW	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER
38	DARC-WAEDC-SSB	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER
39	DARC-XMAS	TRUE	TRUE	TRUE	FALSE	RST QSO NUMBER OR DOMESTIC QTH
40	EU SPRINT	TRUE	FALSE	FALSE	FALSE	QSO NUMBER AND NAME
41	EUROPEAN HFC	TRUE	TRUE	TRUE	FALSE	RST ZONE
42	EUROPEAN VHF	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER AND GRID SQUARE
43	FCG-FQP	TRUE	TRUE	FALSE	TRUE	RST DOMESTIC OR DX QTH
44	FISTS	TRUE	FALSE	FALSE	FALSE	RST QTH NAME AND FISTS NUMBER OR POWER
45	GACW-WWSA-CW	TRUE	FALSE	TRUE	FALSE	RST ZONE
46	GAGARIN-CUP	TRUE	FALSE	TRUE	FALSE	RST ZONE
47	GENERAL QSO	TRUE	TRUE	FALSE	FALSE	RST NAME QTH
48	GRID LOC	TRUE	TRUE	TRUE	FALSE	NAME AND POSSIBLE GRID SQUARE
49	HA DX	TRUE	TRUE	TRUE	FALSE	RST DOMESTIC QTH OR QSO NUMBER
50	HELVETIA	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER AND POSSIBLE DOMESTIC QTH
51	IARU-HF	TRUE	TRUE	TRUE	FALSE	RST ZONE OR SOCIETY
52	INTERNET SPRINT	TRUE	FALSE	FALSE	FALSE	QSO NUMBER NAME DOMESTIC OR DX QTH
53	JA LONG PREFECT	FALSE	TRUE	FALSE	FALSE	RST LONG JA PREFECTURE
54	JIDX-CW	TRUE	FALSE	TRUE	FALSE	RST ZONE
55	JIDX-SSB	TRUE	FALSE	TRUE	FALSE	RST ZONE
56	KCJ	TRUE	FALSE	TRUE	FALSE	RST DOMESTIC QTH

#	CONTEST	QSO BY BAND	QSO BY MODE	MULT BY BAND	MULT BY MODE	EXCHANGE RECEIVED
57	KIDS DAY	FALSE	FALSE	FALSE	FALSE	KIDS DAY EXCHANGE
58	KING-OF-SPAIN-CW	TRUE	FALSE	TRUE	FALSE	RST DOMESTIC QTH OR QSO NUMBER
59	KING-OF-SPAIN-SSB	TRUE	FALSE	TRUE	FALSE	RST DOMESTIC QTH OR QSO NUMBER
60	KVP	FALSE	TRUE	TRUE	TRUE	RST ZONE
61	LQP	TRUE	FALSE	FALSE	FALSE	QSO NUMBER NAME DOMESTIC OR DX QTH
62	LZ DX	TRUE	TRUE	TRUE	FALSE	RST ZONE OR DOMESTIC QTH
63	MICHIGAN QSO PARTY	TRUE	TRUE	FALSE	TRUE	QSO NUMBER DOMESTIC QTH
64	MINITEST	FALSE	FALSE	FALSE	FALSE	RST QSO NUMBER
65	MINNESOTA QSO PARTY	TRUE	TRUE	FALSE	FALSE	NAME DOMESTIC OR DX QTH
66	MONGOLIAN DX	TRUE	TRUE	TRUE	FALSE	RST ZONE
67	NAQP-CW	TRUE	FALSE	TRUE	FALSE	NAME DOMESTIC OR DX QTH
68	NAQP-SSB	TRUE	FALSE	TRUE	FALSE	NAME DOMESTIC OR DX QTH
69	NA-SPRINT-CW	TRUE	FALSE	FALSE	FALSE	QSO NUMBER NAME DOMESTIC OR DX QTH
70	NA-SPRINT-SSB	TRUE	FALSE	FALSE	FALSE	QSO NUMBER NAME DOMESTIC OR DX QTH
71	NCCC-SPRINT	TRUE	FALSE	TRUE	FALSE	QSO NUMBER NAME DOMESTIC OR DX QTH
72	NEQP	TRUE	TRUE	FALSE	FALSE	RST DOMESTIC OR DX QTH
73	NEW YORK QSO PARTY	TRUE	TRUE	FALSE	FALSE	RST DOMESTIC QTH
74	NRAU-BALTIC-CW	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER AND DOMESTIC QTH
75	NRAU-BALTIC-SSB	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER AND DOMESTIC QTH
76	NZ FIELD DAY	TRUE	TRUE	TRUE	TRUE	NZ FIELD DAY
77	OCEANIA-DX-CW	TRUE	TRUE	TRUE	TRUE	RST QSO NUMBER
78	OCEANIA-DX-SSB	TRUE	TRUE	TRUE	TRUE	RST QSO NUMBER
79	OHIO QSO PARTY	TRUE	TRUE	FALSE	TRUE	RST QSO NUMBER AND DOMESTIC QTH
80	OK-OM DX	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER OR DOMESTIC QTH
81	OZCHR	TRUE	TRUE	TRUE	FALSE	RST ZONE OR SOCIETY
82	OZCHR-TEAMS	TRUE	TRUE	TRUE	FALSE	RST ZONE OR SOCIETY
83	PACC	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER OR DOMESTIC QTH
84	QCWA GOLDEN	FALSE	FALSE	FALSE	FALSE	QSO NUMBER NAME CHAPTER AND QTH

#	CONTEST	QSO BY BAND	QSO BY MODE	MULT BY BAND	MULT BY MODE	EXCHANGE RECEIVED
85	QCWA	TRUE	TRUE	FALSE	FALSE	QSO NUMBER NAME CHAPTER AND QTH
86	R4N-CHAMP	TRUE	TRUE	TRUE	TRUE	QSO NUMBER AND ZONE
87	R4W-CHAMP	TRUE	FALSE	FALSE	FALSE	QSO NUMBER DOMESTIC QTH
88	R9W-UW9WK-MEMORIAL	TRUE	FALSE	FALSE	FALSE	QSO NUMBER AND ZONE
89	RAC CANADA WINTER	TRUE	TRUE	TRUE	TRUE	RST QSO NUMBER OR DOMESTIC QTH
90	RADIO-160	FALSE	TRUE	FALSE	FALSE	RST QSO NUMBER AND DOMESTIC QTH
91	RADIO-MEMORY	TRUE	TRUE	FALSE	FALSE	RST AGE AND POSSIBLE SK
92	RADIO-ONLY	TRUE	TRUE	FALSE	FALSE	RST AGE
93	RADIO-VHF-FD	TRUE	TRUE	FALSE	FALSE	RST QSO NUMBER AND GRID SQUARE
94	RADIO-YOC	TRUE	FALSE	FALSE	FALSE	QSO NUMBER AND PREVIOUS QSO NUMBER
95	RAEM	TRUE	FALSE	FALSE	FALSE	QSO NUMBER AND GEO COORDINATES
96	RDAC	TRUE	TRUE	TRUE	FALSE	RST DOMESTIC QTH OR QSO NUMBER
97	RDXC	TRUE	TRUE	TRUE	FALSE	RST DOMESTIC QTH OR QSO NUMBER
98	REF-CW	TRUE	FALSE	TRUE	FALSE	RST AND QSO NUMBER OR FRENCH DEPARTMENT
99	REF-SSB	TRUE	FALSE	TRUE	FALSE	RST AND QSO NUMBER OR FRENCH DEPARTMENT
100	REGION 1 FIELD DAY	TRUE	TRUE	TRUE	FALSE	RST QSO NUMBER
101	REGION 1 FIELD DAY-RCC-CW	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER
102	REGION 1 FIELD DAY-RCC-SSB	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER
103	RF-CHAMP-CW	TRUE	FALSE	TRUE	FALSE	QSO NUMBER AND ZONE
104	RF-CHAMP-SSB	TRUE	FALSE	TRUE	FALSE	QSO NUMBER AND ZONE
105	RF-CUP-CW	TRUE	FALSE	TRUE	FALSE	QSO NUMBER AND GRID
106	RF-CUP-SSB	TRUE	FALSE	TRUE	FALSE	QSO NUMBER AND GRID
107	ROPOCO	TRUE	FALSE	FALSE	FALSE	RST AND POSTAL CODE
108	RSGB-160	FALSE	FALSE	FALSE	FALSE	RST DOMESTIC QTH OR QSO NUMBER
109	RSGB-IOTA	TRUE	TRUE	TRUE	TRUE	RST QSO NUMBER AND POSSIBLE DOMESTIC QTH
110	SAC-CW	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER
111	SAC-SSB	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER

#	CONTEST	QSO BY BAND	QSO BY MODE	MULT BY BAND	MULT BY MODE	EXCHANGE RECEIVED
112	SALMON RUN	TRUE	TRUE	FALSE	FALSE	RST DOMESTIC OR DX QTH
113	SOUTH AMERICAN WW	TRUE	TRUE	TRUE	FALSE	RST AND CONTINENT
114	SP DX	TRUE	TRUE	TRUE	FALSE	RST DOMESTIC QTH OR QSO NUMBER
115	SRR-JR	TRUE	FALSE	FALSE	FALSE	QSO NUMBER AND AGE
116	STEW-PERRY	FALSE	FALSE	FALSE	FALSE	RST AND OR GRID
117	TAC	FALSE	FALSE	FALSE	FALSE	RST QSO NUMBER AND POSSIBLE DOMESTIC QTH
118	TEN TEN	TRUE	TRUE	FALSE	FALSE	NAME QTH AND POSSIBLE TEN TEN NUMBER
119	TENNESSEE QSO PARTY	TRUE	TRUE	TRUE	FALSE	RST DOMESTIC QTH
120	TEXAS QSO PARTY	TRUE	TRUE	FALSE	FALSE	RST DOMESTIC OR DX QTH
121	TOEC	TRUE	FALSE	TRUE	FALSE	RST DOMESTIC QTH
122	UBA-DX-CW	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER AND POSSIBLE DOMESTIC QTH
123	UBA-DX-SSB	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER AND POSSIBLE DOMESTIC QTH
124	UCG	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER
125	UKRAINE CHAMPIONSHIP	TRUE	FALSE	TRUE	FALSE	QSO NUMBER DOMESTIC QTH
126	UKRAINIAN	TRUE	TRUE	TRUE	FALSE	RST QSO NUMBER OR DOMESTIC QTH
127	UN DX	TRUE	TRUE	TRUE	FALSE	RST DOMESTIC QTH OR QSO NUMBER
128	URAL-CUP	TRUE	TRUE	TRUE	FALSE	QSO NUMBER DOMESTIC QTH
129	WAG	TRUE	TRUE	TRUE	FALSE	RST QSO NUMBER OR DOMESTIC QTH
130	WISCONSIN QSO PARTY	TRUE	TRUE	FALSE	FALSE	RST DOMESTIC QTH
131	WRTC	TRUE	TRUE	TRUE	FALSE	RST ZONE OR SOCIETY
132	WW PMC	TRUE	TRUE	TRUE	TRUE	RST ZONE OR SOCIETY
133	WWL	TRUE	TRUE	TRUE	FALSE	RST AND GRID
134	XMAS	TRUE	FALSE	TRUE	FALSE	RST QSO NUMBER AND RANDOM CHARACTERS
135	YO DX	TRUE	TRUE	TRUE	FALSE	RST QSO NUMBER OR DOMESTIC QTH
136	YUDX	TRUE	FALSE	TRUE	FALSE	RST ZONE

8.9 Sub Window default colors.

Window	Back ground	Color	View
ARROW	BTNFACE	RED	2
BAND MODE	BTNFACE	BLACK	1
BEAM HEADING	BTNFACE	BLACK	1
CALL	WHITE	BLACK	1
CLOCK	BTNFACE	BLACK	1
CODE SPEED	BTNFACE	BLACK	1
COMPUTER ID	BTNFACE	BLACK	2
COUNTRY NAME	BTNFACE	BLACK	1
CQ COUNTER	BTNFACE	BLACK	1
CQ TOTAL	BTNFACE	BLACK	1
OPERATOR	BTNFACE	BLACK	2
DATE	BTNFACE	BLACK	1
DUPE CALL INFO	BTNFACE	BLACK	2
EDITABLE LOG	WHITE	BLACK	1
EXCHANGE	WHITE	BLACK	1
FOOT SWITCH	BTNFACE	BLACK	2
FULL TIME	BTNFACE	BLACK	1
HOURLY RATE	BTNFACE	BLACK	2
INSERT	BTNFACE	BLACK	1
LAST QSO TIME	BTNFACE	BLACK	2
LOCAL TIME	BTNFACE	BLACK	1
GRID LOCATOR	BTNFACE	BLACK	1
MASTER	BLUE	WHITE	2

Window	Back ground	Color	View
MULT INFO	WHITE	BLACK	1
MULT	YELLOW	BLACK	1
NAME	BTNFACE	BLACK	2
ON AIR TIME	BTNFACE	BLACK	2
OP MODE	BTNFACE	BLACK	1
PADDLE	BTNFACE	BLACK	2
POSSIBLE CALL	BTNFACE	BLACK	2
PREVIOUS QSOS	BTNFACE	BLACK	2
PTT	BTNFACE	BLACK	1
QSO B4	RED	WHITE	2
QSO INFORMATION	WHITE	BLACK	1
QSO NUMBER	WHITE	BLACK	1
QUICK COMMAND	BTNFACE	BLACK	2
RADIO ONE FREQ	BTNFACE	BLACK	1
RADIO ONE NAME	BTNFACE	BLACK	1
RADIO TWO FREQ	BTNFACE	BLACK	2
RADIO TWO NAME	BTNFACE	BLACK	2
RATE	BTNFACE	BLACK	1
S&P COUNTER	BTNFACE	BLACK	1
TEN MINUTES	BTNFACE	BLACK	2
TOTAL SCORE	BTNFACE	BLACK	1
USER INFO	BTNFACE	BLACK	2
WHOLE SCREEN	BTNFACE	BLACK	1 & 2
WINKEYER	BTNFACE	BLACK	2

10 Appendix A. Configuration Statements

Preliminary

Preliminary