Welcome

Geoff Anderson G3NPA

Logger32.hlp Version 18 dated 05 March 2003

WELCOME

Welcome to Logger32, a 32-bit logging program written by Bob Furzer, K4CY. Bob is also the author of Zakanaka, and a 16-bit version of Logger.

Logger32 runs under Windows 95/98, Windows 2000, Windows ME, Windows NT and Windows XP (these program names are all copyright by Microsoft Corporation). At the present time, Logger32 is free.

Logger32 software and Help File copyright information can be found in the Copyrights and License section.

ACKNOWLEDGMENTS

Thanks and acknowledgements are given to:

Fred Lloyd AA7BQ, the founder of **QRZ.COM,** who kindly arranged for special, no-frills access to the worldwide callsign database from this program along with his permission to use the QRZ Logo in Logger32. QRZ.COM can be found at www.qrz.com/.

John Shelton K1XN for his approval allowing the integration of the **GoList** QSL Manager Database with this program. The GoList can be found at www.golist.net/ or via e-mail at support@golist.net.

Makoto Mori JE3HHT for his permission to include his RTTY encoding and decoding engine MMTTY within the Data window software. Further information on MMTTY can be found at www.qsl.net/mmhamsoft/.

Aki Yoshida JA1NLX and Hal Kojima JE4IVN for their considerable assistance during the development of the radio control software for use under the Japanese versions of Microsoft Windows.

History

Geoff Anderson G3NPA

Like Zakanaka, Logger32 and these Help files are the product of an experiment. Bob Furzer, K4CY, decided that he would enlist assistance of other amateurs in creating the package. Work started on the project in early July 2001 and the following coordinated via the Internet to assist in the development of the program and to create the Help files:

Development Team

Geoff Anderson, G3NPA	Richard B Drake, W3ZJ
Joseph Edmonds, N4NQY	Robin Trebilcock, GW3ZCF
Bob Shaw, W0IM	Hal Miller, KB1ZQ
Charlie Sutton, W1MCP	Danny Conner, KD5UJ
Barry Gross, N1EU	Brian Mury, VE7NGR

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Beta Test Team

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John Bent, G0FSM Andy McLellan, VE9DX

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Haruo (Hal) Kojima, JE4IVN Marek Niedzielski SP7DQR (Polish translation)

Peter Velnet, N8YEL Villi Sigurjonsson, TF3VS

Mike Barrette, N1GPV Jorge Enrique Knull, LU4YAO

Travis Fitzgerald, VE3WO Yukito (Kit) Fukui, JI1ANI

Per Einar Dahlen, LA7DFA Ian Morrison, VE3IEM

Arne Andersson, SM5CNQ Toni Perez, EA1NK

Palle Dall Larsen , OZ1LHK Brian Bowers, G0VAX

Tomek Barbachowski, SP5UAF

Someday we will meet each other in person, but for the moment, we hope that we have continued the helping-ham tradition that passed to us by Bob. Each topic has the name of the original author(s) at the upper left, but all team members contributed over course of development.

Copyrights and License

Bob Furzer K4CY

Authorization to use this software is limited to radio amateurs who agree to strictly comply with the following operating practices:

- Always use your full callsign when calling another station;

- Never respond to calling operators who do not use full callsigns;
- Do not spell your name or QTH unless specifically asked to do so;
- Do not call the operator of the station you are in contact with 'Sir', 'Your Highness', 'Doctor', 'Monk' or any other title (real imaginary);
- Do not end your transmissions with 'QSL', 'Roger', 'Over', or 'Over Over';
- Do not begin your transmissions with 'QSL', 'Roger', or 'Roger Roger';
- Do not operate (or condone those that do) on DX list or DX net operations;
- Know the callsign of the station you are calling before you call.
- Do not operate on SSB with wider than 2.8KHz bandwidth filters (or condone those that do).
- Do not use external devices to unnecessarily distort the audio.

I took the time and effort to write the software. Many others have taken the time and effort to debug the software and write the documentation. At the very least, you can make the effort to comply with the terms of the use of this software. If you chose not to operate in accordance with the requirements listed above, please do not use this software.

In general, Logger32 is free for use in amateur radio, but is not licensed for reproduction on CDs or web sites other than those selected by Bob Furzer. Authorization to reproduce this software (on CD, Internet or any other form or media) is explicitly Please don't waste my time or yours by asking. The answer is 'NO'.

How to Use Help

Geoff Anderson G3NPA

The Help files contain a few features that you should know about.

There are **hyperlinks** throughout the text, in three colors.

- Those in purple jump to a definition in the Glossary or Abbreviations; you can also get to the Glossary or Abbreviations by using the Contents tab.
- The hyperlinks in green jump to various sections of the Help files that go into more detail about the subject of the link.
- The hyperlinks in blue will attempt to link to a World Wide Web siteto provide external resources that may help you with hardware and other issues relevant to using Logger and implementing the digital modes on your computer-radio system open your default e-mail application to send an e-mail message to the highlighted e-mail address.
- In all cases, once you have jumped to a new location, you can use the Back arrow at the top of the Help screen to return the previous location in the Help files.

You can use Help in two ways.

- The Table of Contents can be found under the Contents tab at the top of the page; use the Table of Contents to navigate a topic.
- The Index and Find tabs of the Help window will allow you to search for specific topics or individual words within the Help files.

There is a section of Tips Tricks and Troubleshooting hints that may save you time in solving problems (for example: Everything stopped working--Is Logger32 on top of an error message?)

Links and Reflectors

Hew Lines VA3HU

LINKS

The following links to the internet may provide you with more specific or additional detail on topics related to Logger32:

> www.hosenose.com/adif - The current version and details on the Amateur Data Interchange Format used to exchange between various logging programs.
>
> www.qrz.com/
>
> www.golist.net/

For information on USB to Serial Port adaptors, try www.aa5au.com/usb

Until QSL Label printing functionality is implemented in Logger32, try the BV software for QSL management, label printing and more. Check it out at DF3CB's site www.df3cb.com/bv/index.html

Try the following link to NG3K's large list of DX Clusters available through the Telnet Window
www.cpcug.org/user/wfeidt/Misc/cluster.html

In addition to the Telnet site pre-defined in the Satellite Tracking Window, another source for Keplerian elements can be found at www.amsat.org/amsat/keps/menu.html

A site that has lots of good information on time zones around the world is www.timeanddate.com/worldclock/full.html

Detailed information on the Port95nt.exe Low Level I/O Port Drivers may be found at www.driverlinx.com/DownLoad/DlPortIO.htm

REFLECTORS

The following reflector will allow you to participate in on-line discussions related to the Logger programs, both 16 and 32 bit
http://hamlogger@yahoogroups.com

General Features

Geoff Anderson G3NPA

Logger32 has been constructed to be a highly user configurable general purpose Amateur Radio logbook with computer control support for many radios and antenna rotators. It is NOT a contesting log (although there is no real reason why it could not be used for such.) and does not contain some features that might be found in software specifically designed for this activity. A sample of it DOES contain is given below:

- Fully ADIF compatible – including the proposed new modes and sub modes.
- Logbook and previously worked tables can have up to 48 columns, all user configurable, including IOTA, Grid squares, satellite names, ten-ten etc.
- Logbook, Previous QSO, and QSOs to a selected prefix windows can have the columns presented in any order.
- Worked/Confirmed Table can display information in either of two ways.
- Seven user-definable log entry page items.
- Logs more than 1.5M QSOs.
- All Country, County, and IOTA databases are fully editable.
- Displays sunrise/sunset, short path distance, long and short path beam headings, and local time for the distant end.
- Comprehensive statistics tables.
- Real time satellite tracking using Keps from a local file or collected from a favored web site.
- Grayline display with selectable terminator.
- DX spot tables with input from packet or telnet sources (or both at once).
- User definable "worked/confirmed" color scheme on incoming spots.
- Support for many radios including a debug window.
- User selectable frequency display in KHz or MHz down to 1 Hz resolution.
- User selectable date and time format
- CDROM support.
- Support for the use of QRZ.com and GoList via the Internet.
- A facility to synchronize your computer clock to an atomic standard.
- All windows fully re-sizeable.
- Supports multiple .INI files for different set-ups (normal, contest, etc.)
- Fully configurable fonts, background, and foreground colors
- Auto log-on scripts for telnet and cluster access
- Definable telnet and cluster shortcuts and scripts
- Sorting of the logbook on Date, Callsign, Frequency, Band, Mode, Zone and many more.

- Personalize you own band plan.
- Prefix statistics available on screen for up to 50 bands and 48 modes
- Previously worked callsigns automatically appear under the callsign entry window. (Callsign preview)
- The Logbook, Previously Worked, Spots and Stats tables all have variable width columns
- Support for a parallel port antenna selector that can operate automatically with your bandplan.
- Log page can be sorted on QSO#, Callsign, Prefix, Frequency, Band, Mode, CQZ, DXCC, Grid Square, IOTA, State, Continent, and ITUZ.
- Logs can be output in either ADIF or CSV format.
- Supports both multiple user (One log for the family or Club station) and multiple logs (one for the main, one for contesting
- User selectable fields to copy from previous QSO details to a new logbook entry.
- Logbook percentage full indicator.
- Grid Square Calculator
- Support for Logbook of the World.
- Functional information buttons in the log input window.
- Support for eQSL and LOTW output files
- Export QSOs flagged for QSLing
- QSLs waiting to be sent are highlighted in the log.
- Send DX spots to a VHF cluster or Telnet.
- Built in version of Zakanaka (the soundcard window) for PSK31/RTTY which includes:

  Three independant, simultaneous receive channels in PSK31, Waterfall or spectral signal display.

  Selectable colors for receive and transmit windows (Tx and Rx windows).

  Selectable frequency markers.

  Built in macros for use with a selectable number of programmable “buttons”.

  Macros with programmable colored keys and number of macros.

  Capture his callsign and his name with a click.

  Add QSO number.

Programmable default Rx (initial receive) frequencies.

Independent AFC and squelch settings for each Rx window.

Selectable waterfall and spectrum display characteristics (color, brightness, smoothing).

IMD indication.

Slash-zero option.

Operate RTTY (including 23 Hz.) using MMTTY module written by Mako Mori.

Calibrate the sound card timing.

Operate split using audio tones or using radio control.

Save operating parameters in RTTY mode in a "Profile"

- Built in CW keyer (but NO decoder) with programmable buttons and a limited range of macros
- Support for automatic control of your antenna rotator
- Contest serial number counter – up to 999,999 contacts
- User selectable highlighting for worked, confirmed, QSL send, QSL awaiting printing and general editing
- Single button compression and saving of back up log files

With Logger32 the answer is probably "Yes". Now what is the question?

Version History

Geoff Anderson G3NPA

Logger32 – Main Program Changes

Date	Version Number	Type of upgrade	Revision
dd mmm yyyy	1.00	Full Install	Initial release

Logger32 - Help File Changes

Date	Version Number	Revision
dd mmm yyyy	1.00	Initial release

System Requirements

Hal Miller, KB1ZQ

Logger 32 has been tested on the following MS Windows operating systems:

Windows 95

Windows 98/ 98SE

Windows NT

Windows ME

Windows 2000

Windows XP

These systems were primarily Pentium class machines, with the lowest level of hardware having a 166 mHz cpu with of RAM. Lower end machines will take a longer time to display and update some windows as they are processor dependant.

The program requires approximately 20 Mb of disk space.

Install Procedures

Hal Miller, KB1ZQ

Download the program from one of the Logger32 distribution sites and run Setup.exe. Setup will create all the necessary folders install all files in the correct spot.

User Editable Databases

Geoff Anderson G3NPA

The Country Databases

In order to provide maximum versatility and to maximize the capability of Logger32 to correctly identify the correct Country and from a callsign, the program maintains three separate (but linked) databases.

- The **Country database** contains information about:
    - the designated ARRL Prefix (this must be unique),
    - the Country Name,
    - the Latitude and Longitude of the approximate center of the Country,
    - the CQ Zone, and
    - a flag to determine if the Country is current, or has been deleted from the ARRL Countries list.

This information is contained in the four files COUNTRY.ISD, .ISF, .ISL and .ISM. **These files must ALWAYS be as a set of four**.

- The **Alias database** contains information about alternative prefixes for the Country.

  For example, in the case of the USA, the Prefix assigned is W. Valid alternative prefixes include A, K, and 4U1WB. is included as an Alias since that callsign, used by the World Bank HQ, counts for DXCC as the USA. Each Alias must be unique. Hidden within the Alias files are the ADIF Country numbers.

  This information is contained in the four files ALIAS .ISD, .ISF, .ISL and .ISM. **These files must ALWAYS be treated as set of four.**

- The **Offset database** contains offset information for Countries having a large landmass that could span several Zones.

  For example, in the case of the USA, an offset is provided for each of the call districts. This ensures that the Zone is 3 if Callsign is a W6, and the Zone is 5 for a W4. Also, Latitude and Longitudes of the approximate center of each Offset are maintained to ensure the calculated beam headings will be more accurate. In the Offset Database the Offset Prefix (i.e., W1, W2, VE1, VE2, VK6, VK7, etc.) must be unique.

  This information is contained in the four files OFFSET.ISD, .ISF, .ISL and .ISM. **These files must ALWAYS be treated set of four.**

The ARRL Prefix links the three databases. This unique identifier is the key to getting anywhere in any of the three databases.

A Help Topic, Calculating a Country from a Callsign, is provided to further explain the process followed by Logger32 in country from a callsign. This may seem overly complicated to some, however, if you anticipate doing major changes to the Alias, and Offset databases, you must know what you are doing. If you make modifications to the database, and the results are as expected, you should review this section.

The County Database

The program maintains three separate (but linked) databases and it is used to check the validity of the entered county name the US state

- The County database contains information about:
  - The US State
  - The US County
  - The latitude and longitude of the approximate centre of the County or its most major city or town.

This information is contained in the four files COUNTY.ISD, .ISF, .ISL and .ISM. **These files must ALWAYS be treated as a set four.**

The IOTA Database

The full IOTA database is copyright of the Radio Society of Great Britain, and is not provided as part of this program. Information has been collected from various public domain sources (Internet, BBSs, Packet Clusters, and on-air QSOs) and input into a database provided with this program and it is provided for your reference only. The accuracy and validity of this data is Entry window. This information is provided to assist the user in correctly modifying the Country, Alias and Offset databases in a manner that will increase the possibility of identifying the correct country from a callsign.

- First strip the callsign down to essential parts only.

  Does the callsign appear in the Alias database? If it does, then the first part is complete. This is done so that for certain callsigns (i.e., SV8ASP/A in Mt. Athos, rather than the normal /A meaning of operating from an alternate QTH) you would put SV8ASP/A as an Alias for Mt. Athos. This check would find a match, and not proceed to the check below that would remove the /A.

  Now strip off the /M, /P, /A, /MM, /AG, /AA, /AE. This information has nothing to do with the Country, which we determined above.

Determine which piece of a portable callsign is the Portable piece. Is KI0K/VP2M in the US, or Monserrat? The rule applied the shortest piece (KI0K or VP2M), or if they are the same length the first part (following ITU convention), is the correct designator. In the KI0K/VP2M the callsign is (internally) changed to VP2M/KI0K. A station using the callsign N6BFM/9K2 defaults (internally) to 9K2/N6BFM.

- The next step is to identify the Country Prefix

  First, make all portable callsigns with a number only following the / reflect their correct location. (i.e. N6BFM/4 = N4BFM, W8CNL/4 = W4CNL).

  Now loop (reducing the length of the callsign by one letter at a time) to find an Alias that matches (i.e., N6BFM, N6BF, N6B, N). N is an Alias for W (the USA). In the example above of SV8ASP/A, the first pass of the loop would identify SV8ASP/A as Alias for SY - Mt. Athos). In the case of the KI0K/VP2M (internally converted to VP2M/KI0K), the following occurs in the loop VP2M/KI0K, VP2M/KI0, VP2M/, VP2M where a match with Monserrat is identified.

  The information regarding the matched Alias is correlated to the Country prefix.

- The last step is to find out if there is any Offset information on the Country, and determine the exact Offset.

  Check if the callsign is in the Offset Database. N6BFM does not sign as portable 4 so you could, if you choose, put N6BFM the Offset database (under W for the USA) with the details of Zone and Latitude and Longitude of Atlanta. If a match is found, then this step is complete.

  Check if the Prefix of the callsign (not the Country prefix) is in the Offset database. Use the example of CK1XX in Canada. Under the Offsets for Canada is there a CK1? If so, the offset is found, and this step is complete.

  Take the Country prefix - use the example of the callsign EX0MM that has the Country prefix of UA9. If the number in the callsign differs from the number in the callsign, as it does in our example, strip the number from the Country prefix (we now, temporarily, have UA as the Country prefix), and add the suffix of the callsign (we now have UA0MM). We now loop, decrementing the length of the callsign each loop (i.e., first pass UA0MM, second pass UA0M, etc.), and check for a match in the Offset database. Coincidentally, there is a UA0M in the Offset database that shows CQ Zone of 16 (the default CQ Zone Asiatic Russia is Zone 19). You can see that by using this method all stations in Asiatic Russia with the Number 0 and the letter of the suffix as M (i.e., UA0Mxx, RA0Mxx, EX0Mxx, RX0Mxx, etc.) can be identified as being in Zone 16. Easy, huh?

  If an Offset is found to match during the third step of the process, the CQ Zone number, the Latitude and Longitude of the are used in the calculations.

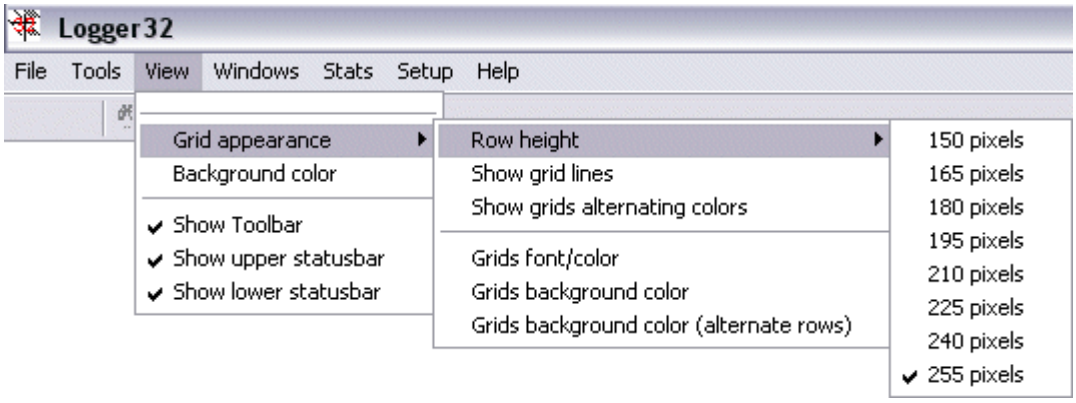
The above description is very simplified. However, it will hopefully help the user understand the fundamentals that are followed, allow the user to keep the databases current as more and more new Callsigns and Aliases are used.

Grid Appearance Setup

B. Charles Sutton W1MCP

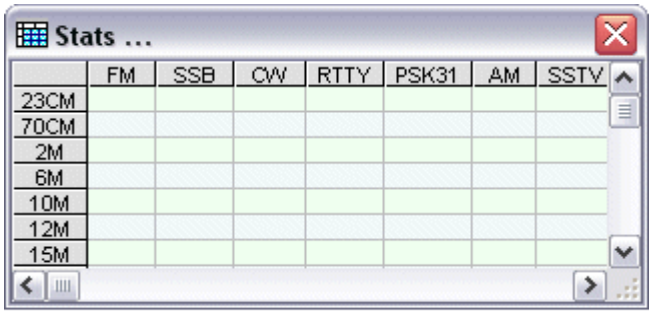
Four windows in Logger are setup in a grid format. They are the Logbook Page, Previous QSOs, Worked/Confirmed, and DX windows. Any changes in the Grid Appearance Setup will affect all four windows equally.

You access the grid appearance menu by choosing View | Grid Appearance from the Main Menu.

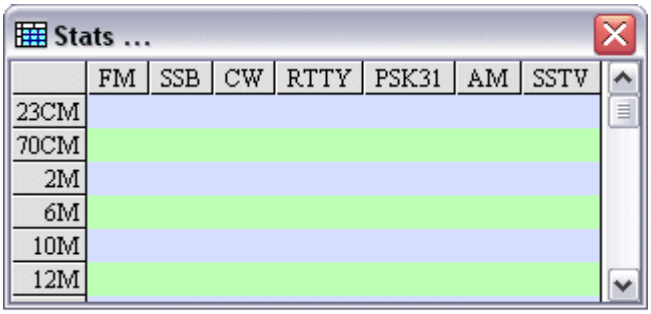


Row Height provides eight choices ranging from 150 to 255 pixels in height.

The following examples show how you could customize the Grid Appearance:



Example 1



Example 2

Show grid lines will toggle the gridlines (thin lines separating the rows and columns) on and off. Example 1 shows gridlines on Example 2 shows them off.

Show grids alternating colors will apply two alternating colors to each row in the grid. Both examples use this feature.

Grids background color: This has two effects. If you are not choosing to show your grid with alternating colors, this will be the background color of every row in your grid. If you have chosen to display the grid with alternating colors, this will be the primary background color.

Grids background color (alternating rows): If you have chosen to display the grid with alternating colors, this will be the secondary background color.

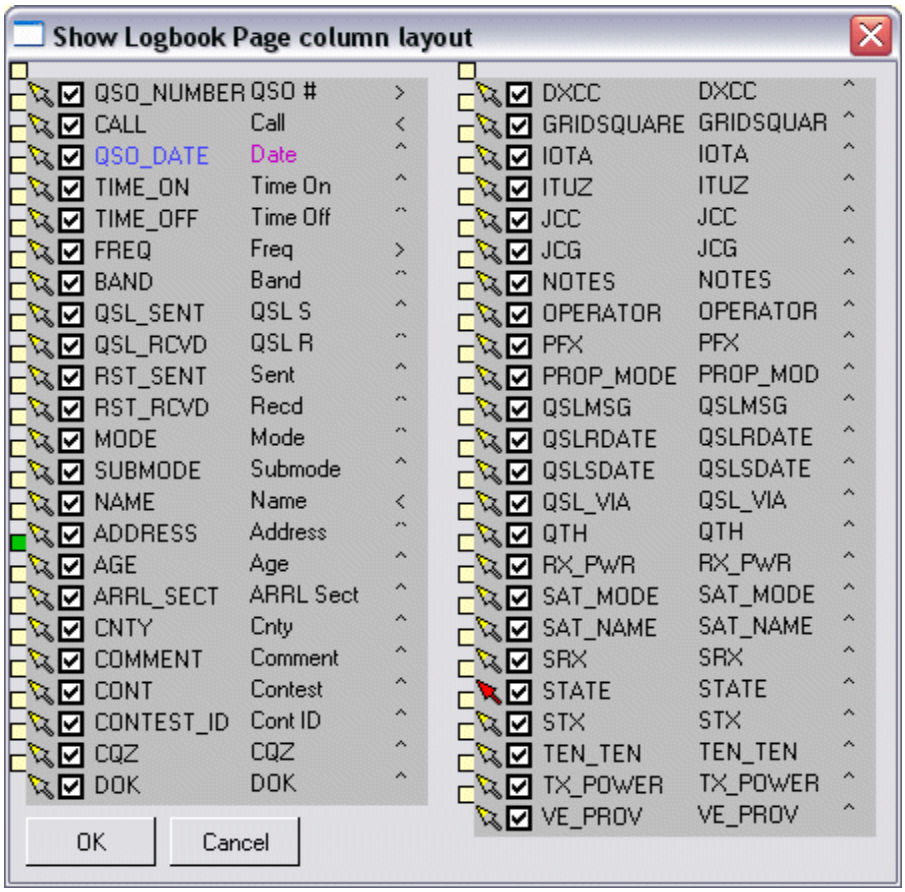
Grids font/color: This will allow you to choose the font, size and color for the data displayed in the grid. Example 1 is using the Arial font in 8pt type and Example 2 the Times New Roman Font in 9pt type.

You can change a column's width by placing your mouse cursor in the header row between two columns, directly over the grid line (for example between FM and SSB in the examples above), the mouse cursor will change shape to two opposing arrowheads. Simply click and hold the left mouse button and drag the column to the width of your choice. This will only change the width of single column and will not affect columns in other grid windows.

Grid Layout Setup

B. Charles Sutton W1MCP

When choosing Grid Layout by right clicking from either the Logbook Page, Previous QSOs, or Worked Confirmed Window}], the following will be displayed:



The columns shown above are, from left to right, move field indicator (yellow box), display field checkbox (white box with check mark), ADIF Field Name, Grid Column Header, Text Justification indicator (< ^ >)

This is a complete list of all the fields you can display in the LogBook Page Window, with half of the fields on the left and the other half on the right.

To display a field click on the white box to the left of the ADIF field name. In this example all the fields are checked and are displayed in the LogBook Page window.

The first text column shows the ADIF field name. In the example above, the text in Blue (QSO_DATE) is an ADIF field name, it not be changed. When importing and exporting data, these field names allow Logger to identify parts of your data. For more information on the ADIF format, please refer to the Appendix Amateur Data Interchange Format. Refer to the bottom of this page for a list of all the fields you have available along with the type of data expected in each field, and to see what fields Logger32

automatically fill in for you.

The next text column shows the Grid Column Header. This is the heading at the top of each column in your LogBook Page. In example above, the text in purple (Date) is a Grid Column Header. This text can be changed. In the example above, the column header will be displayed as Date rather then the longer QSO_DATE. Other examples include Time On and Time Off which were also changed from their ADIF counterpart. Please keep in mind, while you can change a column header to anything you like, it should represent the data Logger32 is expecting there. For example, you could change the QSLMSG column header to ABC and you could enter ID Numbers for contacts you make with the ABC Club, BUT, when you export your logs that field will be QSLMSG and other programs reading that label will expect to find a QSL Message in that field. If you have a special need for a unique data field, it is suggested you use the Notes or comments field. If you refer to the first example at the top of this page, will see how customizing the Grid Column Headers can look.

> **NOTE:** Even though you are able to change the names of the column headers, the correct ADIF field will be used during any export function.

The last column shows a symbol that represents the alignment of the data in that column. "<" indicates Left Justified, "^" indicates Centered and ">" indicates Right Justified. To change the alignment of a column, right click on the symbol and choose from the three options or simply overtype the symbol. In the Logbook Page example in the first example at the top of this page, The QSO number column is right justified, the Call column is left justified, and the Mode is centered.

Rearranging the order the columns will be displayed in is a little tricky and may take a few attempts to get the hang of it. The top header is the first column displayed in your LogBook page and the bottom right header is the last column displayed. To move a column left click on the yellow arrow to the left of the field name you wish to move and hold the mouse button down. Drag that to the appropriate yellow box and release the mouse. Notice that the yellow boxes are positioned offset between two field names, releasing the mouse will move that field to a position between those two fields. For example, if you wanted to move the STATE to a position after the ADDRESS field, you would left click and hold on the arrow to the left of STATE (shown above in red) then the field to the box between ADDRESS and AGE (shown above in green) and release the mouse.

> **NOTE**: If you make a mistake, choose cancel and the changes will not be applied as changes are only applied when you OK. Bear in mind that if you make 5 changes, and then select cancel, all five changes will be lost.

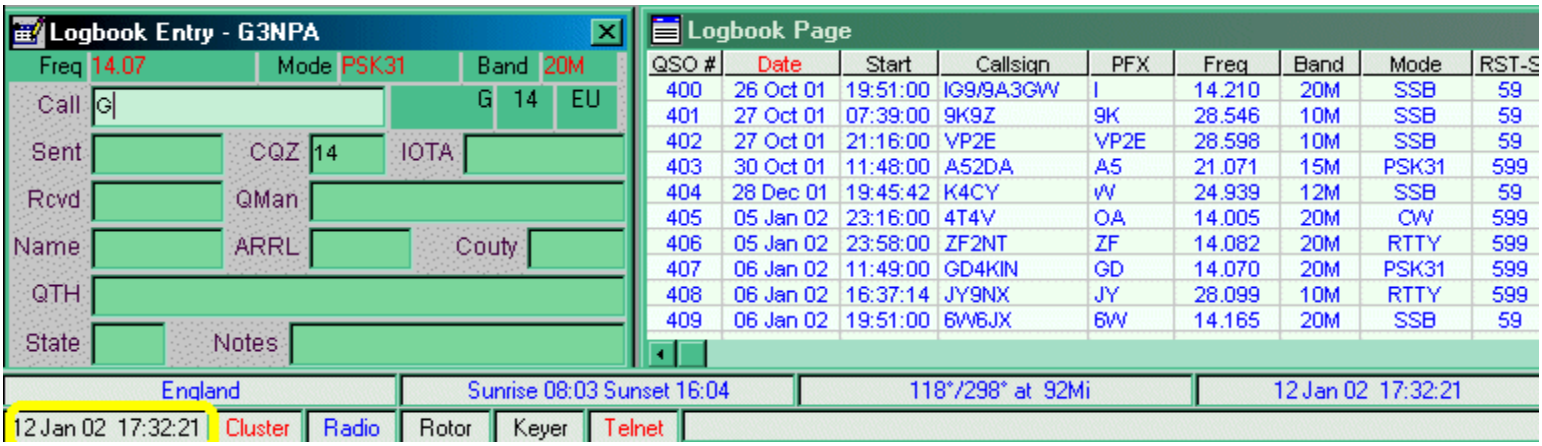
Placing a check mark before "Check to show ADIF DXCC field as Country name" will show the Country name in the DXCC of your Logbook, unchecked will show the DXCC Number.

> **NOTE:** the field only contains the DXCC number, and regardless of this setting, Log Exports will ONLY contain the DXCC number (this is to maintain ADIF compliance). Also, if you sort the Logbook on the column, it will sort numerically not alphabetically.

Standard Time Zones

Geoff Anderson G3NPA

The Date and Time panel in the Upper Status Bar gives the local time for the prefix entered in the Logbook Entry Window. The generation of this time information relies on the Standard Time names used within the Microsoft operating system in use. It has found that there are some differences between the various Windows systems, and in earlier versions some of the Standard Time names, which have been set within the Logger32 countries database, are not present. If you are using Win 98/Win 98SE or Win a local time will not be shown for some prefixes unless steps are take to correct this problem.



A list of the Standard Times names used in the database is shown in Table 1. Note that some Standard Time names are marked with a "#", indicating those that are not within Win98, Win 98SE or Win NT and therefore if a local time is required from these zones, some of the countries within the database will need to be modified. Table 2 shows those prefixes effected and gives a suggested alternative. Please note that these suggestions are considered the best alternative. They will NOT necessarily give correct local time throughout the whole year.

See also an alternative suggestion below

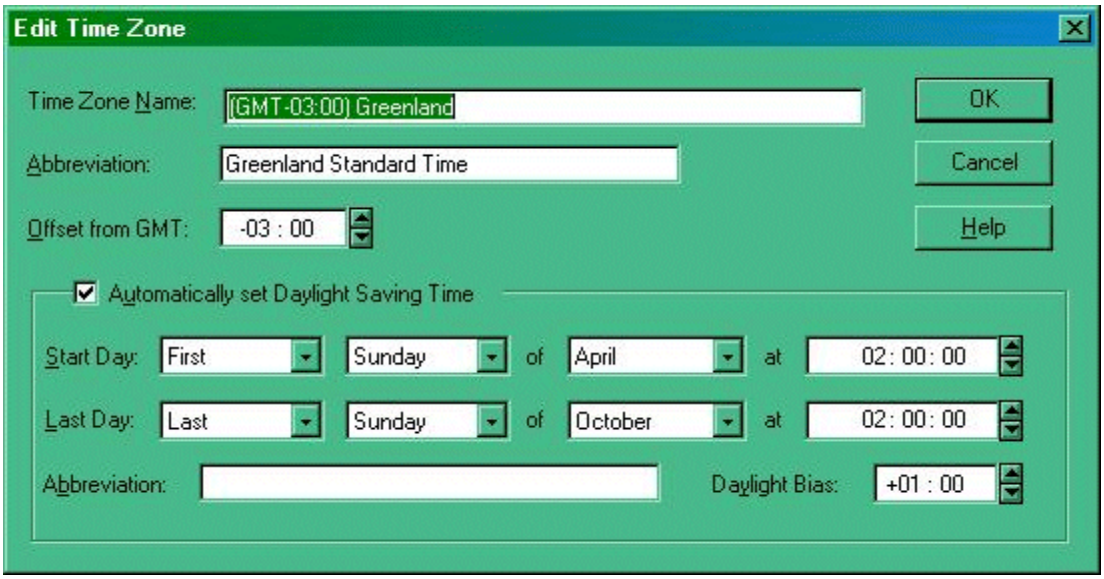
Offset from GMT	DST Applied	Microsoft Standard Name	NOT in Win 98/98SE or NT Note: No local time will be shown - unless alternative selected
-12:00	N	Dateline Standard Time	
-11:00	N	Samoa Standard time	
-10:00	N	Hawaiian Standard Time	
-09:00	Y	Alaskan Standard Time	
-08:00	Y	Pacific Standard Time	
-07:00	Y	Mountain Standard Time	
-07:00	N	US Mountain standard Time	
-06:00	Y	Central Standard Time	
-06:00	N	Canada Central Standard Time	
-06:00	Y	Mexico Standard Time	
-06:00	N	Central America Standard Time	#
-05:00	Y	Eastern Standard Time	
-05:00	N	US Eastern Standard Time	
-05:00	N	SA Pacific Standard Time	
-04:00	Y	Atlantic Standard Time	
-04:00	N	SA Western Standard Time	
-04:00	Y	Pacific SA Standard Time	Included but is -5:00Hr difference
-03:30	Y	Newfoundland Standard Time	
-03:00	Y	E.South America Standard Time	
-03:00	N	SA Eastern Standard Time	
-03:00	Y	Greenland Standard Time	#
-02:00	Y	Mid Atlantic Standard Time	
-01:00	Y	Azores Standard Time	
-01:00	N	Cape Verde Standard Time	#
00:00	Y	GMT Standard Time	
00:00	Y	Greenwich Standard Time	
+01:00	Y	Central Europe Standard Time	
+01:00	Y	Central European Standard Time	
+01:00	Y	Romance Standard Time	
+01:00	Y	W.Europe Standard Time	
+01:00	N	W.Central Africa Standard Time	#
+02:00	Y	E.Europe Standard Time	
+02:00	Y	Egypt Standard Time	
+02:00	Y	FLE Standard Time	
+02:00	Y	GTB Standard time	
+02:00	N	Jerusalem Standard Time	
+02:00	N	South Africa Standard Time	
+03:00	Y	Russian Standard Time	
+03:00	N	Arab Standard Time	
+03:00	N	E.Africa Standard Time	
+03:00	Y	Arabic Standard Time	#
+03:30	Y	Iran Standard Time	
+04:00	N	Arabian Standard Time	
+04:00	Y	Causasus Standard Time	
+04:30	N	Afganistan Standard Time	
+05:00	Y	Ekaterinburg Standard Time	
+05:00	N	West Asia Standard Time	
+05:30	N	India Standard Time	
+05:45	N	Nepal Standard Time	#
+06:00	N	Central Asia Standard Time	
+06:00	N	Sri lanka Standard Time	
+06:00	Y	N.Central Asia Central Time	#
+06:30	N	Myanmar Standard Time	#
+07:00	N	SE Asia Standard Time	

Microsoft Standard Name	Countries Effected	For Win98/98SE - Suggest
Central America Standard Time	CE0/E CE0/Z CE0/X HR TG TI TI9 V3 YN YS	Canada Central Standard Time
Pacific SA Standard Time	CE CP ZP	Atlantic Standard Time
Greenland Standard Time	FP OX	E.South America Standard Time
Cape Verde Standard Time	3C 3C0 D4	Azores Standard Time
W.Central Africa Standard Time	3V 5N 5U 9Q D2 TJ TL TN TR TT	GMT Standard Time
Arabic Standard Time	CY0 CY9 VP9	Russian Standard Time
Nepal Standard Time	9N	India Standard Time
N.Central Asia Central Time		
Myanmar Standard Time	VK9/C XZ	SE Asia Standard Time
North Asia Standard Time		
Malay Peninsular Standard Time	9M2/4 9M6/8 9V DU YB	Taipei Standard Time
North Asia East Standard Time	JT	Taipei Standard Time
Tonga Standard Time	3D2 A3 T31 T32 ZL7	Samoa Standard time

Table 2

As a much better alternative, one can edit and/or add to the actual time zone list within the operating system using TZEdit. The Zone Editor is part of the Windows 98 Resource Kit, Windows NT 4.0 Resource Kit, and Windows 2000 Resource Kit. Find the directory **tools\reskit\config** on your Windows installation CD, and run Tzedit.exe. If you use this method, then it is imperative the Microsoft standard name is used (exactly as shown above in Table 1), for it is this, which Logger uses and it **MUST** match exactly. If you make a mistake in typing the time zone name (abbreviation), it will not work correctly with Logger32.

An example is given below for Greenland's time zone.



NOTE – In Win 98 it is not possible to generate a time zone of +13 hours for Tonga. However a very close approximation can be achieved but using a GMT offset of 12:59…

Remember also that DST in the southern hemisphere (if applicable) is the reverse to that in the northern hemisphere (i.e., it starts Sept/Oct and ends in March/April).

Initial Set-up

Geoff Anderson G3NPA

In order for Logger32 to operate correctly, there is some basic set-up information that it requires. This section is designed to help you through this stage so you will be up and running in the shortest possible time. It is recommended that before you progress too far that the latest version of Internet Explorer be installed on your computer.

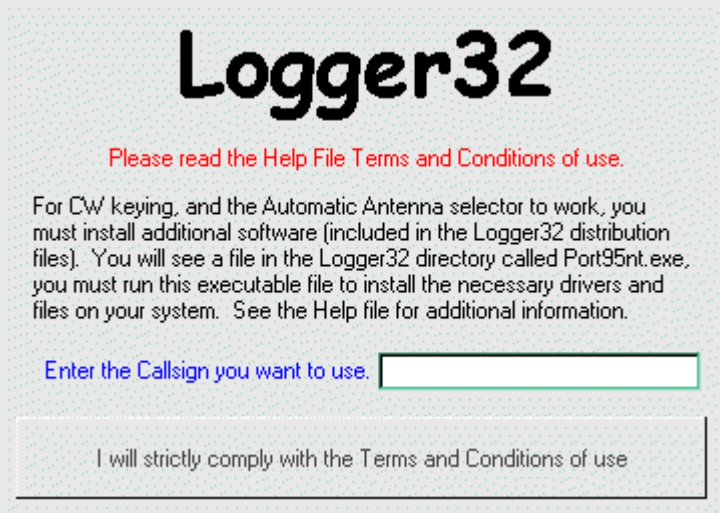
The basic steps are:-

1) Set the operator callsign
2) Set you preferred window configuration and window sizes
3) Set the latitude and longitude of your own location
4) Set your computer clock
5) Set your preferred frequency, date and time format.
6) Import your existing log

1 - Enter Callsign

When Logger32 is run for the first time you will be presented with the dialog box displayed below.

PLEASE READ THIS NOTICE - IT CONTAINS IMPORTANT INSTALLATION INFORMATION



Having noted what you have to do as part of the installation, enter your callsign IN CAPITALS and then click on the bar containing the words "I will strictly comply with the Terms and Conditions of use".

DO NOT FORGET TO RUN THE I/O DRIVER PROGRAM Port95nt.EXE. If you do, then control of the radio via a CAT interface, the CW machine and the Antenna controller will NOT work.

2 - Windows

On opening Logger32 for the first time, it will default to a main window and eight smaller child windows. Adjust the main window to your preferred size and then position and size the eight individual child windows within the main window. Child windows may be turned off by using the "X" in the top right of each window and turned on again using the Toolbar:icons at the top of the main window.

3 - Latitude and Longitude of your own location.

In order for some of the Logger features to work correctly (Beam heading and distance, and Grid Squares) you must the Latitude and Longitude of your location using the Setup User Latitude/Longitude dialog box.

4 - Computer clock

Logger32 records times in UTC so it is important to ensure that your PC is set up correctly.

1) Double click on the clock/time in the Windows system tray to display the computer Date/Time Properties

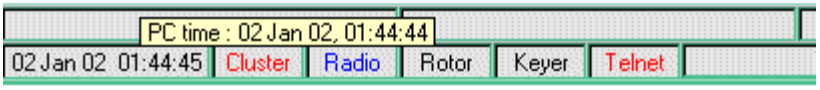
2) Select the appropriate Time Zone for your location and check the small box alongside the words "Automatically adjust for daylight saving changes" and then click on "Apply" followed by "OK".

3) Reboot the computer (to ensure that the operating system is correctly set) and then call up the Date/Time Properties once again.

4) Set the date and time to your LOCAL time. Click on "Apply" followed by "OK", or synchronize the computer clock to an atomic standard as described in section Atomic Clock.

5) Logger32 displays UTC time in the bottom left hand corner of the Lower Status Bar. If this is not right then check to make sure you have all the above settings correct.

6) As a final check, place the mouse over the time pane in Logger32 (see below) to display the PC time. Note that in the example below, the two times are the same because the PC used was set to GMT and NO DST was being applied in January! If you are using any other Time Zone and/or DST is being applied, then these times will be different.



You should not need to change your computer clock again (apart from any small corrections necessary resulting from drift) – even when daylight saving times apply.

5 - Frequency Display

Logger32 has the ability to display and log frequency in either MHz or kHz to a maximum resolution of 1 Hz. From the MenuBar, click on Setup and then select Frequency. Click on the frequency display configuration} of your choice.

You can now start to log your contacts but you may wish to refer to other sections on how to set up the "Logbook Page", the "Logbook Entry" window, the "Previously Worked" windows and the Bandplan before doing so. If you will be using either a Telnet a VHF packet cluster to gather DX spot information, and/or you are using a CAT interface to your transceiver then you may wish refer to these sections also.

6 - Importing your Log Data

Import log data from your previous log program as described in the section "Importing Logs".

Non-English versions of Windows.

Non-English versions of Windows seem to use the Comma (,) as the decimal delimiter in numeric values (like 2,3148). If this Regional Setting is not changed, the Microsoft mathematical routines fail so it is **MANDATORY** that all users **ENSURE** that the Windows default for the "Decimal Symbol" is set to a "period (.)" by:

1. Opening the Windows Control Panel;

2. Double-clicking on the "Regional Settings" icon;

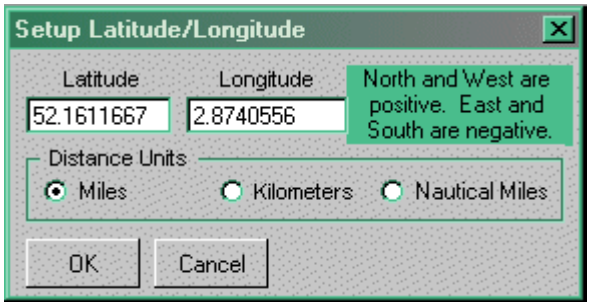
3. Selecting the "Numbers" tab panel; and,

4. Ensuring that the "Decimal Symbol" is a "period" (.).

Setup User Latitude - Longitude

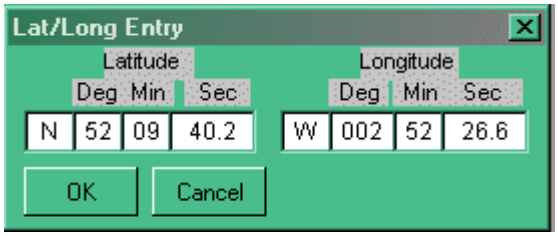
Geoff Anderson G3NPA

In order to set up or change the Latitude and Longitude of your station, right click on the Logbook Entry window and select Setup| QTH Lat/Long menu item to display the Setup Latitude/Longitude dialog box.



Enter your Latitude and Longitude in degrees and decimal degrees and chose the units in which you want distance to be then click "OK". Note that North and West are positive values while East and South are negative values.

If you prefer to enter Latitude and Longitude in degrees minutes and seconds, then right click on either of the two panes to display the screen below. Enter Latitude in the format (N)(S) DD MM SS.S and Longitude in the format (E)(W) DDD MM SS.S



Setup Antenna Rotator

W5IFP Jim Hargrave

General information

Logger32 will support the following popular auto-positioning rotors.

Yaesu GS-23 (GS-232)

RC28000 (M2 Rotor)

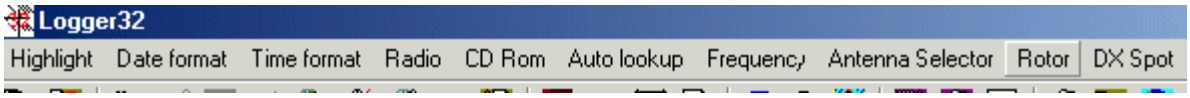
HyGain DCU-1 (RotorEZ)

Zelpro SAK-232

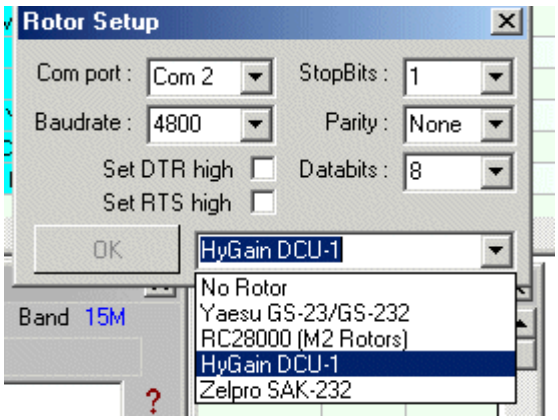
This is accomplished via the TxD line of an RS-232 serial port. The antenna positioning may be accomplished by entering Ctrl_ A when focus is in the Log Entry window and by macros when in the sound card window. The global positioning information is available as soon as a prefix or callsign is entered in the "Call" field of the Log Entry window. Once this is accomplished, Logger32 will send positioning commands to the rotor control by either of the above mentioned operator commands. The user can select path or long path positioning.

Rotor Serial port setup

To setup the rotor controller, on the main menu select "Setup" then "Rotor".



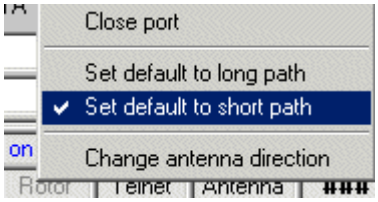
A window will appear where the user can select the type of rotor controller and setup the serial port parameters. The example is the HyGain & RotorEZ controller



The Set DTR high and Set RTS high are used to set interface power on from the RTS/DTR lines.

Selection of Path

The user can determine whether to use short or long path. The system will remember the user setting and use it for the default direction. Right-click on the "Rotor" box in the bottom status line. A pop-up menu will appear giving you the two path options. Just click on the one you desire. A check mark will show the user selection.

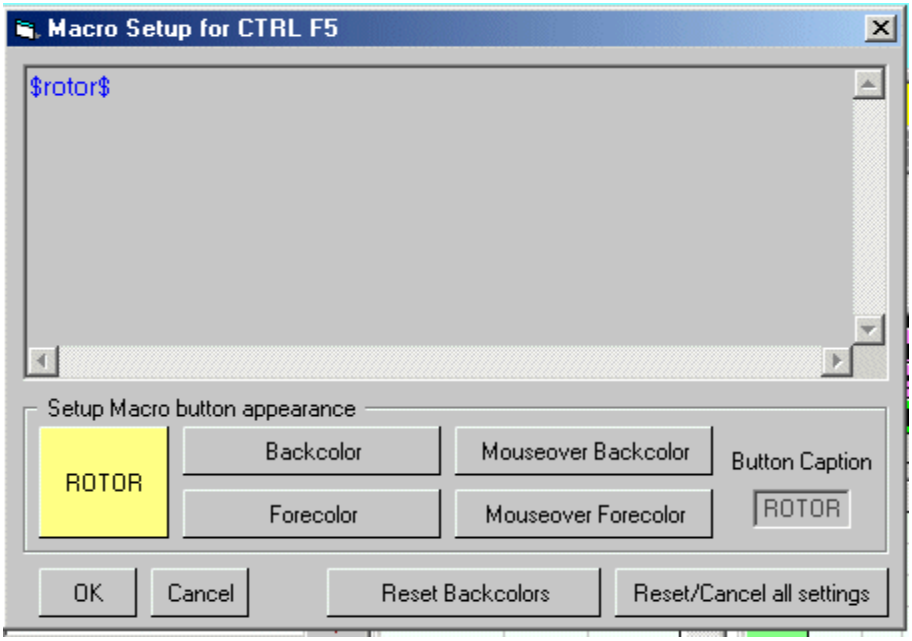


Open and closing the Rotor port

This can also be accomplished by right-clicking on the rotor box at the bottom and selecting "Close Port" from the pop-up menu

Sound Card operation

When the focus is on the Sound Card, the antenna rotor can be controlled by the use of a macro with the command $rotor$ in it. This macro will automatically position the antenna once a callsign has been entered into the Logbook Entry window "Call" field. callsign may be entered manually or by left-clicking on a callsign in the Sound Card receive text.



Log Entry operation

When the focus is on the Log Entry window and a callsign has been entered in the "Call" field, entering a CTRL_ A will send the positioning information to the antenna controller.

Rotor Port status

The status is displayed when the mouse is over the rotor box in the lower status bar.

Setup Date, Time and Frequency Formats

Hew Lines VA3HU

Logger provides the capability for the user to select the display format of the Date, Time and radio Frequencies from a pre-defined list of formats. These formats are selected by first selecting the Setup Menu, then selecting the Date Format, Time Format or Frequency menu items respectively.

Setup Radio Control

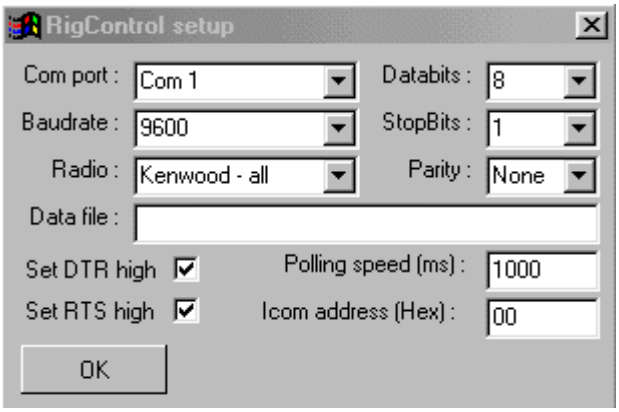
Hew Lines VA3HU

Many modern transceivers provide the capability to interface with the serial (COM) ports of computers to send and receive data software applications. Interfacing your transceiver with Logger32 will provide you with the following features:

Automatic display and logging of the radio Frequency/Band and Mode of operation;

Automatic setting of the radio Frequency and Mode to that of a station that is selected in the DX Spots window.

Setting up Logger32 to interface with a transceiver is very simple. From the Main Menu, select the Setup menu. From the Setup Menu select the “Radio | Radio Port configuration" menu item to display the RigControl Setup dialog box.



The first step is to select your radio from the Radio drop-down list. Currently supported transceivers are:

ICOM (IC-735 only);

ICOM (not IC-735);

Kachina 505;

Kenwood (all models);

Ten-Tec Omni VI or Omni VI Plus;

Yaesu FT-100;

Yaesu FT-817;

Yaesu FT-847;

Yaesu FT-890.

Yaesu FT-920;

Yaesu FT-990;

Yaesu FT-1000D; and,

Yaesu FT-1000MP.

Accept the default values for the remaining serial port parameters or change them as required according to the specific of your radio.

Ensure that the radio is connected to the configured COM port and currently turned on from the Setup Menu, select the Radio | Open Radio port menu item.

The default values of 9600 baud for the COM port and 1000 ms (1 second) for the Polling Speed should be used as a starting for your configuration. If your radio and computer can handle faster baud rates you should select the highest baud rate that reliable operation with your specific hardware. Reducing the value of the Polling Speed (increasing the rate of radio polling) will provide a faster and smoother display of all band, frequency and mode changes.

Detailed interface information for the following radios can be found in the Radios section of the Appendices:

ICOM-746;

Kachina 505;

Kenwood TS-570 TS-850 TS-870;

Ten-Tec Omni VI and Omni VI Plus;

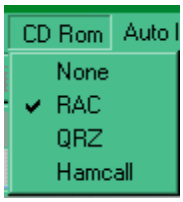
Ten-Tec Paragon;

.

Setup CDRom

Geoff Anderson G3NPA and Hal Miller KB1ZQ

To set up the CDRom facility all one needs to do is to call up the menu item Setup|CD Rom and check the appropriate CD ROM – shown below:-



RAC CD

It is possible (certainly in the case of the RAC and QRZ CDRom) to run without the actual CD in a drive if the data has been on to a HDD. If you wish to do this, then here are the steps you have to take:-

1) Copy the data directory from the CDRom onto a HDD into a directory called C:\Data for RAC or C:\Callbk for QRZ (we will assume that this is drive C:)

2) Locate the correct DLL from the CDROM (raccd32a.dll for RAC) and copy it into your Logger32 directory.

3) With Logger32 closed, open the Logger32.INI file in Notepad or Wordpad and find the section [CD Lookup Settings] and the line defining the drive letter as follows:-

CD Drive Letter=C:

4) Resave the Logger32.INI file.

The callsign lookup will now be very much quicker.

For information on how to use the lookup facility, please refer to the section called "Callsign Lookup"

Transferring Logs from Logger16 and other programs

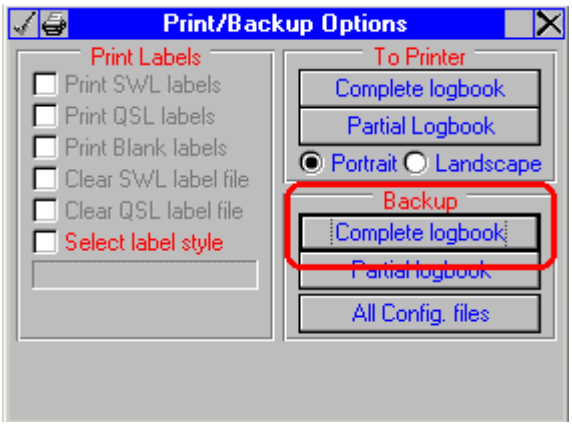
Geoff Anderson G3NPA & B. Charles Sutton W1MCP

How to Transfer your Logger16 Logbook into Logger32

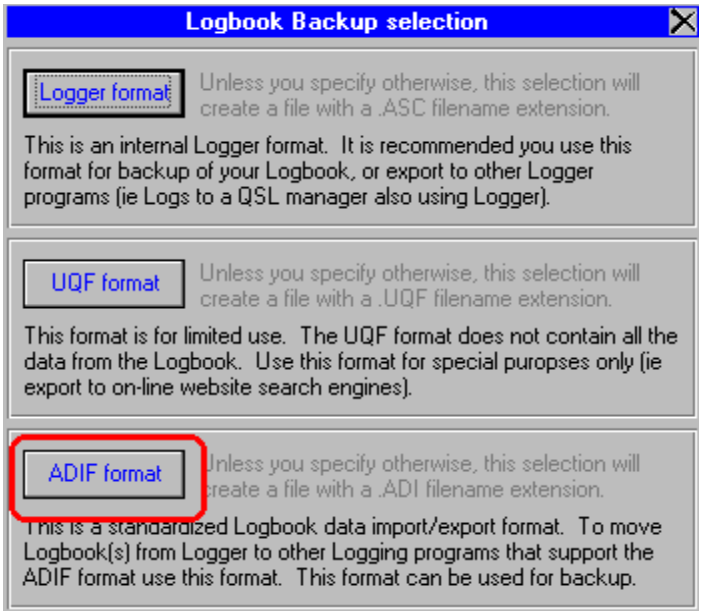
To transfer your existing Logger16 logbook into Logger32 you need to complete each of the following steps in order to transfer without problems.

Step 1 Save the Existing Logbook.

Load Logger16 and select the Print menu button to open the Print/Backup Options dialog box.



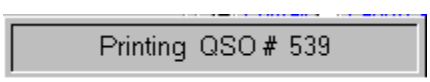
From the Backup panel, select Complete Logbook and then select ADIF format.



You are now given the opportunity to give a name to the file you are about to create. It is suggested that you name the file YOURCALL.ADI. When ready, select "OK". If this file already exists then either select "NO" and start again OR select "YES" overwrite the file.

You are now returned to the Print/Backup Options window, where it is necessary to select "OK" to actually save the file.

You should see a counter increasing rapidly as the file is saved. Please note two things at this point:



a) Your existing log in Logger16 will not have been effected by this export, and

b) The file YOURCALL**.**ADI just created will be found in the Logger16 directory.

If you have valued contacts already within the Logger32 logbook and you need to retain these, then it is recommended that also [{Link to topic Exporting Logs:export}] these to an ADIF file at this stage, for import again at a later stage. Use Tools | Export Logs | ADIF file and follow the prompts given.

Step 2 Make any Corrections Necessary to the ADIF File

It is important to note that if you have used some digital modes in Logger16 or another log program, your program may not used a correct ADIF mode format. Although the log file created in Step 1 will load, you may find that the new statistics created Logger32 do not match up with what you observed in Logger16 or another program. As an example of this, you may have the term PSK instead of the full and correct identification of PSK31 and if this is the case, then it is advisable to correct the problem now before you go on.

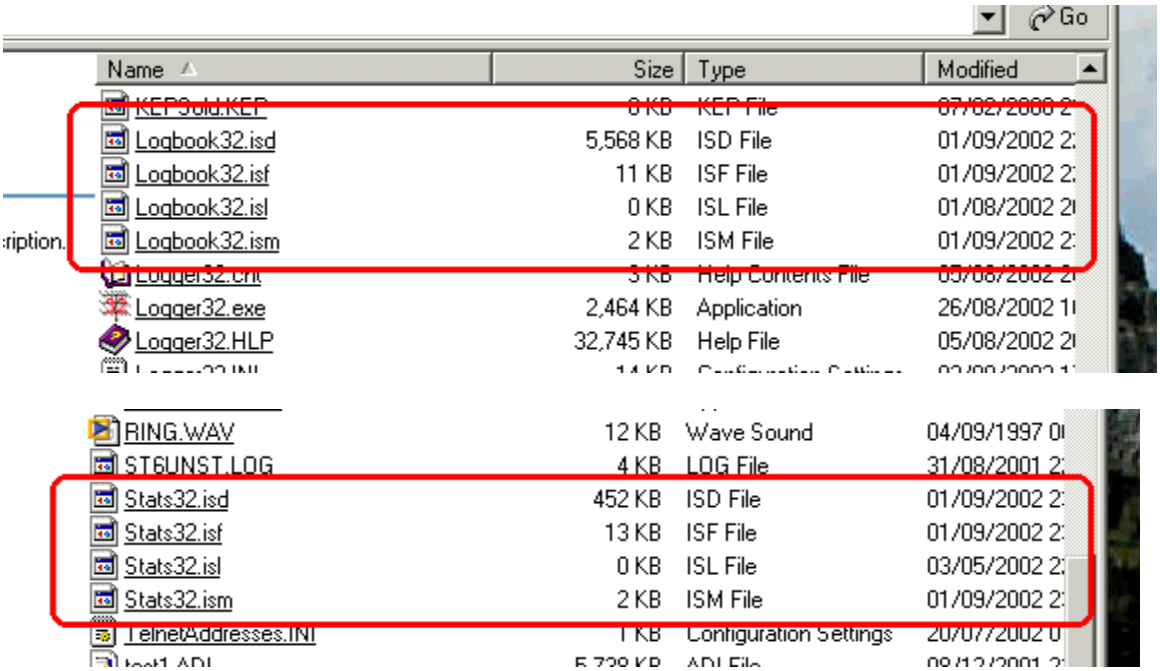
If you need to correct a Logger16 log file, please read the section Using Conversion.exe, then continue the correction of your file here.

You can correct your file by loading the "YOURCALL**.**ADF" file into Notepad or Wordpad and performing a search and replace function throughout the complete file to correct this problem. **NOTE**: When making changes to the .ADI file you must follow correct format. Before the actual mode text is the field identifier and the field length, for example: <MODE:3>PSK You can simply change PSK to PSK31, you would have to search on 3>PSK and replace it with 5>PSK31. In this example the word MODE identifies this field as the MODE field, the number 3 identifies the length of the text following the > delimiter, so PSK characters. If you omit changing the 3 to a 5, any ADIF compliant program will ONLY read the three characters following the delimiter.. in effect you would negate the text change.

Once you have made the necessary changes you are ready to go to the next step.

Step 3 Make Quite Sure that the Logger32 Logbook is Empty

It is quite possible that in your eagerness to see how Logger32 works you have entered some data into the logbook. Before load your logs into Logger32 you are strongly advised to make sure that any log previously created is removed. Open Explorer and select the Logger32 folder. Look for and delete the eight (8) files named **Logbook32.isd**, .**isf**, .**isl** and .**ism** and **Stats32.isd**, .**isf,** .**isl** and .**ism**.



Step 4 Make Sure You Have Entered Your Callsign into the Current User Area

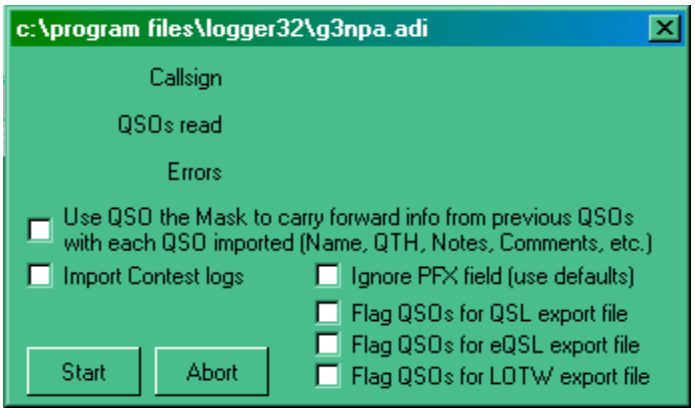
You callsign should have been configured during the first opening of Logger32. However it is advisable at this stage to check that the callsign configured is the one you want. Open Logger32 and make sure that the Logbook Entry window is visible. If it not visible, then click on the second icon from the left under the menu bar. Right click on the grey area in the middle of this

window (NOT in one of the small panes) and you will bring up the appropriate menu. Select Change Operator and enter your callsign here.

If, in Logger16 you have different logs based on different callsigns you've had in the past, or used to separate mobile or calls, then you should CHANGE the Logger 32 callsign to match the log you will be importing. Unlike Logger16 in which you would have to load and maintain multiple log books for different callsigns, Logger32 takes advantage of the ADIF field OPERATOR, and therefore only uses one Logbook. The operator field should be used to identify the operator at the time of QSO. Logger32 will automatically enter the callsign for the current operator when importing ADIF log files.

Step 5 Load the Logbook Data into Logger32

With Logger32 running, from the menu bar select File | Import Logs | ADIF. Locate your (possibly modified) file and select "Open". You will now be presented with the window shown below and as this section is specifically for the of Logger16 logs, it is recommended that all the check boxes are left blank. Click on "Start". You will now receive a message the effect that if imported QSOs have no operator field, they will default to the current user: YOURCALL. Click "OK" and the will load.



At the end of the loading process you will receive an information window advising of the number of QSOs loaded and the number that could not be loaded for some reason. If there are log entries that were not accepted by Logger32, then the file BAD.ADI will contain those records that were problematical. These can be edited and re-loaded in the same way.

If you saved an ADIF file from Logger32 in Step 1, repeat the load process for this file to make the new log complete.

Step 6 Perform a recalculation

If you have carried out all the steps described above, then this step should not be necessary. However, just to make sure that the log databases are set up correctly and the statistics that come from them are right, it is recommended that you perform a "recalculation". Use "Tools | Recalculate statistics" and then click on the "Recalculate" button in the Recalc Stats dialog box. This step WILL be required if you have deleted some QSOs for any reason after you have loaded them into Logger32

Should you find that your statistics do not match up with those generated by Logger16, then look again at the point specifically raised in Step 2. The quickest way to do this is to look at the logbook and sort it on MODE (click on the title) and then scroll through the log looking for errors in the mode description. Return your logbook to normal by clicking on the title for QSO# or date.

Points to note about the transfer of Logger16 files

1) It has already been pointed out above that some fields exported from Logger16 might not conform to the correct ADIF specification. In addition to this, Logger16 did not have separate fields for Name, QTH and Notes, and such items were probably recorded in the Comment field. The Logger32 import routine cannot sort this out for you and this has to be a manual editing labor of love if you require your log to look correct or you could try using CONVERSION.EXE.

2) There is a minor bug in Logger16 when exporting a PARTIAL log in that it will not output QSO data for the final date selected. It will output all QSOs up to the date but not for the final date itself. In order to overcome this problem, select a date as one day AFTER the selection required. In other words, if you require QSOs between 1 Jan 2000 and 31 Dec enter the start date as 01012000 and the end date as 01022002. This "bug" is NOT apparent if you export the whole log.

Use of Conversion.Exe

Only to be used to convert Logger16 ADI files to Logger32 ADI files.

In an attempt to assist with the problems described in "points to Note" (1) above, a small routine has been included with Logger32 which will look at the "Comments" and "Mode" fields from Logger16. This routine cannot cater to every situation that could arise your Logger16 ADIF file so it is far from perfect. The routine does two things:

a) It will assume that the first word in the Comments field is a NAME and generate a name field with this word in it. (This has been selected as if one was using Zakanaka with Logger16, Zakanaka would place a name as the first item in the Comments field).

b) Any words in the original Comments field can be either placed in a new QTH or new Comments field OR discarded – at user's option.

c) An attempt will be made to convert the old MODE field to a standard ADIF mode /sub mode name. For example, PSK will become PSK31, BPSK will become PSK31 with the submode of BPSK and QPSK will become PSK31 with a submode of QPSK.

The routine can be run from any directory folder and it is self explanatory in its use. The user has the option to select how the Comments field is to be dealt with.

The output file will be called CONVERTED.ADI and will be found in the directory where you ran CONVERSION.EXE.

PLEASE NOTE:

1) You may still have some small editing to do following the use of this conversion program. If you only use SSB and/or CW modes, then it will not be necessary to run this routine at all.

2) The converter routine is ONLY intended to be used with Logger16 ADI files. NO attempt has been made to deal with ADIF from other sources.

Transferring your Logbook from Other Sources.

If you wish to transfer a logbook for another source, the basics of steps 1 to 6 above will still apply. The only difference will be the method by which you obtain the ADIF file format from your current software. You are advised to consult the help file of that for guidance on how to export your log in ADIF format.

It should be noted that some ADIF formats contain WPX information in the PFX field and this will cause Logger32 to produce incorrect information. The ADI file loader can ignore this field (if present) and it is recommended that this box be checked before loading if you are in doubt. Logger32 will then replace the field with the correct DXCC prefix automatically. Should you find that have prefixes like WB2 or 9K2 in the PFK field, then this is incorrect and the log files will have to be reloaded. Delete ALL the files (4) AND the Stats files (4) and start again.

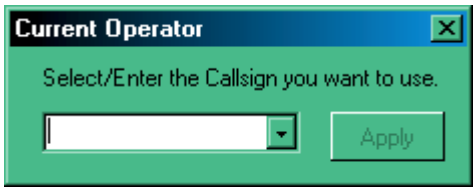
The ADI file loader has the ability to load contest logs and to mark them with the name of the contest. If this option is required, the check the "Import Contest Log" box and you will be asked to supply the contest name. The contest name given will be loaded into the Contest_ID field for each record in the logbook.

Setup Callsign

Geoff Anderson G3NPA

When Logger32 is run for the first time or if you right-click on the Logbook Entry window and select "Change Operator" from the popup menu, the Current Operator dialog box will be displayed. Simply enter a new callsign into the edit box, or using the drop-

arrow, select a previously entered callsign and click the "Apply" button.



Main Menu

Hew Lines VA3HU

Logger32 utilizes two standard Windows Menu bars, the Main Menu and Setup Menu.

The **Main Menu** enables the user to access the following functionality:

The **FILE** menu item allows the user to change the logbook.

The **TOOLS** menu item allows the user to:

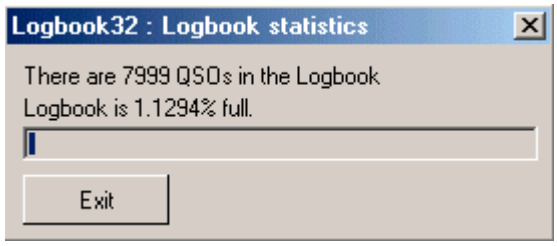
Utilize the Grid Square Calculator;

Snap Windows to Size;

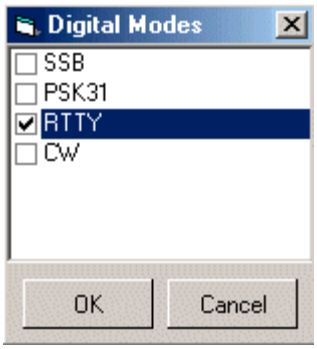
Set up Bands and Modes;

Database Maintenance allows the user to:

Display Logbook details;



Setup digital modes;



Recalculate statistics;

Reformat QSO numbers;

Maintain the IOTA database;

Maintain the US County database;

Maintain the Country/Prefix database;

Import Logs in ADIF format;

Export Logs in one of the following formats:

ADIF;

Comma delimited (CSV);

UQF (text).

Export files in one of the following formats:

QSL;

eQSL;

LOTW.

The **VIEW** menu item allows the user to:

Display the DX Spots window;

Display the Notes window;

Display the Logbook Entry window;

Display the Logbook Page window;

Display the Previous QSOs window;

Display the Cluster WIndow;

Display the Sound Card Data window;

Display the Tracking window;

Display the Worked/Confirmed window;

Modify the Grid Appearance:

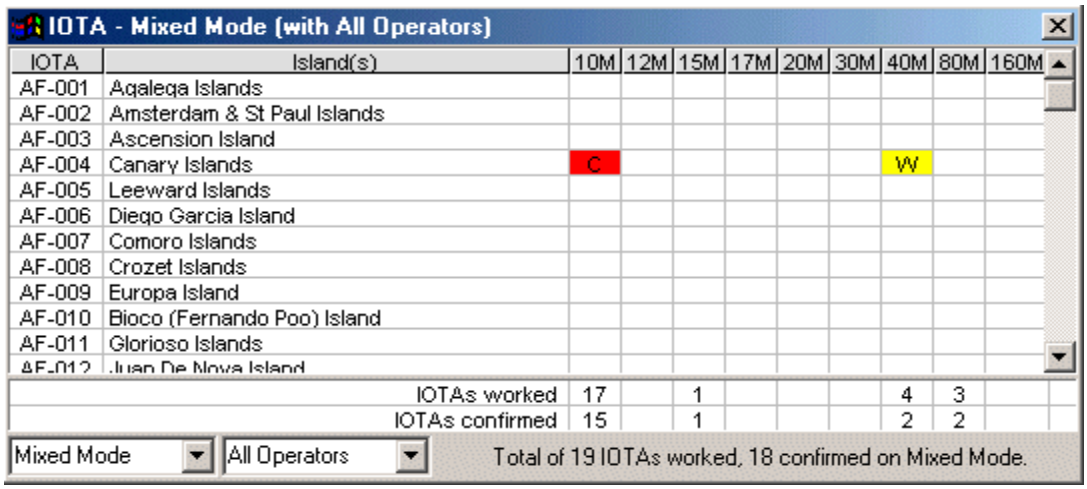
Modify the Form Background Color;

Display or Hide the Toolbar;

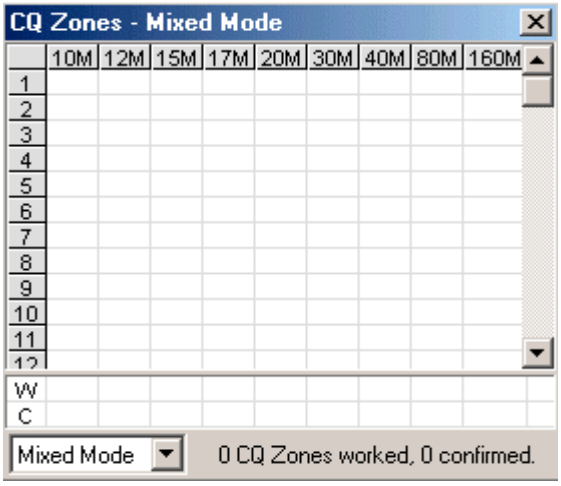
Display or Hide the Status Bars.

The **AWARDS** menu item enables the operator to display the following Award statistics:

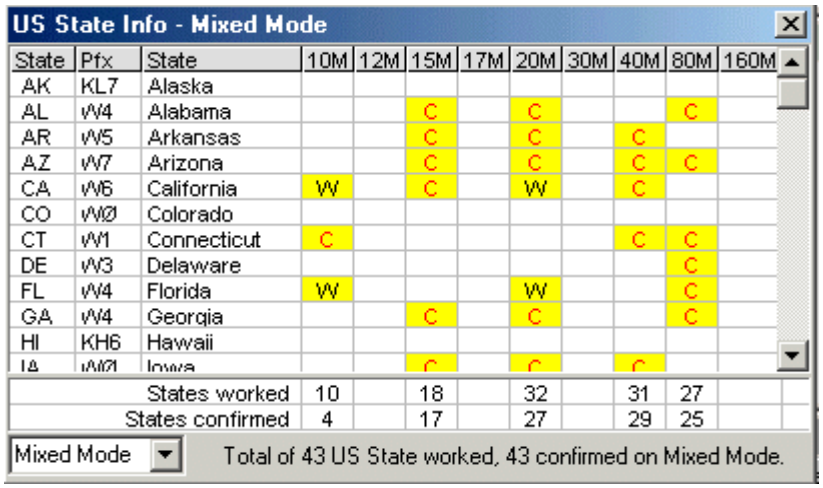
The Islands (IOTA);



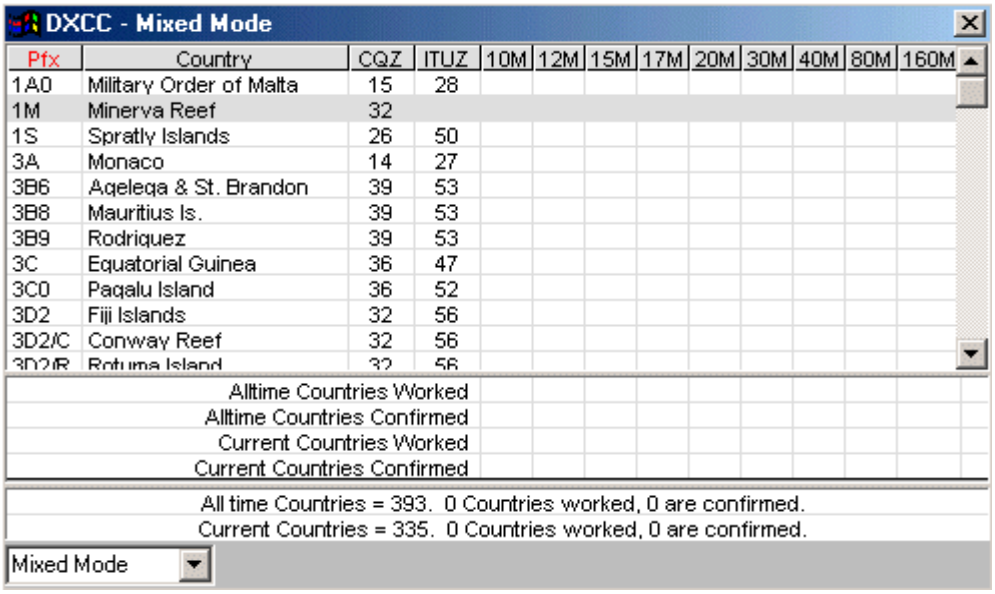
CQ Zones;



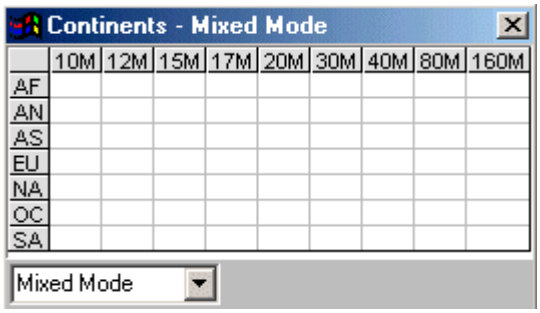
US States;



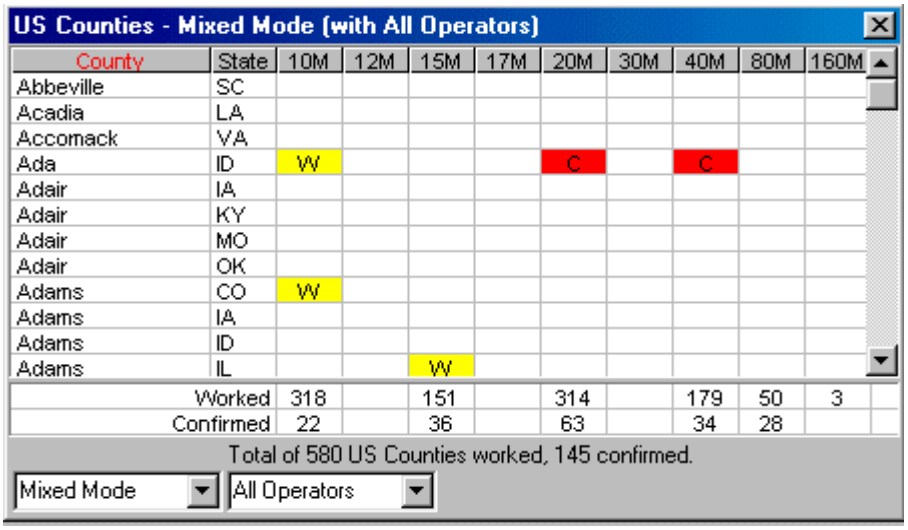
Countries (DXCC);



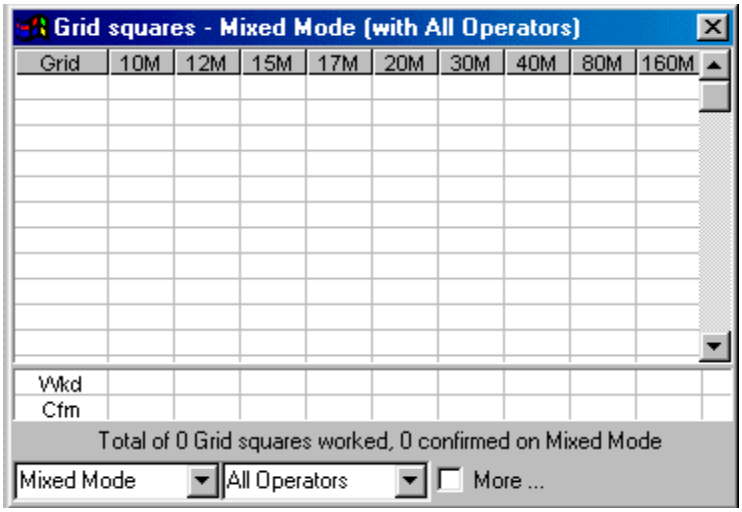
Continents;



US Counties; and,



Grid Squares.



The **CW** menu item allows the user to use the Logger32 CW Machine;

The **SETUP** menu item switches the Menu Bar to the Setup Menu;

The **HELP** menu item allows the user to display the Logger32:

Version Number;

Help File Index; and,

Help File Contents.

Setup Menu

Hew Lines VA3HU

Logger32 utilizes two standard Windows Menus, the Main Menu and Setup Menu.

The Setup Menu enables the user to access the following Logger32 Setup functions:

The **HIGHLIGHT** menu item allows the user to configure the following selectable highlight options for Logger32:

Grid Highlight (on mouse click)

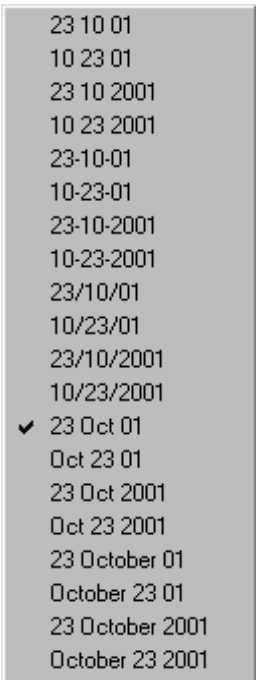
Worked Highlight

Confirmed Highlight

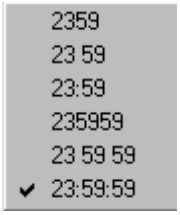
QSL sent highlight

QSL to be printed highlight

The **DATE FORMAT** menu item allows the user to select the Date format to be used by Logger32 from a drop-down menu list.



The **TIME FORMAT** menu item allows the user to select the Time format to be used by Logger32 from a drop-down menu list.



The **RADIO** menu item allows the user to:

Setup the Radio Port Configuration;

Show the Radio Debug window;

Use Narrow filters for CW;

Open and Close (toggle) the Radio port.

The **CD ROM** menu item allows the user to select a CDROM Callbook to be used by Logger32 from the following list:

None;

RAC;

QRZ;

Hamcall

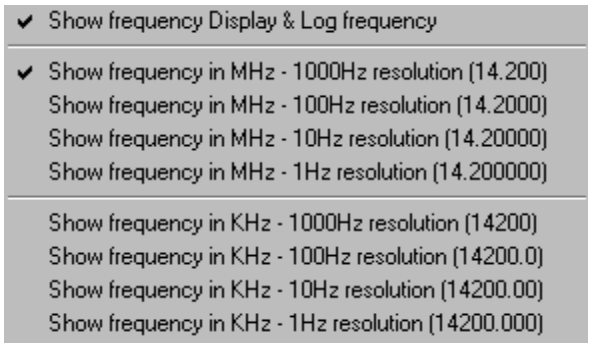
The **AUTO LOOKUP** menu item allows the user to configure Logger 32 to automatically search for callsign data from one of the following selections, when data is entered into the Logbook Entry window:

Auto www.qrz.com/ Lookup;

Auto CD-ROM Lookup;

Auto Golist lookup.

The **FREQUENCY** menu item allows the user to select the Frequency format to be used by Logger32 from a drop-down menu list.



The **ANTENNA SELECTOR** menu item allows the user to configure Logger32 to use an electronic antenna switch to select different antennas for different bands. The definition of what antennas to use for what bands is configured in the Setup and Modes section.

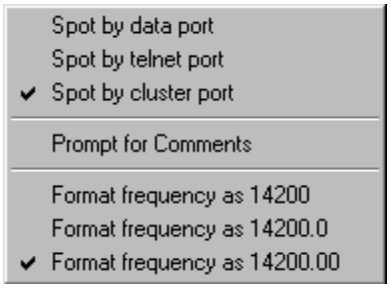
The **ROTOR** menu item allows the user to interface Logger32 to an antenna rotator using an RS-232 serial interface.

The **DX Spot** menu item allows the user to setup Logger32 to send DX Spots from the Logbook Entry Window. The user can:

Select the DX cluster port that the spot will be sent to;

Enable a "Prompt for Comments" edit box to put a comment in the spot;

Format the frequency to be sent with the spot.



The **MAIN MENU** menu item allows the user to switch back to the Main Menu bar.

Toolbar

Hew Lines VA3HU

The Logger32 Toolbar provides a set of quick access Tool Buttons allowing the user to select most commonly used Logger32 windows and functions. The display of this toolbar is user selectable through the Main Menu, View menu item.

The Toolbar is divided into six general areas.

Toolbar Group One

The first group of two buttons allows the user to save, in compressed (ZIP) form:

 Compress Logbooks

 Compress User Files and Databases.

Toolbar Group Two

The second group of nine buttons allows the user to display the:

 DX Spots window;

 Following windows as a group:

Logbook Entry window;

Logbook Page window;

Previous QSOs window.

 Logbook Page Window;

 QSOs window;

 Telnet window;

 Sound Card Data window;

 Tracking window;

 Worked Confirmed window}];

 Notes Window

Toolbar Group Three

The third group of four buttons allows the user to:

 Snap Windows to Size];

 Do Country/Prefix Database Maintenance;

 Access the Grid Square Calculator}].

 Setup contest serial numbers.

Toolbar Group Four

The fourth group of buttons allow the user to perform:

 WWW.QRZ.COM callsign lookup;

 CDROM callsign lookup;

 GO List Callsign lookup.

Toolbar Group Five

The fifth group of buttons enables the user to create:

 An eQSL File;

 A generic QSL file in one of three formats;

 A LOTW File.

Toolbar Group Six

The sixth group of buttons allows the user to mark QSOs for export to one or more of the QSL files described above:

 Flag for an eQSL file;

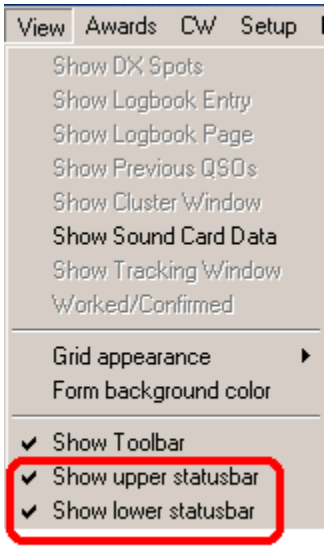
 Flag for a generic QSL file}];

 Flag for an LOTW file.

Status Bars

Hew Lines VA3HU

Logger32 provides two user-selectable (Upper and Lower) Status Bars. The display of these status bars is controlled through the Main Menu, View menu item.



UPPER STATUS BAR

The Upper Status Bar displays five panels of specific information for any callsign entered in the Logbook Entry window. These panels consis of:

The Country panel displaying the Logger32 country name;

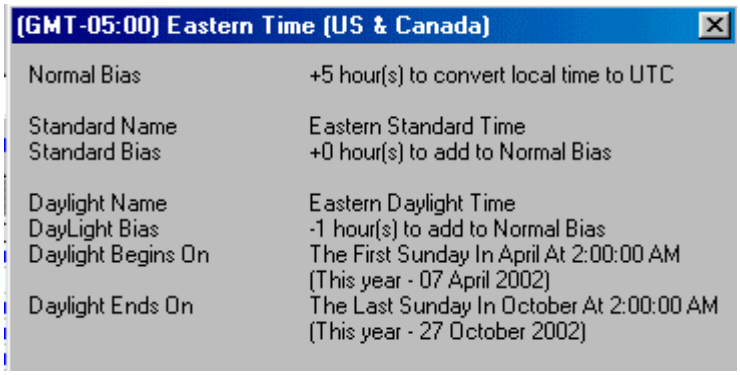
The Prefix Panel displaying the Prefix, CQ Zone and Continent;

The Sunrise and Sunset times panel;

The Beam Headings panel displaying the Short and Long path beam headings and Short Path distance to the station;

The Date and Time panel displaying local date and time at station.

> If you right-click on the Date and Time Panel while information is being displayed, complete details for the Time Zone of the selected station will be displayed.



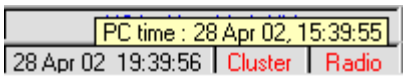
LOWER STATUS BAR

The Lower Status Bar displays general system and status information.

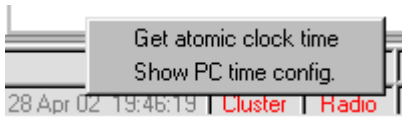
The system and status information displayed in the Lower Status Bar consists of:

Logger Date and Time;

If you place the cursor over the Logger date and time, a yellow pop-up hint box will display your PC system date and time.



If you right-click on the Logger date and time, a pop-up menu will be displayed:



allowing you to set your PC time to an Atomic Clock standard or to view details of your PC Time Zone using the same display as described above for the Upper Status Bar local date and time.

Cluster (Telnet) window status;

If you place the cursor over the Cluster status, a yellow pop-up hint box will display the status of the serial (COM) port configured for the Cluster (Telnet) window.

If you right-click on the Cluster status, a pop-up menu will be displayed allowing you to Open or Close (toggle) the serial (COM) port configured for the Cluster (Telnet) window.

Radio control status;

If you place the cursor over the Radio control status, a yellow pop-up hint box will display the status of serial port configured for the Radio port.

If you right-click on the Radio control status, a pop-up menu will be displayed allowing you to Open or Close the serial (COM) port Radio port.

Rotor control status;

Telnet window status;

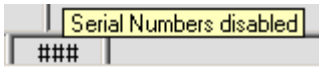
If you place the cursor over the Telnet window status, a yellow pop-up hint box will display the status of the socket connection of the Telnet window.

If you right-click on the Telnet window status, a pop-up menu will be displayed allowing you to Connect or Disconnect from the Default Remote Host configured in the Telnet Window.

Antenna Selector status;

If you place the cursor over the Antenna Selector status, a yellow pop-up hint box will display the status of the parallel port configured for the Antenna Selector.

Serial Number; and,



WWV, WCY and WX messages received in the Cluster window.

If you can right-click on this pane to update it's contents from the NOAA.

DX Spot Window

Hal Miller, KB1ZQ

The DX Spot window uses inputs from the Cluster and Telnet Windows to display DX Spots. These spots are displayed using the following columns, which are user-definable as to font, color and size (Grid Appearance):

DX Spot Call sign of the Spotted Station

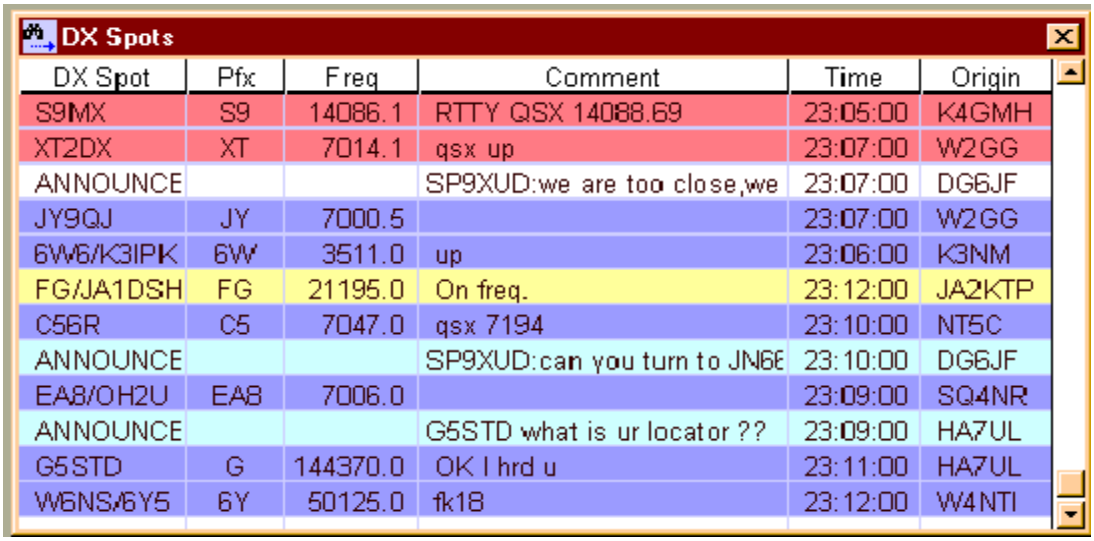
Pfx Country

Freq Frequency

Comment Free format comments

Time Time the spot was posted

Origin The Originating Stations Call sign



Configuring the DX Spot Window makes extensive use of multiple pop-up and linked menus.

Right-clicking on the DX Spot window displays a pop-up menu that provides the operator with four functions and access to pop-up menus.

The first four menu items provide the following functionality:

Hold off DX Spots

This item is toggled. When checked, the display of incoming spots is disabled and the DX Spot Window Title Bar will flash. When un-checked, the display of incoming spots is enabled and the Title Bar will not flash.

Clear entries

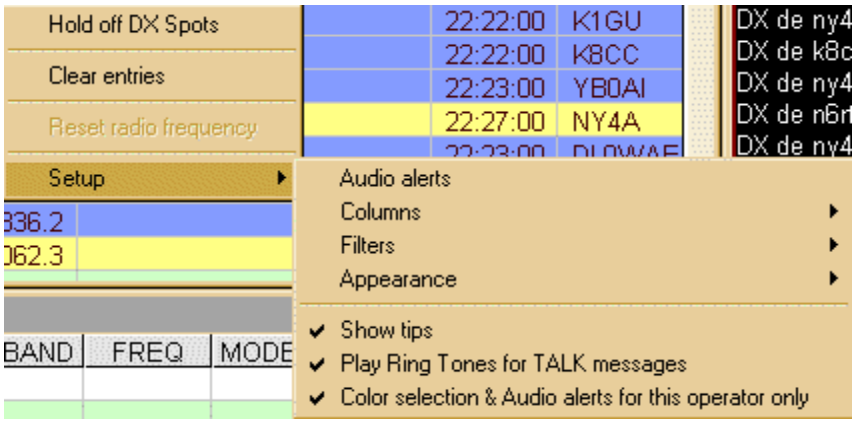
Clears all entries from the DX Spots Window

Reset radio frequency

Resets the radio to the last frequency used, prior to selecting a spot. For example, you are on a net frequency when a needed country pops up on another frequency or even another band. Click on the spot to change bands/frequency, work the DX then click on Reset radio frequency and you will be returned to the original net frequency. Of course, this function does require radio controlled by Logger32.

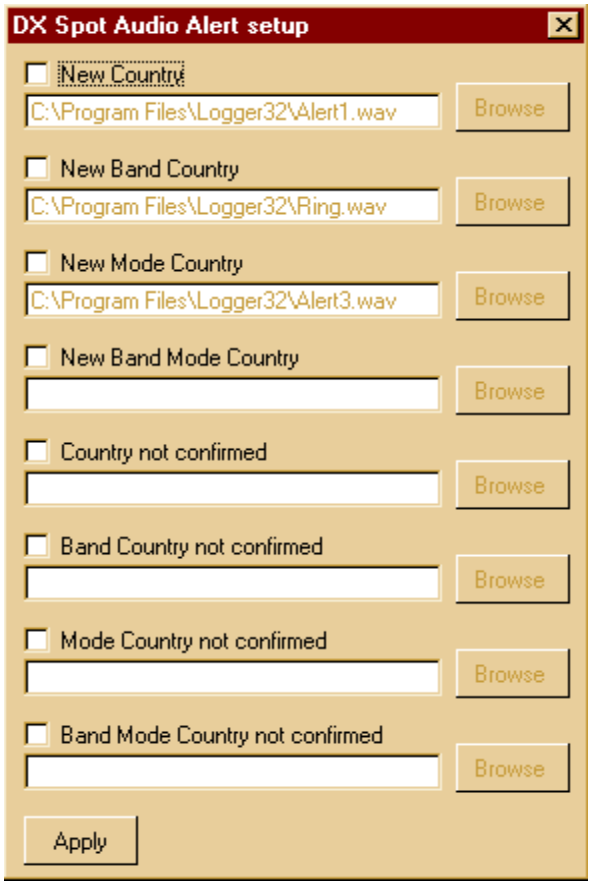
Setup

The setup menu item displays an additional pop-up menu that provides the operator with the ability to select four more pop-up menus and three additional functions.



Audio Alerts

In this pop-up menu, the different audio alerts can be selected to sound when individual audio WAV files used in the DX Spot Window for each spot that meets the specified selection. The WAV File played is based on the user's Band plan to determine bands and modes. Selections will only play when the small box is checked.

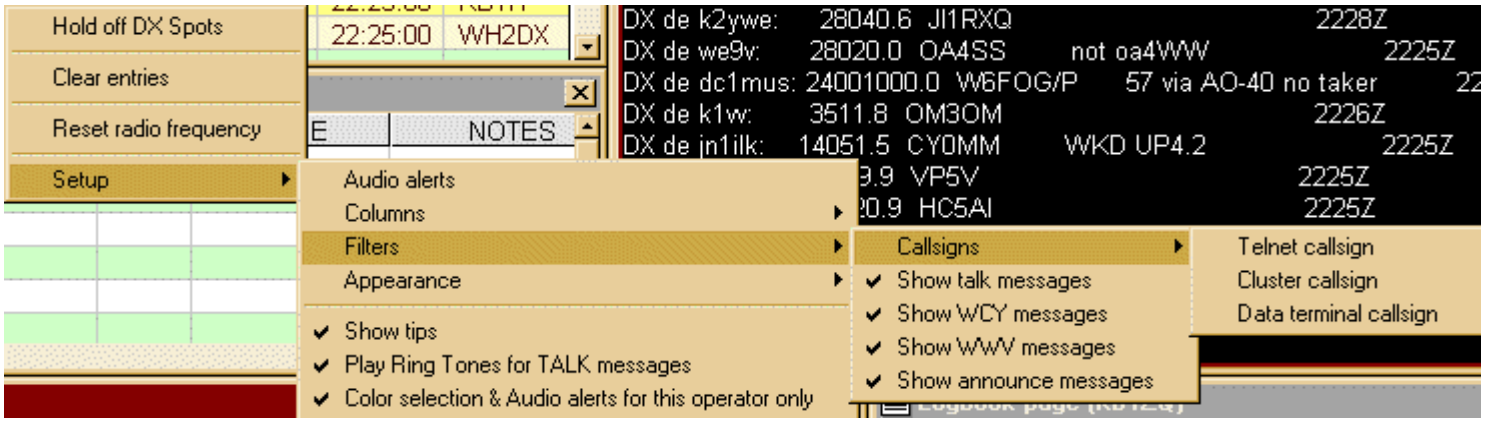


Columns

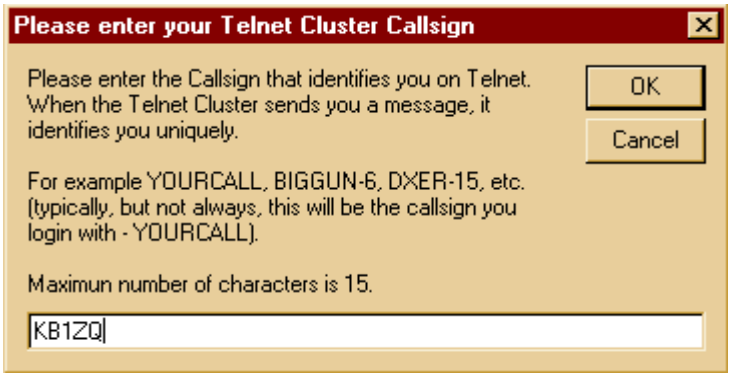
These four menu items are toggles that, when checked, display the specified column in the DX Spot Window. If a menu item not checked that column is not displayed.

Filters

The first menu item of this menu allows the user to display yet another pop-up menu in order to set a call sign to be used by Telnet, Cluster and Data Terminal Tab Panels of the Cluster Window



Clicking on any one of the selections will display a dialog box, allowing the user to enter a call sign to be used for the selected Tal Panel.



The next four items of this pop-up menu are toggles that, when checked activate the following functions. If a menu item is not checked, that function is not available.

Show talk messages

Talk messages will be displayed in the DX Spot Window.

Show WCY messages

WCY messages will be displayed in the DX Spot Window.

Show WWV messages

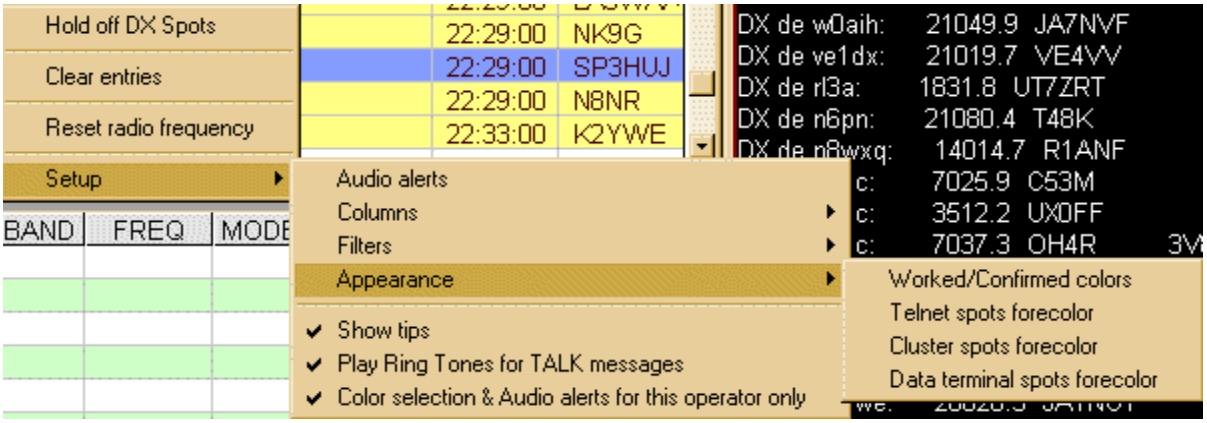
WWV messages will be displayed in the DX Spot Window.

Show Announce messages

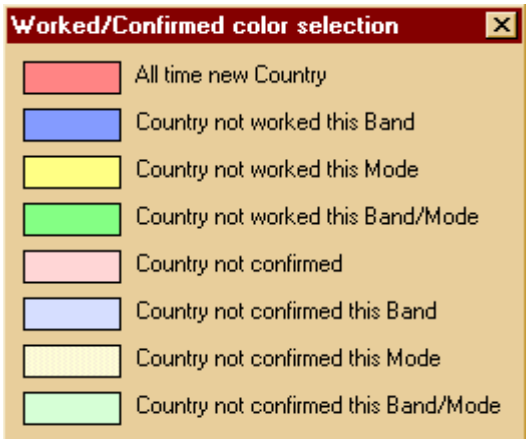
Announce messages will be displayed in the DX Spot Window.

Appearance

This menu allows the user to select different color schemes to "individualize" the DX Spot Window



Selecting Worked/Confirmed colors displays a color selection box that allows the user to select individual background colors be used in the DX Spot Window for each spot that meets the specified selection. The color displayed is based on the user's Band plan to determine bands and modes. The color selection is made using a standard Windows Color Dialog Box, by right clicking on the color to be selected.



Selecting any of the other three menu items allows the user to set the text font color of any spot that comes from the selected source. The color selection is made using a standard Windows Color Dialog Box.

Show Tips

The show Tips selection is a toggle that, when checked, allows Windows Tool-Tips to be displayed to the operator. When the cursor is placed over a call sign in the DX Spot column, the Country Prefix, Country Name, CQ Zone, Continent and Status of the country (Needed on Band, New Country, Not confirmed) will be displayed as a Windows Tool-Tip.

Play Ring tones for TALK messages

This menu selection is a toggle. When checked, a telephone style "ring tone" will sound whenever a "Talk" message is from the DX cluster.

Color selection & Audio alerts for this operator only

This menu item enables the Color and Audio setup to be valid for the current operator only. This function allows for differing setups for each individual operator.

Logbook Entry Window

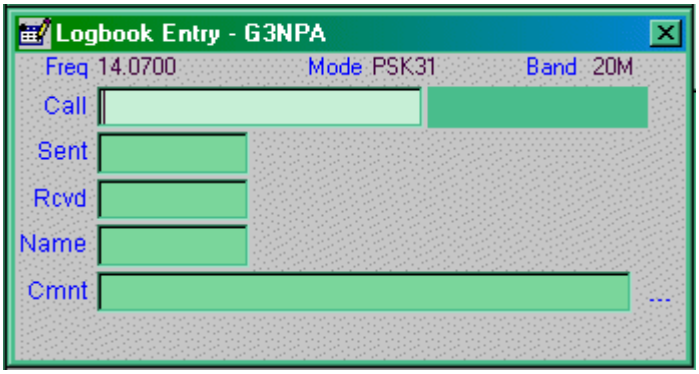
Geoff Anderson G3NPA

Basic Setup

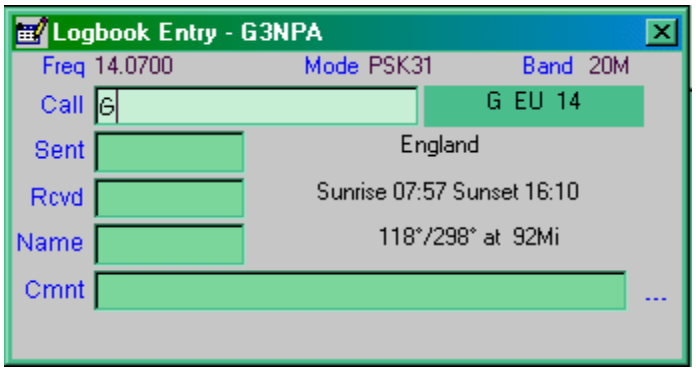
As the name implies, this is the window through which the main entries are made to the logbook. It is quite complex and highly configurable so you are well advised to take time to study this section to fully understand what facilities are available from here. picture shown below is the most basic Logbook Entry Window

The top line shows the frequency, the mode and the band that will be logged. The frequency will be derived from your radio if you have CAT control and it is set up and activated. If you do not have computer control, then the frequency can be set manually The Mode and Band will be derived from your Band Plan or, if desired, these also can be set manually. (more later on this). Below top line are entry panes for Callsign, RST sent, RST received, Name and QTH. You MUST enter a callsign at the very least you can transfer anything to the log.

To change between panes use the <TAB> key on the keyboard. To transfer the QSO information to the logbook, then use the key combination CTL-L or the <Enter> key. If you wish to clear the whole entry window for any reason, then use the key CTL-C.

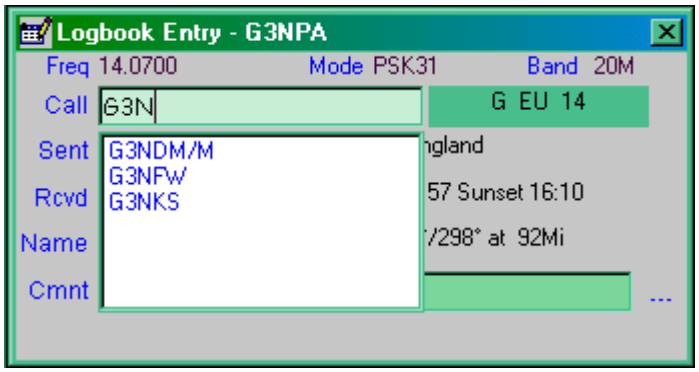


When using this basic arrangement, or indeed more complex set-ups, as soon as you enter a callsign prefix that is recognized, following will occur:



Note that now, the country name, sunrise and sunset times, short and long path beam headings and the short path distance are calculated and displayed. If it should happen that you have more entry panes visible, then some or none of this latter may not be visible here. However, the same information is displayed on the upper of the two Status Bars at the bottom of the window, so the information is still available.

Continuing with the callsign entry – once you have typed sufficient AND there are matching callsigns already in your log, Logger32 will attempt to prompt you for the callsign (known as Callsign Preview). If the one you require is in the list presented, then a click the particular callsign will place it in the Callsign area of the entry window. If not, just continue to type in the remaining letters. See example below:



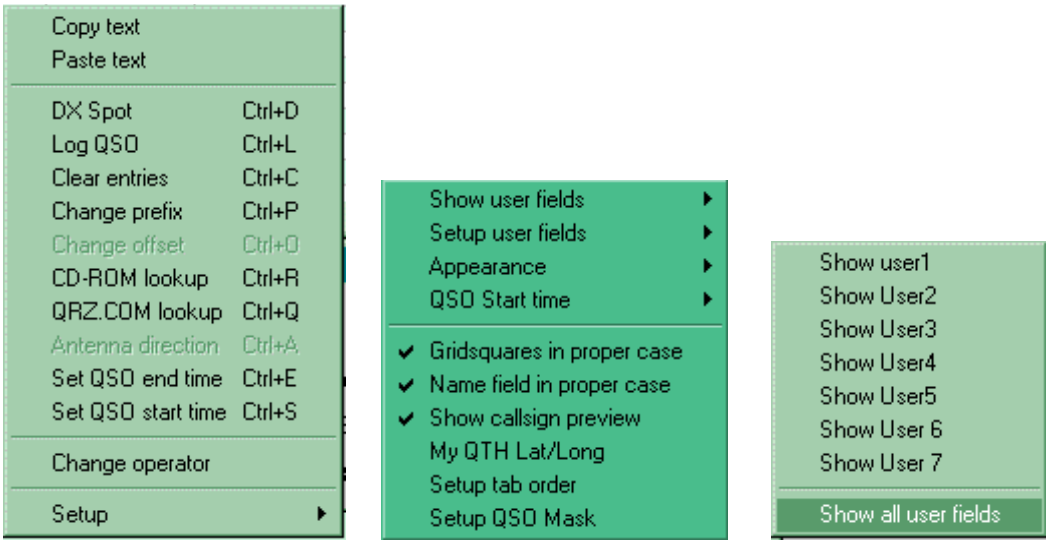
If you do not see this type of presentation, then right click on the Log Input window, place the cursor on Setup and check Show callsign preview

NOTE: It is preferred for Logger to enter a callsign in the format: Callsign / Prefix modifier.

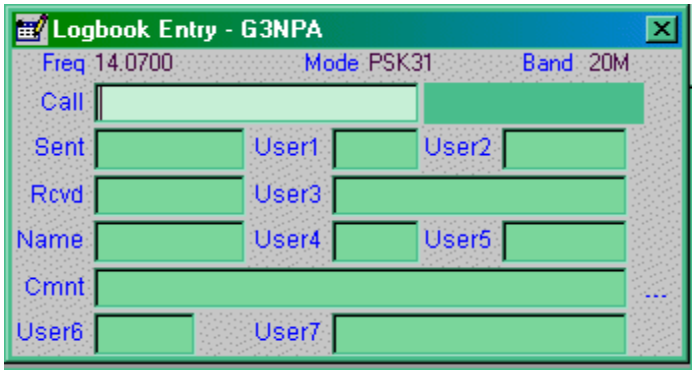
For example W4xxx/1 (a W4 portable in area 1) or G3xxx/FR\T (A G prefix operating on Tromelin Island).

Logger32 will operate with a number of different callsign formats BUT occasionally – especially where the prefix modifier is (like FR\T or KH0\M) the determined location, CQZ, etc. can be incorrect if other formats of entry are used.

Logger32 has in fact 7 more input panes that the user can configure for him/herself. To do this, right click on any of the entry to produce a menu. Select **Setup|Show user fields|Show all user fields**. This will activate all the user definable panes. If you require one or a special combination of panes, then these may be selected using the Show User# option.



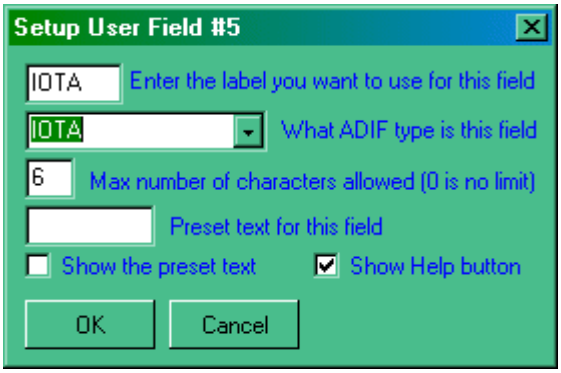
With all panes visible the entry window should look something like this:



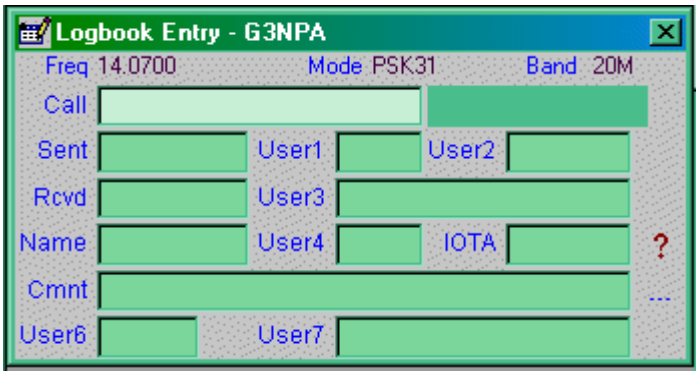
Take note of the location of the 7 user panes and their numbering. Each one of these panes can be set up to accept ANY ADIF

entry. Right-click on any of the log entry panes, select **Setup|Setup user fields** and pick the field of your choice. In the example below, USER 5 was selected.

Enter the label required, select the ADIF field type and in this case select the Show Help button. Make other selections to suit. Please be aware that the list of ADIF fields available from the pull down list will change. Once one of the ADIF definitions has used the same definition will NOT appear in the list again thus preventing its use in a second pane. To restore the definition to the list you must remove it from wherever it is used – thus releasing it back to the list.

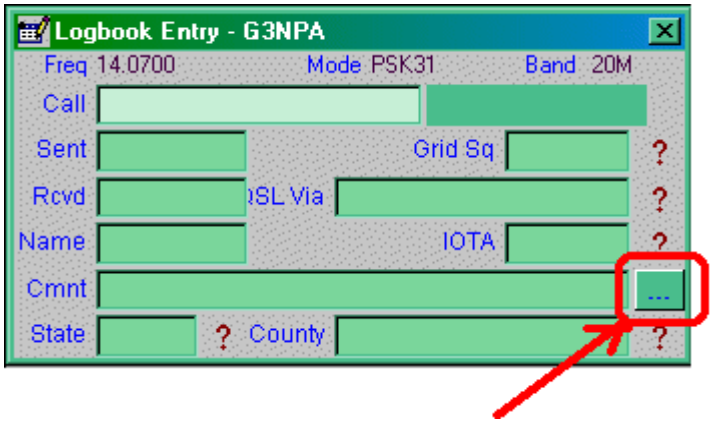


The settings above for User 5 give the results shown below. The "?" mark is the Help button and a click on this will reveal information about your IOTA contacts. Note that only fields 2,3,5,6 and 7 can have help button associated with them.



If you wish to limit the number of characters that can be entered into a field or have something preset in a field, then complete the appropriate parts in the setup window for that field.

Shown below is an example for the Logbook Entry Window that does not display User1 and User4 fields.



Note: This button will cause the fields on this line to toggle between Comment, QTH and Address.

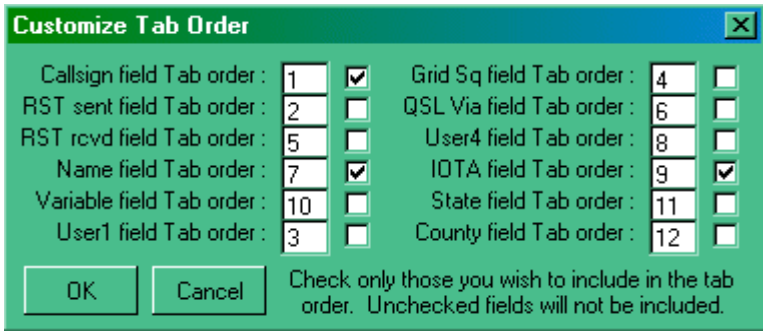
Other Setup Menu Items

Appearance

The general appearance of the Logbook Entry Window can be adjusted to suit individual tastes. Select **Setup|Appearance** here you can change a whole range of items such as background, highlight and font colors as required. You may also you require, the callsign preview facility here

Entry Window Tab Order

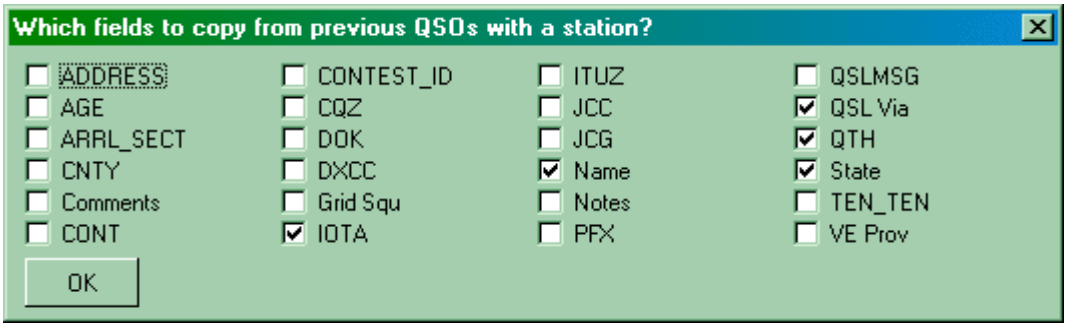
Following the entry of a callsign, you can arrange to "Tab" through the entry window in any order you wish. Select **tab order** to reach the customizing window below.



In the left hand box enter the order number for which you require that field to fall and if you require the field to be included in tab sequence, place a check mark alongside (left click in the box). In the example above only three fields have been selected the order Callsign, Name and User 5 (which you have defined as the IOTA number). Having completed your selection press "OK" button. Note that your bandplan can set the default RST sent (normally 599) and the RST received field will default to if nothing is entered. In the above case, having entered a callsign, a single "tab" will take you to "Name" having filled in the reports of 599 on its way.

QSO Mask

Logger32 has the facility to look at your logbook and extract information from the last QSO you had with someone and display this in the logbook entry window. For example, if you had worked Bob K4CY previously and you had correctly recorded his in the Name field, then the next time you enter his callsign, this information can be retrieved and put in the log input window automatically. To set up this facility select **Setup| Setup QSO Mask**, and select those items that you wish to be carried In the example below, Name, QSL via, QTH and State will all be transferred from the previous contact record to the new. you know how Bob is so quick on coming back with your name if you work him twice!



Gridsquares in proper case

If this option is checked, then captured or directly input information will appear in the form IO82nd. If unchecked, the format remain as typed (or captured)

Name field in proper case

If this option is checked, then captured or directly input information will have the initial letter of the name capitalized and the remainder in lower case. E.g. Geoff. If unchecked, the format will remain as typed (or captured)

QSO Start time

A QSO is transferred from the Log Input window into the logbook following an <Enter> or CTL-L. This action also

stamps the QSO end time. Two options to automatically stamp the start time are available, these being when the callsign field loses its focus or when the QSO is entered into the log.

Callsign field loses focus

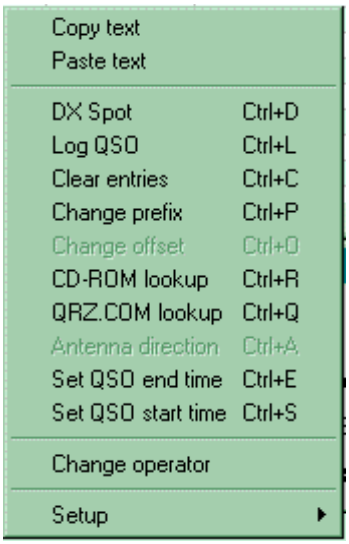
What this means is that the QSO start time will be taken to be the moment you strike the TAB key to move away from the callsign entry to add further information into the log input window. The CTL-S key combination will override the start time it is used before the first time the callsign field loses focus

When QSO entered in log.

If this option is selected, then by default, the start time will be the same as the end time. Even with this option selected the S key combination will still record the start time if pressed.

Please note that both the start and end times can be recorded automatically if the $starttime$ and $endtime$ macros are in the shortcut key definitions in the soundcard window (PSK & RTTY). These macros are NOT available for use in the CW machine.

Other Menu Items



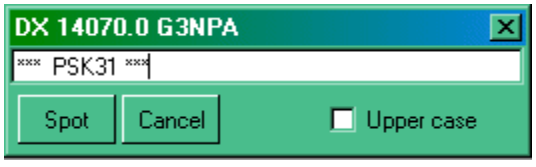
Change operator

The Logger32 logbook is designed to be used by one or more operators if required. If you wish to change the operator who is using the log at the time, select this option and change the callsign.

Control + Letter functions

You will see from the above menu that there are a number of functions that can be accessed using shortcut keystrokes. All reasonably self-explanatory – except perhaps the two that are grayed out in the above example. Antenna direction is gray because in this case the antenna rotator function is not set up and/or the comm. port is not activated. The "Change Offset " only show in black typeface if a prefix for a country with several time zones is entered (USA, Russia etc) and the station being worked is not in his/her own area. For example enter the prefix W1 and note that this shows time and distance based on the station being in Concorde NH. If this station was actually in California, the time and other information shown would be so press CTL_O and a small window will appear allowing you to highlight the appropriate area – in this case W6. Right click W6 and then on "Select". The calculated times, distances etc will now be based on San Francisco.

The CTL_D function will allow you to forward a DX spot to the cluster.



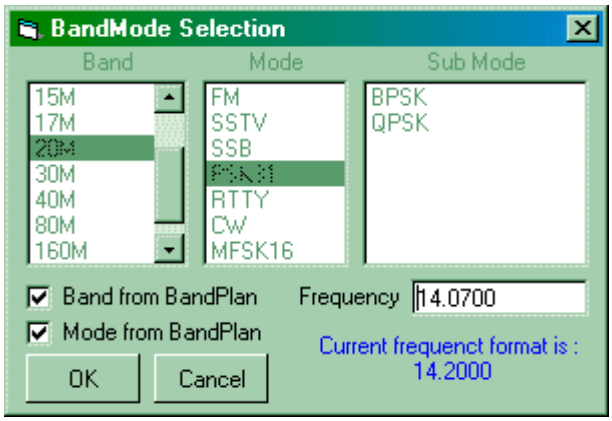
All of the report to the cluster is preformed, the header showing the frequency and callsign of the spot. Anything typed into the pane will appear as a “comment”. Click on the “Spot” button to send. You must be connected to a cluster before this facility work.

Band Mode Selection Setup

If you right or left click on any of the titles Frequency, Band or Mode in the log input window you can do several things.

Manual entry

If you have no computer interface or you wish to enter details of frequency, band, mode and/or sub mode, then remove the check marks from Band from BandPlan and Mode from BandPlan. You will now have complete manual control over what appears in the log entry window. Enter the details required and click on "OK". The "current frequency format is;" is dependent on your frequency resolution settings from the main window setup menus.



Automatic entry

If you wish to automate these functions and you have a computer interface to your radio, then place a check mark in "Band from BandPlan" and "Mode from BandPlan". The frequency will be obtained from the radio and the band and mode will be dependent your setting in the BandPlan. The mode and band will change automatically as you move through the bands. If “Mode from BandPlan” is left unchecked and you are using a CAT interface, then the mode displayed in the Log input window will be that of rig (not necessarily the actual mode of operation).

Logbook Page Window

B. Charles Sutton W1MCP

The LogBook Page holds all the information pertaining to your individual QSOs.

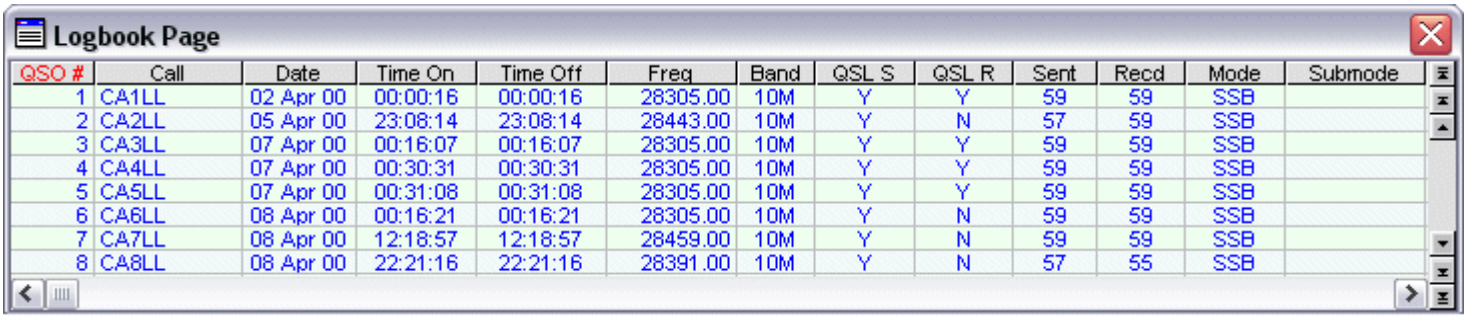
One of the biggest changes in Logger32 is how it handles multiple operators. In prior versions of Logger, if you wanted to keep separate logs for separate callsigns you were required to have multiple logs. In Logger32, you can still have multiple logs, but you may not find it necessary. Tracking is based on setting the operator callsign for individual contacts as they are entered. You do need to change the operator callsign with each QSO you enter, but you must change it for the first QSO entered with a different callsign. This allows you to maintain everything in one single log. Logger32 checks the operator of each QSO to determine if it should be included when generating statistical info and award tracking information. You can also export the entire logbook or a portion based on a single operator.

You change the current operator callsign by right-clicking in the LogBook Entry Window and selecting "Change operator". If you prefer to use different logs, you have the option to create multiple logs as in original Logger. From the Main Menu, select File, select change Logbook. A pop-up window will appear requesting additional information. You must supply a filename (which be unique), and the path you want the file stored in. After switching logs, you must run a recalculation to reset the statistic files to match the current log. You can run a recalc by selecting Tools from the Main Menu, then selecting Database maintenance, then click on Recalculate statistics.

If you choose to maintain multiple log files, you can change them by selecting File from the Main Menu.

> **NOTE**: Because of the way tracking and stats are handled, you can only have one (1) instance of a log name per computer. Just be sure each log has a different name.

There are 46 different ADIF compliant fields available for your use. You have the option of displaying as many or as few as you wish, as well as the order in which they appear.



QSO #	Call	Date	Time On	Time Off	Freq	Band	QSL S	QSL R	Sent	Recd	Mode	Submode
1	CA1LL	02 Apr 00	00:00:16	00:00:16	28305.00	10M	Y	Y	59	59	SSB	
2	CA2LL	05 Apr 00	23:08:14	23:08:14	28443.00	10M	Y	N	57	59	SSB	
3	CA3LL	07 Apr 00	00:16:07	00:16:07	28305.00	10M	Y	Y	59	59	SSB	
4	CA4LL	07 Apr 00	00:30:31	00:30:31	28305.00	10M	Y	Y	59	59	SSB	
5	CA5LL	07 Apr 00	00:31:08	00:31:08	28305.00	10M	Y	Y	59	59	SSB	
6	CA6LL	08 Apr 00	00:16:21	00:16:21	28305.00	10M	Y	N	59	59	SSB	
7	CA7LL	08 Apr 00	12:18:57	12:18:57	28459.00	10M	Y	N	59	59	SSB	
8	CA8LL	08 Apr 00	22:21:16	22:21:16	28391.00	10M	Y	N	57	55	SSB	

Many of the columns in the logbook can be sorted. By clicking on a column heading, Logger will display your QSOs in ascending order sorted on that column. When you select a column sort, that column's header will be displayed in red (QSO# in the example above). When you select a column to sort, Logger32 will only display QSOs with data in the sorted field. For example, if you sort IOTA, then only QSOs with an IOTA entry will be displayed. NOTE: Change your sort to a mandatory field (such as QSO# or to show all QSOs in your logbook.

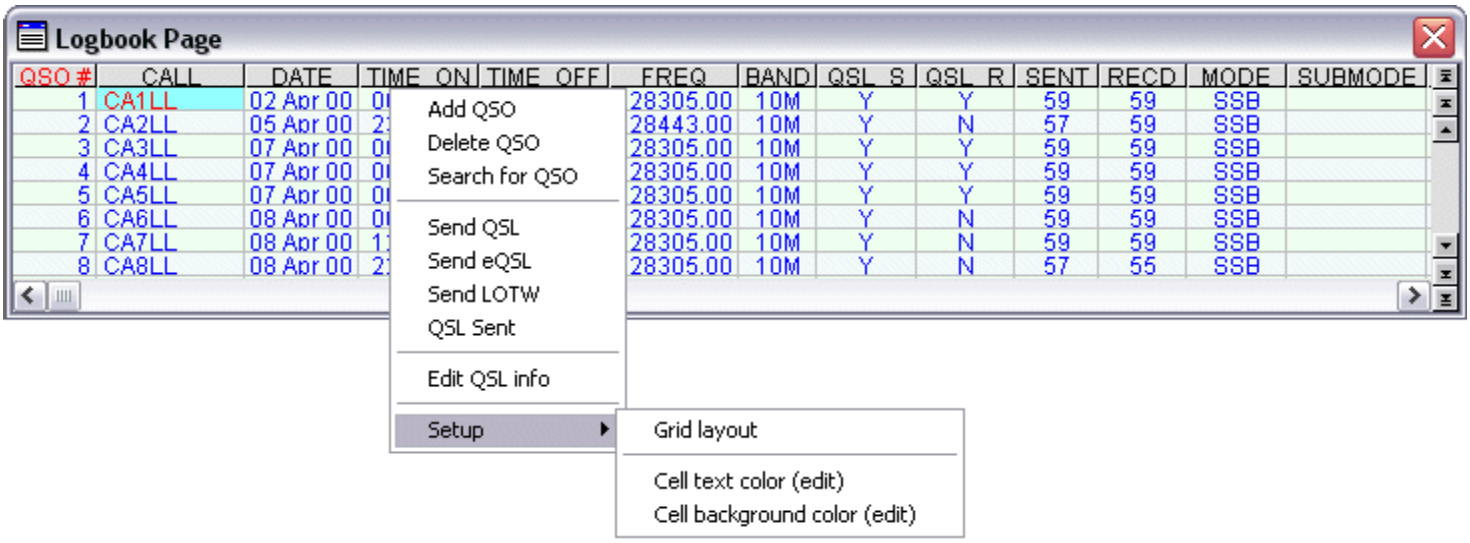
If you choose to display more fields than can be displayed in the window you will see a scrollbar at the bottom of the window. your log exceeds the number of lines that can be displayed in the window, you will notice a scrollbar on the right of the window. There are 6 buttons that you can click on. From top to bottom they are: move to top of the logbook, move up one page, move up one line, move down one line, move down one page, move to the bottom of the logbook (With focus on the window, the Page Up and Page Down keys will also scroll the log one page). The sort you have selected is maintained when scrolling through the logbook.

Changing the appearance of the logbook grid

> You can change the appearance of the grid such as displaying the grid lines, changing the row height and column width, alternating grid background colors and much more.
>
> Please refer to the section [{Link to topic Grid Appearance Setup:Grid Appearance Setup}] for complete details.

Setting up the grid and choosing the fields to display

> When you right-click anywhere inside the Logbook Page window a pop-up menu will appear allowing you to modify it. These changes apply only to the logbook page.



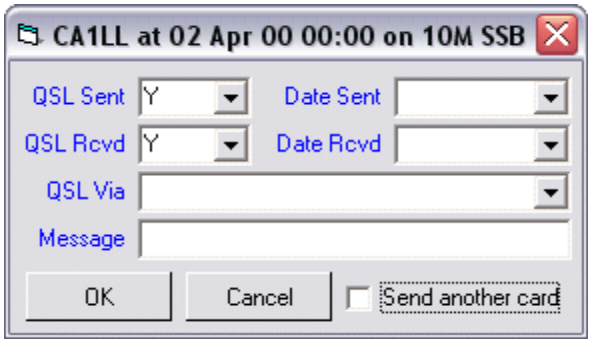
Choosing **Cell text color (edit)** and **Cell background color (edit)** will change the color of the cell you have chosen to edit. Notice QSO #1, the font color has changed to red and the cell background has changed to light blue.

Choosing the **Grid layout** will allow you to change the column header names, the justification of the columns and the order in which the columns are displayed. Please refer to the section [{Link to topic Grid Layout Setup:Grid Layout Setup}] for details.

Modifying QSO information

You can change the data in any cell by left-clicking in that call and simply typing in the correct information.

To change QSL related information, right-click in the appropriate row, and select Edit QSO info. A pop-up window will appear shown here:

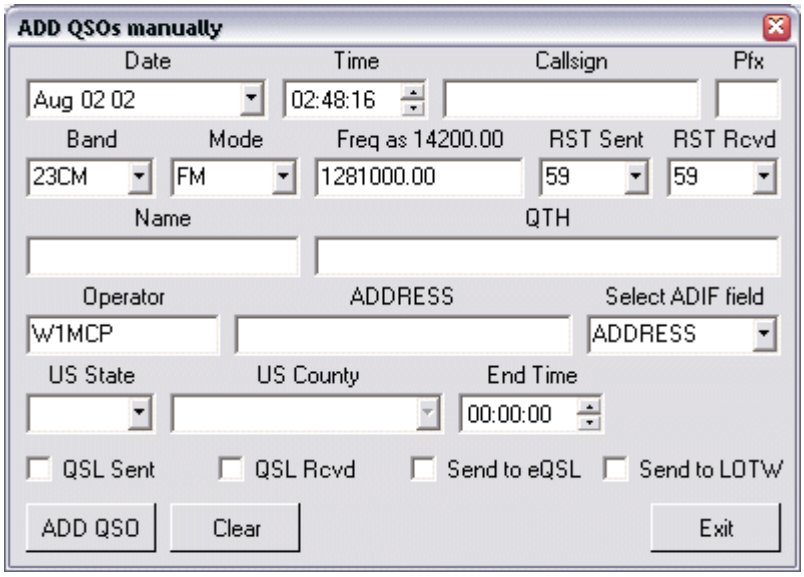


You can change the data that is displayed, add a QSL manager (or bureau) or add a QSL message. The message section will appear in the ADIF QSL_Message field. Many QSL printing programs will print any data entered in this field onto your card or label.

Another unique field is the Notes field. Open the Notes window by clicking on its icon in the main toolbar. Then enter a in the Logbook Entry Window. Any notes associated with the callsign will be displayed along with the QSO date. To enter a note for this particular QSO, right-click on the grid in the Notes window, and choose Add Note. Add your note to the pop-up window, then close it. Finish entering your QSO in the Logbook Entry Window and press Enter when finished. The notes will saved to the ADIF Notes field and an internal database.

Adding or Deleting a QSO

To add a QSO, right-click anywhere in the Logbook Page Window and select Add QSO. The following menu will appear:



Navigation: Use Tab to move between main fields, use CTRL_TAB or your arrow keys to move between sections of a field. Use your up & down arrow keys to scroll through any field with a list (like Band).

Date Field: This field will default to the current date. You can change the date by highlighting any of the three sections day or year) and increase or decrease the field by using the + and - keys on the numeric pad or by using the up and down arrows. You can also select a date by clicking on the arrow to the right of the date and accessing the calendar.

Time Field: This field works very similar to the date field.

Band and Mode: As you enter data here, you will notice the frequency will change to approximately the middle of that section of the band. The frequency can then be manually changed. If you enter a mode that has a submode associated (like the submode field will become visible to the right of the End Time field.

Address & Select ADIF **Fields**: These two fields operate together. When you change the Select ADIF Field, the name on field immediately to its left will change to match your choice. This allows you access to every field in your logbook. As you change fields, any data you entered in a previous field is retained and will be added to your QSO entry.

Several fields are "sticky" in that they remember the last data entered. This should make adding several QSOs much easier, especially if there are several on the same day or band.

Placing a check in QSL Sent or QSL Rcvd will update the corresponding ADIF fields.

Placing a check in Send to eQSL or Send to LOTW will flag the QSOs to be included in your next corresponding log export.

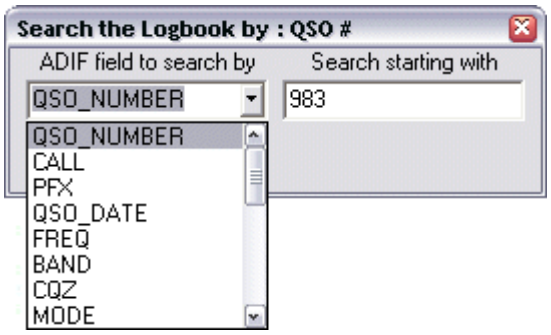
The Clear button will clear any data from the non-sticky fields.

The Exit window will close the Add QSOs manually window. If there is data in the fields, it will not be logged.

If you try to enter a QSO with the same time as a QSO already in your logbook a pop-up window will alert you (click OK) and either change the time or you will notice a red button labeled 'Increment time' appear to the right of the "Clear" button. on this will increment the time and log the QSO.

To delete a QSO, right-click in the appropriate row and select Delete QSO. A confirmation pop-up window will be displayed. You must click Yes to delete the QSO or click No if you made an error.

To search for a QSO, right-click anywhere within the Logbook page and select Search for QSO. A pop-up window will open and you can choose from many of the fields to conduct your search, some are shown here:



Depending on what field you choose to search on, the logbook page will react differently. For example, if you choose to sort QSO number beginning with 983 as in the image above, the log will sort by QSO number and then position itself at QSO On thing to note is that when sorting, only QSOs with matching data will appear in the log. For example, if you sort by IOTA starting with NA-001, the log will first sort by IOTA, then position itself at NA-001 and only those QSOs with an IOTA entry will display in the log. One other thing to note, once you have selected your search criteria, you can move the Search the window out of your way while you are working with the log. Once you close the Search the Logbook window, the log reverts back to the condition it was in before you invoked the search.

Flagging QSO records: Right-clicking on any QSO will bring up a pop-up window (see image above) where in the center of window are 4 options:

Send QSL - This option will flag the QSO so that it is included with the next [{Link to topic Exporting Files:QSL Record

Send eQSL - This option will flag the QSO so that it is included with the next [{Link to topic Exporting Files:eQSL Record export}].

Send LOTW - This option will flag the QSO so that it is included with the next [{Link to topic Exporting Files:LOTW Record export}].

QSL Sent - This option will set the field QSL_Sent to Yes.

Below is a table of the ADIF fields used in your Logbook, along with the type of data, a description of the field's intended use, and any special features within Logger32.

Field Definitions

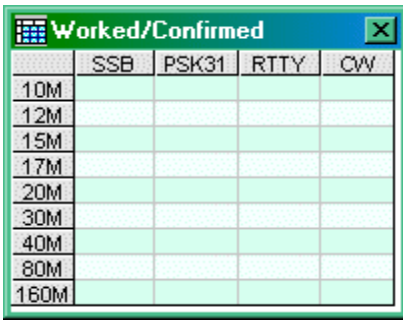
Name	Type	Comment	Logger – Auto fill in
ADDRESS	M	As it will appear on the mailing label	
AGE	N	Age of the operator of the other station	
ARRL_SECT	C		
BAND	C	160M, 80M, 40M, 30M, 20M, 17M, 15M, 12M, 10M, 6M, 2M, 70CM, 23CM	Yes, based on your bandplan.
CALL	C	Call sign of the other station	
CNTY	C	US County in the format STATE,COUNTY. For example GA,BARROW. Use CQ County list	Yes, If you are using a callbook CD and have it set to automatically import data
COMMENT	C	Comment field for QSO	
CONT	C	Continent: NA, SA, EU, AF, OC, AS	Yes, based on info in your Country database
CONTEST_ID	C	Contest Identifier -- SS, ARRLVHF, ARRLDX, etc.	Yes
CQZ	N	CQ Zone	Yes, based on info in your Country database
DOK	C	http://www.darc.de/referate/dx/fed.htm	
DXCC	N	Numeric identifiers from ARRL.	Yes, based on info in your Country database
FREQ	N	in Megahertz	Yes, if radio control is on, or you selected a DX Spot
GRIDSQUARE	C	4, 6, or 8 or however many characters	Yes, If you are using a callbook CD and have it set to automatically import data
IOTA	C	HYPHEN MUST BE INCLUDED. Example: NA-001	
ITUZ	N	ITU Zone	Yes, based on info in your Country database
JCC	C	http://www.jarl.or.jp/English/4_Library/A-4-5_jcc-jcg/jcc-list.txt	
JCG	C	http://www.jarl.or.jp/English/4_Library/A-4-5_jcc-jcg/jcg-list.txt	
MODE	C	SSB, CW, RTTY, TOR=AMTOR, PKT, AM, FM, SSTV, ATV, PAC=PACTOR, CLO=CLOVER	Yes, based on your bandplan.
NAME	C	Name of the operator of the other station	Yes, If you are using a callbook CD and have it set to automatically import data
NOTES	M	Long text for digital copy, third party traffic	
OPERATOR	C	Callsign of person logging the QSO	Yes, once set. Must be changed if Op changes.
PFX	C	WPX prefix	Yes, based on info in your Country database
PROP_MODE	C		
QSLMSG	M	Personal message to appear on QSL card	
QSLRDATE	D	QSL Rcvd Date	
QSLSDATE	D	QSL Sent Date	
QSL_RCVD	C	Y=Yes, N=No, R=Requested, I=Ignore or Invalid	
QSL_SENT	C	Y=Yes, N=No, R=Requested, I=Ignore or Invalid	
QSL_VIA	C	QSL Manager, Bureau, etc.	Yes, If you are using a callbook CD and have it set to automatically import data
QSO_DATE	D	YYYYMMDD in UTC	Yes, If you are using a callbook CD and

Worked/Confirmed Window

Geoff Anderson G3NPA

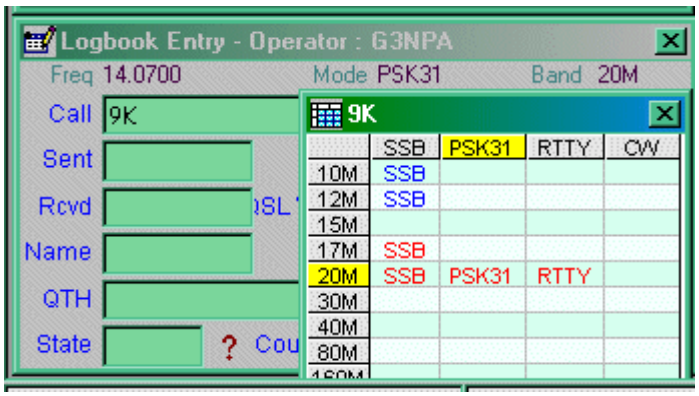
The Worked/Confirmed window is designed to show a summary of the band/mode combinations worked for a specific prefix. Additionally, it will show specific summary information for the callsign entered in the Log input window, if that callsign has been entered into the log previously. Some elements of the way this information is displayed are configurable by the user.

A typical basic (empty) window is shown below



The bands and modes displayed are derived from your BandPlan and whether you have the Stats column marked with a "Y". The more bands and modes you have so marked, the larger will be the table shown above.

The table becomes active as soon as a recognized prefix is entered into the "Call" pane of the Log Input Window. The table will remain blank if the particular country has not been logged before, but if the prefix has been recorded previously, then the band/mode combinations will be activated, as shown in the example below. Note that the Worked/Confirmed window title has changed to that of the prefix entered.



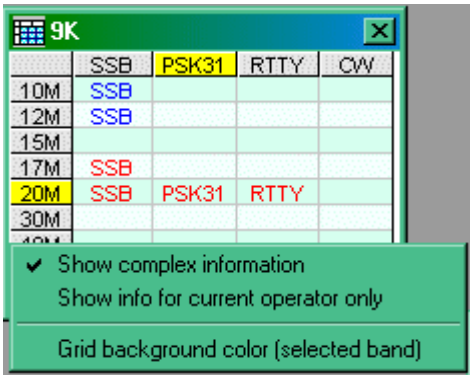
The text and background colors in the table have the following meanings:

Red text – Band/Mode worked AND confirmed

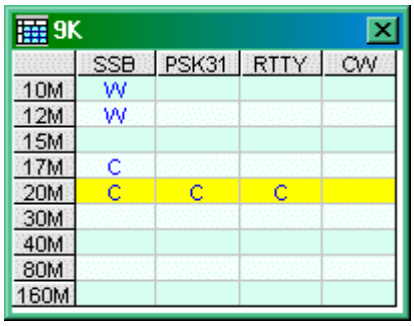
Blue text – Band/Mode worked but NOT confirmed

The Yellow Band and Mode highlights along the top and left-hand edge of the table show the currently selected band/mode (as shown by the information in the Log Input Window). The color of these highlights may be changed from the menu accomplished right-click anywhere within the Worked/Confirmed window.

The data in the Worked/Confirmed window can be changed to show a simplified worked/confirmed format if desired. Right-click anywhere within the window and uncheck "Show complex information" to obtain the display as shown below.



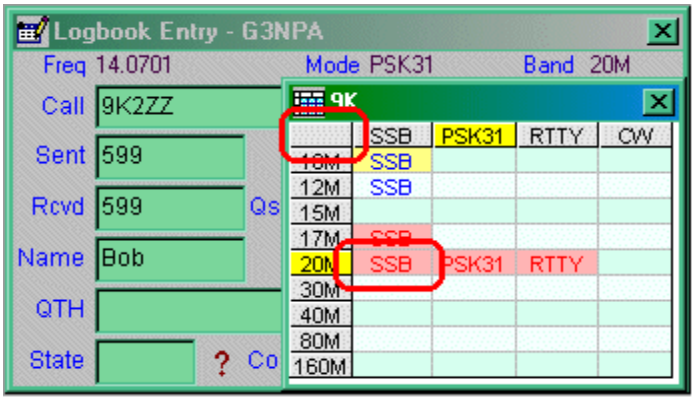
to give:



In this presentation only "W" and "C" indications are given and only the band in use at the time is shown.

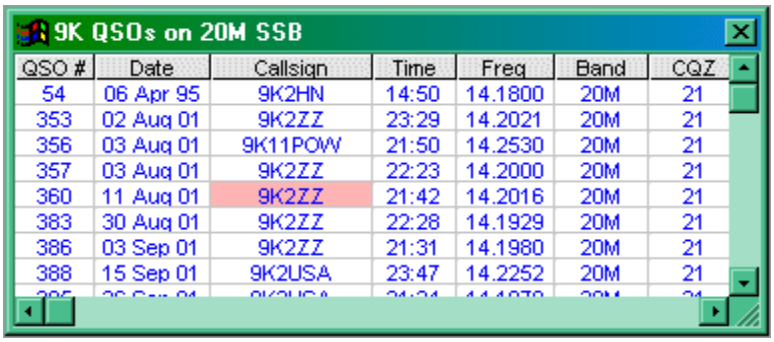
Once the full callsign of your QSO partner has been entered in the Log Input Window, further information may be available if you have worked that station before and you have set the "complex" mode of display. The background colors in the individual band/mode combinations now indicate specific details for the particular callsign entered. In the example below, the red indicates that 9K2ZZ has confirmed QSOs on 20m SSB, PSK31 and RTTY and 17m SSB, and the light yellow background that he has been worked on 10m SSB. The entry for 12m SSB (which is not highlighted) indicates that the prefix 9K has been worked in band/mode combination, but it was not with 9K2ZZ. The specific colors for these highlights may be selected form the Setup| Highlight menu option.

Note: It is advisable to perform a logbook recalculation occasionally to ensure that this table is correct.



Additional Information

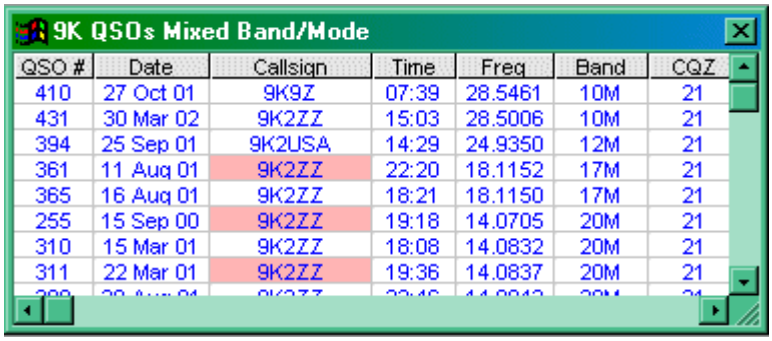
Left-clicking on any grid of the Worked/Confirmed Window will display a pop-up Show Country window listing all log entries for the Band/Mode selected. For example, clicking on the 20m SSB grid (as circled above) could display the following details from the logbook.



QSO #	Date	Callsign	Time	Freq	Band	CQZ
54	06 Apr 95	9K2HN	14:50	14.1800	20M	21
353	02 Aug 01	9K2ZZ	23:29	14.2021	20M	21
356	03 Aug 01	9K11POW	21:50	14.2530	20M	21
357	03 Aug 01	9K2ZZ	22:23	14.2000	20M	21
360	11 Aug 01	9K2ZZ	21:42	14.2016	20M	21
383	30 Aug 01	9K2ZZ	22:28	14.1929	20M	21
386	03 Sep 01	9K2ZZ	21:31	14.1980	20M	21
388	15 Sep 01	9K2USA	23:47	14.2252	20M	21

Observe that this action shows ALL the stations logged with the prefix 9K.

Left-clicking on an empty grid in the Worked/Confirmed window will display a Mixed-Mode listing of all logbook entries for the selected band, regardless of mode. If you do not have an empty grid space in the Worked /Confirmed window, then the click on empty gray rectangle in the upper left-hand corner of the table to achieve the same result, as below:



QSO #	Date	Callsign	Time	Freq	Band	CQZ
410	27 Oct 01	9K9Z	07:39	28.5461	10M	21
431	30 Mar 02	9K2ZZ	15:03	28.5006	10M	21
394	25 Sep 01	9K2USA	14:29	24.9350	12M	21
361	11 Aug 01	9K2ZZ	22:20	18.1152	17M	21
365	16 Aug 01	9K2ZZ	18:21	18.1150	17M	21
255	15 Sep 00	9K2ZZ	19:18	14.0705	20M	21
310	15 Mar 01	9K2ZZ	18:08	14.0832	20M	21
311	22 Mar 01	9K2ZZ	19:36	14.0837	20M	21

Note: Right-clicking on the Show Country Worked window (when it is visible) will display the Grid Layout Setup window, allowing user to customize the display in the same way as the Logbook and Previous QSOs windows. Left-clicking on any of the QSOs in window will bring up the Previous QSOs window and the Logbook Page window with appropriate data AND it will highlight the in the Logbook.

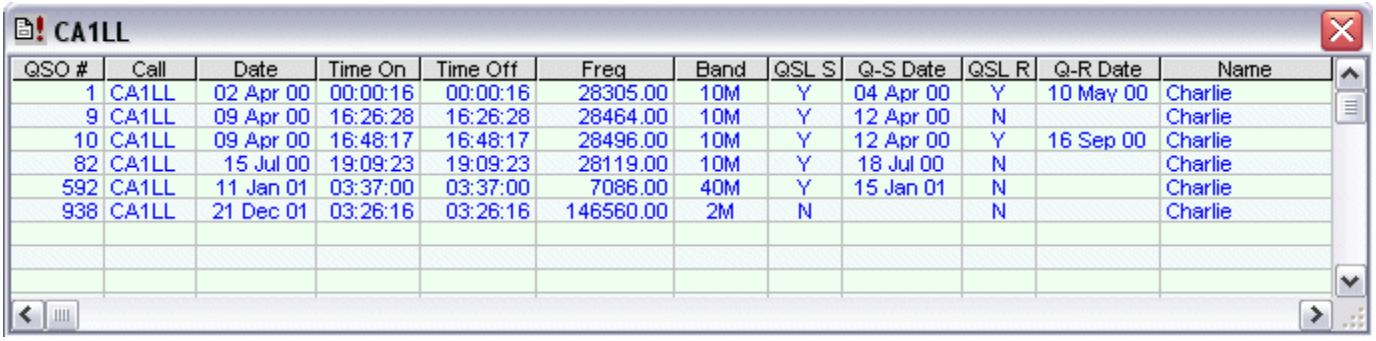
Previous QSOs Window

B. Charles Sutton W1MCP

When you enter a full callsign in the LogBook Entry Window, Logger32 queries your logbook and locates any previous QSOs had, and displays them in the Previous QSOs window.

All 47 fields used in the LogBook can be displayed in the Previous QSOs window.

Here is an example:



QSO #	Call	Date	Time On	Time Off	Freq	Band	QSL S	Q-S Date	QSL R	Q-R Date	Name
1	CA1LL	02 Apr 00	00:00:16	00:00:16	28305.00	10M	Y	04 Apr 00	Y	10 May 00	Charlie
9	CA1LL	09 Apr 00	16:26:28	16:26:28	28464.00	10M	Y	12 Apr 00	N		Charlie
10	CA1LL	09 Apr 00	16:48:17	16:48:17	28496.00	10M	Y	12 Apr 00	Y	16 Sep 00	Charlie
82	CA1LL	15 Jul 00	19:09:23	19:09:23	28119.00	10M	Y	18 Jul 00	N		Charlie
592	CA1LL	11 Jan 01	03:37:00	03:37:00	7086.00	40M	Y	15 Jan 01	N		Charlie
938	CA1LL	21 Dec 01	03:26:16	03:26:16	146560.00	2M	N		N		Charlie

Selecting a QSO

Left clicking on any QSO shown in the window will center the LogBook Page around that entry.

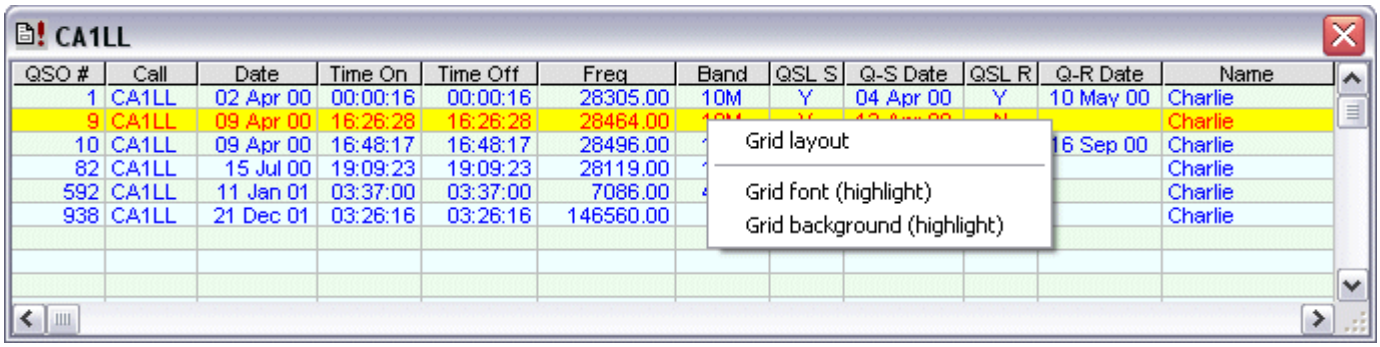
Changing the appearance of the Previous QSOs Grid

You can change the appearance of the grid such as displaying the grid lines, changing the row height and column width, grid background colors and much more.

Please refer to the section Grid Appearance Setup for complete details.

Setting up the Grid and choosing the fields to display

When you right click anywhere inside the Previous QSOs window a popup menu will appear allowing you to make changes. changes apply only to the Previous QSOs window.



Choosing **Grid font (highlight)** will change the color of the font when you highlight a row as shown above in red.

Choosing **Grid background (highlight)** will change the background color of a row when you highlight it as shown above in

Choosing the **Grid layout** will allow you to change the Column Header Names, the justification of the columns and the order in which the columns are displayed. Please refer to the section Grid Layout Setup for complete details.

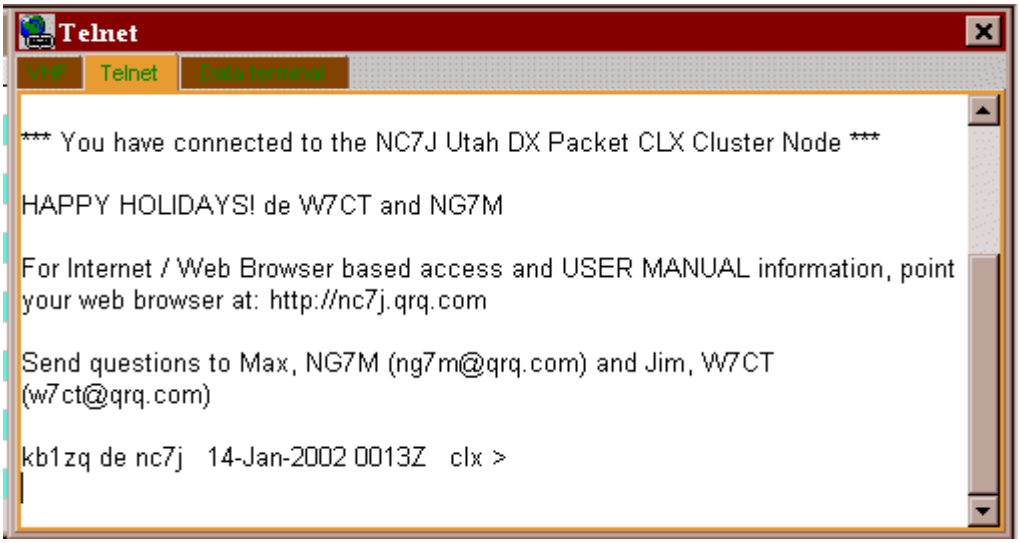
Telnet Window

Hal Miller KB1ZQ

The Telnet Window consists of three (3) tab panels, the:

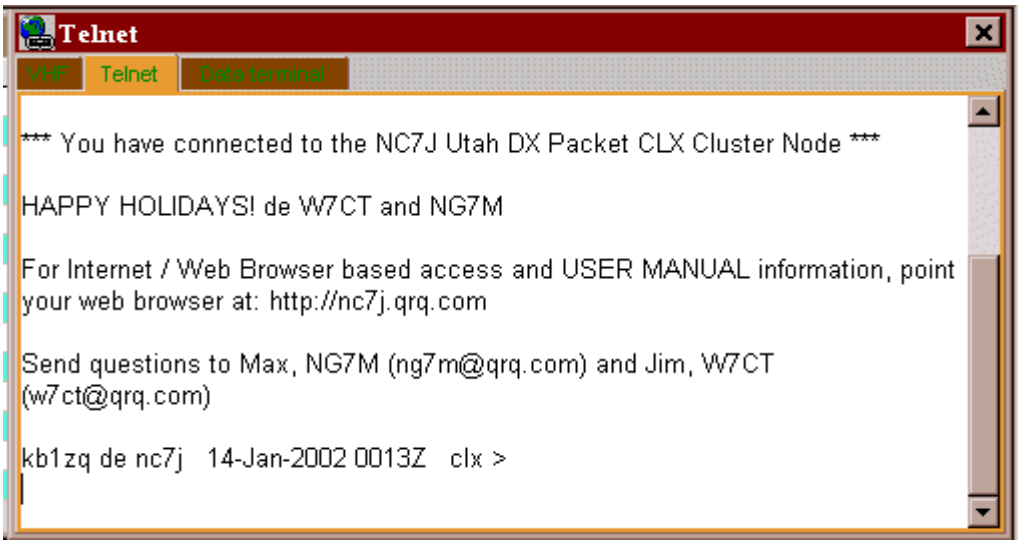
- VHF panel;
- Telnet panel;
- Data Terminal panel.

Right clicking on any of the tabs displays the Telnet Tabs popup menu.



This menu allows the operator to select various font and color values. The selected fonts and colors are the same for all three tab panels.

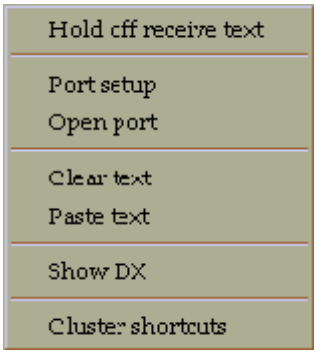
- **Text font** sets the font parameters for all three tab panels;
- **Text backcolor** sets the background color of all three tab panels;
- **Text color (transmit)** sets the color to be used for transmitted text in all three panels;
- **Text color (messages)** sets the color to be used for received text in all three panels;
- **Tab font** sets the font color of all three tabs;
- **Front tab color** sets the color of the tab of the currently viewed tab panel;
- **Back tab color** sets the color of the tab of the other two (hidden) tab panels.



VHF PANEL

The VHF panel is selected by the VHF tab and provides a connection to a serial port and is intended to use a TNC to receive packet radio spots from a VHF packet cluster station. It can also be used to connect to another computer (serial to serial) to receive spots from a second packet cluster station (contact Hal KB1ZQ for more information).

Right clicking on the VHF panel displays a pop-up menu allowing the operator to both configure and operate the VHF This menu is divided into five sections. Sections 1,2,3 and 5 display a fixed set of menu items. Section 4 displays up to packet cluster shortcuts that are manually entered by the user using the "Cluster shortcuts" menu item of section 5. If no cluster shortcuts are defined, there will be no menu items displayed in section 4.



Section one

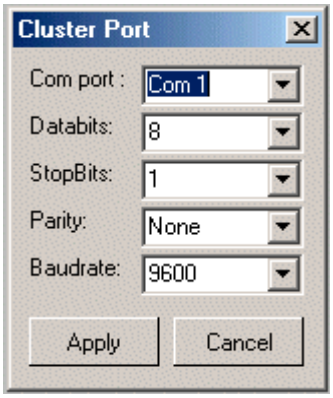
Hold off receive text

This is a toggled menu item. When checked, the display of received text stops. When cleared, the display received text starts.

Section two

Port setup

This menu item displays a pop-up dialog box, allowing the user to set the serial port parameters.



Open / Close port

This is a toggled menu item that allows the user to open or close the serial port configured for the panel. The text of the menu item changes with the state of the port. If the port is currently closed, the text will display "Open port". If the port is open, the text will display "Close port".

Section three

Clear text

Clears all text from the VHF panel.

Paste text

Pastes any text in the Windows clipboard into the VHF panel at the current cursor position.

Section four

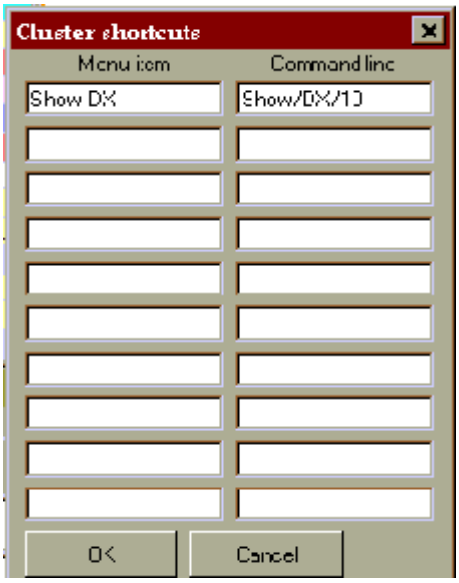
Show DX

In this example the menu item has been adapted by the user, using the Cluster shortcuts menu item, to display the last ten DX spots received.

Section five

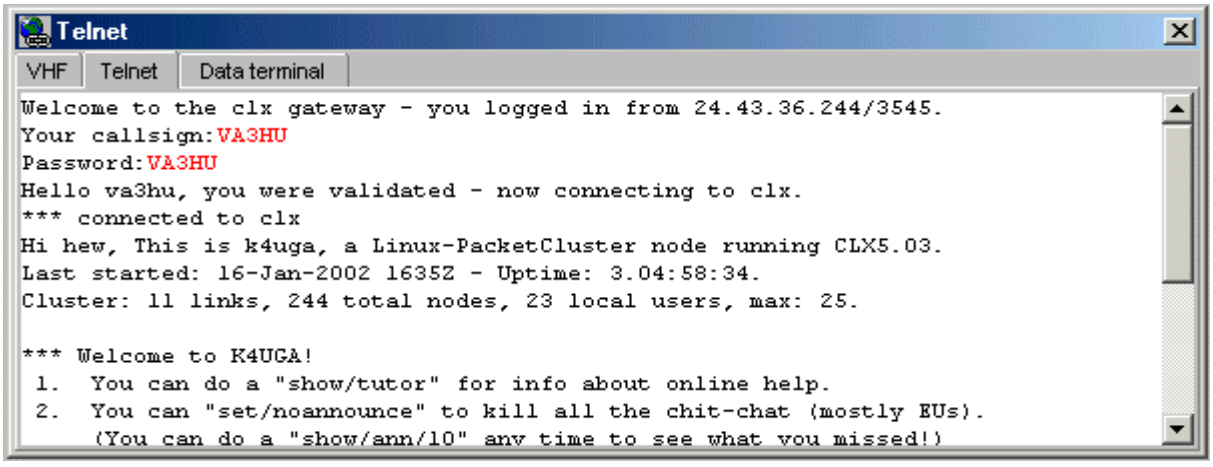
Cluster shortcuts

This menu item displays yet another dialog box that permits the user to enter up to ten packet cluster commands. Each entry consists of plain text in the left column that will be displayed as the menu item of Section four and, in the right column, the packet cluster command to be sent to the packet cluster station that menu item.

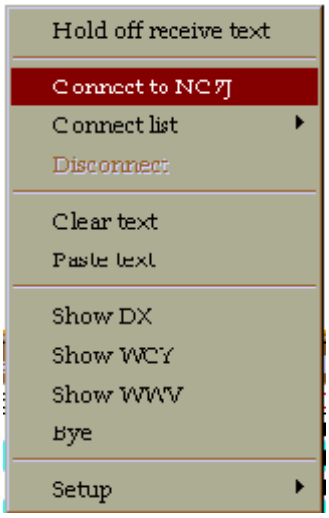


TELNET PANEL

The Telnet panel provides a connection to a DX cluster via the Internet.



Right clicking on the Telnet panel displays a pop-up menu allowing the operator to both configure and operate the Telnet panel. This menu is divided into five sections. Sections 1,2,3 and 5 display a fixed set of menu items. Section 4 displays to ten packet cluster shortcuts that are manually entered by the user using the "Cluster shortcuts" menu item of section 5. no cluster shortcuts are defined, there will be no menu items displayed in section 4.



Section one

Hold off receive text

This is a toggled menu item. When checked, the display of received text stops. When cleared, the display received text starts.

Section two

Connect to

This is a toggled menu item. If there is not a current Telnet connection then this menu item is enabled and provides the capability to connect to the callsign defined by the "Set as defaults shortcut" button of the Setup Remote Hosts selection of the Telnet Setup menu. If the Telnet panel is currently connected, this menu item is disabled.

Connect list

This is a toggled menu item. If there is not a current Telnet connection then this menu item is enabled when clicked, displays a drop-down list of possible connections defined by the user using the Setup hosts menu item of the Telnet Setup menu. . If the Telnet panel is currently connected, this menu item is disabled.

Disconnect

This is a toggled menu item. If there is not a current Telnet connection then this menu item is disabled, if there is a current Telnet connection, then this menu item is enabled, and when clicked, will disconnect.

Section three

Clear text

Clears all text from the Telnet panel.

Paste text

Pastes any text in the Windows clipboard into the Telnet panel at the current cursor position.

Section four

Show DX

Show WCY

Show WWV

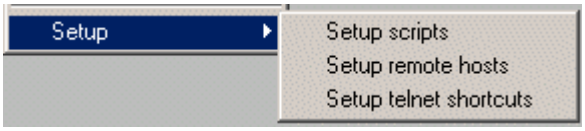
Bye

In this example the user, using the Setup Telnet shortcuts menu item of the Telnet Setup menu, has adapted these menu items.

Section five

Setup

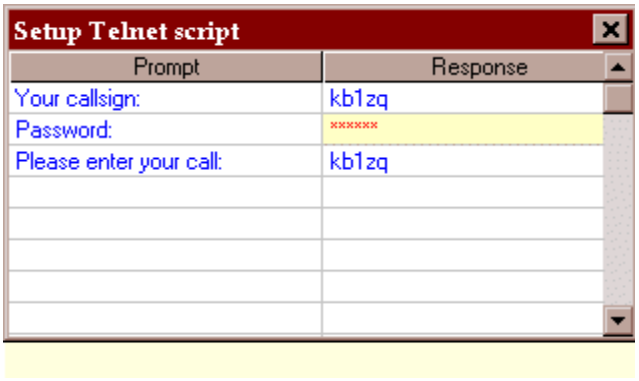
This menu allows the user to setup the telnet scripts, remote host addresses and shortcuts.



Setup Scripts

Selecting this menu item displays the Setup telnet script dialog box. This box enables the user to identify to Logger32 the prompts that are sent by the default Telnet host, and to define responses to each of those prompts. This, effectively, enables an automatic login process to the default

Prompts sent by the host are detailed in the left-hand columns, and the Logger32 responses to each of those prompts are detailed in the right hand column.



Setup Remote hosts

This menu item displays the Telnet Setup dialog box that enables the user to define a list of host shortcuts that appear when the Connect List menu item of the Telnet panel pop-up menu. of the entries in this list may also be designated as the default host and will appear in the to menu item of the Telnet panel pop-up menu.

Add current entry

Enters the current entry to the list of stored hosts

Modify current entry

Enables the current entry to be edited

Delete current entry

Deletes the current entry

Clear all fields

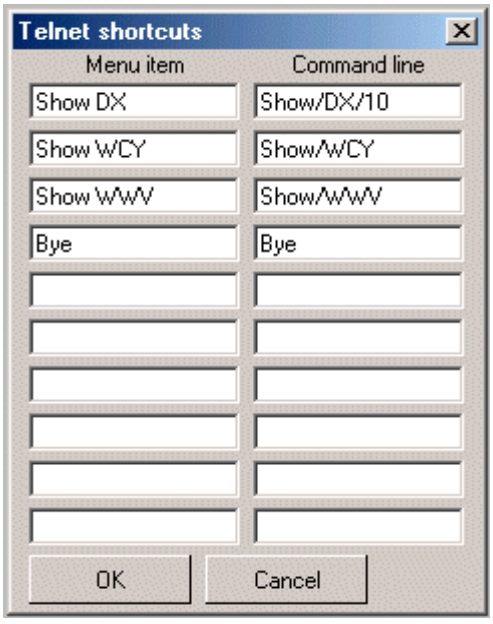
Clears all fields allowing new entry to be made

Set as default shortcut

Sets the current entry as the default "Connect to" host.

Setup telnet shortcuts

This menu item displays yet another dialog box that permits the user to enter up to ten telnet commands. Each entry consists of plain text in the left column that will be displayed as the menu item of Section four and, in the right column, the telnet command to be sent to the telnet station for that menu item.



DATA TERMINAL PANEL

Not coded yet

Tracking Window

Geoff Anderson G3NPA

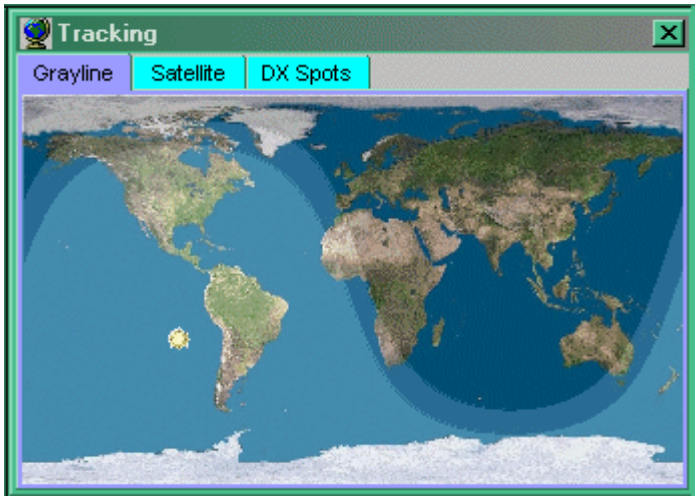
The tracking Window displays a map of the world on three tab panels, overlaid with additional data. The three panels are:

- Grayline;
- Satellite;
- DX Spots.

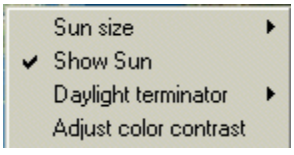
Grayline Panel

The Grayline panel overlays the world map with three distinct shaded areas defining:

- Day;
- Night;
- A selectable transition area between day and night (the Grayline).



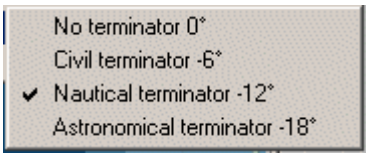
A right click on this window will display a pop-up menu allowing the operator to:



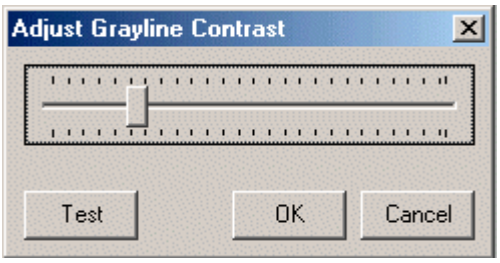
- Select the size of the sun displayed on the map from one of three sizes;

- Show or Hide the sun;

- Select the size of the Grayline;

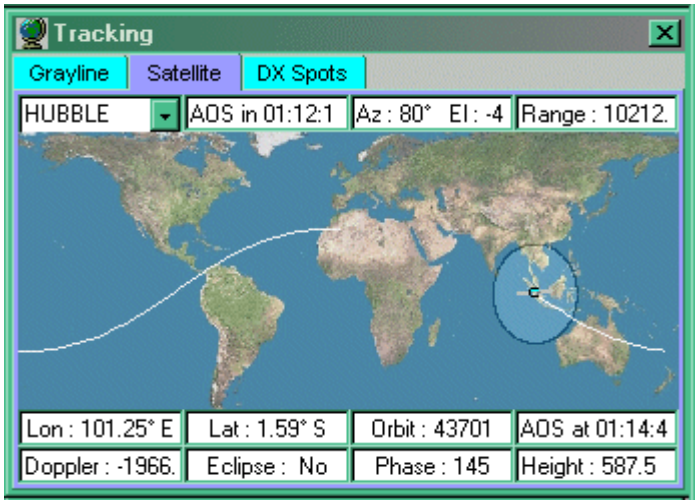


- Select the contrast to be displayed between the three areas.



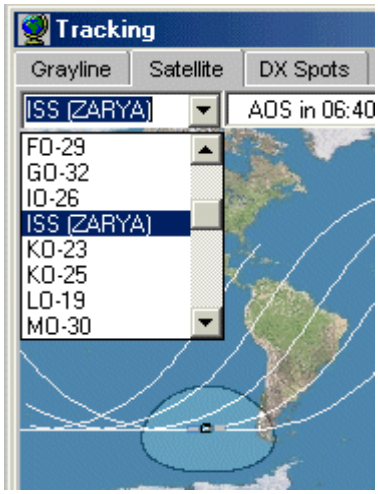
The screen capture of the Grayline Panel displayed above is showing the daylight terminator set to nautical (-12 degrees).

Satellite Panel



The Satellite Panel overlays the world map with the optional display of the position, footprint and the predicted track to next Acquisition of Signal (AOS) or Loss of Signal (LOS) of a selected satellite as well as optional details.

The satellite to be displayed is selected by the drop-down list at the left of the top row of detail information.



The satellites listed in this drop-down list are derived from the import of one or more sets of Keplerian Elements, described later.

The remaining panes of the detail information displayed on the top row are:

- The time in hours, minutes, and seconds remaining until the next AOS;
- The azimuth and elevation of the satellite (Lat and Long must be set correctly);
- The range to the satellite.

Other than the top row of detail information, the display of the remaining items in the Tracking Window is user-selectable. Right clicking on the Tracking Window will display a pop-up menu allowing the user to:

- Display the satellite in one of three sizes:
- Show or hide the satellite;
- Show or hide the satellite path to next AOS or LOS;

  When the satellite reaches AOS, a new track is drawn from AOS to Loss of Signal (LOS) and the time indicator on the top row changes to show the time remaining LOS. Once LOS is reached, a new track will be drawn to the next AOS.

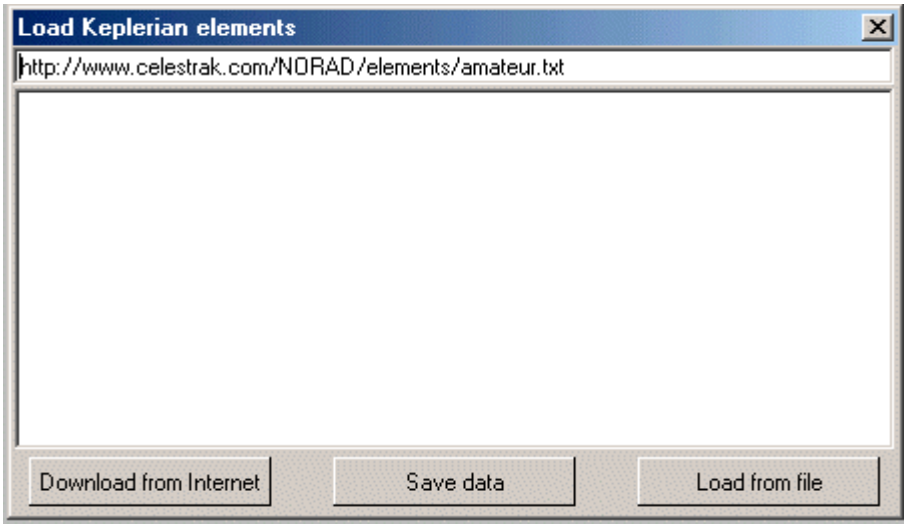
  Note: The satellite predicted track does NOT get erased automatically as the satellite moves. The track can be updated by left clicking on the map.

- Show or hide the two panes of detail on the bottom of the window;
- Adjust the color contrast (See Grayline Panel);
- Load Keplerian elements; and,
- Set the colour and width of the satellite terminator.

Before the display of any data in the Tracking Window will be correct for your location, you MUST ensure that your own latitude longitude have been entered into Logger32 as detailed in the Initial Setup.

To load new Keplearian elements:

1) Right click on the map and select "Load Keplerian elements" from the menu



2) You are now given the option to load elements from the web or from a file you may already have on your computer. Note that the files MUST have the extension of .TXT

3) If you download from the Internet, you can change the default location and file before clicking on "Download from The file contents will appear in the central part of the "Load Keplerian elements" window

4) If you wish to load a file from the computer, click on "Load from file" and you will be presented with the standard "Open" window in your operating system. Make your selection and click the "Open" button. The file contents will appear in the central part of the "Load Keplerian elements" window.

5) Click "Save data" and you will be advised on how many satellite elements have been loaded and you will be given the choice to save these to memory. Select "Yes". This data will now be held in a file called KEPS.TXT in the default directory.

Logger32 will accept a maximum of 100 element sets.

DX Spots Panel

This window is not coded yet.

Soundcard Data Window

Jim Hargrave W5IFP

In Logger32, it is the Sound Card Data Window that provides the functionality previously found in the Zakanaka application written by Bob Furzer, K4CY. The Sound Card Data Window is the interface that provides PSK31 and RTTY capabilities through an interface to the computer sound card and a radio connected to Logger32 through a serial (Com) port. Logger32 is an extremely efficient way of operating PSK31 and RTTY.

The RTTY capability in Logger32 incorporates the RTTY engine of MMTTY, written by Makoto Mori, JE3HHT. This RTTY engine supports a number of baud rates, shift widths, and mark/space selections

The Sound Card Data Window provides the capability for:

- One-click entry of callsigns for use in logging and in macros;
- Presentation of frequency information in the Sound Card Data Window (requires a radio that communicates with Logger32 over the serial port); and,
- Automatic entry of data from the Rx screen to Logger32.

There are several ways of using Logger32 and the Sound Card Data Window. The choice will determine what features are available:

- Communication may be set up between the radio and the computer. This lets Logger32 control the radio, display the radio frequency, and do a number of special functions;
- The Sound Card Data Window has the capability to operate in both PSK31and RTTY;
- In RTTY mode, it is possible to operate AFSK or FSK. FSK has certain advantages, but some advanced features are only available using AFSK.

The Sound Card Data Window provides PSK31 (BPSK and QPSK) and RTTY capabilities to the operator with minimal hardware. Most program settings made from the Sound Card Data Window menu remain the same in all modes: when you set a feature in mode, it remains that way for other modes. Screen operations (like fonts, colors, etc.) work this way. However, this is not true for the macro buttons. Macro buttons are the same for PSK31 modes, but you can have an entirely different set of buttons for RTTY. See the section Macros, Hot Keys and Programmable Buttons for more information.

The following screen captures have most of the Sound Card Data Window features implemented. New users may want to look over to get an idea of where the controls and displays are located.

The Soundcard Data Window consists of eight sections:

The Title bar;

The Main Menu;

The RXWindow;

The Splitter bar;

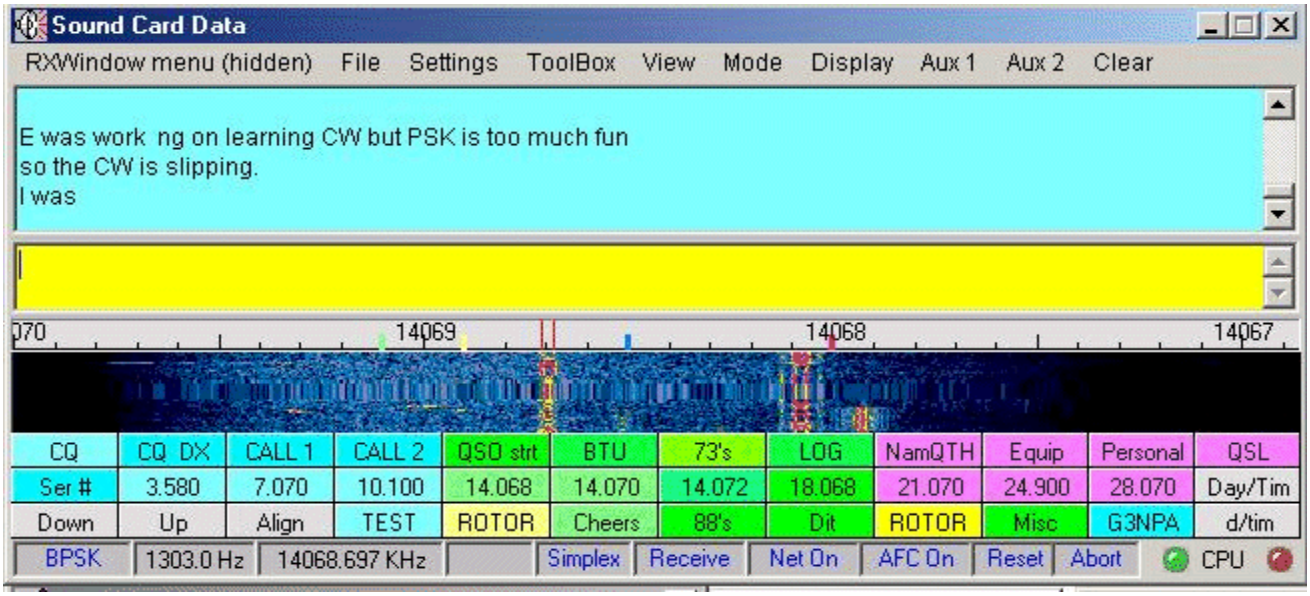
The TXWindow;

The Radio Frequency Display;

The Tuning window;

The Programmable Buttons;

The Status bar.



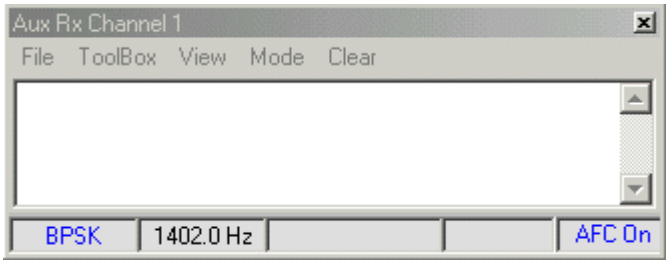
The two Auxiliary Windows consist of:

The Title bar;

The Menu bar;

The RXWindow;

The Status bar.



The three Tuning windows (Main Tx/Rx and two Auxiliary) consist of five sections:

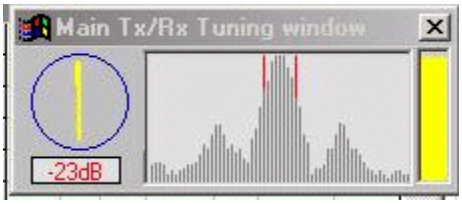
The Title bar;

The Phase Scope;

The Frequency Histogram;

The Receive Quality Meter;

The IMD Display window.



The Main Menu

The Sound Card Data Window Main Menu Bar provides access to the following functionality:

File

Send a text tile

Open receive text file

Close receive text file

Exit

Settings

Squelch response

Squelch slow

Squelch fast

Display smoothing

PSK - Fast display (no smoothing)

PSK - Medium display (little smoothing)

PSK - Slow display (heavy smoothing)

RTTY - Fast display (no smoothing)

RTTY - Medium display (little smoothing)

RTTY - Slow display (heavy smoothing)

Spectrum pen width

Spectrum pen width = 1

Spectrum pen width = 2

CW ID Speed

37 WPM

19 WPM

12 WPM

9 WPM

- Typing preference
    - PSK - Send as typed
    - PSK - Send all CAPS
    - PSK - Send all lower case
    - RTTY - Send word out
- Line wrap on
- Use slash for zero
- Long tx tail
- Overload warning
- RTTY watchdog timer
- Transmit buffer indicator
- Receive window mouseover
- Radio PTT options
- Spectrum display width
- Waterfall sensitivity
- Spectrum sensitivity
- Preset Radio frequencies
- Preset Audio frequencies
- Audio frequency markers
- RTTY Watchdog timer delay

ToolBox

- Rx window font
- Rx window Tx text color
- Rx windowcontrol codes color
- Rx window normal background
- Rx window paused background
- Rx window mouseover highlight
- Tx window font
- Tx window background

- Tx window buffer indicator color
- Waterfall colors
- Waterfall sensitivity
- Sound card input level
- Sound card output level
- RTTY XY Scope color
- CPU Power Saver mode

View

- Show Tuning window
- Show Tuning display
- Show Statusbar
- Show RTTY toolbar
- Show Radio debug window
- Frequency markers
    - 1050 Hz
    - 1100 Hz
    - 1150 Hz
    - 1200 Hz
- Frequency display
    - Display frequency from radio
    - Display audio frequency
    - Fixed Radio on 14070.00 USB
    - Fixed Radio on 14070.00 LSB
    - Fixed Radio on 14071.00 USB
    - Fixed Radio on 14071.00 LSB
- Macro buttons
    - 0 Macro buttons
    - 12 Macro buttons
    - 24 Macro buttons

- 36 Macro buttons
- Rx window options
  - Show control codes
  - Show RTTY commands
  - Echo transmitted text

Mode

- BPSK
- QPSK
- QPSK (inverted)
- RTTY 170Hz shift
- Setup RTTY Profiles
  - Load RTTY profile from file
  - Save RTTY profile to file
  - Assign RTTY Menu item
  - Delete RTTY Menu item
- CW
- Tune

Display

- Spectrum
- Waterfall

Aux 1

Aux 2

Clear

- Clear Rx
- Clear TX
- Clear both

The Aux 1 and Aux 2 Menu Bars provide access to the following functionality:

File

- Close

ToolBox

Rx window font settings

Rx window mouseover highlight

RX window background settings

View

Show Tuning window

Mode

BPSK

QPSK

QPSK (inverted)

RTTY

CW

Clear

The Status Bar – An Information Control Mechanism

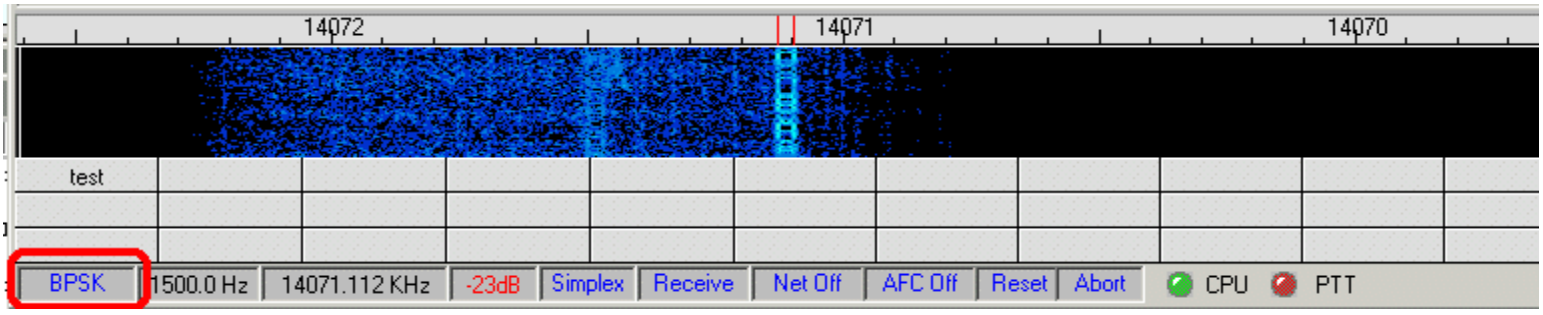
Scott E. Thile, K4SET

The Statusbar of the Sound Card Data Window is located at the bottom of the window. It is the command and control center of window, providing access to information and commands that you will use actively during digital operations.

The panes in the Status Bar not only give information, but those with captions in blue or red are controls that act as switches to change modes or perform actions (for example, to switch between receive and transmit).

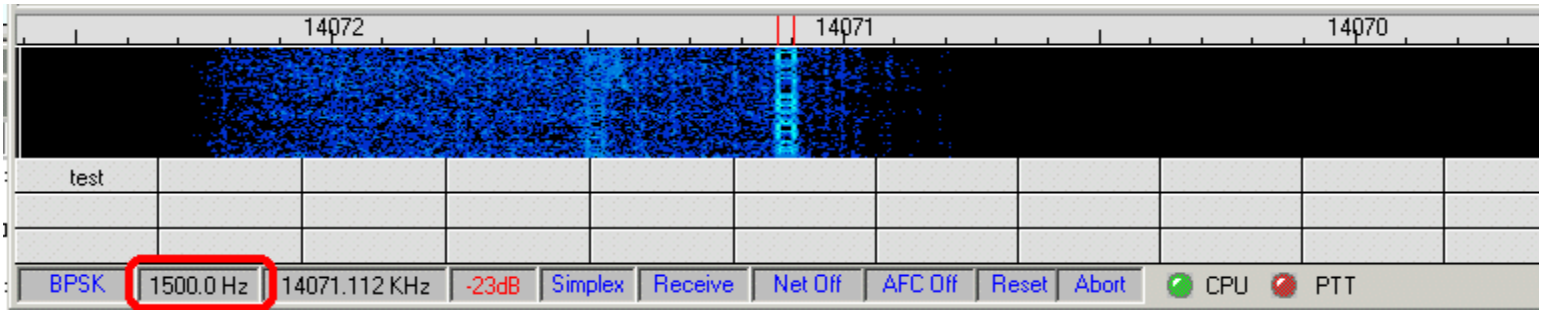
Mode

The first pane indicates the digital mode currently selected. A mouse click in this panel will cycle through Logger32's modes. The mode can also be set from the Mode menu.



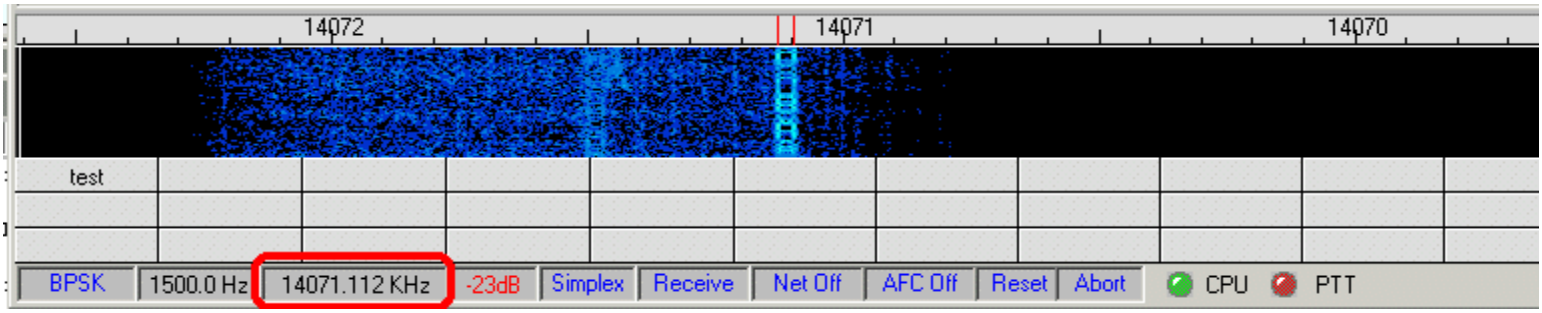
Audio frequency

The second pane indicates the audio frequency at the tuned position of the main window.



Operating frequency

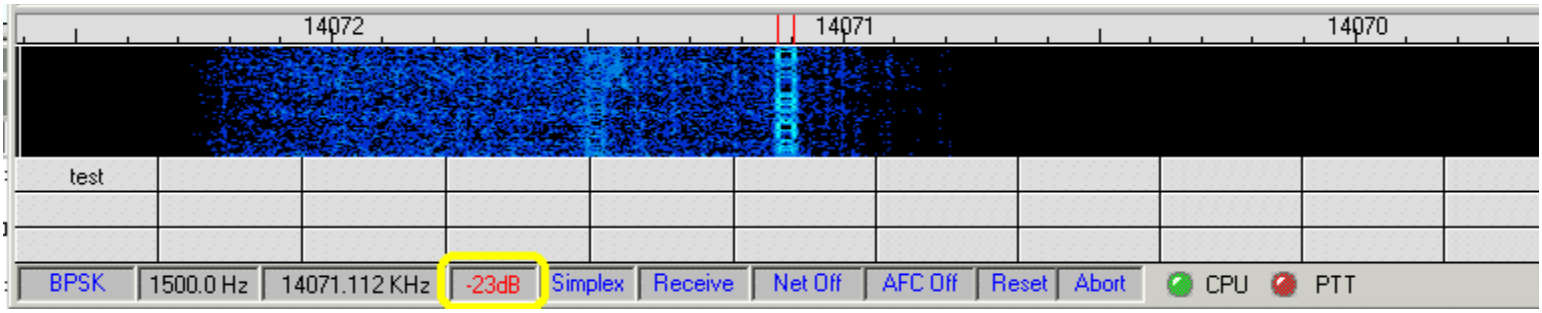
The third pane will show your actual operating frequency, which is your radio frequency plus (USB) or minus (LSB) the receive frequency. To display this frequency your radio must be connected to Logger32 using a computer-radio communication, and you must be running Logger32. See Interfacing a Radio for PC Control for information on connecting your radio to use Logger32's control features. Next select, **Display frequency from radio** from the **View, Frequency display** menus shown here:



Note: Logger32 may or may not reflect a change in frequency that you set using your RIT or clarifier control on the radio. You should check this so you know how it works. Turn the RIT or clarifier and see if the frequency pane shows a change.

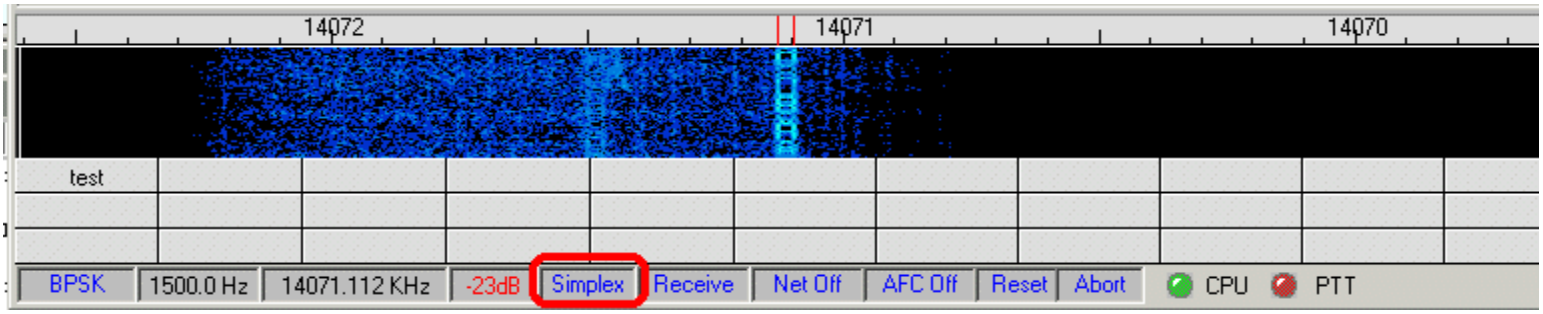
IMD

The fourth pane shows the IMD reading. When the received station is idling (transmitting, but not sending text) this area displays IMD (intermodulation distortion) of the received signal. The IMD is due to interaction between the two transmitted tones (one tone shifted by 180 degrees). This number also appears below the round phase indicator on the Rx/Tx Tuning window. A negative number is displayed, indicating the number of dB below the peak signal amplitude is the amplitude of the strongest distortion products.



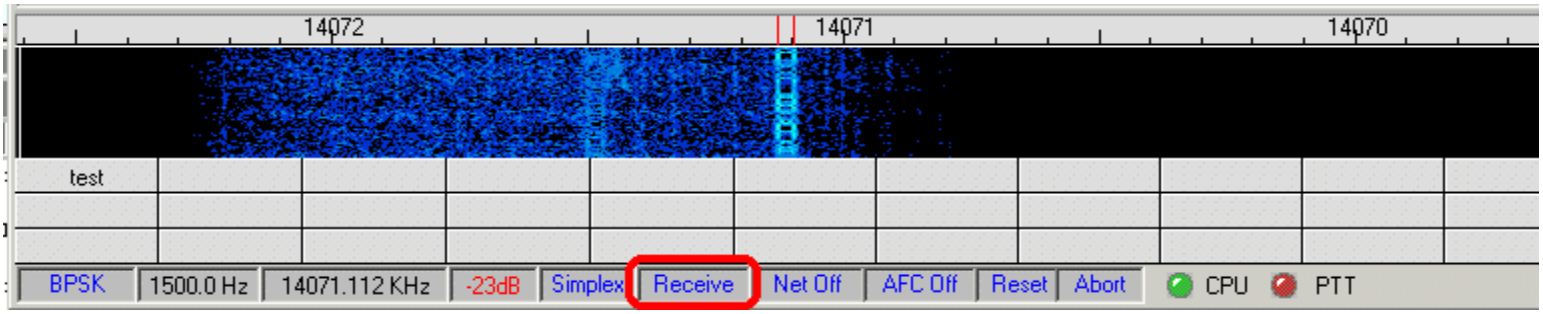
Simplex/Split

The fifth pane shows Simplex or Split operation. When you have computer-radio communication using a serial port, Logger32 can operate split frequency by changing the frequency of the radio as it goes between receive and transmit. This pane tells you if you are in simplex or split mode, and allows you to set the direction and amount of transmit split from your receive frequency. See Logger32.



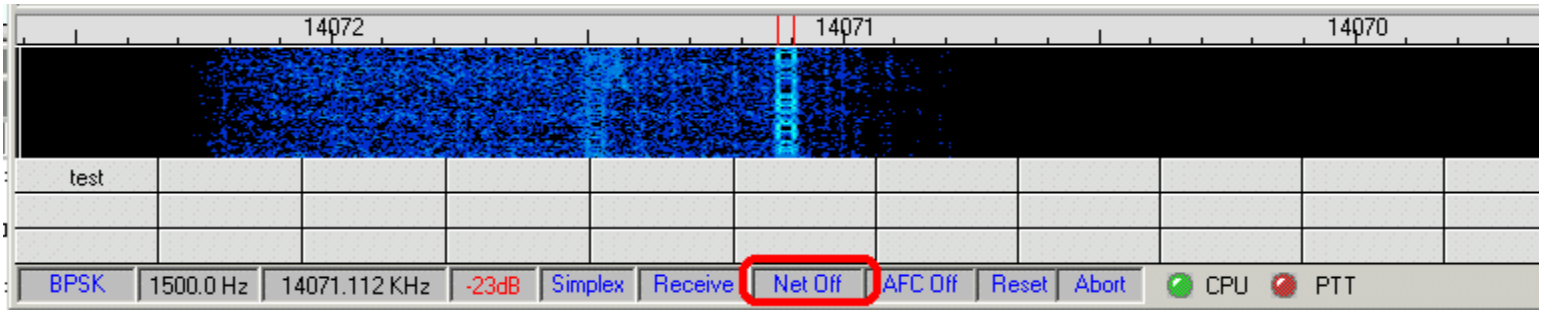
Receive/Transmit

The sixth pane indicates that Logger32 is either in **Receive** or **Transmit** modes. The Rx/Tx mode can be toggled with a mouse in this area. Rx/Tx can also be toggled with the pause/break key on your keyboard.



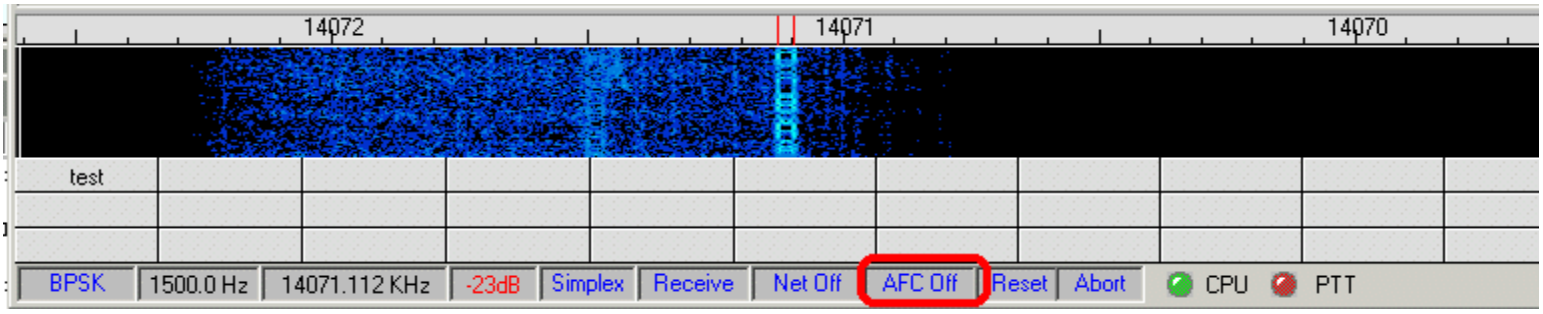
Net On/Off

The seventh pane indicates Net is on or off. Net can be toggled on/off by a mouse click in this area. (NET on will set the transmitted audio frequency to the receive audio frequency. Net off will cause you to transmit at the last frequency at which you transmitted. If you have not gone to transmit since you started Logger32, you will transmit at the default Tx audio frequency. you transmit, the waterfall display of your transmit signal will be at the frequency where you are actually transmitting.



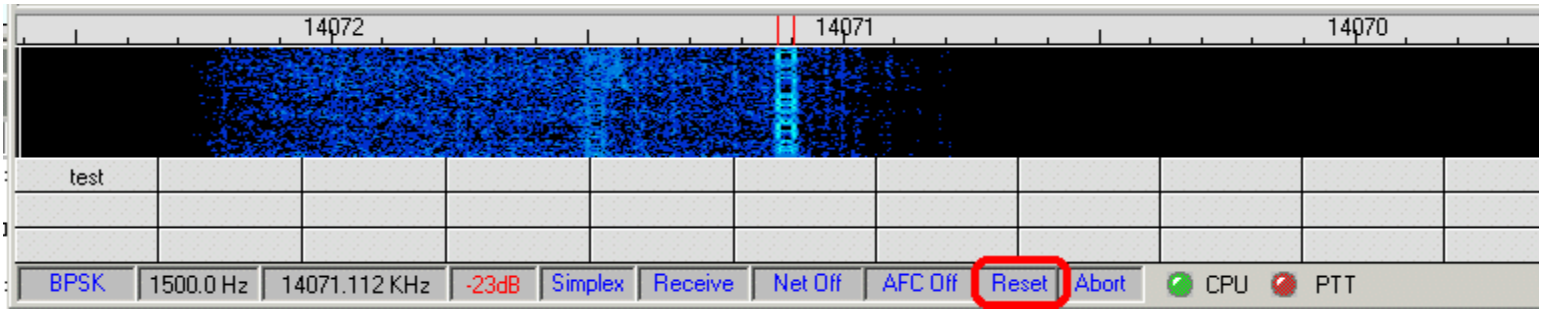
AFC On/Off

The eighth pane indicates AFC action, whether on or off. PSK31 is quite difficult to tune in manually. You will usually want the AFC on, at least to tune in a station.



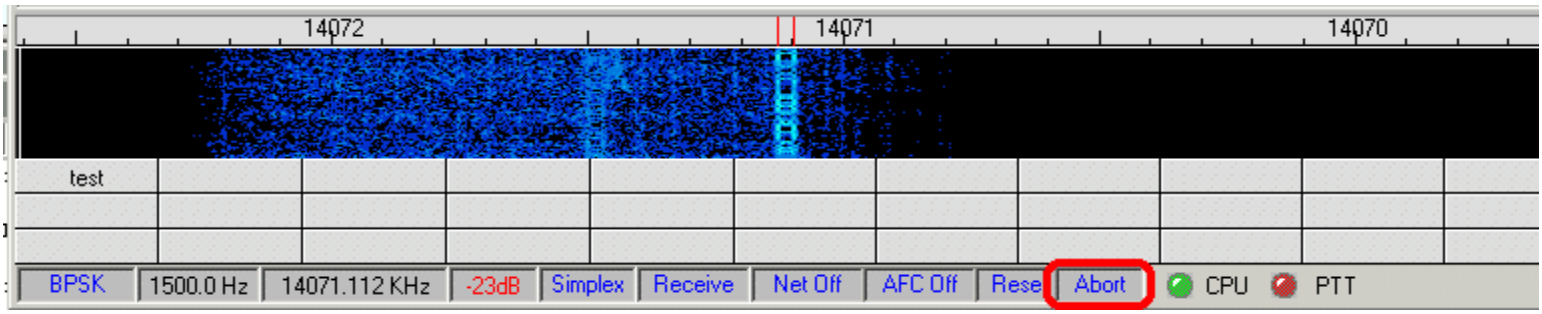
Reset

A mouse click in the ninth pane will put the main receive audio frequency (the receive passband window) back to its default value (1500 Hz., if you have not changed it).



Abort

A mouse click in the tenth pane clears the transmit buffers. If Logger32 is transmitting it switches from transmit to receive as as possible.

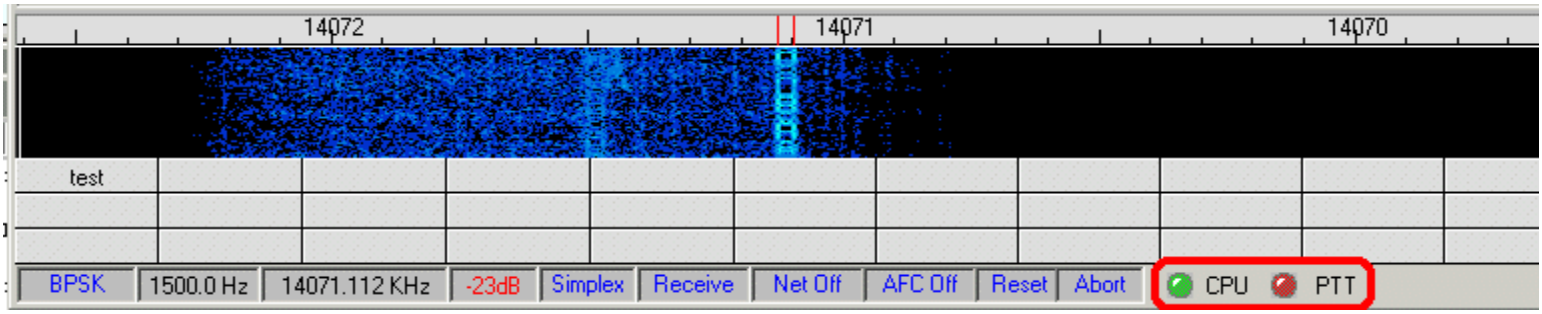


CPU/PTT Indicator Lights

A green CPU LED indicates that there are enough CPU cycles available to service 100% of the sound card, DSP and FFT needs. Red CPU LED indicates the CPU apparently got busy doing something else, and was unable to service the full requirements of Logger32. In order to avoid problems, the Sound card is reset, and the buffers are flushed.

A red PTT LED indicates PTT is off and Logger32 is in the receive mode.

A green PTT LED indicates PTT is on and Logger32 is in the transmit mode.

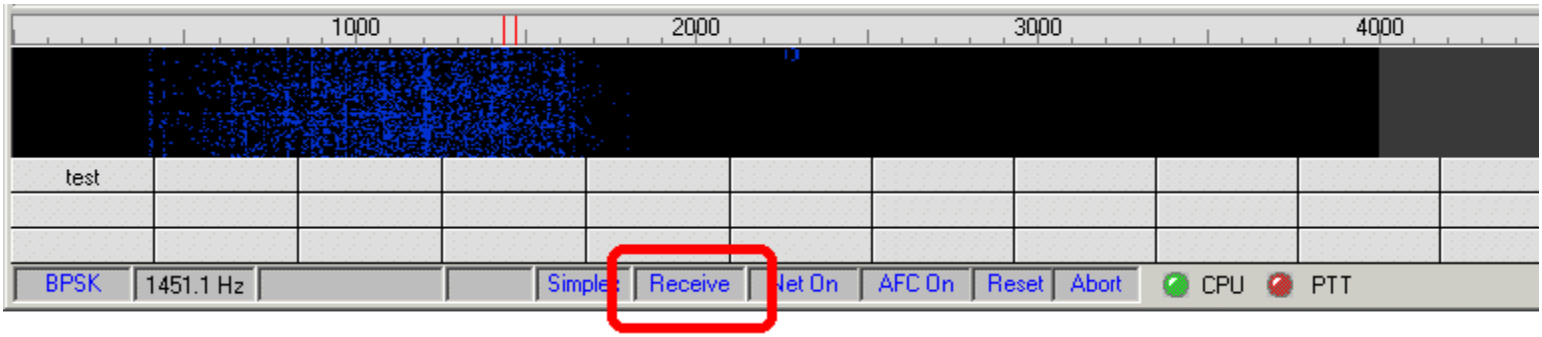


Basic Operation

The following sections describe how to do basic Sound Card Data Window operations.

Switching the Radio Between Receive and Transmit

- Use the receive/transmit pane in the Statusbar (this is the sixth box along the bottom);



- Use Macros and Hot Keys;

- Use the Pause/Break key. Use the <Esc> key.

Pausing the Rx Window

You can pause the display of received data in the Rx Window by pressing the <Ins> or <Insert> key on the keyboard. You can scroll back and forth in the Rx Window, using the scroll arrows to the right. The pause is cancelled by typing <INS> again. continues to receive data while the Rx Window is paused, and the text that arrived while the display was paused will appear at the bottom of the Rx window when you press <INS> a second time.

Be careful with the pause function. When you use the pause function, the background turns white. If you are using a white the whole Rx Window will turn white and you won't be able to see the letters. You can adjust the Rx window background color pause with Toolbox, Rx Window Paused Background.

Cut and Paste

You can cut and paste data from the Sound Card Data Window. You can copy text into the Logger32 Windows, into a browser, or into a word processor. For those familiar with Windows, this is the Clipboard function.

- Left-click and drag the mouse across some text in the Rx window (this will momentarily highlight the text), then release the left mouse button.

- Right-click and select copy or cut. Be careful, people often forget this right-click step.

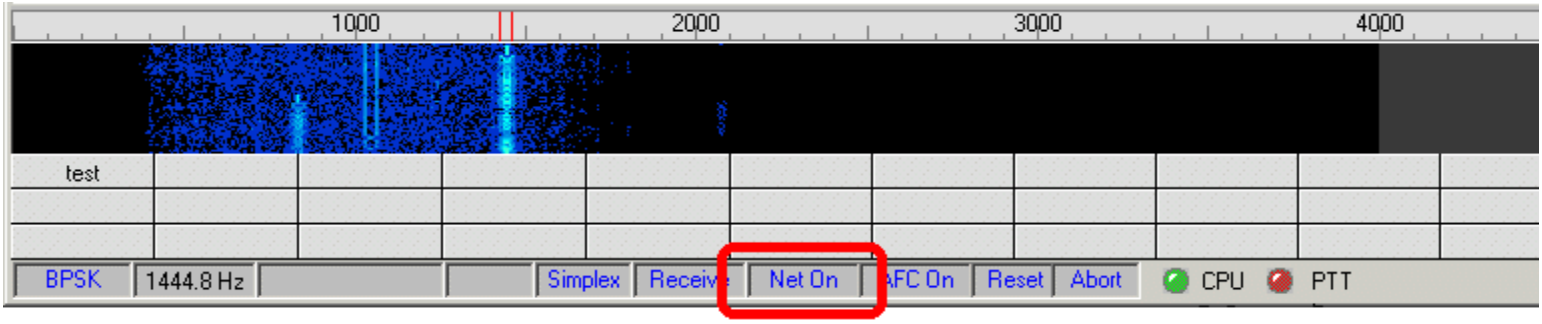
- Move to the window where you want to paste (probably Tx) and press the right mouse key and select paste.

Resizing the Tx Window

Move the cursor slowly over the separation line between the Tx window and the Rx Window and when the cursor changes shape into a double-arrow, hold down the left mouse button to resize the window to your operating preference.

Operating On the Other Station's Frequency (Net Operation)

Turn **Net on** and you will transmit on the other station's frequency. If you turn **Net off**, you will transmit where you last
See the section on Audio Split Frequency Operation for more details.



Using the Sound Card Data Window With or Without Radio-Computer Communication

The Sound Card Data Window will work without any direct radio interface. You can operate PSK31 or RTTY as long as you have way to operate the transmit/receive switching and get tones to and from the computer soundcard. All the functions that are discussed here also work with radio-computer communication. Here are some functions that you have:

- Display of your audio frequency;
- Split operation using audio frequency split in PSK mode;
- Data capture for use by macros and logging;
- Automatic data entry into the Logbook Entry Window;
- CD callsign lookup;
- Audio split frequency in PSK mode.

Logging From the Sound Card

Jim Hargrave, W5IFP

Logger 32 has enhanced Logging procedures for PSK and RTTY modes. Many of the normal QSO exchange data can be logged directly from the Receive Text window.

They can be automatically transferred to the Log Entry window by clicking on the appropriate words or numbers in the received window.

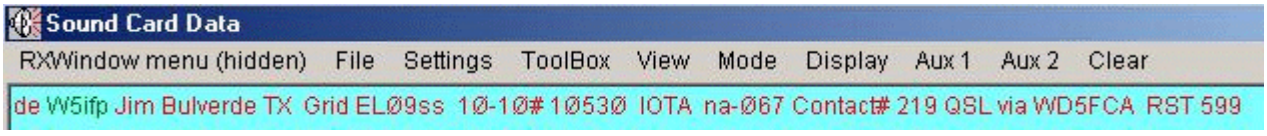
Note: In order for all these entries to work, you must configure the Log Entry window to accommodate the desired entries by the data fields to the "user defined Fields". This is accomplished by right-clicking in the Log Entry window and select "setup". select each field you want to display by placing a check mark by each field to be shown, Setup the user fields by selecting the appropriate title and ADIF field. Specific details of setting up the user fields are provided elsewhere in the Helpfile.

The following sample text shows the fields that can be automatically transferred to the Log Entry window by mouse clicks.

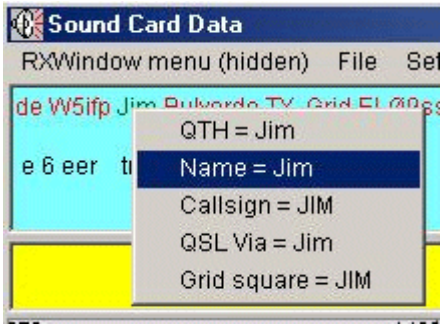
de W5ifp Jim Bulverde TX Grid EM09ss RST 599 10-10# 10530 IOTA NA-067 SRX# 219 QSL via WD5FCA

As in the examples below, Logger32 does not always display the full list of options. It determines which selections are to be displayed based on the word/number that is highlighted by the right click.

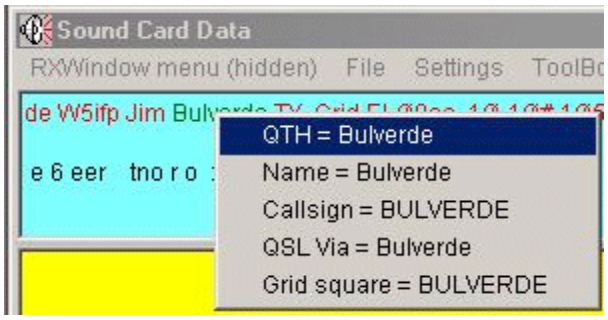
CALLSIGN: Left click on the callsign of the station you are in contact with or desire to contact. This is a fixed field and does not require user setup.



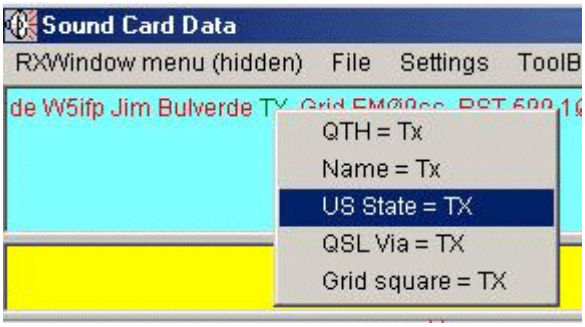
NAME: Right click on the name and the following window will appear. Select "name" then left click. This is a fixed field.



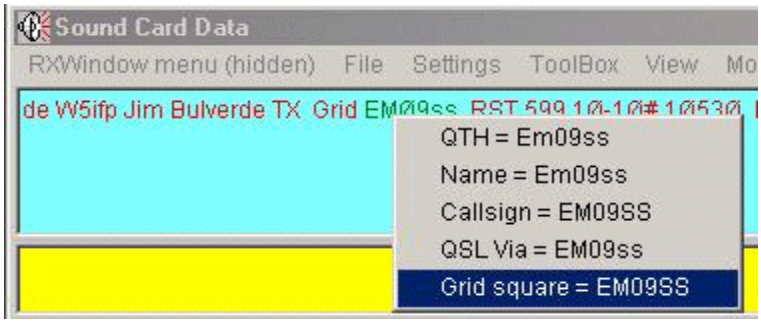
QTH: Right click on the QTH and select QTH, then left click. This is a fixed field.



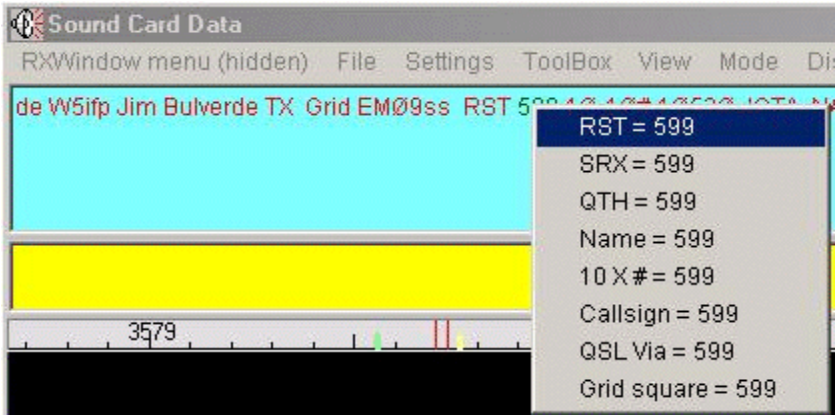
STATE: Right click on the state and select U.S. State, then left click. This field requires user setup with the ADIF definition of "STATE"



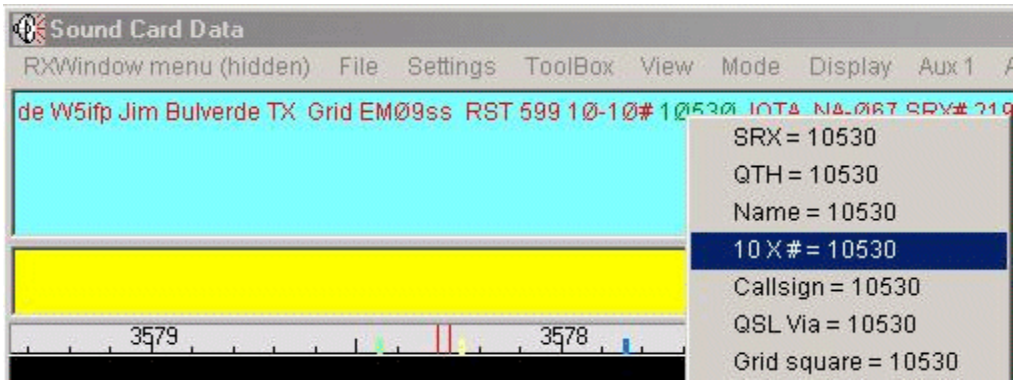
GRID SQUARE: Right click on the Grid Square and select Grid Square, then left click. This field requires user setup with the ADIF definition of "GRID SQUARE



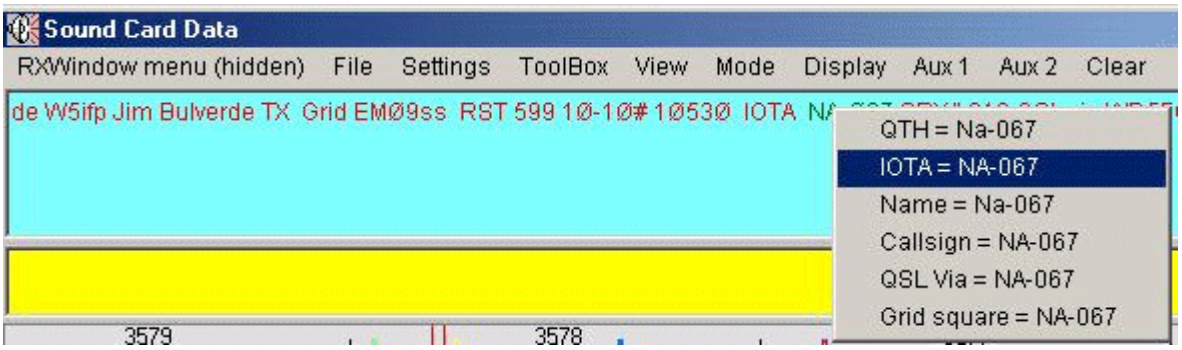
Your RST signal report: Right click on the numeric signal report, select RST, then left click. This is a fixed field.



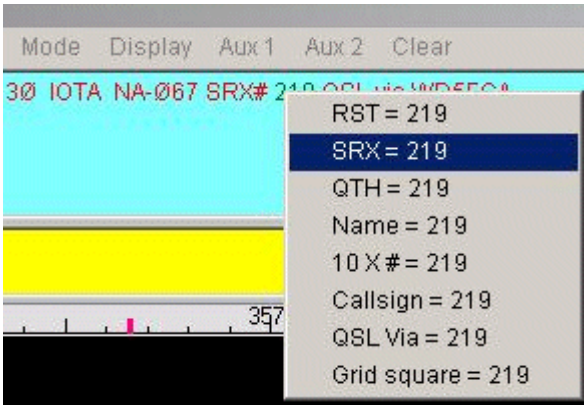
TEN_TEN number: Right click on the Ten_Ten #, select 10X#, then left click. This field requires user setup with the ADIF of "TEN_TEN"



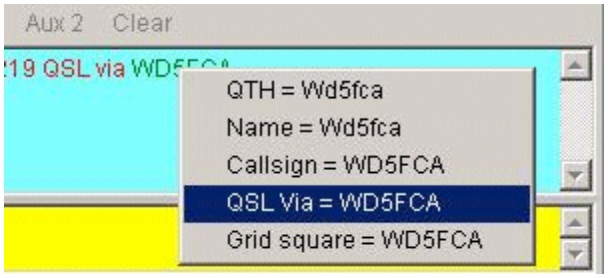
IOTA island designation: Right click on the IOTA number, select IOTA, then left click. This field requires user setup with the definition of "IOTA"



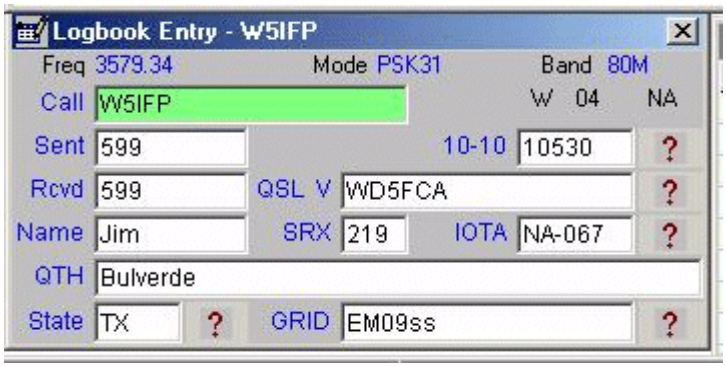
Contest QSO report number: Right click on the QSO contest report number, select QSO number, then left click. This field user setup with the ADIF definition of "SRX"



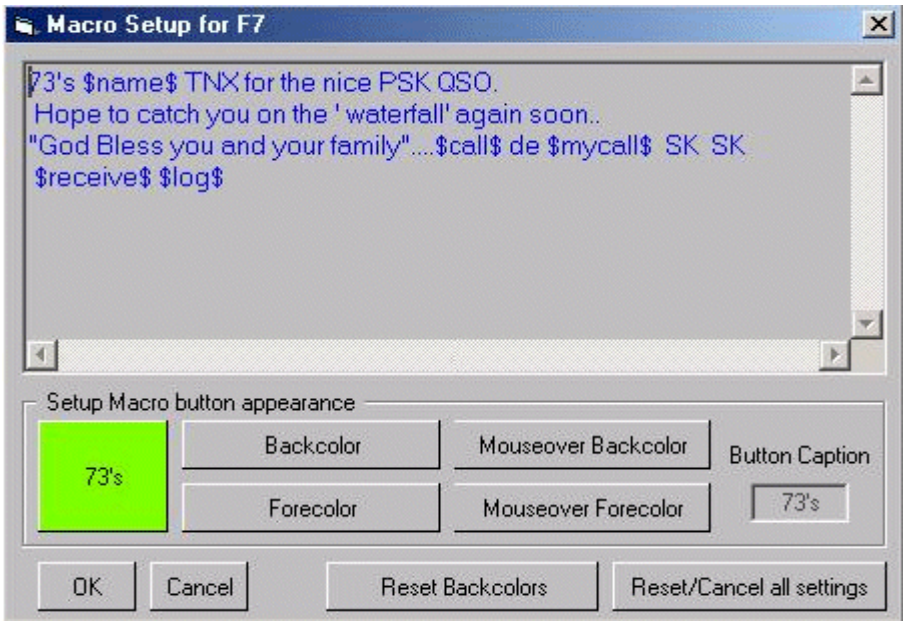
QSL manager: Right click on the QSL manager's callsign Select QSL Via and left click. This field requires user setup with the definition of "QSL_VIA"



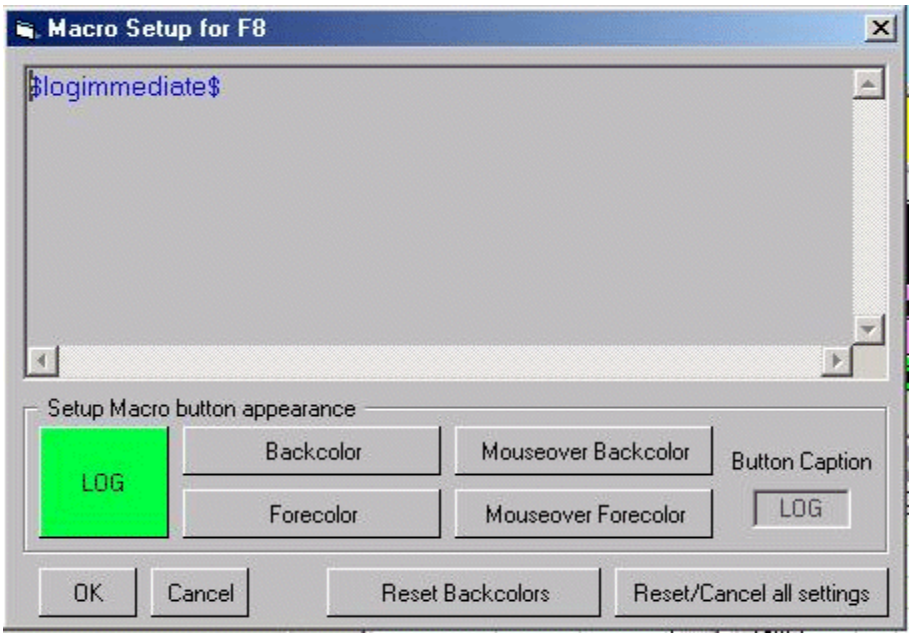
Each time you click on the above elements they will automatically appear in the LOG ENTRY window. Here is a sample of the Log entry showing all the above entries:



When you complete the QSO, you can automatically log the data into the main LOGBOOK by using macros within the sound card window. You can include log in your signoff macro or you can also have a dedicated macro for that purpose. Here is an of the log included in the signoff macro:



The following is an example of a dedicated $logimmediate$ macro. This macro will log the QSO with the current time of the computer.



Audio Split Frequency Operation

Even though you do not have computer-radio communication over a serial port, the Sound Card Data Window can operate split frequency on transmit and receive by using different tones for each frequency. This is only possible in PSK mode. Audio split-frequency operation is fully described in the Receiving PSK31 topic, in the section called [{Inner Link Operating Split Frequency Using Different Audio Tones, Sound Card Data WIndow:Operating Split Frequency Using Different Audio Tones}].

If you have computer control, look at the section later in this topic, called [{Inner Link Operating Split Frequency with Computer Control, Sound Card Data WIndow:Operating Split Frequency with Computer Control}].

Using Logger32 With Computer-Radio Communication

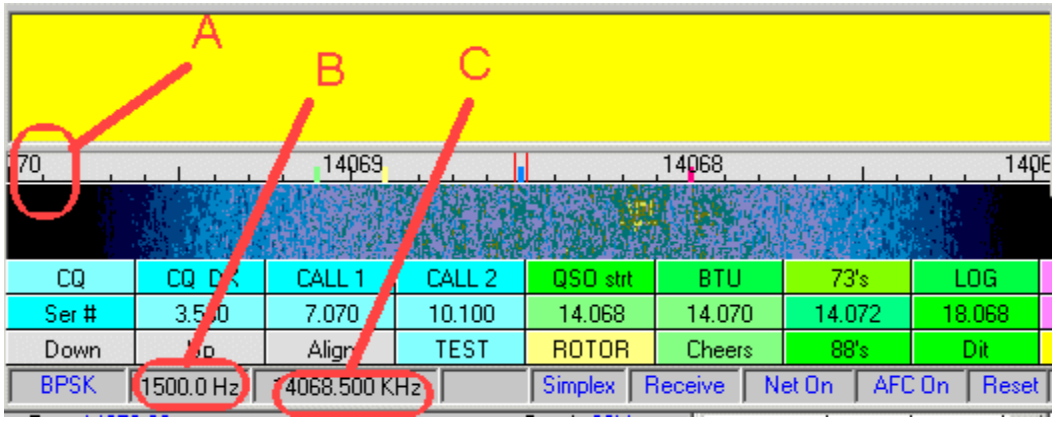
You must configure computer-radio communication through Logger32 as described in the topic Interfacing a Radio for PC Control.

Here are various functions that are enabled with radio-computer communication:

- Display of frequency from the radio;
- Frequency control of the radio using the $align$ macro;
- Split frequency operation.

Display of Frequency from the Radio

The Sound Card Data Window can display the radio frequency, the actual transmitted frequency and the tone frequency. The frequency displayed on the radio will be at the left end of Sound Card Data Window's frequency bar (**A**). The Sound Card Data Window uses the radio frequency (**A**) along with the audio tone frequency (**B**) to display the actual frequency (**C**) you will receive/transmit. That is, if your radio frequency is 14.070 (**A**), radio in LSB, and you are listening to a 1500 Hz (**B**) tone, The Card Data Window display the actual transmitted frequency of 14068.5 kHz (**C**).



To turn this feature on, select the **View | Frequency Display | Display frequency from radio** menu item. You must do this to the frequency display on screen in the third pane from the left in the Statusbar, but once you do it, you can leave it on forever. frequency information is unavailable, the Sound Card Data Window will display nothing. Select the **View | Frequency Display | Display Audio Frequencies** if you would rather see the audio frequencies of the tones.

Align

There are situations in which you might want to retune your radio after you have begun to copy a station, but you would not like to lose the station. Here are some situations:

- You want to transmit a high tone to reduce the chance that you will transmit distortion, but the station you want to receive is low in your receive/transmit range, at the current radio frequency setting (see Transmitting a Clean Signal);
- You have a narrow receive filter in your radio, but it is not centered at the place where the station you want to receive is coming in;
- You want to quickly move the station you are listening to near the edge of the receive range, so you can use your radio's passband tuning to get rid of QRM.

The align function will help out, in both PSK and RTTY modes.

Your radio can be retuned with a mouse click. To set up to use the align (frequency change) function, do the following:

- You must have computer communication with your radio;
- Select the **Settings | Default main Rx Frequency** menu item and set it to an appropriate value (this will stay the same most of the time). This can be a high tone or the center of the narrow filter passband. It is best if both situations are true, and you may have to tune your passband tuning control to make it so;
- Select the **View | Frequency Display | Display Frequency from Radio** menu item.

Here is how the align operation works:

- Leave the AFC on, so Logger32 can retune following the frequency change;
- Left-click on a signal to receive it in the main Rx window; and,
- Right-click on the same signal to invoke the align function, so that signal will be received at the preset Default Rx Frequency.

Instead of a right-clicking, you can use the $align$ macro in a programmable button.

Logger32 will move the main passband to the default Rx frequency, and will also reset your radio frequency the proper amount so that the signal is now at the default Rx frequency. You should still be copying the signal.

Here is an example:

- Set your default Rx frequency to 2000 Hz., which is high within the range of your narrow filter, so if you overmodulate, you will probably not generate harmonics since they fall outside your transmit passband;
- The radio is currently tuned to 14.070 MHz;
- Left-click to receive someone at 14.0705 MHz. This means that you will be transmitting a 500 Hz. tone, which is quite low, and may cause distortion;
- Use align function (right-click or macro);
- Logger32 will retune the radio to 14.068 MHz., which is now the low end of the Soundcard Data Window frequency display;
- You are still receiving and transmitting at 14.0705 MHz;
- The station is now at 2000 Hz. in your Rx and Tx transceiver range, which is pretty high, and not subject to as much distortion as the 500 Hz. tone.

It may be useful to know where on the display your signal is going to end up, so set a colored frequency marker at your default Rx frequency. Every time you right-click the mouse, the radio will retune so that the frequency under the mouse will become the Rx frequency, where you have a colored marker. Read about how to use this marker feature in Screen Control Operation.

It is possible to tune your radio using this feature: click anywhere in the display and that spot will move to the Default Main Rx Frequency. If you click higher in frequency than your Default Main Rx Frequency your radio will tune up in frequency; if you click lower in frequency than your Default Rx Frequency, your radio will tune down.

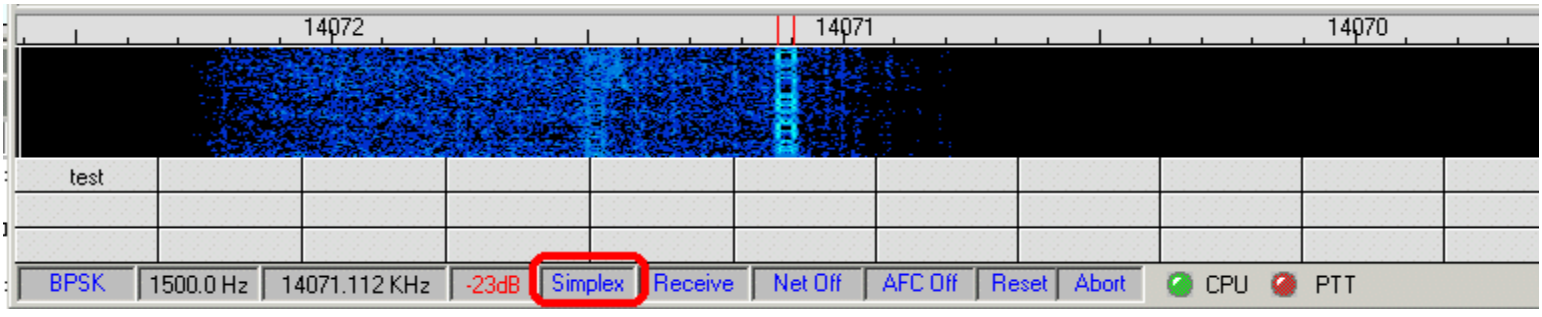
Many people find that it is difficult to right-click just the right place on the received signal. The $align$ macro takes care of that problem. Instead of retuning where you click, it moves the current signal that is being received to the default Rx frequency. Just dedicate a programmable button to contain the text $align$ only and when you select that button, it will be is as if you right-clicked the correct place.

Operating Split Frequency with Computer Control

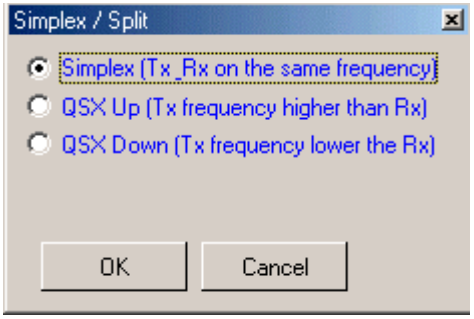
There are two ways that Logger32 can operate split frequency: (1) using different audio tones for transmit and receive and, (2) changing your radio frequency as it switches between transmit and receive. The audio frequency method is described in PSK31, and only works in that mode.

Here is how you can operate split with computer control, for either PSK31 or RTTY:

- You must have computer-radio communication;
- On the Statusbar in the Simplex panel, the Simplex/Split status is displayed It probably says Simplex;

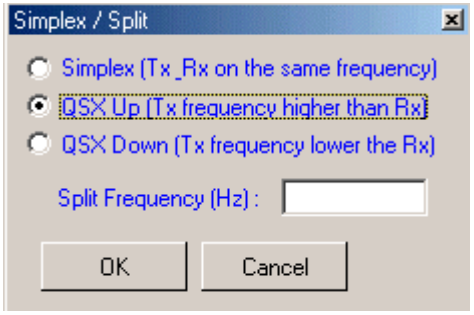


- Left-click on the Simplex panel and the Simplex/Split dialof box will pop-up;



- Select QSX up if you want to transmit higher than your receive frequency, or QSX down if you want to transmit lower than your receive frequency. This choice will depend which way the other station tells you he is listening. It does matter if you are in USB or LSB. QSX up will always take you higher in frequency when you transmit;

- After you make your selection, an edit box will appear;



- Enter a frequency in Hz. in this window. If you want to transmit 1 kHz. from your receive frequency, enter 1000;

- Click OK;

- The Simplex Status panel will now display the word Split, instead of Simplex;

- Make your calls, and, we hope, work the rare DX station who is listening split;

- When you are finished, click the Simplex Status panel, select Simplex and you will be back to regular operation.

You can also use a macro to do this, but it is no easier unless you integrate it with some other commands. The macro is qsx, is described in the section Macros, Hot Keys and Programmable Buttons.

There is a $simplex$ macro as well, to undo qsx.

Communicating with PSK31

Andrew J. O'Brien, KB2EOQ and Jim Hargrave W5IFP

The Art of Conversation in PSK

From its beginning, PSK31 has been known as a conversational digital mode. This distinguishes it from the automated PACTOR stations or the rapid-fire RTTY contest/DX operations. Many stations that you have PSK31 QSOs with will ask you a few about yourself and your setup. They may also comment on your signal and offer assistance to get your transmitted signal "just right."

While it is perfectly acceptable to have quick QSOs, you are encouraged to develop the art of digital conversations.

The art of a digital conversation does not differ much from the art of a rag chew on voice modes. It requires you to try and make

conversation *interesting*. In addition to your name, QTH, weather, and how long you have been on PSK, try to stimulate the conversation by asking questions about the other station's QTH, occupation, hobbies other than amateur radio, family, and so

At first, operating a digital mode can be intimidating , especially to the slow typist. However, you will soon realize that Logger32 allows you to time your responses while listening to the other station and typing ahead. Typing ahead saves time and also your rig's finals since PSK31 is 100% duty cycle.

Logger32 allows you to program 36 macros that also aid in the art of conversation. You will find, however, that overuse of pre-programmed macros is frowned upon by some. It's seen as too impersonal. Do **not** have **long** brag macros that describe everything in your shack including the manufacturer of the carpeting in your room!

By all means, use macros for the obvious (name, QTH, antenna/rig, and a "return" macro, i.e., one that automatically puts out his call and your call (e.g.,pd5dx de kb2eoq). A couple of basic macros to use at each exchange will give enough time for even the slowest typist to type comfortably in real conversation mode. Here are some examples. The word in brackets is the macro

Macro 1 [return] $call$ de $mycall$

Macro 2 [FB Name] ..FB $name$

Macro 3 [solid] Solid copy that time

OR

Macro 4 [fair] Fair copy that time. Some garbled characters.

The above will give you about 15-20 seconds of delay time. You can then comfortably "hunt and peck," and even pause for a few seconds of thinking time without feeling like you are too slow.

Here are two different macros that take care of transmit/receive switching along with some of the typing:

Macro 5 $transmit$ $call$ de $mycall$

Macro 6 BTU $name$ $call$ de $mycall$ K $receive$

Other conversation tips

Do not worry about typing errors or spelling mistakes. Yes, you can backspace and delete the error before it is transmitted (if you are fast enough) but it is really not necessary. Most hams will be able to figure out your original meaning. If you do backspace, remember that backspace is a PSK character, and you can even erase after the letter has been transmitted and the other station's display will backspace and erase the character.

When in conversation with hams for whom English is not their native tongue, avoid use of slang, colloquialisms, and other speech habits that obscure your meaning. "How's things with you?" will not mean as much as "How are you today." Likewise " the here is Dave, just got home from the salt mine," is not as clear as "My name is Dave, I have just got home from work." "QRX go to the bog, I need a wicked slash," will not have much meaning to non-British hams!

A Discussion of RST

RST is the standard READABILITY -SIGNAL STRENGTH-TONE system used by amateurs worldwide.

READABILITY

1--Unreadable

2--Barely readable, occasional words distinguishable.

3--Readable with considerable difficulty.

4--Readable with practically no difficulty.

5--Perfectly readable

SIGNAL STRENGTH

1--Faint signals, barely perceptible.

2--Very weak signals.

3--Weak signals.

4--Fair signals.

5--Fairly good signals.

6--Good signals.

7--Moderately strong signals.

8--Strong signals.

9--Extremely strong signals.

TONE

1--Sixty cycle AC or less, very rough and broad.

2--Very rough AC, very harsh and broad.

3--Rough AC tone, rectified but not filtered.

4--Rough note, some trace of filtering.

5--Filtered rectified AC but strongly ripple-modulated.

6--Filtered tone, definite trace of ripple modulation.

7--Near pure tone, trace of ripple modulation.

8--Near perfect tone, slight trace of modulation.

9--Perfect tone, no trace of ripple or modulation of any kind.

RST and PSK?

Since PSK's debut on the ham bands, there has been much debate about the usefulness of the RST system. Some have argued a new system that includes the percentage of text copied perfectly and the IMD readings. However, you will find that the majority PSKers still use the RST system, and will give you your RST that can be clicked to put it in the log. Readability is often a measure of the printed text; Signal Strength is often from a rig's S meter, but sometimes from the subjective indications that can viewed on the PSK waterfall. Tone is almost always reported as a "9" but some PSKers have suggested that the 9-step system be used to indicate the quality/cleanliness of the transmitted PSK signal.

Another issue to deal with is the measurement of signal readability and strength. Logger32 uses a panoramic display. You may have realized by now that the usual method of using Logger32 is to set the transceiver bandwidth as wide as possible and select signal with the mouse and cursor. You let Logger32's DSP do the work of filtering. But when you look at the S-meter on the you are not looking at the signal strength of the station you are working, you are looking at the signal strength of the strongest in that 2000+ Hz. bandwidth. Your QSO partner may be far weaker than the S-meter indication.

The answer to this problem, for many PSKers, is to look at S-meter readings on an empty band and learn what different strength signals look like on the waterfall. Then you can estimate from the waterfall display what RST to give the other station. Of course,

remember that strong signals in that broad bandwidth can desense your radio, and that will change the appearance of the
You might want to look over the table above and make your judgements based on the subjective R and S levels descriptions in table. As for T, well.....

Receiving PSK31

Randy Tipton, WA5UFH and Jim Hargrave W5IFP

Proposed frequencies for PSK31 QSOs

1838.150
3580.150
7035.15 for region 1 and region 3, and 7080.15 for region 2 *
10140.150
14070.150 <--- Very active frequency for PSK..
18100.150
21080.150
24920.150
28120.150

* The 7 MHz. band is much wider in region 2 (the Americas), and the IARU bandplan reflects this.

The plan for PSK31 activity has been to concentrate activity starting from the bottom edge of the IARU RTTY bandplan, upwards as activity increased. The exception is in the 10-meter band, in order to give hams with less than full privileges a chance meet.

The recommendation is to begin 150 Hz above the bottom frequency. Keep in mind that all you need is about 100 Hz. as channel separation.

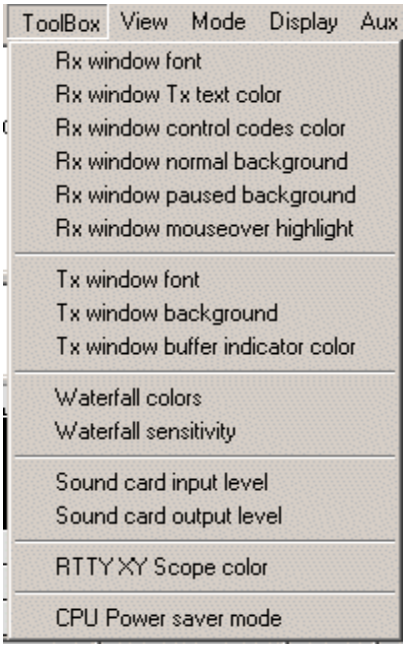
Receiving and displaying PSK31 signals involves several software options. The best way to get familiar with the Receiving is to read this topic, thoroughly. Then, while receiving live PSK31 transmissions, change the options to become familiar with their use.

Purpose of the Rx Window

The Main Receive window has three purposes:

1. Display received PSK31 text.
2. Echo transmitted text after it has been sent.
3. Provide an area for the user to capture callsign, signal report, and name.

Toolbox Menu Item



The following are user-selected options for the Rx window.

- **Rx window font** - sets print style and text color.

- **Rx window Tx text color** - sets color for echoed text. Echoed text is enabled/disabled with the **View | Rx Window Options** menu item.

- **Rx window control codes color**. Control codes are enabled/disabled with the **View | Show Control Codes** menu item.

- **Rx window normal background**.

- **Rx window paused background** - sets the background color when all Rx windows are paused with the <Insert> key.

- **Rx window mouseover highlight** - sets color for text change when the cursor is over it. This is useful when you are selecting text to right-click for the comment field of Logger32, or when selecting a callsign or RST for a log.

Rx Window Pause

The Rx Window has a scrollbar on the right-hand side when the window becomes full of text. Text will scroll from the top of the window downward until the window is full. At that point text is scrolled off the top, out of the user's view. The user can see this again by doing the following:

- Press the <Insert> key on the keyboard (one time).

- The Rx Window background will change to white (or whatever color you have selected in the Toolbox menu item) and the text is frozen.

- The Scrollbar can now be clicked to scroll the buffered text through the Rx Window.

- Press the <Insert> Key on the Keyboard to again start receiving text. (No Rx text is lost).

This technique works during transmit, as well as in receive mode. You can freeze and scroll the Rx Window while text you have already entered is being transmitted by Logger32.

Note: When you use the pause function, the background turns white. If you are using a white font, the whole Rx display will turn white and you won't be able to see the letters. Use the Receive Window Tx text Color menu item to change this color.

Aux 1 and Aux 2 Windows

The two Aux Rx windows are user-selectable. By clicking on Aux 1 or Aux 2 on the toolbar, the Auxiliary Receive windows will be opened, displayed, sized, and positioned on your screen. If you have trouble fitting them on your screen, see Screen Control Operations.

The Auxiliary Rx Windows can be used for the following purposes:

- An additional window to receive a PSK31 signal (possibly ready for a change to QPSK).
- To monitor a crowded band.
- To look for the next contact while in QSO.
- To work split frequency directly from Logger32 using audio split (not transceiver split).

From the Aux1 and Aux2 windows, a callsign can be captured by double clicking on it. However all QSOs have to take place the Main Rx Window. If you saw a station on Aux 1 signing with R5ARE, you would do the following to give him a call:

1. Quickly, left double-click on the station's signal in the display window.
2. Double-click the station's callsign in the Aux Window (this will add the callsign to the log and $call$ macro).
3. Now call him.

The Aux windows have the same font and background controls as the Main Rx Window. Go to ToolBox on the Main Menu of the Auxiliary Rx Window to change functions that apply separately to each Aux window.

To tune in signals for the two Aux Windows, use the combination of <ALT> and mouse click for Aux 1 and <CTRL> and mouse for Aux 2. The AFC is controlled by clicking on the AFC pane on the Statusbar in the Aux Window. The Aux Window Statusbar indicates the received signal frequency (Hz.) and IMD.

The Aux 1 and Aux 2 Windows can be resized and positioned anywhere on your screen display.

The following drop-down items are on the Auxiliary Tuning windows.

- **File** Closes the Aux window
- **ToolBox** Fonts and Background
- **View** Shows Tuning window
- **Mode** BPSK, QPSK, QPSK inverted
- **Clear** Clears Aux Channel Window of received text

To close the Aux Channel, click on the X in the upper right corner of the Aux Channel task bar or use <ALT>F4 with the focus on window you wish to close.

Operating Split Frequency

There are times when you want to establish separate transmit and receive frequencies (operate split). There are several ways to this:

- If you are using AFSK for PSK31, use a different audio frequency for transmit and receive. This works as long as you want to split the frequencies within the available range of audio frequencies.

- If you have computer control of your radio, use the Split/Simplex pane or the QSX macro to change the transmit and frequency automatically each time you switch between transmit and receive.

- Operate without any special features and use two VFOs, one on receive and another on transmit, and set the transmit frequency manually at the radio.

Operating Split with a Computer Controlled Radio

This is the simplest way to operate split, but you must have communication between the radio and the computer.

Operating Split Frequency Using Different Audio Tones

Logger32 can work split frequency within its receive range (about 3000 Hz.) without relying on computer-radio communication, simply by sending a tone that is different from the one being received. There are several ways to operate split in this way, but only work in PSK mode. With this method, you can operate a limited split even if your radio is not capable of two-VFO split operation.

Operating Split With Only the Main Window

1. We will assume that you know where the station you will call is operating, and have that station in the receive range

2. Turn **Net On**. This will cause you to transmit where you are receiving.

3. Put the cursor on the spot where you want to transmit.

4. Make a very brief transmission at that location (click transmit on and off). This will move the transmit frequency to that location.

5. Turn **Net Off**. This will leave the transmit frequency where you last transmitted.

6. Click on the station you are trying to work so you can receive him.

At this point, you will transmit where you last transmitted because Net is off. You will receive where you click.

Here are pictures of two successive Logger32 screens. The first is at the beginning of this operation; the second is at the end.

You will note that the Transmit audio frequency is 1179.9 and the Receive audio freq is

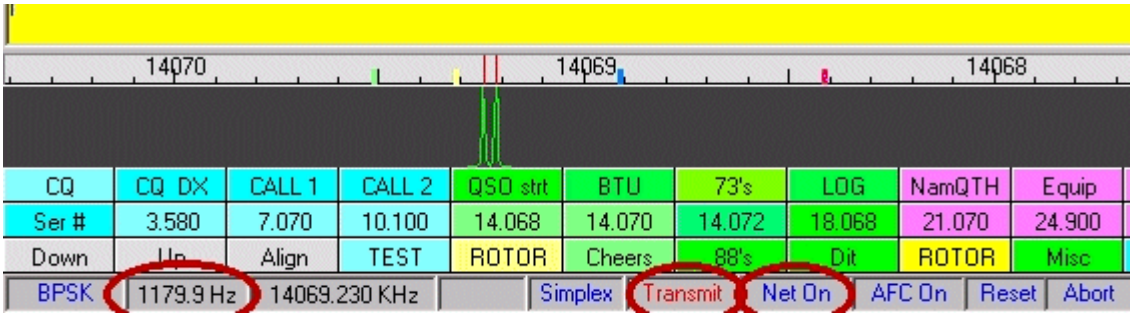
825.9. You are now ready to give a call:

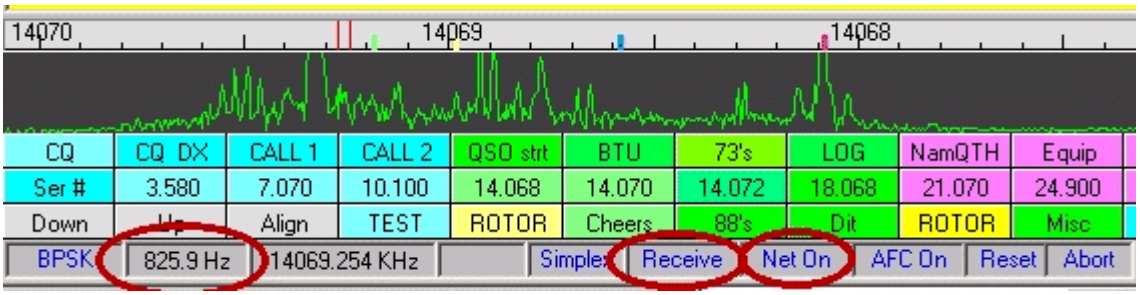
CQ Split Listening +/- 350hz down de W5IFP.

You can program a macro to repeat this CQ with the following macro text:

$transmit$ CQ Split CQ Split listening +/- 350hz down de $mycall$ $mycall$

$transmit$ CQ Split CQ Split listening +/- 350hz down de $mycall$ $mycall$ pse k $receive$





Operating Split By Transmitting at an Aux Window Passband Frequency and Receiving With the Main Window

1. You come upon a DX station operating split by calling "CQ DX CQ DX de SP1LT listening down 500 hz pse." Here is a to follow his instructions.

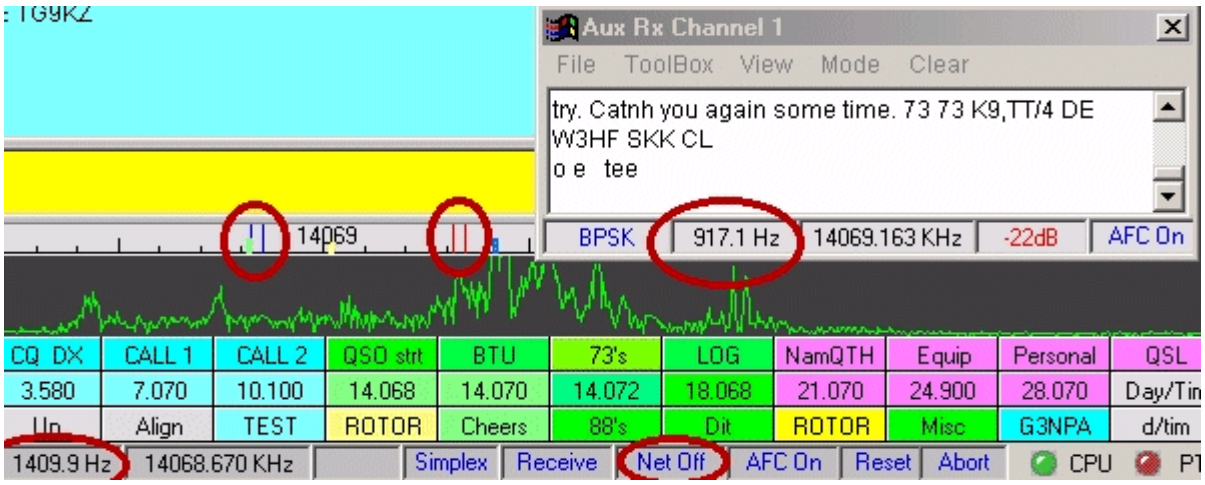
2. Turn **Net Off** (this is a crucial step). From now on your transmit frequency will **not** follow your receive frequency.

3. Open Aux 1 Rx window (blue passband).<> Look for activity down 500 Hz. (if he was calling on 1400 Hz. you should look down around 900 Hz).

4. If you see some activity close to 900 Hz., hold the Alt key and click on the signal in the display, to bring the Aux 1 Rx to that area (blue passband).

5. Click the Audio Frequency Pane (second pane from left) on the Aux 1 Window status bar. This moves the transmit to that frequency. When you transmit, your signal now will be at the blue passband and you are still listening to the station split under the red passband Main Rx Window.

You can use either Aux 1 or Aux 2 to set the transmit frequency when working split. Receive the station in the Main Receive Window. To reset the transmit frequency to the receive frequency simply click Reset on the Statusbar of the Main Receive Remember to turn Net on when you have finished working split.



Operating Split by Transmitting at the Main Window Passband Frequency and Receiving with an Aux Window

1. Turn Net On.

2. Receive the station you are trying to work with Aux 1 or Aux2.

3. Left-click the cursor where you want to transmit and the Main (red) passband indicator will go to that spot.

4. At this point, you will transmit where the red indicator (main passband) is, and you can receive in the Aux window.

Manual Split Operation

Manual split is straightforward. If your radio has two VFOs, just go to split operation with your radio and set the transmit VFO to

operate where you want. This is the same method you would use for SSB or CW split. Leave Net On in Logger32 and you will be shifted an amount exactly equal to the difference between your two VFOs.

Tuning Display and Controls

After adjusting the input volume to your sound card, see [{Link to topic Interfacing the Radio to a PC Sound Card:Interfacing the Radio to a PC Sound Card}], you are ready to set up your display. If the background of your screen becomes red, then the sound card is overdriving the computer. Readjust the soundcard input level.

Logger32 has two types of displays, the Waterfall and the Spectrum Display. To select which display you will use, click **Display** the Main Menu and select Waterfall or Spectrum. The frequency display (receive range) is as wide as the audio bandwidth of modern receivers. The receive and transmit frequencies are limited to the range 300 to 3000 Hz. due to the passband of most

However it is better to stay away from the edges, because transceivers may have some limitations, as well and some sound may be audio limited Remember, if you are in QSO at the edge of the receive range, you may be at or beyond the edge of transmit audio passband. It is best to KNOW your equipment! Power output may be lower at the edges of the receive range. is a special Logger32 feature called align, which allows you to realign your radio and Logger32 so you can transmit at the a audio frequency. Align requires that you have computer-radio communication.

In Waterfall mode, if the background turns red then the sound card input level is too high. In the Spectrum mode, the entire spectrum line will turn red in this situation.

There is a sensitivity control for the tuning display that controls how high the signals rise in the window. Click **Settings**, **Spectrum Sensitivity** and move the sliders to the right to increase sensitivity. The main and aux sensitivities can be adjusted separately.

Note: Logger32 starts with zero sensitivity for the tuning display. You must adjust the sensitivity upward to see any signals on tuning display.

Waterfall

With the Waterfall display, the PSK signal is displayed as the brightness of one horizontal line. The stronger the amplitude of the signal, the brighter the display. At time increments, each horizontal frequency sample line shifts down, and a new one is placed at the top. This effect looks like a waterfall.

- A PSK signal should produce a fairly narrow trail (often called a snail trail). The advantage of this display is that it gives a history, in time, of the received signal for the last few seconds. The disadvantage is that it is difficult to judge the signal strength. In order to tune a signal:

- Turn AFC on. An error or drift of only a few Hz. will stop decoding for PSK.

- Click on the PSK signal.

- The two red passband lines will reposition over the signal and text will print in the Rx window.

If the Main Tuning window is open you will see the following things:

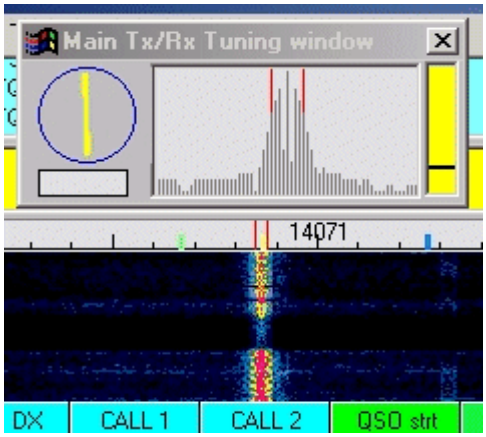
- A phase scope indication.

- Receive quality indication (squelch display).

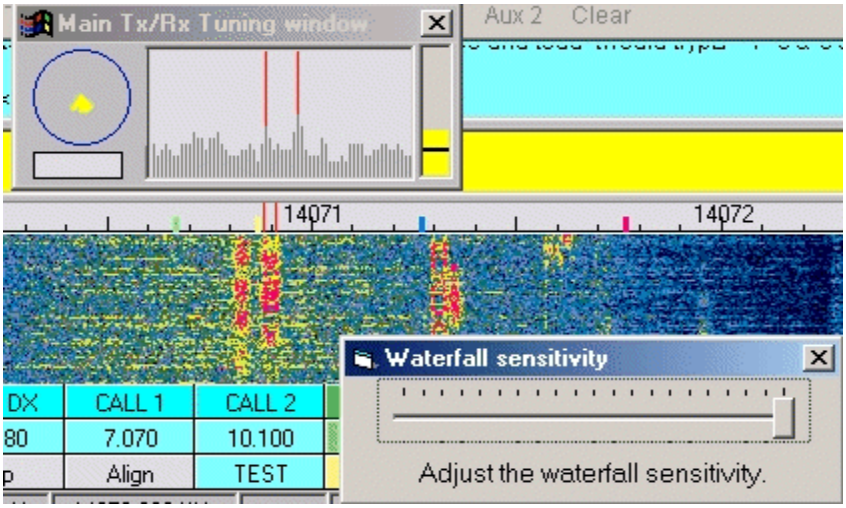
- PSK signal displayed on 250Hz frequency histogram display.

- MD reading (if station is sending an idle signal) on the StatusBar (fourth pane from the left).

If the squelch is open the text should start flowing across your Receive window.



A user-set Waterfall control can be found under the **Settings** drop-down menu on the Main Menu. It is called **Waterfall** and, when selected, opens a small window with a movable pointer that will either increase or decrease the sensitivity of the waterfall's brilliance. The two examples below show a Waterfall sensitivity of 100 and 26.



Spectrum Display

The Spectrum Display shows amplitude versus frequency. Actual signals that you will see depend on the audio bandwidth of the receiver. The display starts at 0 Hz. and goes to 4000 Hz. (receive range). The mouse cursor changes to a cross while in the display area. To tune in a signal:

- Turn on AFC
- Click on the PSK signal
- The two red passband lines will reposition over the signal.

If the Main Tuning window is open you will see the following displays:

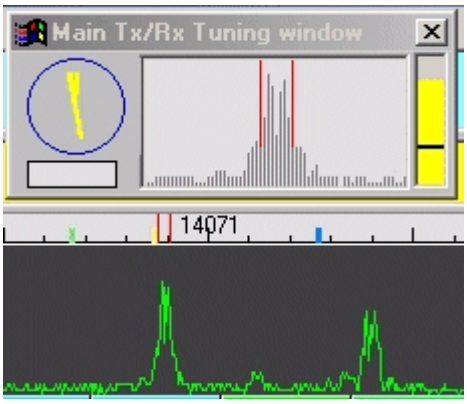
- Phase scope indication
- Receive quality indication
- PSK signal displayed on 250 Hz. display
- MD reading (if station sending an idle signal).

If the squelch is open the text should start flowing across your Receive window.

Here are the controls that are specific to the spectrum display on the **Settings** drop-down menu

Spectrum pen width controls the line thickness: 1 is narrow, 2 is wide.

Spectrum sensitivity adjusts the spectral sensitivity, from 1 to 50. This control does not change the strength of the signal coming into Logger32, just the display brightness.



Shared Controls for Both the Spectrum and Waterfall Displays

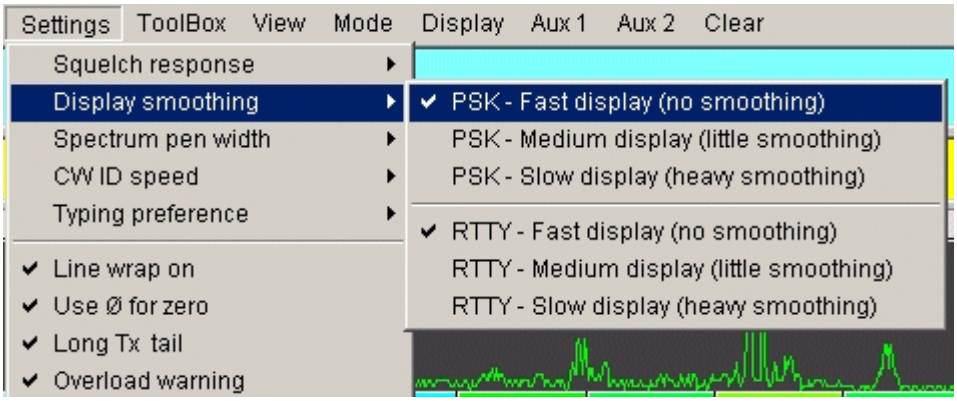
From the figure below you can see how to select Display smoothing. It is on the **Settings** menu. The smoothing (software manipulated) controls work for either display selected (Spectrum or Waterfall).

Fast Display (No Smoothing)

When using Fast display, the signals are displayed in real time, i.e., you see the noise spikes and the signals jump up and down in strength.

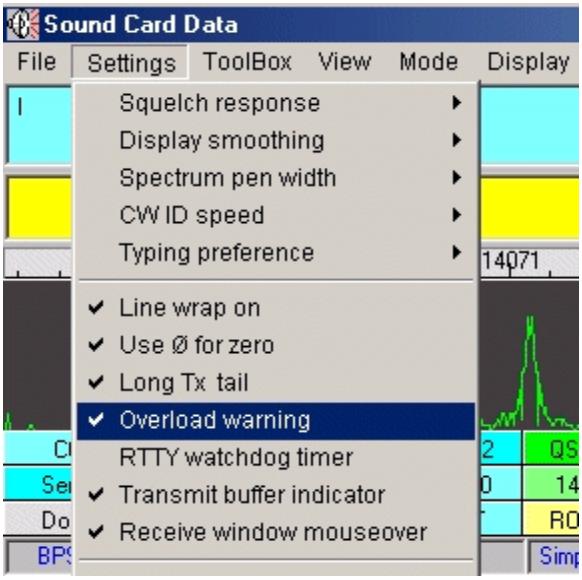
Medium and Slow Display (Little or Heavy Smoothing)

By selecting Medium or Slow display options, the displayed signals are averaged over a period of time. The effect of these is to reduce the noise spikes, lower the overall background noise, and prevent the signal from jumping up and down on the The effect of the smoothing is easily seen on the display. Smoothing has no effect on quality of the received signal.



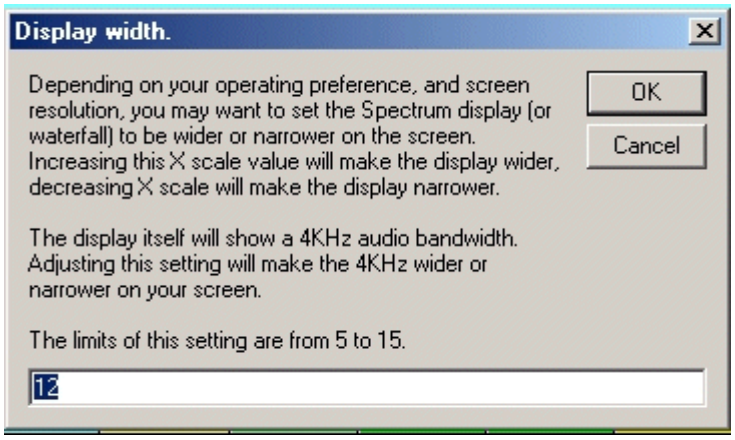
Red Alerts for Overdriven Sound Cards

If you check the option **Overload warning**, on the **Settings** drop-down menu you will activate an indicator which monitors your audio level input to the sound card. If your audio level is too high, it will cause either display, Waterfall or Spectrum, to turn red. your hardware is protected elsewhere, then leave the option off.



Display Width

A user-set Display control called **Spectrum Display Width** can be found under the **Settings** drop-down menu on the Main Menu. This allows you to shrink or expand the display view width. The following window is displayed for the user to adjust for personal operating preference.



Under **View** on the Main Menu you will find **Frequency display**. After selecting **Frequency display**, the user has the option to the display, Spectrum or Waterfall, scaled in **Display audio frequency**, or **Display frequency from radio**.

Display Using Preset Radio Frequency Reading

If you wish to use the display scaled in radio frequency instead of audio frequency, **but you are not using Radio Control**, do the following:

- Under **Settings** on the Main Menu, select **Preset Radio Frequencies**
- Set four preset frequencies and modes (USB or LSB). These are the frequencies to which you should adjust your when operating on that band. If you set 14070.00 USB, then set your VFO to that frequency and mode when you are meters. Now your VFO and Logger32's display scale will agree.
- Under **View** on the Main Menu, select **Frequency Display** and pick one of the Fixed Radio frequencies you entered in 2.

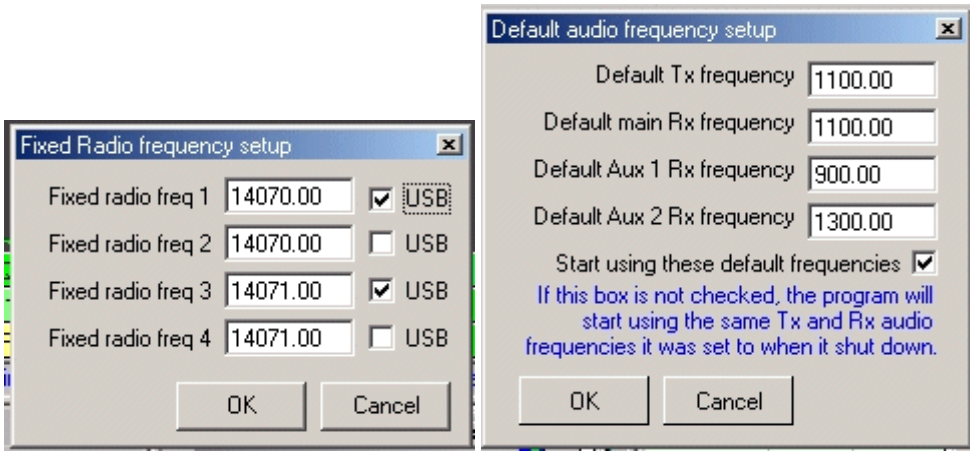
When you have done the above, the following macros will work properly and the radio frequency will be displayed on the third from the left on the Statusbar, even though the radio and computer are not in communication.

≠####$radioandtone$

≠####$radiofreq$

≠####$upperorlower$

≠####$rxtonefreq$



Display Using Preset Audio Frequency Reading

If you wish to use the display scaled in Audio Frequencies, go to **View**, **Frequency Display**, and select **Display Audio**

Display Using Radio Frequency From Your Radio

If you have radio-computer communication, you can configure Logger32 to display beginning at your radio's frequency.

Under **Settings** on the Main Menu select **Preset Radio Frequency**.

Select mode (USB or LSB). If your radio sends sideband information to Logger32,then this setting will be ignored.

Under **View** on the Main Menu select **Frequency Display**.

Select **Display Frequency From Radio**.

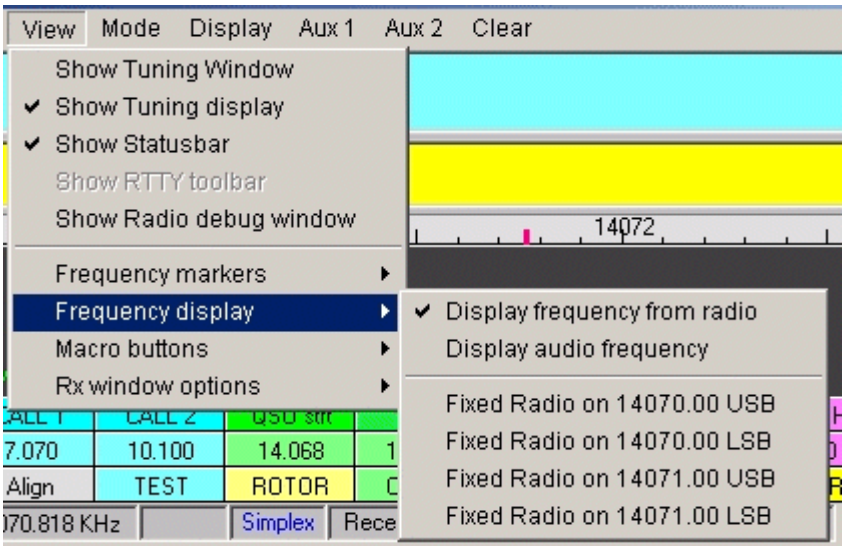
When you have completed the above, the following macros will work properly and the radio frequency will be displayed on the pane from the left on the Statusbar.

≠####$radioandtone$

≠####$radiofreq$

≠####$upperorlower$

≠####$rxtonefreq$



Logger32 can display a maximum of 4000 Hz. of receive bandwidth (receive range), however, it will only receive and transmit over 3000 Hz. bandwidth, from 0 Hz. to 3000 Hz. of audio.

Display Sensitivity

There are separate controls to adjust the sensitivity of the waterfall and spectrum displays. The waterfall gets brighter with increasing signal strength and the spectrum display gets higher. Go to **Settings** and choose **Waterfall Sensitivity** or **Spectrum Sensitivity**.

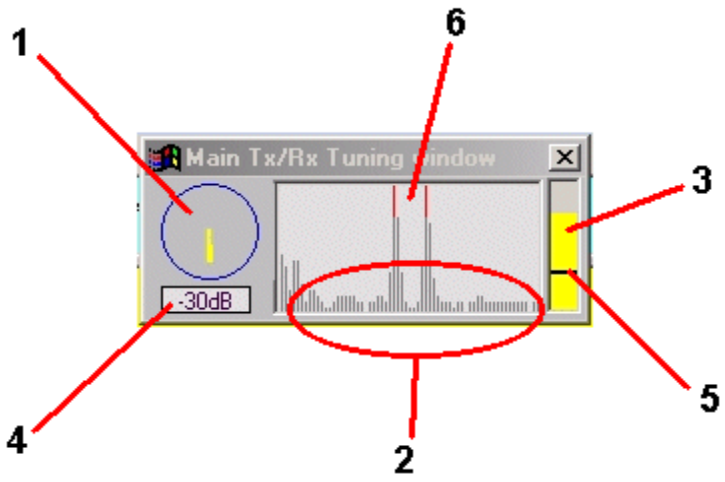
Individual Tuning windows

There are three such windows:

- Main Rx/Tx Tuning window
- Aux 1 Rx Tuning window
- Aux 2 Rx Tuning window

Each Tuning window includes the following tools.

1. Phase scope (mini vectorscope, aids in finding and tuning PSK31 signals)
2. Frequency histogram (graphical display 250Hz, wide centered on the main passband frequency
3. Receive quality meter (the higher the reading the better quality / reliable the signal is being received)
4. IMD display window (indication of distortion / unwanted harmonics).
5. Squelch adjustment bar (to tell the program at what squelch setting to start displaying received signals).
6. Passband indicators (red, blue or green bar that is fixed 31Hz. wide).



Adjusting Squelch

Signal clarity is shown by the height of the yellow squelch bar. The more letters Logger32 decodes successfully, the higher the yellow bar. When there is a lot of noise, and Logger32 is unsure of whether letters have been sent, the yellow bar drops. The higher the bar, the more correct text will be sent. You can set Logger32 not to display when the bar drops below a certain level. This gives you cleaner copy, but you may miss some information in the noise.

To adjust the squelch using this window, simply click below or above the indicator line in the yellow vertical quality display bar at right side of the display. For received text to be displayed in the Main Receive window, the yellow bar must be above the squelch line. In the above example, it is set at about 25 % setting, and the yellow bar indicating signal quality is about 75 percent of This station's IMD is down 20 dB and the squelch is open.

The bandwidth of each Tuning window is 250 Hz. and is not adjustable.

Rx Frequency Controls

Here are three ways to control your receive frequency:

1. Click somewhere in the Logger32 receive range.
2. Use the qsy macro.
3. Use the up or $down$ macros.

The actual Transmit /Receive frequency is your USB radio dial frequency setting plus the audio frequency displayed in Logger32. you were using LSB then you would subtract the Logger32 audio frequency reading from your radio's dial frequency. You can go **View**, **Frequency display** and choose whether you want Logger32 to display the audio frequency or preset radio frequency, or if you want Logger32 to read the transceiver using computer-radio communication to show you the actual frequency at which are received.

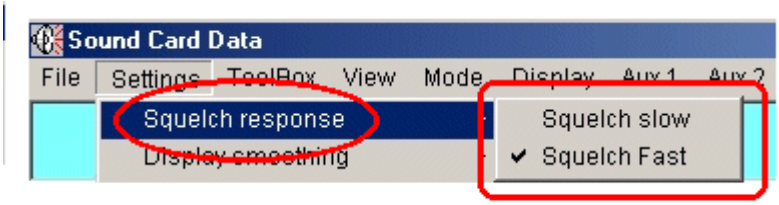
Note: Logger32 will display the offset for RIT for some radios but not for others. You should verify how this works with your own radio.

AFC Control

Turn on the AFC in the pane on the Statusbar at the bottom. The pane says AFC On or AFC Off. To receive PSK31, you will always need to turn AFC on, because an error of only a few Hz. will reduce copy to zero. By the time the frequency drift contributions of your receiver, the other station's transmitter, and your sound card are added together, it is best to use AFC to the signal.

Squelch Response Speed

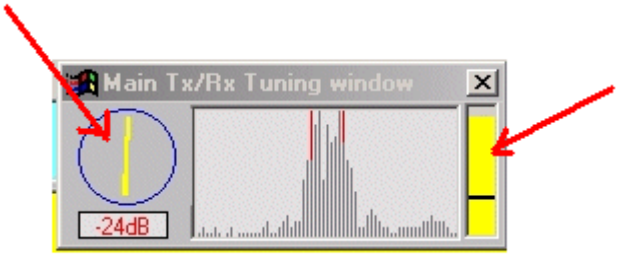
There are three squelch controls. One for the Main Receive window and one for each Aux Rx channel. The squelch threshold for each is user-adjustable. The **Settings**, **Squelch Response**, slow or fast, is used for the Main Receive window and the Aux Rx channels. It can only have one setting for all receive windows. Adjust the squelch using the yellow bar in the Tuning window, below or above the indicator line in the vertical yellow bar at the right side of the display. For received text to be displayed in or Aux window, the yellow bar must be above the squelch line.



Received Signal Quality

The squelch meter on the right hand side of the Tuning window is actually a measure of signal quality; it has nothing to do with Signal quality describes how readable is the signal. The scale is arbitrarily 0 to 100, where 0 means unreadable and 100 means perfectly readable.

The squelch value displayed is inversely proportional to the phase jitter on the phase scope. A good quality signal (see note will have very little jitter and the phase scope will be almost a steady vertical line as shown here.



The more the phase scope deviates from vertical, the lower the signal quality.

Note: A good quality signal is (by definition) a combination of many factors (including, but not limited to):

- Quality and linearity of original transmitted signal.
- Propagation path attenuation, distortion, etc.
- Receiver distortion, noise, linearity, etc.
- Interference.

Using Receiver Filters

Audio DSP

Logger32 uses audio DSP to select one signal from many that are in the receive range. If you set your receiver selectivity to wide, you can still copy a single signal, as long as no signal is very strong. However, DSP in Logger32 works only on the audio into the sound card so if the transceiver receive passband is wide, noise and interference come through. If some of the signals are very strong, they may affect the receiver AGC, which reduces the amplitude of a weaker signal that you are trying to copy.

Audio DSP in your radio will be of little benefit to Logger32. The narrower audio signal may sound nicer to you in the speaker, but you have not improved copy by using audio filtering or DSP. Logger32 (in either PSK31 or RTTY modes) already has about all audio DSP it needs.

Some radios use IF DSP, and which may provide the filtering you need to prevent distortion from occurring in the IF stage of the receiver (see the next section).

Transceiver IF Filtering

PSK31 is a narrow-signal mode, and the best results in terms of removing interference, and in terms of getting the best signal-to-noise ratio (S/N), come from setting the IF selectivity as narrow as the signal. For PSK31, this IF bandwidth is about 50 Hz. You may not have a filter this narrow, but you may have some filtering that you can bring into play. Normally, IF filtering is in play you select a narrow crystal or mechanical filter, when you use the passband or IF shift controls, when you use an IF notch filter, or when you implement IF DSP.

A Combined Approach

One tactic is to set your radio's selectivity to a wide setting while tuning the band, so you can see many signals. Once you have found a signal and you want to make a QSO, narrow your radio bandwidth. If your radio uses passband tuning (PBT), IF shift, or some other passband-modification scheme, you may be able to adjust it to reduce interference. With Logger32's spectrum you can see the effect of making filter and other IF changes at your radio. Sometimes, all the filters are not exactly centered at same frequency, and you may have to adjust the passband tuning control to ensure that you have the signal of interest in the passband. With the $hexcommand$ and $command$ macros, you may be able to set macro buttons that allow you to control bandwidth right from the Logger32 screen. See Direct Control of Radios.

It is also possible to use your radio's manual IF notch filter to remove interference. Again, you will see the effect of this filter by watching the waterfall display. If your radio has an effective manual notch filter, tune it slowly and you will see a line of black signal) move across the display. However, if this notch is an audio filter, the warning above about audio filtering applies. With an audio notch filter, any distortion caused by the interfering signal will already be present by the time you apply the audio notch filter remove it. An automatic notch filter will not work because it will remove the wanted signal along with the unwanted ones. The automatic filter cannot tell the difference between the signal you want and the signal you do not want.

S-Meter Readings

When you make a decision about receiver filtering, you may also want to consider the fact that your S-meter will show the signal strength of the many signals in the radio's passband. You may have poor copy of a weak signal using a wide passband, the S-meter may report a high value due to nearby signals. When you narrow the passband with IF filtering in your transceiver, also cause your transceiver S-meter to read the strength of the signal of interest.

Saving Received Text to a File

You can save a file for later reference (say a contest, where you may want to double-check callsigns), or to print all or part of it, using an editor such as Notepad or Wordpad. If you wish to save received text to a file (to hard drive or floppy), do the following:

1. Go the Main Menu and click on **File**
2. Select **Open receive text file**
3. Select a file or create one to receive the saved text
4. When saving is completed go to **File**
5. Select **Close receive text file**

There is no indication that the text is being saved to file, except as viewed in the **File** drop-down menu. The user should turn the **Open receive text file** off when the desired copy is complete by selecting **Close receive text file**. If this is not done the Main Receive Window will continue to save your text!

Evaluating the Other Guy's Signal

The presence of extra lines around someone's signal is a sign that he may be overmodulating. However, this is not a guarantee the other station is distorting, since a strong signal can cause very similar distortion to take place in your receiver, even from a signal. This is receiver overload. The surest way to determine whether the other station is or is not clean is to use the IMD indication in the fourth pane from the left in the Statusbar, also shown at the bottom left of the Rx Tuning window. It will turn green about -23 dB of intermodulation distortion (IMD), but there is little noticeable distortion at -20 dB.

If you see a strong signal that is generating extra bars on the display, but whose IMD is good, then the distortion is in your
You use your crystal filters and passband tuning to reduce the strength of the station by moving him out of the receiver's
Logger32's built-in DSP does a good job of copying through such distortion products, and if the strong station is the one you want
work, the DSP ignores the bars outside the main Rx passband lines.

Transmitting PSK31

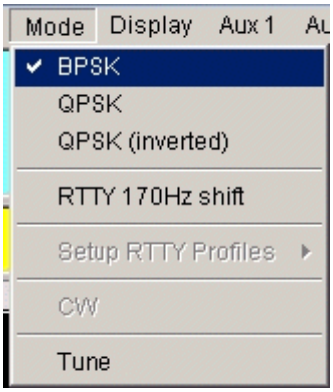
Randy Tipton, WA5UFH

Transmitting PSK31 signals involves several software options. Every operator is personally responsible for the quality of signal he she emits. For information on adjusting your transmitter and sound card see [{Link to topic Interfacing the Radio to a PC Sound Card:Interfacing the Radio to a PC Sound Card}]. This discussion covers the software options available to the Logger32 user for transmitting PSK31 signals, and makes suggestions on how to use them. The best way to get familiar with the transmitting is to read all the topics, and then, with the radio turned off, start playing with the options to become familiar with their operation.

Selecting an Operating Mode

The modes of operation are found in the Main Menu for **Mode**. Modes not yet available in your version will be gray in color. The mode that is selected will have a check mark, indicating it is selected. The leftmost pane of the statusbar also indicates mode, can be clicked to step through the modes. You can also use the following macro commands to change mode:

- ⁄####$rtty$
- ⁄####$rtty-i$
- ⁄####$bpsk$
- ⁄####$qpsk$
- ⁄####$qpsk-i$



The Tune Position

In Tune mode Logger32 will output a steady carrier when you transmit. To select Tune, first select **Mode** on the Main Menu and select Tune on the drop-down menu, or simply left-click the Mode pane on the status bar (first pane, it usually reads BPSK) until word Tune appears. When you are in tune mode, you can click on the Transmit/Receive pane (fifth pane) and you will have a steady carrier for tuning.

Tune can be used for the following operations:

- ⁄####Making adjustments to your sound card controls. (see Interfacing a Radio to the PC Sound Card), Self-test of Our Own Signal
- ⁄####Making adjustments to your radio
- ⁄####Checking SWR.

Note: When making adjustments, pick a clear frequency or use a dummy load. PSK is a weak signal mode, and users are encouraged to run barefoot. Reasonable output power for this mode is between 10 and 40 watts. After completing your adjustments in Tune mode, remember to change back to a regular operating mode (probably BPSK).

Tx (Transmit) Window

The Tx window serves as an area to view text that is to be transmitted, The Tx window also allows the user to type what he or she wants to send while they are still in the receive mode. This is referred to as a type-ahead buffer. The text is transmitted in the it is displayed in the window. This is also true for macro keys; if you have text in the buffer and press a macro key, the macro will take effect after the text already in the buffer is sent. The **Clear Tx** and Abort functions operate immediately, without waiting for text to be sent.

The following are user-selected options for the Tx Window (transmit window) in the **Toolbox** menu:

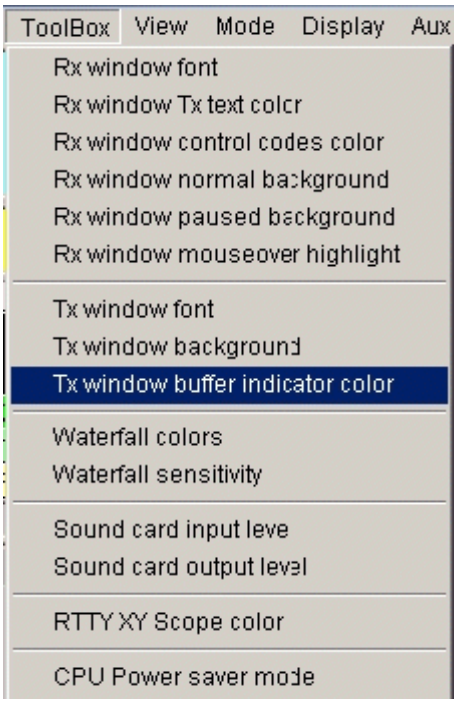
- **Tx Window font** - sets font, size and font style.

- **Tx Window background** - sets background color.

- **Tx Window buffer indicator color** - sets the color that text will change when it is transmitted.

There is an associated option in the **Settings** menu:

- **Transmit buffer indicator** - sets transmit-buffer text to change color as it is transmitted, so the operator can see what is left send.

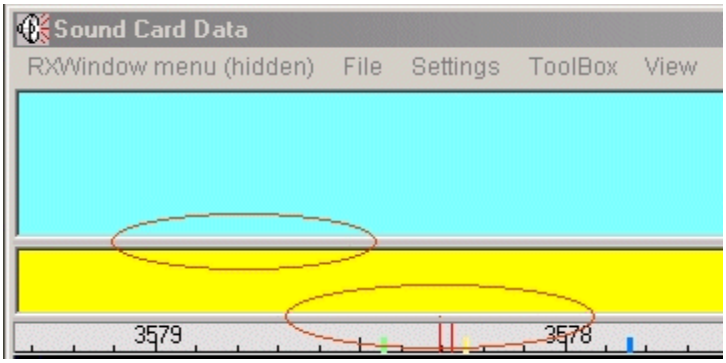


The Tx Window will have a scrollbar on the right-hand side when the window becomes full of text. It fills from top to bottom. When the Tx window is full, text scrolls off the top, out of the user's view. The user can view this text again by using the scroll-down bar the right side of the window. Transmit text is buffer-size limited.

Transmitted text is echoed in the receive window. This allows the user to see what text has been transmitted, and to monitor the other station's transmission and his or her own transmissions, in context. You can change the color of the echoed text by using **Toolbox**, **Rx Window Tx Text Color**. In this way, you can use color to distinguish between received and text.

When the Tx window is empty and Logger32 is still in transmit, an idle signal is transmitted. If you are asking another station for IMD report, you should send five seconds of PSK idle.

The Tx Window can be resized using the Splitter Bar. Use the mouse and move the cursor over the splitter bar slowly until the pointer changes to the splitter identifier (up/down arrow) and left-click the mouse and drag the Tx Window up or down to the width.



Methods to Enter Text in the Tx Window

- User types text here using the keyboard
- User pastes text from Logger32 or another application using standard Windows copy/cut and paste (mouse right-click or Ctrl-C/Ctrl-V).
- User invokes text by with buttons and hot keys (see MACROs, Hot Keys and Programmable Buttons).
- User calls up a text file on a floppy or hard drive, using **File**, **Send a text file** on the Main Menu.

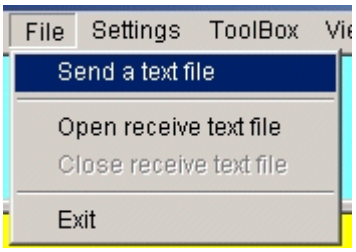
Methods to Correct Text in the Tx Window

- If incorrect letters **have not been transmitted**, backspace to erase, then correct the letters. Transmitted text will come as corrected.
- If incorrect letters **have been sent**, the receiving station will see the incorrect text, then he will see the letters erased and replaced by whatever you type after erasing
- If a buffer (e.g., a macro or typing ahead) has incorrect text, **if you are fast enough**, you can backspace and erase the wrong text is transmitted
- A correction can only be made to the last letter in the Tx buffer. It is not possible to use the back arrow to correct text in middle of the buffer. You must erase backwards from the last letter in the Tx buffer to the error
- Left-click **Abort** (pane 7) to clear all text in the Tx buffer and return to receive. This is the panic button, in case your radio starts to smoke during a transmission
- Left-click **Clear** on the top menu and select Tx buffer.

To Call Up a Text File From a Floppy or Hard Drive

1. Click **File** on the Main Menu
2. On the drop-down menu select **Send a text file**
3. Select the prepared file using the **Windows Open** dialog that appears
4. When opened, the file is entered as text in the Window

This option can be used for a Brag File, etc.



To Clear All the Text in the Tx Window:

1. Click on **Clear** (on the Toolbar)
2. From the drop-down menu select **Clear Tx**

It is also possible to use the $clearbuffers$ and $cleartxbuffer$ macros.

Note: The Tx Window and Tx buffer are cleared, but you will not switch to receive.

To Abort All Text and Switch the Program to the Receive Mode single click on the Abort pane on the Statusbar

This could be considered an 'Emergency Kill.'

Transmitting Upper and Lower Case

PSK can transmit all the letters on a computer keyboard, both upper (capital letters) and lower case, and the special characters. You can force Logger32 to transmit only upper or only lower case letters by clicking **Settings**, **Typing Preference**, and making a selection.

The standard is to type as usual, using upper and lower case. With PSK31, uppercase letters are longer than lower case letters, and if you select "uppercase only" your transmissions will be slower.

Changing the Transmit/Receive Status of the Radio

To see how to interface the rig with the computer for controlling the switching from Receive to Transmit see Interfacing a Radio to the PC Sound Card

Methods of Switching from Receive to Transmit

- Click on the 6th pane from the left on the Statusbar. Pane text will change from Receive (blue) to Transmit (red)
- Use the $transmit$ macro invoked either by Buttons or Hot Keys. See MACROs, Hot Keys and Programmable Buttons.
- Press the Pause/Break key.

Methods of Switching from Transmit to Receive:

- Click on the 6th pane from the left on the Statusbar. Logger32 will type all the text in the Tx buffer and then go to The transmit/receive pane will change from Transmit (red) to Receive (blue) when all the text is sent

- Press the Pause/Break key. This is the same as clicking transmit/receive

- Click on Abort (9th pane from the left) on the Statusbar. Logger32 will clear the Tx buffer immediately and go to receive

- Press the <Esc> key. This is the same as clicking Abort<>Use the $receive$ macro invoked either by buttons or hot See MACROs, Hot Keys and Programmable Buttons.

Select the Transmit Frequency

There is no place to enter your frequency Hz within the sound card window. Frequency selection is accomplished by clicking in Display Window, by tuning your radio, or by using the QSY and QSX macros. You probably know how to tune your radio, so we'll just tell you about Logger32 here:

1. If you're going to transmit (call CQ, Tune) click inside the display area in an open area not presently being used by another station and observe the frequency readout on the 2nd pane of the Statusbar

2. If you're going to be answering another station, click inside the display area on top of the other station's received signal. frequency will be displayed on the 2nd pane of the Statusbar.

The picture below of the display window indicates the following:

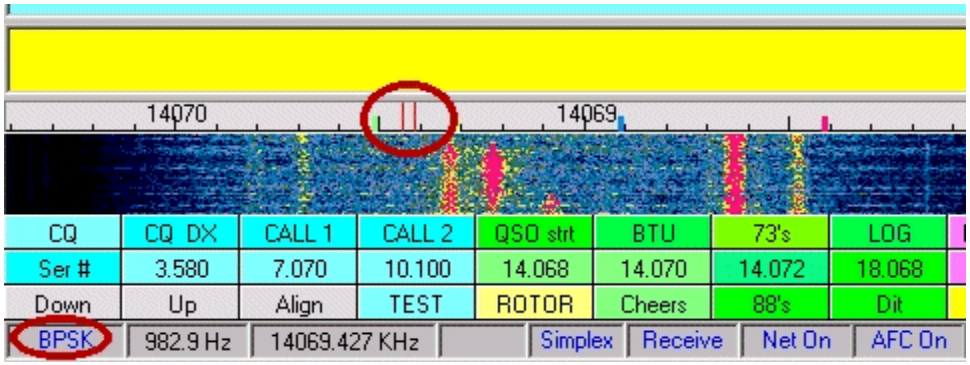
- The display shows the audio frequency

- The user has clicked in the display to a clear part of the spectrum at an audio frequency of 991.9 Hz. to transmit or listen

- The mode is BPSK

- The Net feature is turned on. (Transmit frequency = Receive frequency)

- The radio is in receive mode.



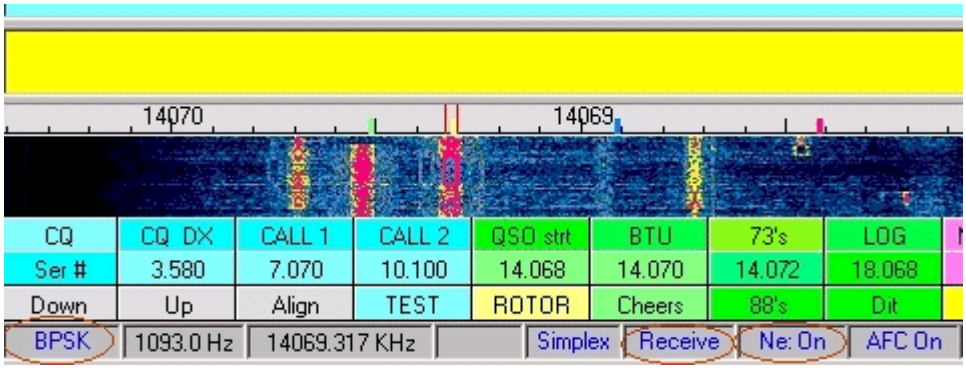
The picture below of the display indicates the following:

- The user has left-clicked on the PSK signal in the display, and the main red passband marker is now centered over that signal

- The mode is BPSK

- The net feature is turned on. (Transmit frequency = Receive frequency)

- The radio is in receive mode.



Net Function

It is possible to work split-frequency by using different audio tones for transmit and receive. Net is turned off and the transmit frequency is set separately. For information on this process see Operating Split Frequency.

Net On forces Logger32 to transmit on the current receive frequency selected in the Display, and shown on the Statusbar pane. The advantage of having Net turned on is, it reduces the bandwidth used by the two stations because stay on one If neither station uses the Net function it is like operating split frequency, which uses more spectrum. If both stations use Net it still possible for both stations to drift. If this happens, one station should change his/her Net status (if off turn it on, if on turn it In this way, one station will track the other station's frequency.

The Net function has two positions, either off or on. Click on the 6th pane on the Statusbar to toggle between these positions. pane will change from Net On to Net Off).

If you turn Net off, you will transmit at the last-used Tx audio frequency**.** The transmit waterfall display will be at the audio at which you are transmitting. If you have made a mistake, you can abort your transmission and turn Net on, or, if you decide to where you are, you can left-click on your own transmit waterfall during **while you are transmitting**, and your receive passband window will move to your transmit frequency, so you can copy someone who calls you zero-beat.

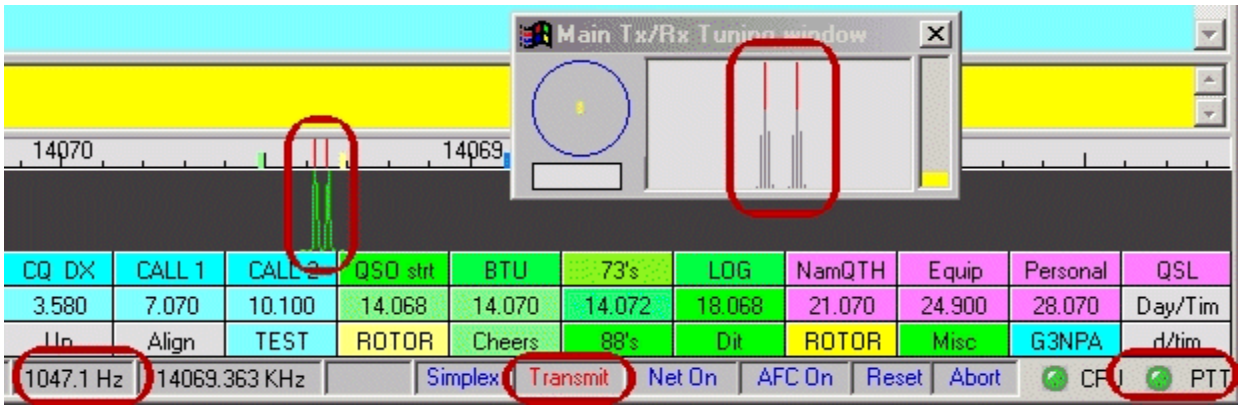
Note: The displayed PSK31 Signal on the display and Tuning windows is software generated and is not a true representation of your actual transmitted signal.

PSK31 NET Rule of Thumb: The station that is initiating a contact or calling CQ should leave the Net function off, thus setting the master frequency, and let the called station track the master frequency. This prevents "walking" up or down the band if one is always a little off frequency.

Indications That You Are Transmitting PSK31

There are a number of ways to know that Logger32 is transmitting:

- The 6th pane on the Statusbar indicates Transmit
- The PTT light is green
- The display shows only the PSK31 signal at your transmit frequency
- The Main Rx/Tx Tuning window indicates the PSK31 signal
- Transmitted text is echoed in the Rx window.



The above picture of the display panel indicates the station is transmitting on 1556.0 Hz.

Macro Control of Transmit Frequency

The topic on Macros describes the QSX and QSY macros. There is a full description of how to use QSX for split operation in the Secion MACROs, Hot Keys and Programmable Buttons. These macros require computer-radio communication.

Tx/Rx Tuning window

When Logger32 transmits, there will be a histogram display in the small Tx/Rx Tuning window. This display represents the audio that is being sent from the sound card to the radio. **The Tx/Rx Tuning window is not a display of your radio's actual output.**

How Do I Transmit a CWID?

If you wish to send a CW identification at the end of your text you can use the CW macros. To change the CW speed in words per minute go to **Settings** (Main Menu) and select **CW ID Speed** on the drop-down menu.

[{Picture txpsk10.bmp}]

Considerations When Transmitting at Display Frequency Extremes

The maximum displayed bandwidth in Logger32 is 4000 Hz. You can transmit up to 3000 Hz. from the frequency at which your transceiver is set, since Logger32 can set a tone up to an audio frequency of 3000 Hz.

There are two considerations to keep in mind when you click on a signal to call a station, and thereby select a transmit audio frequency.

Rolloff Consideration

Since you are using AFSK in the SSB mode of your transceiver, you should remember that the transmit audio rolls off below 300 and above 3000 Hz. Those are just ballpark numbers, and some transceivers have a low-end rolloff above 300 Hz. and some a high-end rolloff lower than 3000 Hz. This means that your signal will be attenuated when you are near those limits. If you output power meter the display will show that you are running lower power, for the same transceiver microphone gain setting, you transmit very high or very low tones. You should be especially careful that you do not set your transmit audio mic gain with very high or low tone and then operate in the middle, because you may be overdriving in the middle, since the gain is higher.

Harmonic Consideration

If you do happen to overdrive, one type of distortion you will generate is harmonics. If you transmit a tone at 600 Hz, then you can also transmit a harmonic at 1200 Hz., 1800 Hz., 2400 Hz., and 3000 Hz. Above that, your transmitter audio rolls off and your harmonics will be attenuated. However, if you were to choose a transmit audio frequency of 2000 Hz. or above, and overdrive the audio, your first harmonic, 4000 Hz., is already well into the rolloff region of your transceiver transmit audio stage, and it will be attenuated, along with the higher harmonics. Clearly, you are safer operating at a tone above 2000 Hz. For more on this topic, Transmitting a Clean Signal.

The feature that allows you to transceive on your default Rx frequency can make it easier to transmit high tones even though you initially receive a station at a low frequency in your receive range. Invoke this align function with a right-click of the mouse. Align

requires that you have computer control over your radio's frequency.

Communitcating with RTTY

William R. Turner, W7TI

RTTY is a fun and easy mode to operate, but there are a few things which may be puzzling to the newcomer. Please take a few minutes to read the following and you will probably save yourself some time and frustration, as well as becoming more knowledgeable about the basics of RTTY.

Mark and Space

An RTTY transmitter sends out a continuous carrier which shifts the frequency back and forth between two distinct frequencies. There is no amplitude modulation, only a pure carrier similar to CW with the addition of a frequency shift. The lower RF frequency known as the SPACE frequency and the upper RF frequency is known as the MARK frequency. The difference between the two known as the SHIFT. For amateur radio, the SHIFT has been standardized at 170 Hz. It is customary to refer to the MARK frequency as the frequency on which you are operating. For example, if you say you are transmitting on 14080.00 kHz, that your MARK frequency is 14080.00 kHz and your SPACE frequency is 170 Hz lower, or 14079.83 kHz.

FSK and AFSK

You will often hear the terms FSK and AFSK when talking about RTTY. FSK means Frequency Shift Keying and AFSK means Audio Frequency Shift Keying. Here is an important point: regardless of which method is used, the RF signal sent out over the air identical. MARK is always the higher RF frequency and SPACE is always the lower RF frequency. The station receiving the signal cannot tell any difference at all. So what is the difference? The difference is the way your transmitter generates the RF signal.

With FSK, your transmitter receives a simple on-off signal which causes the carrier frequency to shift back and forth. Since you be using MMTTY, the on-off signal will come from a COM port on your computer. Other stations which do not have a sound card program like MMTTY would use a separate box called a TNC (Terminal Node Controller). The TNC does the same job that does with your sound card. FSK is simpler, easier and more foolproof than AFSK and is highly recommended if your transmitter supports FSK input. Check your owner's manual if you're not sure.

Since not all transmitters support FSK input, there is another method available with MMTTY. You guessed it - AFSK. AFSK can used with any SSB transmitter. AFSK is a bit trickier to set up and use, but when it is done correctly, it works just as well as FSK and will transmit a perfect RTTY signal. Also, AFSK can do some things FSK can not, such as Automatic Frequency Control of the transmitter.

To operate with AFSK, you put your transmitter in the SSB mode instead of FSK mode, and you put an audio signal into the microphone input (some transceivers have a rear connector for data input). When you transmit, MMTTY causes your sound card put out a pair of audio tones which cause your transmitter to send the required RF output. Sounds simple, right? Here's the tricky part --- the tones are two sine waves - nothing fancy - but the frequency and amplitude of the tones is critical. Let's say you want transmit on 14080 kHz, as in the previous example. Remember, your MARK signal has to be on 14080 kHz. Here's how you get there with AFSK. With your transmitter in the LSB mode (Lower Side Band), whatever frequency goes into the microphone input be subtracted from what your dial says and be transmitted on that frequency. For example, if your dial says 14080 kHz. and you in a 1000 Hz. audio tone, your transmitter will put out an RF signal at 14079 kHz., exactly 1000 Hz. lower than your dial. In this case, if the 1000 Hz. represented your MARK signal, you would have to set your transmitter to 14081 on the dial, and your MARK signal would be transmitted on 14080, just as you wanted. OK so far? Now, what about SPACE? Remember, you want your SPACE signal to be transmitted 170 Hz. lower, on 14079.83 kHz. What audio tone will give you 14079.83? Simple - 14081 minus 14079.83, or 1170 Hz. So the MARK audio frequency is 1000 Hz. and SPACE is 1170 Hz.

There you have the basics of AFSK. MMTTY generates the two audio frequencies and your transmitter converts them to two RF frequencies. For technical reasons related to harmonic generation, audio frequencies of 1000 Hz. and 1170 Hz. are NOT recommended. They are used in this example just to keep the math simple. The recommended audio frequencies are 2125 Hz. the MARK audio frequency and 2295 Hz. for the SPACE audio frequency. Making the frequencies higher like this will reduce any second harmonics which might be generated in your transmitter.

If you've been paying close attention, you may have noticed the SPACE audio frequency is higher than the MARK audio just the opposite of the RF frequency you actually transmit. This happens because you're using lower sideband. If you happen to forget and set your transmitter to USB instead of LSB, two things will happen. Because your MARK and SPACE are now

in your receiver, any RTTY signals you hear will not print correctly. All you will see is random characters that make no sense at The other thing is that YOUR transmissions will also be nonsense to the other guy. Just remember - always use LSB. In the real world of course, sometimes USB gets selected accidentally. This is why MMTTY has a button marked REV. When you have a station tuned correctly but all you see is nonsense printing, click on REV and your transceiver will be reversed. Now you can print the other fellow and tell him he is "upside down", as it's commonly called. After he reverses himself, just click REV again and you will both be back to normal.

Note: By default when using AFSK, REV reverses both your receiver and transmitter. If you want REV to reverse only your receiver, go to Option/Setup MMTTY, click the TX tab and click "Disable REV". When using FSK, REV reverses only your If you want to reverse your transmitter and receiver with FSK, your transceiver should have a way of doing that. See your manual.

Also, you should know that in some parts of the world, especially Europe, the standard is to use USB instead of LSB. This works fine as long as you also reverse the MARK audio frequency and the SPACE audio frequency. MMTTY defaults to LSB, and it is recommended to leave it there, even in Europe, since your signal will be identical. If you prefer to use USB, leave REV on all the time.

The really critical part about AFSK is the amplitude of the signal fed into the microphone connector (or rear panel connector), together with the microphone gain setting. You must NOT overdrive your transmitter or spurious signals will be transmitted. In general, keep the audio drive low enough that your transmitter does not generate any ALC voltage. Never try to drive your transmitter to maximum output. Around 80 to 90 percent of maximum is about right. Consult your owner's manual for more information on how to do this. If you ever hear a station at two or more frequencies at the same time, the cause is almost always overdrive. None of this applies to FSK, of course. With FSK, you can run full power and not worry about overdrive.

Figures Shift and Letters Shift

RTTY uses the Baudot code, invented before radio even existed, and still widely used throughout the world. The Baudot code data bits to represent letters, numbers and punctuation, much like your computer does. Unlike your computer, which uses eight for each character, the Baudot code uses only five, plus a start bit and stop bit. Using fewer bits is good because it speeds up transmission and reduces the chance of errors, but there is a complication. Five data bits can only represent 32 different characters. Since there are 26 letters in the English alphabet plus ten numbers, plus some punctuation, 32 different characters is not enough, even if you only use capital letters, which Baudot does.

Mr. Baudot could have chosen to use six data bits or even more, but he found a better solution. He reasoned that most of what would be sent would be letters rather than numbers or punctuation, so he assigned all the letters to the basic 32. He then had six characters left over and he did a very clever thing with two of them. He made one of them a FIGURES SHIFT and another a LETTERS SHIFT. The way it works is this: when sending one of the basic 32 characters, nothing special happens. But when a number or punctuation is to be sent, a FIGURES SHIFT character is sent first (it's a non-printing character - you won't see it on screen). Whatever follows will still be one of the basic 32 characters, but the receiver will interpret it differently. For example the letter Q uses the same five data bits as the number 1, but when the receiver gets a FIGURES SHIFT first, it prints the next as a 1, not a Q. This continues until a LETTERS SHIFT character is received, at which time the receiver goes back to "normal" printing. All of this shifting is done by the system - there is no key marked LETTERS SHIFT or FIGURES SHIFT. It's all automatic and you will scarcely notice it happening.

In fact, the only reason to mention it at all is because we are using radio instead of wires, and radio is susceptible to interference from various sources such as lightning static, man-made noise, etc. If a burst of static should happen to wipe out a LETTERS SHIFT or FIGURES SHIFT character, the characters following will not print correctly until another LETTERS SHIFT or FIGURES SHIFT is received. For example, suppose you are sending a signal report of 599, but the FIGURES SHIFT character gets wiped by a burst of static. Instead of printing 599, the other fellow's computer will print TOO. TOO is exactly the same as 599, without FIGURES SHIFT. So how can he read what you intended to send? It's easy if he knows the secret. Here it is, look at the top row letter keys on your keyboard - QWERTYUIOP. Now look just above each key and to the left. Each of those number keys is the same as the letter key below and to the right, plus the FIGURES SHIFT. In our example, TOO = 599. Likewise, the word PIPE, if the LETTERS SHIFT were missed, would print as 0803. If 0803 lost its FIGURES SHIFT, it would print as PIPE.

Bandwidth and Filters

When the bands are nearly empty, you can use practically any receiver bandwidth with good success. Your SSB filters are between 2.1 and 3.0 kHz. wide and as long as no other stations are nearby, copy will be fine. For optimum performance however, less bandwidth is better, in fact MUCH better. 170 Hz. shift RTTY only needs about 250 Hz. for proper copy. If you don't have a Hz. filter, 500 Hz. will do pretty well, but anything wider than that will not be satisfactory in the long run.

You may wonder why, if the shift is 170 Hz., do you need a 250 Hz. filter? Why not 170? The reason is that shifting the frequency generates sidebands adjacent to the actual signal and if the sidebands are attenuated, the signal will be degraded. RTTY is

a form of FM, and if you'd like to understand more FM theory, there are a large number of books available. For amateurs, the Handbook is a good source.

Depending on your transceiver, you may or may not be able to use a narrow filter for RTTY. Some of the less expensive transceivers do not have an FSK mode, and also are unable to select a narrow filter while in the LSB mode. Some improvement be made by using an outboard audio filter between the speaker output and the sound card input, but unfortunately, that will not prevent a strong adjacent signal from causing the receiver's AGC circuit to reduce gain, often to the point where the desired signal disappears. The best solution is to upgrade to a transceiver which has an FSK mode built in, AND which allows you to select a narrow filter while in that mode.

Band Plans

It's easy to remember the band plans for RTTY. Most activity will be found between 80 and 100 kHz. up from the bottom edge of band, except for 80 meters which goes an additional 40 or 50 kHz. higher, and 160 meters. 160 meter RTTY activity is rare, but when found, it is usually between 1800 and 1820. Avoid the CW DX window between 1830 - 1840. At present, there is not much activity on the WARC bands, although 30 meters can be active at times.

Here is where you will find most of the RTTY activity:

80 meters: 3580 - 3650 (3520 - 3525 in Japan)

40 meters: 7080 - 7100 in the US (see note below)

30 meters: 10110 to top of band

20 meters: 14080 - 14099 (avoid the beacons at 14100)

15 meters: 21080 - 21100

10 meters: 28080 - 28100

RTTY allocations for 40 meters vary greatly all over the world. In the US, RTTY is permitted between 7000 and 7150, although US activity is between 7080 and 7100. DX activity is often found between 7020 and 7040.

For US operators, remember that RTTY is not allowed in the phone portions of the HF bands except on 160 meters, where it is anywhere in the band.

RTTY DX

Chasing DX on RTTY is highly popular with the RTTY crowd. As you might guess, 20 meters is the premier DX band for RTTY, most rare DX stations and especially DXpeditions operate on 14080. Just like with CW or phone, if the DX is calling CQ and no answers, you can feel safe in calling him right on his frequency. If things are busy however, he will often work split, which you should call him on a different frequency, usually 2-10 kHz. higher. He will say "up 2-10" or something similar at the end of his transmission, and that's your clue. Your transceiver owner's manual will explain how to do "split".

RTTY Contests

RTTY contesting is a passion with a lot of operators. There are about a dozen major RTTY contests each year and when they are on, the bands will be full! Even if you don't care to compete, it's a great way to pick up new states or countries. Many of the rare stations are serious contest operators. A list of RTTY contest times and rules can be found on the web at:

http://home.online.no/~janalme/RTTY.html

or

http://www.sk3bg.se/contest/

Contesters are in a hurry, of course, so please don't send your name, QTH or anything except what is required by the contest. Plenty of time for chatting after it's over.

If you get serious about RTTY contesting, you will probably want to get a program designed specifically for it. In the meantime, MMTTY will let you try it out and see how you like it.

Your First RTTY QSO

Ok, you've learned a bunch of stuff and you're ready to get on the air! For your first time on RTTY, try the 20 meter band. 20 has the lion's share of RTTY activity and you can usually find someone, day or night. Try calling CQ between 14080 and 14087 kHz. typical RTTY CQ would go like this: CQ CQ CQ CQ CQ CQ DE W7TI W7TI W7TI PSE K Practically all RTTYers add the "PSE" the end. Kind of a friendly touch. Some will add their name and QTH, some will add the time and date. You'll find a lot of variety and it's all ok - just get on the air and try it out!

If you're familiar with CW procedures, you'll be right at home with RTTY. RTTYers use most of the Q-signals, as well as DE, K, and all the rest. And if you accidentally find yourself "upside down", don't get embarrassed - we've all done it! RTTYers are some the nicest people you'll ever meet, and things like jamming and profanity are almost unheard of.

RTTY Forever

In spite of the newer digital modes like PSK, Pactor, G-Tor and others, RTTY remains the favorite of contesters and DXers alike. RTTY does not use error correction, handshaking, or synchronizing, all of which slow things down. When quick back-and-forth exchanges are important, RTTY is the mode of choice. Roundtable discussions and nets which would be difficult or slow with modes are a natural for RTTY, and RTTY is likely to be around for a long time to come.

So there you have most of what you need to know to become a proficient RTTY operator.

Welcome to RTTY!

Bill, W7TI

Receiving RTTY

Andy O'Brien, KB2EOQ

This topic will help you to receive RTTY signals when using Logger32 . It is NOT a technical guide. For detailed information, see [{Inner Link RTTY Basics, Sound Card Data WIndow:RTTY Basics}] elsewhere in this document.

Getting Your Radio Ready

To receive RTTY signals one first has to find RTTY signals on the air. RTTY signals are not as prevalent as PSK31 signals these days, but you should be able to find them at: 7070-7085 kHz. ,14080-14095 kHz., 21080 to 21095 kHz., and 28080-28110 kHz. best chance may be the 20 meter frequencies.

RTTY usually is received and transmitted using the lower sideband (LSB). Put your transceiver in LSB and tune to one of the desired frequency ranges. If you are lucky, you should be able to find the quite distinguishable trill, chirpy, RTTY tones. RTTY warbles, while PSK drones.

Getting Logger32 Ready

- First, copy MMTTY.EXE (version 1.59D2 or above) into the same directory as Logger32. Logger32 will not be able to operate RTTY without this file

- Next, place Logger32 in RTTY mode. Either click and rotate through the mode options in the lower left corner of your Logger32 screen (figure 1) or click on MODE at the tope of your screen and choose RTTY from the drop-down menu (figure 2).

Figure 1. RTTY selected by clicking until RTTY appears in the left pane of the statusbar.

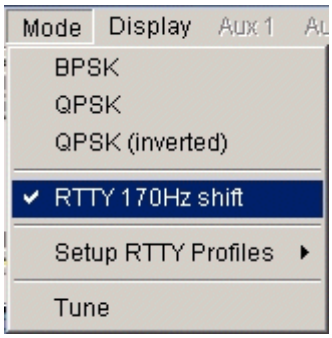


Figure 2. RTTY selected from the drop-down menu.

The RTTY logo will appear on your Windows task bar, usually at the bottom of your screen. (Figure 3)

Figure 3. RTTY Mode selected and RTTY Engine activated.

Okay, I'm All Set. Bring On the RTTY!

With your radio ready and Logger32 correctly configured, you are a mouse click away from receiving RTTY. To make tuning set AFC on by clicking the AFC button on the RTTY toolbar or on the Statusbar at the bottom until it says AFC On. AFC will automatically fine tune and will compensate for drift.

Tune the radio until you hear a RTTY signal and look at your waterfall. As you tune the dial you will see the RTTY signal moving or right. Tune so that the RTTY signal is completely in your waterfall display (Logger32 has lots of features that make this easier we will save that for later). With the RTTY signal close to the center of the waterfall you should see the following:

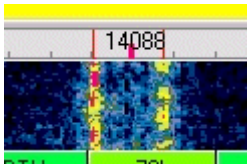


Figure 4. RTTY signal's two vertical lines.

Left-click in the center of the signal (between the two vertical lines) and you should see copy printed on your screen. That's it. much to it. If you have received PSK31 before, it is simple for you. If you do not copy successfully, here are some points to consider:

- Under weak signal conditions, RTTY is a little less robust than PSK31 or MFSK16, so if you see garbled characters on screen it could be the result of a weak or noisy signal

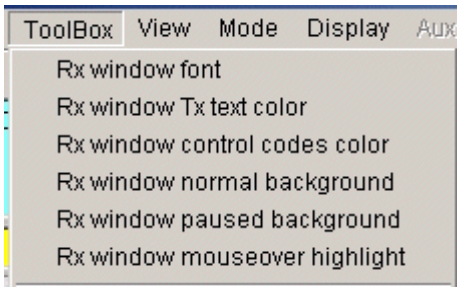
- If nothing prints, you may not be using the same "sense" as the received signal, i.e., you are on the opposite sideband. the RTTY toolbar (above the Rx screen) button that says **Normal** and it will become **Reverse**. This reverses the "sense" (whether mark is the high or low tone) of the signal, and allows you to copy as if you had switched sidebands your radio. This button will also change the "sense" of your transmitted signal, so you can work the other station this

MMTTY, the RTTY engine within Logger32, has numerous advanced features for selecting filters that improve weak signal performance. See the MMTTY help files for details.

Toolbox Dropdown Menu

Note: The **Toolbox** menu works the same as it does when you receive PSK31. The information from that topic is copied here.

The following are user-selected options for the Rx window.



Rx Window Colors

As seen on the above drop-down **Toolbox** menu, we find the following user options:

1. Rx window font - sets print style and text color.

2. Rx window Tx text color - sets color for echoed text. Echoed text is enabled/disabled with the **View, Rx Window Options** menu.

3. Rx window control codes color. Control codes are enabled/disabled with the **View, Show Control Codes** menu item.

4. Rx window normal background.

5. Rx window paused background - sets the background color when all Rx windows are paused with the <Insert> key.

6. Rx window mouseover highlight - sets color for text change when you put the mouse on it. This is useful when you are selecting text to right-click for the comment field of Logger32, or when selecting a callsign or RST for a log.

Rx Window Pause

The Rx Window has a scrollbar on the right-hand side when the window becomes full of text. Text will scroll from the top of the window downward until the window is full. At that point text is scrolled off the top, out of the user's view. The user can see this again by doing the following:

1. Press the <Insert> key on the keyboard (one time)

2. The Rx Window background will change to white (or whatever you selected in the **Toolbox**) and the text is frozen

3. The Scrollbar can now be clicked to scroll the buffered text through the Rx Window

4. Press the <Insert> key on the keyboard to again start receiving text. (no Rx text is lost).

Note: When you use the pause function, the background turns white. If you are using a white font, the whole Rx display will turn white and you won't be able to see the letters. See the Receive Window Color instructions to change this color.

This technique works during transmit, as well as in receive mode. You can freeze and scroll the Rx Window while text you have already entered is being transmitted by Logger32.

Warning: If Logger32 becomes unstable in RTTY mode, possibly operating slowly, or failing to do something, read the topic Computer Tuneup.

Advanced RTTY Receiving

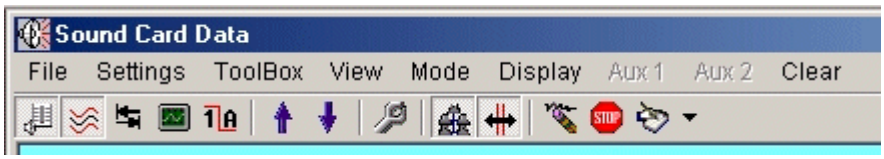
Now that you are receiving, here are ways to fine tune the received signal. First, we will look at the RTTY toolbar that appears at top of the RTTY receive window.

RTTY Toolbar

When you go to RTTY mode an additional toolbar will appear, allowing you to operate the following controls. These appear from

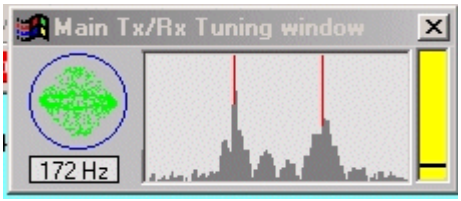
to right on the toolbar:

- Squelch (set this as with PSK, on the Tuning window vertical bar)
- Bandpass Filter (BPF). Set your transceiver to a wide passband and turn this on and off to see its action. This audio filter remains centered on the receive frequency
- Normal/Reverse mode RTTY
- XY display on/off
- UOS on/off. Unshift on Space
- FIGS shift, see below
- LTRS shift, see below
- Setup. Bring up a set of screens that allow the user to control many receive and transmit parameters
- Net on/off. Transmit where you receive. See Transmitting RTTY
- AFC on/off. Automatic Frequency Control, track the received signal, see below
- Reset. The same as on the Statusbar, reset to preset transmit and receive frequencies and shifts
- Abort. TURN TRANSMIT OFF RIGHT NOW!



Rx/Tx Tuning window

To activate this window, click on **View**, **Show Tuning window**. You will then see



This Tuning window gives you several displays:

- Spectral display of the signal, like that for PSK31
- XY display of received mark and space tones
- Squelch display
- Digital readout of mark-space shift, in Hz.

Warning: If you cannot find the XY scope or the tuning display, it is very likely that you turned them off on the main RTTY toolbar.

Squelch

Squelch works in RTTY as it works in PSK31. If the signal does not reach the preset squelch level, it will not be decoded. This decrease the amount of "garbage" characters that appear on your screen, but setting the squelch level high can also fail to some letters.

Change the squelch level by **View**, **Show Tuning window**, and then left-clicking in the vertical area with the yellow or red bar. low for an open squelch (print everything) and high for a tight squelch (print only strong signals).

The black line shows where the squelch is set, and the bar shows signal strength.

The bar is red when the signal is below the squelch threshold, and yellow when it is above the squelch threshold.

Bandpass Filter (BPF)

The bandpass filter narrows the receive bandpass, using AF DSP. This filter remains centered on the RTTY passband when the passband moves.

Normal/Reverse Sense

This switch reverses the relative positions of the mark and space tones. Normal operation is with the radio set to LSB, and the switch set to Normal. In this case the mark signal is higher in radio frequency than the space signal, since for LSB, a higher tone means a lower radio frequency. If you want to speak to a station that is "upside-down" or "backwards" in sense, then press this button to reverse your mark and space tones. Your transmit will change to be the same sense as your receive setup.

XY Display (RTTY Tuning Scope)

In the past, a standard tool for receiving RTTY was to use an oscilloscope with an XY display. The two audio tones that make up RTTY signal (mark and space) were displayed. One signal appeared as a vertical ellipse, and the other as a horizontal ellipse. goal was to tune the signal so that the vertical ellipse was straight up-and-down. If the horizontal ellipse was not at exactly 90 degrees, this meant that the shift width for receive did not match the shift being used for transmit. With Logger32/MMTTY, you set the AFC to **free** and it will always cause the ellipses to be at right angles. See AFC below.

You can switch the XY display on in the RTTY toolbar. If your computer slows down or has other problems running Logger32 in RTTY mode, try eliminating the XY scope to save resources.

To set the color of this XY display, use the **Toolbox** menu **RTTY XY Scope Color** for a selection of color choices.

Unshift On Space (UOS)

Baudot uses a character to indicate that the next character will be LTRS (letters) or FIGS (figures) shift. In other words, each character can have two meanings, depending on whether it is preceded by LTRS or FIGS shift. Furthermore, once you shift into LTRS or FIGS, the original standard of Baudot was that the decoder stayed in that shift until it received a command to shift to the other state. If your decoder misses a shift character, then it will be in the wrong shift state until it receives another shift command. You can shift to numbers, miss a shift, and then continue to print garbage for a long while.

Most of the information that hams receive is in LTRS shift, with FIGS used only for the digits. The other FIGS characters are relatively unused in modern ham RTTY operation. It has become common practice to have the decoder perform an "unshift on space" (UOS) operation. After a FIGS shift, the decoder prints FIGS characters until it reaches a space character, after which it automatically performs a LTRS shift, whether or not it receives such a command. To make things consistent, many modern encoders automatically send a FIGS shift whenever they send a FIGS character after a space, even if the last character before space was a number.

The recommendation is that you set UOS on unless you have found a reason not to do this. See Transmitting RTTY for a way to your transmit to help others who are using UOS.

FIGS/LTRS Shift

If you think that you have missed a LTRS or FIGS shift you can use these two buttons to force Logger32 to make the shift on receive. This can only be done to characters that have not been decoded. Once a character is printed, it cannot be shifted.

AFC

You have a choice of four AFC modes, which can be set with **Setup** (toolbar), **AFC/ATC/PLL** Tab:

1. Free - Allow both mark and space to vary to copy the signal best. Transmit with the receive mark/space

2. Fixed - Mark can change, but shift is fixed at the default value

3. HAM - The mark can change, but the shift can only take the values of 170/200/220/240 Hz., whichever works for most copied. The shift will change only for receive, it will return to the HAM default for transmit

4. FSK - The center frequency cannot change and the shift can only take the values of 170/200/220/240 Hz., whichever for most letters decoded.

You can set the mark and shift by clicking **Setup**, **Demodulator** Tab and setting them at the left. Press **OK** to leave this display save the mark/shift values. If you set the AFC at Fixed, then the mark frequency can change to try to copy a signal, but the shift stay as you set it on the Demodulator Tab.

If you are in Free AFC mode, the shift will change to match the actual shift of the received signal when you turn the AFC on. You can return to the standard HAM values by pressing **Reset** on the RTTY toolbar or the Statusbar. The HAM values can be set on Demodulator Tab. The MMTTY engine comes with these preset at mark = 2125 Hz., shift = 170 Hz.

When you set the AFC at Free and turn AFC on, **Reset** returns you to the original mark/shift values for a moment, then Logger32 looks around for RTTY signals and varies these parameters in an attempt to copy something.

Left-Click to Reset Shift

When you are in an AFC mode that allows the shift to change (such as Free), Logger32 returns the shift to the HAM default every time you left-click in the waterfall. This means that Logger32 always begins to try to decode a new signal at the default shift.

Reset

The Reset button sets the mark and shift frequencies back to the values set on the Demodulator Tab. RTTY and PSK31 modes differ in this situation, since PSK uses values that are set in the Settings menu item.

Show RTTY Commands

It is possible to have Logger32 echo in the receive window the RTTY control commands that you issue from the toolbar or from a macro. Click **View**, **Rx Window Options**, **Show RTTY Commands** and they will appear in the receive window, in brackets < >.

Show Control Codes

You can view the control codes that are sent and received by Logger32. Control codes are carriage returns. Click **View**, **Window Options**, **Show Control Codes**.

Macros

You will find special macros for use in RTTY mode in the Macros topic. You may use Logger32 macros that are relevant to RTTY to general Logger32 operation (e.g., $transmit$), and you may use some MMTTY macros if you are familiar with them, as long as they apply to RTTY operation in Logger32, and do not require parts of MMTTY that are not part of Logger32. For example, you send %d and Logger32 will send the date, but you cannot use %c to send the other station's callsign, you must use Logger32's $call$ macro because this feature pertains to the way that Logger32 captures callsigns.

Notch Filter

The MMTTY engine provides for one or two audio DSP notch filters for use during reception. To enable the notch filter(s), go to RTTY **Setup** (toolbar), **Demodulator** Tab. Now look to the right and you will see two smaller tabs, one is **LMS/Notch**. Click the **LMS/Notch** Tab. Set the taps at 256 to start, this gives a relatively narrow, deep notch, and click the box next to Notch. You can also invoke two notches, but they will be at the same frequency, resulting in a deeper notch. Click **OK**.

You turn the notch on by left-clicking in the graphic frequency display. A bar appears at the notch frequency. Right-click in the frequency display and the notch turns off.

Note: If you click in the waterfall, you will move the receive passband; you must click in the frequency display to operate the

Display Smoothing

You can set the spectrum display to be smoothed, as you can for PSK31; the effect is the same. Click **Settings**, **Display Smoothing**, and check the choice you want.

Fast Display (No Smoothing)

When using Fast Display, the signals are displayed in real time. In real time you see the noise spikes and the signals jump up down in strength. There is no damping.

Medium and Slow Display (Little or Heavy Smoothing)

By selecting Medium or Slow Display options, the displayed signals are averaged over a period of time. The effect of these is to reduce the noise spikes, lower the overall background noise, and prevent the signal from jumping up and down on the

The effect of the smoothing is easily seen on the display. It is easy to experiment on received signals and determine which best suits the band conditions.

Align

When you transmit, there is less likelihood of your transmitting harmonic distortion products if you use high tones. Logger32 has automated method for transmitting with high tones as long as your radio is in communication with the computer using a serial The $align$ macro (or right-click in the display) does this. Logger32 will do the following:

- ⁄#### Move the receive passband to a preset audio frequency (you should choose a high tone)

- ⁄#### Send a QSY command to your radio so whatever audio frequency you were receiving at is now at the preset audio frequency.

The result is that whatever station you were copying, wherever it was in the receive range, is now at the preset audio tone frequency, and Logger32 is listening at that frequency. Here is how to do the align operation:

First, before trying to use $align$, set a default audio frequency for mark. Click **Settings**, **Preset Audio Frequencies**. In the second box down, **Default Main Rx Frequency**, put a high tone value (2125 sounds logical).

Turn AFC on.

To use this technique, tune in a RTTY signal somewhere on the receive range away from the default Rx audio frequency. Put the cursor in the middle of the receive passband lines and right-click the mouse. It may take a second or two, but Logger32 will send frequency shift command ($QSYxxxx$) to your radio so that the signal appears with the mark at the preset audio frequency. At same time, it will move its receive passband to that same area and retune the signal.

You can also use the $align$ macro by putting the command on a macro button.

When you go to transmit with **Net On**, you will be transmitting zero beat with the received signal, but using high tones.

CPU Resources

The MMTTY RTTY engine is able to detect a lack of CPU resources during receive. Click **Settings**, **Overload Warning**, to turn feature on (if this feature is turned on for PSK31 mode, it will also be on for RTTY mode). The CPU light at the lower right will red for a few seconds if there is a lack of resources. If this happens, consider the solutions proposed in the Computer Tuneup section.

Profiles

Logger32 has a special feature whereby you can set a number of parameters and remember them as a Profile. When you want to operate with these parameters, instead of looking them up in a book and changing things, you can invoke the Profile. Profiles only work for RTTY mode, not for PSK

Transmitting RTTY

Andrew J. O'Brien, KB2EOQ

Logger32 uses MMTTY, high-end RTTY software modem, as its RTTY encoding/decoding engine. Basic RTTY features are settings for Logger32/MMTTY. Here is how to start transmitting RTTY using Logger32:

Basic Procedures

Hardware Setup

If you have successfully transmitted PSK31, you already have all the hardware hook-ups and radio interfacing ready to go. If you have not yet set up your computer and rig, please see the topic Interfacing the Radio to a PC Sound Card.

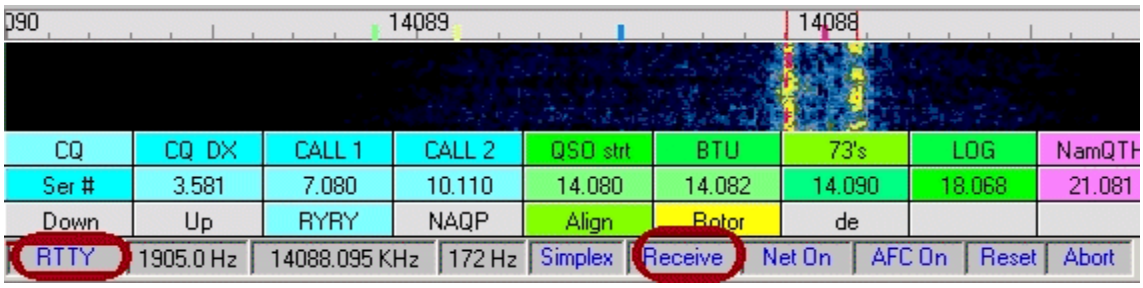
Enter RTTY Mode

- You enter RTTY mode by one of the following methods:
- Click on the mode pane at the left of the Statusbar.
- Click **Mode**, **RTTY** on the main menu.
- Use a macro such as $rtty$ or $rtty-i$ from PSK mode. These must be programmed on a macro button, see [{Link to MACROs, Hot Keys and Programmable Buttons:MACROs, Hot Keys and Programmable Buttons}]. Be sure to read the macro topic. It is useful in RTTY mode.

Warning: If Logger32 becomes unstable in RTTY mode, operating slowly, or failing to do something, read the topic Computer Tuneup. RTTY mode is very demanding of computer resources.

Switch to Transmit

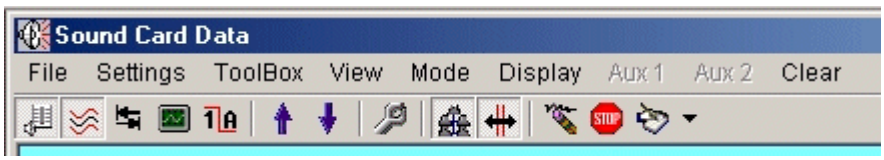
Transmitting in RTTY mode is mostly the same as transmitting in PSK31 mode. You can click on the RECEIVE button and it will switch to "Transmit' and Logger32 will begin to transmit. You can also use macros such as $transmit$ and $receive$.



RTTY Toolbar and Statusbar

RTTY Toolbar

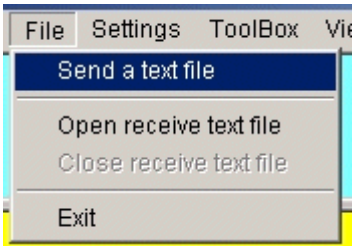
There is a special toolbar that controls both transmit and receive functions in RTTY Mode. Here is the toolbar:



Most of these items are presented in Receiving RTTY. There are two that pertain directly to transmitting, Net On/Off, covered and Setup, which brings up a set of displays that have both receive and transmit parameters.

RTTY Statusbar

There are other important items on the Statusbar.



The key item is the transmit/receive pane in the middle of the Statusbar. Click here to perform Tx/Rx switching. If you go to Logger32 will first transmit all the characters in its transmit buffer before going to receive.

There are also duplicates of the toolbar items, Net on/off, AFC on/off, Reset, and Abort.

Net On/Off

The Net function uses Logger32's ability to control the audio frequency of output tones to make sure that you transmit AFSK tones the same frequency as your received tones. Click the Net button to set Net on and transmit zero beat with receive. This is the way to call someone to establish a QSO. Leave Net on.

When you turn Net off, in RTTY mode, the MMTTY engine sets the transmit mark and shift at the HAM default, which is set on the MMTTY Setup Demodulator Tab. MMTTY comes with these values at mark = 2125 Hz., shift = 170 Hz. When you call CQ, you should turn Net off, but you can leave AFC on. This means that your transmit frequency will not move to track the drift of the other station, and the two of you in QSO will remain at your original transmit frequency (assuming that you have a stable transmitter that does not drift).

If you operate split frequency from your transceiver (perhaps to chase a DXpedition), you should set Net off, because you will your transmit frequency with your second VFO. You probably do not want your transmit frequency wandering around due to movement of your receive passband. Remember, Net and AFC are different animals. Net controls the transmit frequency, AFC controls the receive frequency.

Be careful about turning Net off in RTTY mode. In PSK mode, when you turn Net off, you will transmit at the same audio that you last used for transmit. In RTTY mode, you will always transmit at your default HAM mark frequency, no matter where you last transmitted. The two modes do not operate in the same way.

Transmitted Characters

RTTY has its own alphabet, the Baudot code, which differs from the newer Varicode used for PSK31. First, transmitted text is always in UPPERCASE letters. Second, not all the characters on your computer keyboard are supported by RTTY's Baudot

The supported characters are:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

1 2 3 4 5 6 7 8 9 0

. , " ( ) / ? & - ! :

You will not be able to use such characters as an asterisk (*), ampersand (&), or the @ symbol that is used in e-mail addresses. The # symbol, used in North America to denote "number" is also not supported. The dollar sign and the % sign are likewise not available. If you enter characters that cannot be transmitted, these characters will not change color if **Settings**, **Transmit buffer indicator** is on**.** This is because the characters are not transmitted in RTTY mode.

RTTY Basics has a discussion on the way that Baudot RTTY encodes letters and figures.

Most people type faster than Baudot is sent. You can set the unsent and sent characters in the Tx buffer to be different colors, so you can track what characters have been transmitted by Logger32. Click **Settings**, **Transmit buffer indicator** to turn this feature

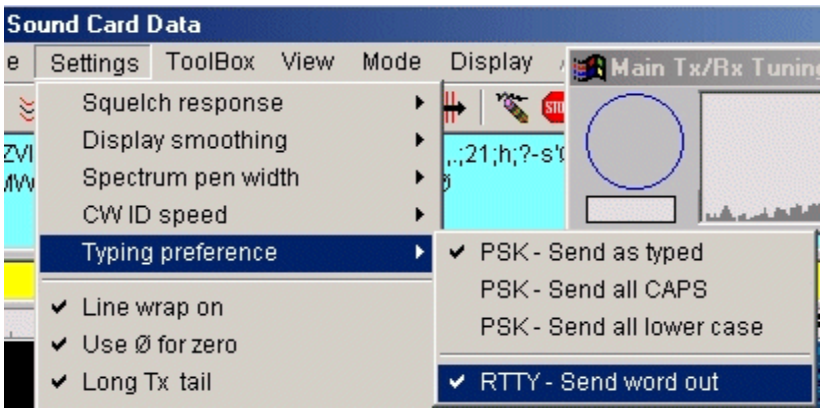
on. You can change the color of the transmitted characters in **Toolbox**, **Tx window buffer indicator color**. These features work the same in both PSK31 and RTTY modes, and settings selected in one mode hold for the other mode.

Backspacing

The RTTY engine can backspace to correct typographical errors, but only before the character has been transmitted. Baudot not support backspace, so once a letter is sent, there is no character to tell the receiving station to back up and erase that character. The easiest way to benefit from the backspace feature in RTTY mode is to set **Settings**, **Typing preference** to word out. See the next section.

Word Out vs. Character Out

Logger32 in RTTY mode allows the user to choose either word out or character out. Click **Settings**, **Typing Preference**, **RTTY-Send word out**; unclick this choice for character out. With word out checked, Logger32 only transmits your typed text when you press the spacebar on your keyboard or use a macro containing the Baudot code for space. With word out unchecked, sends each character to the radio for immediate transmission.



Unshift On Space

In the topic Receiving RTTY we discuss setting unshift on space (UOS) for receive. It is possible for you to set your transmitted signals to be friendly to someone receiving you with UOS. The default for RTTY is to transmit numbers this way: (FIGS)599 599 (LTRS)good signal ... However, if the other person has UOS on, he or she will print: 599 TOO good signal. You can change your transmitted signal so you send (FIGS)599 (FIGS)599 (LTRS)good signal, resulting in 599 599 good signal. Here is how to set the RTTY engine to transmit this way.

Use the RTTY toolbar **Setup** and select the **Tx** Tab. In the middle of the display there is a checkbox for UOS. Check this box and you will transmit a (FIGS) character whenever you try to transmit a number after having sent a space.

PTT Watchdog Timer

Logger32 incorporates a "watchdog timer" for RTTY transmit. This timer works for all methods of transmit/receive control because operates at the software level. When the time is exceeded, Logger32 leaves transmit mode. This should drop your VOX, send software command to put your radio in receive, and/or open (or close) the COM port connection you may be using for PTT control.

To set the timer, click **Settings**, **RTTY Watchdog timer delay** and put in the number of seconds that Logger32 can stay in mode. A value of zero (0) turns off the timer and it will not operate. The default value is 60 seconds. If any value besides zero selected, a check mark will appear next to the menu choice, **RTTY Watchdog timer delay**.

Note: The watchdog timer operates only in RTTY mode.

Setting Audio Levels

As in transmitting PSK31, it is important that your transmitted AFSK RTTY tones are not overdriven and distorted. Here is a quick adjustment procedure, but you should read the topic on transmitting a clean signal. It would also help to read the PSK31 transmitting topic.

Switch your rig to display ALC. In transmit mode, adjust your transmitted signal to the point where the ALC setting JUST begins to

show a slight deflection. You can do this with slight changes in your Mic gain and/or your sound card volume controls.

It is recommended that, unless you are using true FSK, you set your power output to around 50%. If your rig is capable of 100 watts, you should set the output to around 50 watts.

There is more information on this topic in Transmitting a Clean Signal in PSK31 and RTTY. This section discusses both the interface hardware you should use and adjustment procedures for setting transmit levels. These methods are not always obvious, and some operators have had problems without realizing it.

Normal and Reverse Polarity

There is one more important step; you have to make sure that your transmitted RTTY signal is "the right way up." Whether it is "right way up" depends on two things, the sideband selected and the normal/inverted setting. If you have chosen to transmit lower sideband, have your RTTY set to NORMAL (default). If you transmit RTTY using upper sideband set Logger32's RTTY to reverse (inverse or inverted) polarity. See the RTTY Basics topic for more information on what this means. You can set the polarity with the RTTY toolbar **Normal/Reverse** button.

Switch Modes Using a Hotkey

Logger32 provides hotkeys that can be programmed as a macro in RTTY mode for this purpose. $rttyreverse$ is the macro command to invert the signal and $rttynormal$ is the macro command to change back into normal setting (see the Macros topic full instruction on how to program macros).

You can also use the macros $rtty$ or $rtty-i$. These two macros can be used from any mode, and they will switch the Logger32 RTTY mode, normal or inverted respectively.

If you want to enter the RTTY engine and set up normal or inverted mode, use the RTTY **Setup** button on the toolbar. On the **Demodulator** tab in this display there is a box at the extreme lower left, labeled reverse. Put a check in this box to operate polarity. MMTTY always receives and transmits with the same polarity, so when this box is checked, you will transmit and inverse polarity.

[{Picture txrtty6.bmp}]

Transmitting With Macros

In RTTY mode, Logger32 clears the PSK macros and starts fresh. Many macros work with both PSK and RTTY (the basic ones $transmit$ and $receive$ are the same). Macros with "rtty" in them are specifically for RTTY mode.

Copy Macros from PSK to RTTY

1. To copy a macro from PSK to RTTY mode:
2. Open the macro for editing in PSK mode (right-click the macro button)
3. Leave the macro open for editing
4. Switch modes to RTTY
5. Click OK to save it as a RTTY macro.

Example Macros

Here are a few examples for you to cut and paste into the available RTTY macro buttons.

Returning a CQ :

$call$ de $mycall$ $mycall$ kn

Starting conversation:

FB $name$, The name here is Andy, QTH is Fredonia, New York. Located about 45 miles south west of the city of Buffalo,

Over:

So $name$, BTU. $call$ de $mycall$ K

My Station (change to suit your need) :

Station at this end is a Kenwood T2000 running 30 watts into two stacked 7 element Yagis at 150 feet. Software is Logger32 $version$ by Bob Furzer. Also using MMTTY by Mako JE3HHT as the RTTY engine within Logger32.

73/ Log:

So $name$, Thanks for the nice QSO, Will say 73 , now. QSL via bureau. $call$ de $mycall$ log

73 $mycall$ sk

Example RTTY QSO.

CQ CQ CQ de P5DX P5DX P5DX

PSE K.

You would click on macro "Returning a CQ", which would send:

P5DX DE KB2EOQ KB2EOQ KN (your own call sign would be inserted here)

Here is the response:

KB2EOQ DE P5DX

HELLO, THANKS FOR ANSWERING MY CALL, BAND IS QUIET TODAY. NAME HERE IS JAN. JUST HERE IN P5 LAND ON BUSINESS.

You would then click on macro "Starting conversation" which would send:

FB JAN. THE NAME HERE IS ANDY.

QTH IS FREDONIA, NEW YORK. LOCATED ABOUT 45 MILES SOUTHWEST OF THE CITY OF BUFFALO, NY.

You might have an "End of conversation" macro:

TNX FOR THE QSO JAN. I WILL QSL VIA THE BUREAU.

SK

P5DX DE KB2EOQ K

By the way. Note that the final K or KN in each transmission follows several blank spaces. This makes it less likely that P5DX will copy your callsign as KB2EOQK. This is especially important when you have a short callsign that can sound like regular callsign if extra letters are added to it (P5DX would become P5DXK).

Contesting/DXing

RTTY is a major mode when it comes to contesting and those rare DXpeditions. In both contesting and DX hunting, the QSO place in rapid-fire mode. Here are a few macros to help you.

CQ with continuous loop

Use this macro for calling CQ.

$transmit$

cq cq CONTEST de $mycall$ $mycall$ $mycall$

K

$receive$

$loop$ $loop$

If a station answers you CQ you click anywhere in the receive window to stop the loop.

Contest Exchange

$transmit$

$call$ de $mycall$

TU 599 $serialnum$ 599 $serialnum$ bk

$receive$

This will generate your call and a serial number from the Mini-log.

Thanks and QRZ

$transmit$

QSL $name$ TU

QRZ QRZ Contest de $mycall$

k

$receive$

log

This will thank someone in the contest, log the QSO in the Mini-log (assuming you have entered it into the Mini-log) and send

Operating Split

Take a close look at Using Logger32 for information on how to use computer-controlled split. It is in RTTY DX chasing that you most likely to use this feature.

Profiles

Jan DItzian, KX2A

The HAM default in Logger32's MMTTY RTTY engine makes it easy to return to a basic set of RTTY operating parameters. However, new modes, contest conditions, and other situations make it valuable for the operator to be able to define different operating parameters. To make MMTTY flexible under these new and changing conditions, the MMTTY engine has a feature Profiles, which allows Logger32/MMTTY to remember different sets of starting conditions.

The Profiles Concept

The idea behind the Profiles concept is to let the user set a number of parameters at one time.

When you define a Profile, new parameters become the default and, in addition, if you or the AFC change these parameters, a of the HAM button restores them to what they were when you started this Profile.

Using a Profile

The defined profiles can be found only in RTTY mode. Press the down arrow next to the **Profile** button at the far right of the menu and select a profile.

Defining a Profile

You can vary the parameters in any way you choose; you define a new profile and save it. For example, the new mode MTTY (no relation to MMTTY), is the same as RTTY but the shift width is 23 Hz. instead of 170 Hz. Here is the procedure to set up this new Profile we will call RTTY 23 Hz. Note that you must leave Logger32 to define a new profile.

1. Exit Logger32
2. Start MMTTY.exe in the Logger32 default folder
3. Turn off **AFC** so the RTTY shift parameter will not change before you get a chance to save it. If you want this profile to with AFC on, just turn off your rig or turn the RF gain down so there is no noise or signal for the AFC to chase
4. Set the Demodulator to IIR (click the Type button until IIR shows as the Demodulator)
5. Change Shift to 23 Hz
6. Change BW to 20 Hz. for the XY Scope display. If Baud is showing, click the word Baud to change it to BW
7. Change the Demodulator to PLL (click the Type button)
8. Change Loop to 40 Hz
9. Click **Profiles**, **Assign Menu**, and fill in a name for this Profile (RTTY 23 Hz., or any name you choose)
10. Exit MMTTY.exe and start Logger32.

In RTTY mode, you will see the word Profile at the far right of the button bar. Click the down arrow next to the word Profile, and can select your new mode.

If things vary, press the **Reset** button and you will restore all the Demodulator Group parameters for this profile.

You may define up to nine Profiles, although it is strongly recommended that you leave the first one, RTTY default, alone, so you can get back to the standard RTTY parameters if you get lost.

You may make as many changes as you want and incorporate them into a single Profile.

Removing a Profile

You can remove Profiles just as easily. Again, exit Logger32 and start MMTTY.exe. Click **Profile**, **Delete**, and choose the one want to delete. The label will return to **Profile** with a number, and will be grayed out, because there are no longer any data associated with that label.

Tailoring a Profile

It is possible to preset every parameter in the MMTTY engine except for the following, which are set on the main display.

≠#### FIG/LTR on/off

ⅇ#####Mark frequency

All MMTTY parameters are stored in a file called **UserPara.ini**, in the Logger32 folder. You can edit this file with a text editor, as Notepad, but it must be saved in TXT format with exactly the same name. You can change any parameter to any legal Furthermore, if you do not want to save a parameter, but instead you want MMTTY to keep the parameter at whatever value it before you call the profile, delete the line for that parameter from UserPara.ini.

For example, if you want to define a new Profile to change the number of taps in the BPF, but you do not want the shift width to change (you intend to use this "on the fly" under QRM conditions), you can erase the line in that particular profile that reads "DefShift=1.700000e+02." This means that DefShift is no longer defined in this Profile, and it remains unchanged. When you set the new tap value in MMTTY, the parameter RXBPFTAP will change. The new value should stay in the Profile, because this the reason you are making this Profile.

Note: At this time, there is no published lexicon of the names and definitions of the values. You should back up your original UserPara.ini in case you have a problem. You will have to guess at which parameter controls which actual MMTTY value if you to work directly with UserPara.ini.

Additional Information Windows

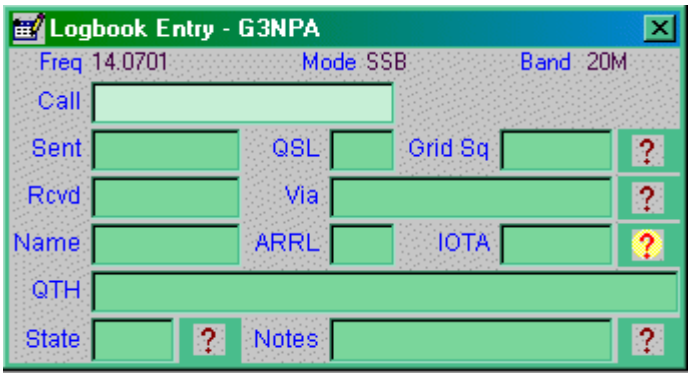
Geoff Anderson G3NPA

The main purpose of this section is to give the operator some brief and quick details, which are related to the data entered in the Logbook Entry window and what is in your logbook. These windows are accessible ONLY via the "?" icons found in the Logbook Entry window. Please see the Basic Setup section above on how to set up information buttons.

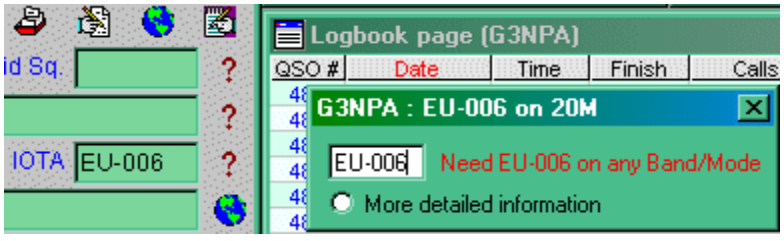
Additional information is currently available for IOTA, US State, US County and Grid Square only. If other ADIF input panels in the log input window are set up with the "?" icon, then a "Not Coded Yet" message will appear when selected.

IOTA Information window

The picture below shows that the cursor has been placed over the IOTA information access button.



To use the additional information, enter a callsign and the IOTA number into the appropriate panes in the Logbook Entry and then click on the IOTA "?" icon. This will bring up a small information window advising the log status of the particular group (see typical panel below). In this case, the panel is telling the operator that EU-006 has not been worked at all. If the island group in question is already in the log or confirmed, then the wording in this panel will change accordingly.



The messages that appear will be one of the following:

IOTA# confirmed on BAND MODE

Need confirmation from IOTA on BAND MODE

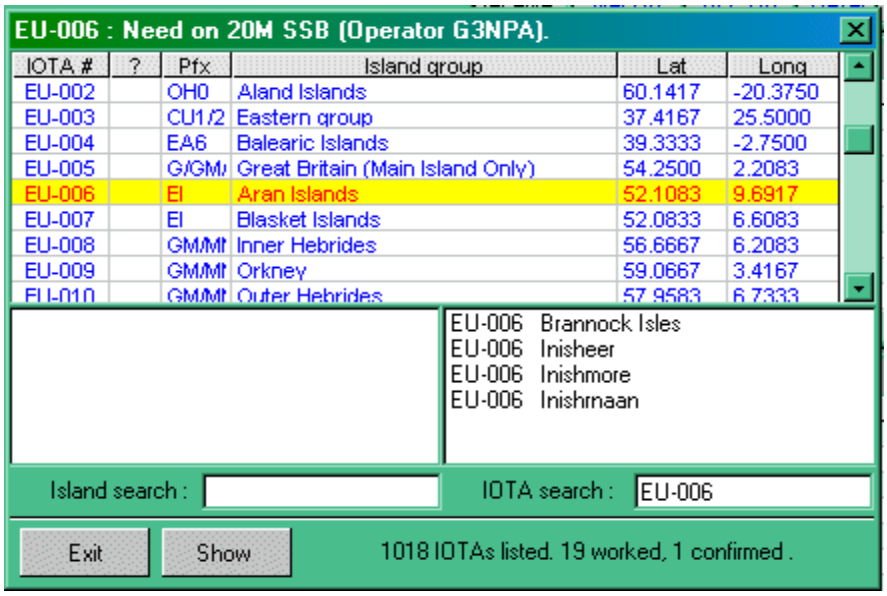
IOTA# confirmed on BAND, but need on MODE

IOTA# worked on BAND, but need on MODE

Need IOTA# on BAND

Need IOTA# on any Band/Mode

Clicking "More detailed information" will bring up and populate the IOTA list as set up in your IOTA database for the band and mode being used at the time. An example is given below for EU-006



Note that the IOTA search has been set to EU-006 and the highlight placed in the correct position in the table.

The window shown above may be used to carry out searches for islands or groups. Typing in a word in the Island search will give island names that most closely match what you have entered in the left-hand pane. Alternatively, one can enter the island IOTA code and all the known islands in that group will be displayed (note that this will depend on what you have into the main database). In the picture below the Island of "Belli" has been entered and by clicking on the name in the left two things will happen. First, all the islands listed in that group will appear in the right hand pane and second, the main title will be highlighted in the listing. In the case below, the highlighting is in yellow with a red script (but this is user-definable). The red and light yellow highlights show island groups confirmed and worked (again these highlight colors are user-definable).

Having highlighted an IOTA reference, you can now click on the "Show" button to produce a map with the nominal center of island group marked as shown below. In the picture below, the island group is denoted by a small yellow square just at the northern end of Italy.

Once this map is displayed, you can select any island group from the table above and the island marker will move to the appropriate location.

The map size can be changed to suit by using the normal operating system facilities for resizing a window.

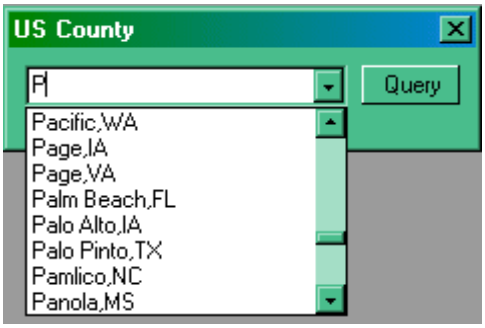
By right-clicking on the map itself you can get at the menus for customizing the map, all of which are self-explanatory. You change the map itself to something more appropriate and/or modify the island marker both for size and color.

US State

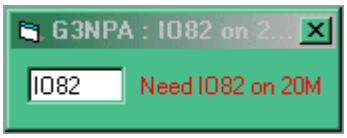
The US State, US County and Grid Square information windows all work in a similar way as described above. Some are shown below

US County

In the case of US Counties, the information window has an additional facility in that the whole list of counties will be searched a match as you type in a name. Clicking on any of the counties presented will give something similar to the info window shown on the right below.



Grid Square



Database Maintenance

Geoff Anderson G3NPA

Important Notes:

1) ***Before making ANY modifications to ANY of the databases make back-up copies before proceeding to make changes.***

2) ***If you are in the habit of sending updated databases to friends, then you must send a copy of ALL the database files as one package. On NO account should you expect an updated database file to work correctly without also sending the all of the database files of the set. The database files are grouped into three database sets***

Country/Prefix, consisting of the following databases

ALIAS32;

COUNTRY32; and,

OFFSET32.

IOTA, consisting of the following databases:

IOTA32; and,

IOTAIsland

US County consisting of

COUNTY32

Each database consists of four files with the file extensions of ".ISD", ".ISF", ".ISL", and .ISM". All four files must be copied for each database.

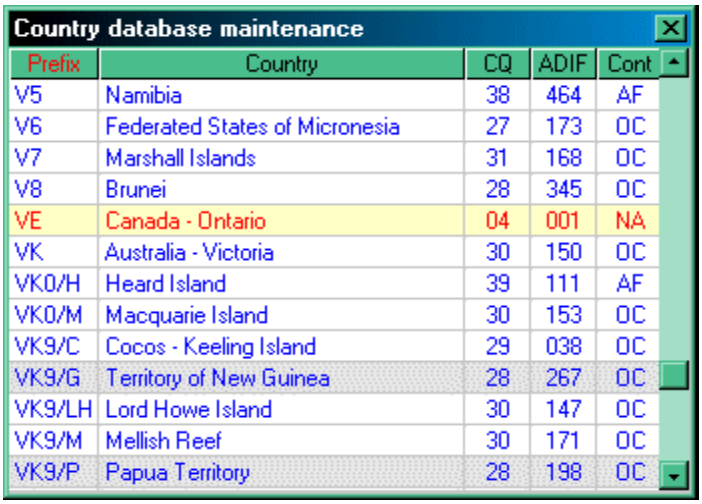
The Country/Prefix, IOTA and US County databases are all maintainable by the user from within Logger32. These three may be accessed from the Logger32 menu bar using the sequence Tools|Database Maintenance.

As a general note, where Time Zone information is required, use the included pull down menu OR alternatively where this does appear, right click in the appropriate box to obtain the same list. DO NOT TYPE IN THE TIMEZONE DETAILS YOURSELF unless you know the exact name and can get the spacing perfect. Where Lat/Long information is required, this should be in the format of degrees and decimal degrees. If you prefer to enter this data in degrees and minutes, then right click in either of the Lat or Long panes (or even in the tables) to bring up this facility.

Country/Prefix

The Country/Prefix database may be accessed from the Main Menu by selecting Tools|Database Maintenance|Country/Prefix maintenance OR by clicking on the Country/Prefix icon on the Tool Bar.

Selecting Country/Prefix maintenance opens the Country database maintenance window.



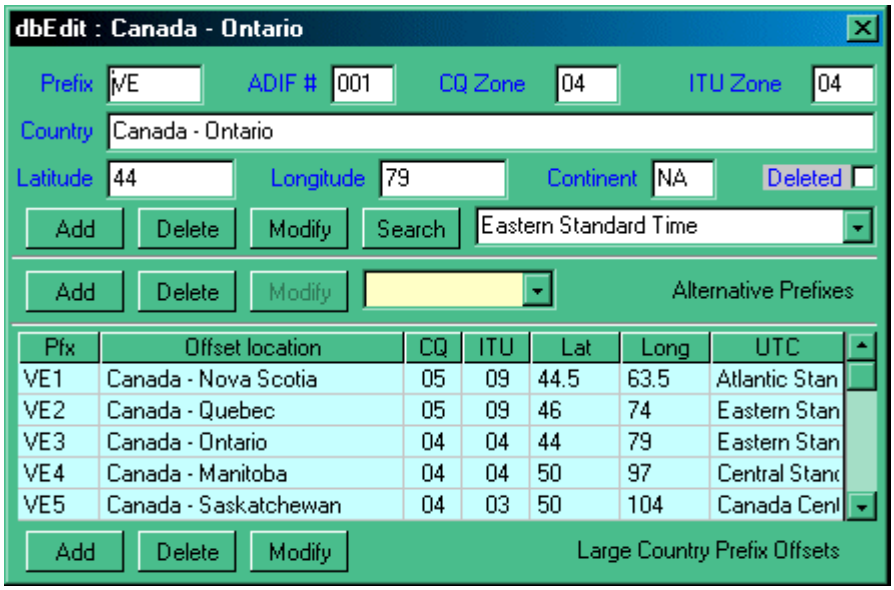
Prefix	Country	CQ	ADIF	Cont
V5	Namibia	38	464	AF
V6	Federated States of Micronesia	27	173	OC
V7	Marshall Islands	31	168	OC
V8	Brunei	28	345	OC
VE	Canada - Ontario	04	001	NA
VK	Australia - Victoria	30	150	OC
VK0/H	Heard Island	39	111	AF
VK0/M	Macquarie Island	30	153	OC
VK9/C	Cocos - Keeling Island	29	038	OC
VK9/G	Territory of New Guinea	28	267	OC
VK9/LH	Lord Howe Island	30	147	OC
VK9/M	Mellish Reef	30	171	OC
VK9/P	Papua Territory	28	198	OC

NOTE: If you left click on ANY of the headings Prefix, Country, CQ, ADIF or Cont in the table above, the grid will sort on column.

This window displays a scrollable list of all:

- DXCC Prefixes and associated;
- Country Name;
- CQ Zone;
- ADIF Country number; and,
- Continent.

To edit a specific country or prefix, double click anywhere on the row for that entry. This will enable the dbEdit window for that particular entry



The dbEdit window is divided into three sections, the:

- Basic Information;
- Alternative Prefixes; and,
- Large Country Prefix Offsets.

Basic Information Section.

Add a New Prefix

To ADD a new prefix click on the BLANK line at the bottom of the Country Database window will display a blank dbEdit Window, enabling the user to enter the required data. Logger32 expects information in ALL blank edit boxes and will prompt the user if any are missing or contain invalid data. The pull-down list at lower right in this section enables the user to select the correct Time Zone for the new prefix. Use the arrow in this pane to obtain a list of Time Zones available. See the topic 'Standard Time Zones' If you to know the relationship between the name, time offset from GMT and if the time zone has DST.) You can leave this entry blank BUT without a Time Zone here, Logger32 will NOT be able to determine the Local time for that prefix. When satisfied that all is correct, click on the "Add" button.

NOTE: If you are entering a country name that will include the "&" character, you must enter the character twice in order for it to display correctly. For example, the country name for the prefix V2 must be "Antigua && Barbuda".

Delete a Prefix

Deleting a prefix can be achieved in two different ways. First select the row containing the entry you wish delete, then:

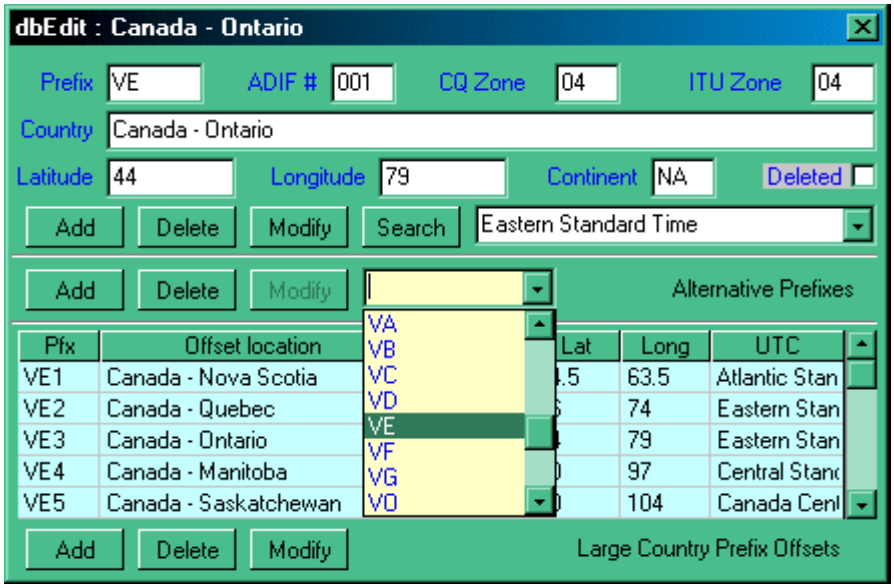
- If you simply wish to REMOVE the data from the database, then click on the "Delete" button. Logger will check with you that this is what you really want to do.
- If you wish to just mark the country as having been deleted (but to keep the information), place a check mark in the box alongside the word "Deleted" and then click "Modify". This second will produce a grey background in the Country Database maintenance window for that prefix VK9/G and VK9/P above).

Modify a Prefix

To modify a prefix select the row containing the entry you wish to modify, then make the changes in the

appropriate edit box(s) and click the "Modify" button.

Alternative Prefixes.



Add an Alternative Prefix

To ADD an alternative prefix first ensure that the Alternative Prefixes drop-down list is blank, then type in the new alternative prefix and click "Add".

NOTE: It is permissible to include specific callsigns in this section if required (see KC4/A - Antarctica). Callsigns must be enclosed in the symbols "<" and ">" in the format "<G3NPA>".

Delete an Alternative Prefix

To delete an alternative prefix, first open the pull down list, select the appropriate prefix then click

Modify an Alternative Prefix

To modify an alternative prefix, first open the pull down list, select the appropriate prefix, modify it as required and then click "Modify".

Large Country Prefix Offsets.

Add an Offset

To add a new offset, select the first available blank row in the list, usually the row at the bottom of the list. The time details are entered from the Time Zone list presented when the operator right-clicks on the UTC field of the selected row. When an entry has been completed, click the "Add" button to enter the data into the database. Always add one line at a time.

Delete an Offset

To delete an entry, left click anywhere on the row to be deleted and click the "Delete" button.

Modify an Offset

To modify an entry, right click on the row to be modified, make the required changes and then click on the "Modify" button.

IOTA

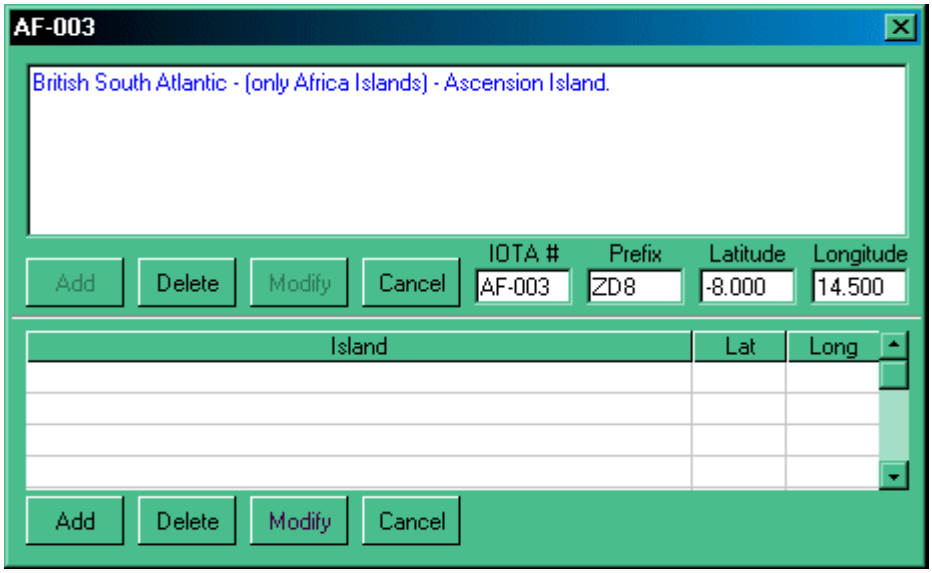
To open the IOTA maintenance screen use the menu sequence Tools|DatabaseMaintenance|IOTA maintenance to display the IOTA Maintenance window.

IOTA #	Prefix	Island Group	Lat	Long
AF-001	3B6	Mauritius - Agalega Is.	-10.000	-56.500
AF-002	FT8Z	French Southern and Antarctic Territories - (Only Africa Islands) -	-38.000	-77.500
AF-003	ZD8	British South Atlantic - (only Africa Islands) - Ascension Island.	-8.000	14.500
AF-004	EA8	Spanish islands - (only Africa islands) - Canary Is.	28.000	16.000
AF-005	D4	Cape Verde Is.	16.000	23.000
AF-006	VQ9	British Indian Ocean Territories - (Chagos Archipelago) - Diego Garcia	-7.500	-72.500
AF-007	D6	Comoro Is. - (note: Contacts with Mayotte before 6 July 1975 count	-12.000	-44.000
AF-008	FT8W	French Southern and Antarctic Territories - (Only Africa Islands) -	-46.500	-52.000
AF-009	FR/E	French Indian Ocean Territories - Europa Island.	-22.500	-40.500
AF-010	3C	Equatorial Guinean Islands - Bioko (Fernando Poo) Island.	3.500	-8.500
AF-011	FR/G	French Indian Ocean Territories - Glorioso Is.	-11.500	-47.500
AF-012	FR/J	French Indian Ocean Territories - Juan de Nova Island.	-17.000	-43.500
AF-013	5R	Madagascar - (Main island only)	-20.000	-47.000

NOTE: If you left click on either of the first two headings (IOTA# or Prefix) in the table above, the grid will sort on that column.

Add a New Island Group

To add a new Island group, select first available blank row in the list, usually the row at the bottom of the list. This action will display the IOTA edit window.



Insert the island details to be displayed in the Island Group column in the large text box and complete the details in the IOTA#, Prefix, Latitude and Longitude edit boxes and click on the "Add" button.

Modify an Island Group

To modify an Island Group entry, click on the appropriate row of the IOTA Maintenance window, make the modifications and click on the "Modify" button.

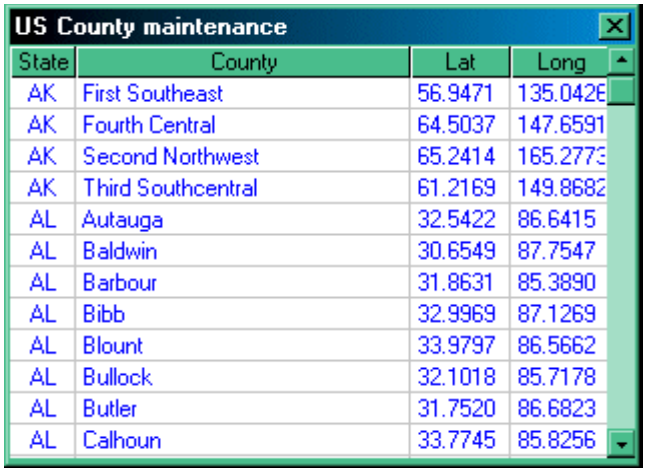
Delete an Island Group

To delete an Island Group entry, click on the appropriate row of the IOTA Maintenance screen and then click on "Delete" button

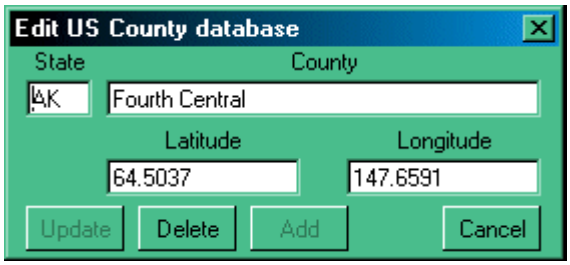
If you wish to add, modify or delete and additional information about the Islands within the group, this can be done in the lower half of the above screen.

US County

Maintenance of the US County database is identical to the IOTA maintenance process, only using the US County maintenance and Edit US County database windows.



NOTE: If you left click on either the State or County headings in the table above, the grid will sort on that column.



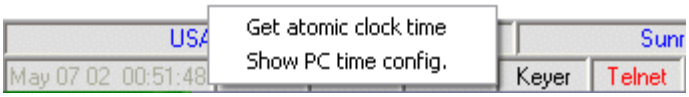
Atomic Clock

B. Charles Sutton W1MCP

If you have the Lower Status Bar turned on, you will find in the bottom left hand corner of the Main Window is Logger32's clock. Logger32 provides the capability to set the computers clock from an Atomic Time standard via the internet.

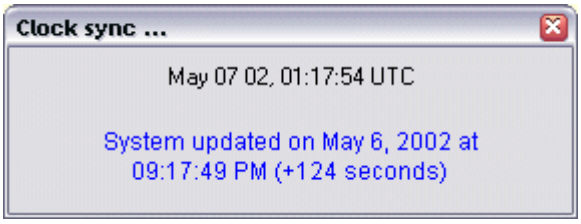
The clock will show GMT (Zulu) time. Logger32 reads the timezone settings you have defined in Windows and adjusts itself accordingly. There is no manual intervention required to allow for Standard Time or Daylight Savings Time.

If you hold the mouse over the time, a tooltip will popup to show the time your PC is set to. If you right click on the clock, a small menu will popup with two selectable options:

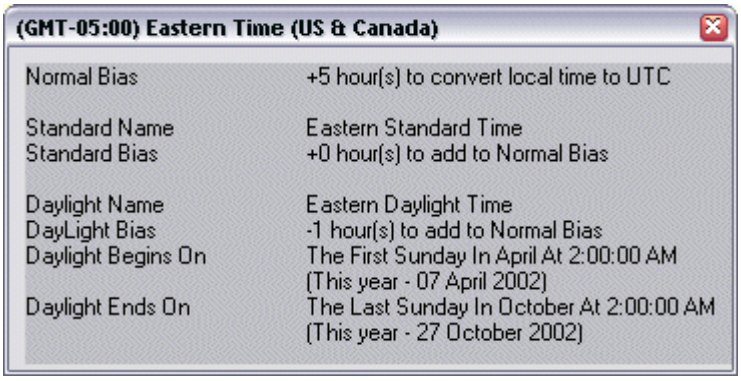


Get Atomic Clock Time: This option will query an Atomic Clock via the internet and set your computer time accordingly.

NOTE: You must be connected to the internet for this feature to work. Any adjustments made will be displayed:

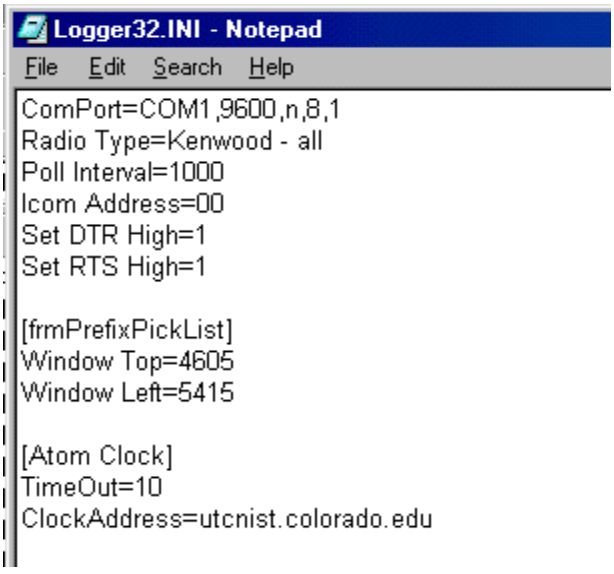


Show PC time config: This option will display the settings you have set-up in Windows.



The functionality of this feature is dependent on the availablility of the Atomic Time Server. In the event the time server is down either temporarily or perminently, there are changes you can make to reconnect.

The URL for the time server is stored in the Logger32.ini file, which can be edited with any ASCII editor (such as notepad). for the [Atom Clock] section and edit the line: ClockAddress=time-a.timefreq.bldrdoc.gov replace the URL listed (to the right of equal sign) with a different time server URL.



The National Institute of Standards and Technology maintains a list of Time Servers on their webpage: www.boulder.nist.gov/timefreq/service/time-servers.html. Here is the list of time servers as of May, 2002:

Name	IP Address	Location

time-a.nist.gov	129.6.15.28	NIST, Gaithersburg, MD
time-b.nist.gov	129.6.15.29	NIST, Gaithersburg, MD
time-a.timefreq.bldrdoc.gov	132.163.4.101	NIST, Boulder, CO
time-b.timefreq.bldrdoc.gov	132.163.4.102	NIST, Boulder, CO
time-c.timefreq.bldrdoc.gov	132.163.4.103	NIST, Boulder, CO
utcnist.colorado.edu	128.138.140.44	University of Colorado, Boulder CO
time.nist.govm	192.43.244.18	NCAR, Boulder, CO
time-nw.nist.gov	131.107.1.10	Microsoft, Redmond, WA
nist1.datum.com	63.149.208.50	Datum, San Jose, CA
nist1.dc.glassey.com	216.200.93.8	Abovenet, VA
nist1.ny.glassey.com	208.184.49.9	Abovenet, New York City, NY
nist1.sj.glassey.com	207.126.103.204	Abovenet, San Jose, CA
nist1.aol-ca.truetime.com	207.200.81.113	TrueTime, AOL facility, Sunnyvale, CA
nist1.aol-va.truetime.com	205.188.185.33	TrueTime, AOL facility, VA

There are technical limitations to Windows ability to adjust itself. If your PC clock is off by more than a day or two, you should manually set the clock as close as possible before running syncronizing your PC. Depending on how close you are to a Standard Time/Daylight Savings Time change, you may have to syncronize twice. Again, this is only if your PC is drastically out of sync.

Flag QSOs for QSLing

Geoff Anderson G3NPA

Flag QSOs for QSLing

This button determines whether your QSOs will be flagged for the QSL file.

If selected (depressed), all QSOs entered into the Logbook Entry Window will be flagged for export to the QSL file.

Note: If you have the QSL highlight set (under Setup|Highlight|QSL to be printed) then you will immediately see this reflected the log once the QSO is entered.

Flag QSOs for eQSL

This button determines whether your QSO's will be flagged for the eQSL file.

If selected (depressed), all QSOs entered into the Logbook Entry Window will be flagged for export to the eQSL file.

QSOs flagged for eQSL are not immediately recognisable but a left click on a QSO in the Logbook Page Window will indicate the flag from the pop-up menu.

Flag QSOs for LOTW

This button determines whether your QSO's will be flagged for the LOTW file.

If selected (depressed), all QSOs entered into the Logbook Entry Window will be flagged for export to the LOTW file.

]

QSOs flagged for the LOTW are not immediately recognisable but a left click on a QSO in the Logbook Page Window will indicate the flag from the pop-up menu.

Note: At present the LOTW files are only dummies as the format has yet to be announced.

QSL File Creation

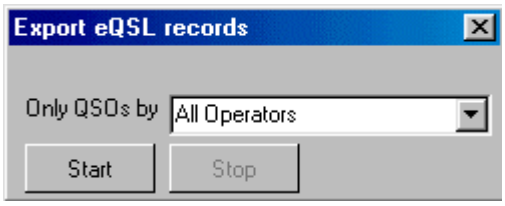
Geoff Anderson G3NPA

eQSL Files

The eQSL file is a standard text (.txt) file. To create an eQSL file:-

1) Click on the **Create eQSL File** button on the Toolbar;

to produce the **Export eQSL records** DIalog Box



2) Select the appropriate operator(s);

3) Click on "Start"

NOTE: If there are no appropriate QSOs flagged in the log, a message to that effect will be displayed and the opertaion will terminate

4) Either select a file name from those presented OR type in a new file name and click on "Ok";

5) Respond to the appropriate prompt to either:

Create a new file;

Replace or **Append** to the existing file; or,

Cancel the file creation activity.

6) If you do not "Cancel", at the end of file creation you will be presented with a message that "nnn QSO's have been copied the eQSL file. Do you want to flag these QSO as having been sent to eQSL Yes/No?". Answer this prompt appropriately.

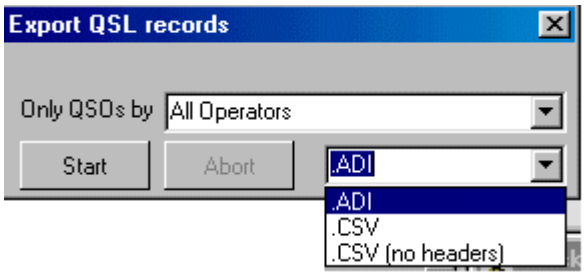
Logger32 will now have created the .txt file ready for uploading to eQSL.

LOTW Files

The LOTW file is a standard text (.txt) file. To save an LOTW file:-

1) Click on the LOTW button on the Toolbar:

to produce the LOTW Dialog Box



2) Select the "Operator"

3) Click on "Start"

4) Either select a file name from those presented OR type in a new file name.

5) Click on "Ok" in the file window.

6) Select one of the three options to replace the file, to append to the existing file or Cancel

7) You are then advised that XX QSO's have been copied into the LOTW file. Do you want to flag these QSO as having been sent to LOTW Yes/No?

Logger32 will now have created the .txt file ready for uploading to LOTW.

NOTE: If there are no appropriate QSOs flagged in the log, a message to that effect will be displayed.

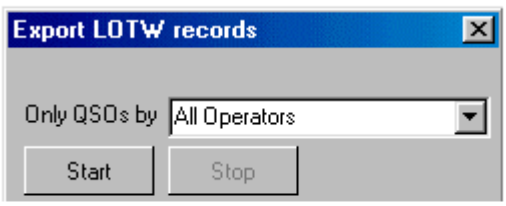
Please note that at present the LOTW files are only dummies as the format for these has yet to be announced.

QSLFiles

To save an QSL file:-

1) Click on the QSL button on the Toolbar

to produce the QSL Dialog Box



2) Select the "Operator"

3) Select the type of file you wish to produce. Three types are available; ADI, CSV or CSV without header lines. The CSV type file is useful if you wish to import the data into a spreadsheet like Excel and the CSV without header can be used as a mailmegre source in Microsoft Word for the generation of QSL labels.

3) Click on "Start"

4) Either select a file name from those presented OR type in a new file name.

5) Click on "Ok" in the file window.

6) Select one of the three options to replace the file, to append to the existing file or Cancel

7) You are then advised that XX QSO's have been copied into the QSL file. Do you want to flag these QSOs as having been sent to QSL Yes/No?

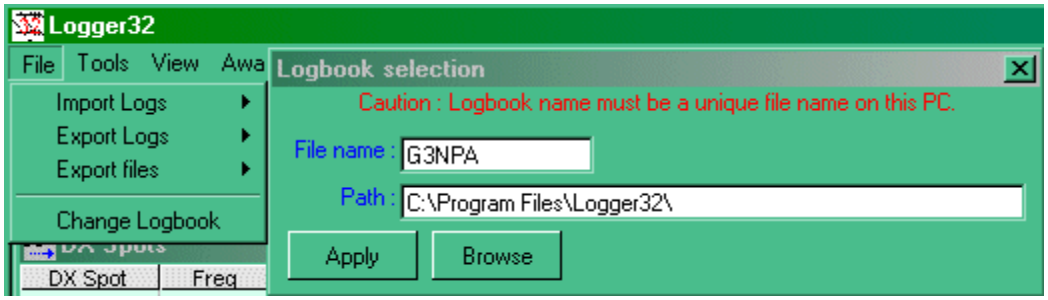
Logger32 will now have created the appropriate file.

NOTE: If there are no appropriate QSOs flagged in the log, a message to that effect will be displayed.

Changing Logbooks

Geoff Anderson G3NPA

As well as having the ability to use one log for multiple users, Logger32 will also support multiple logs. Using the menu item **File|Change Logbook**, additional logs may be entered



Using the “Browse” button will give the user the ability to swap to a different file. Log file MUST have the name xxxx.ISD. [Please note that files such as Country. IOTA32, County and Alias.ISD file are NOT logbook files – these are database files used within Logger32]

To create a new logbook file, go to **Files|Change Logbook** and enter the name of the file to be created. In the case shown the file name will be G3NPA.ISD. Press the “apply” button and then enter the callsign you wish to use as the “Operator”. Once “Applied” the new log will be available. If this is a new log, then the logbook page window will be empty and you may then load appropriate ADIF file or just start to use it.

This facility is most useful should you wish to maintain separate logs for contesting. This has the advantage that the stats during the contest will apply ONLY to that contest even if the “operator” is the same as in other logs.

Exporting Logs

B. Charles Sutton W1MCP

Logger32 gives you the option to export your logs in two different formats:

1. ADIF

Logger32 follows all the standards for exporting ADIF files, here is an example of a portion of an ADIF record:

<CALL:5>KE1EH <QSO_DATE:8:D>20000402 <TIME_ON:6>000016 <MODE:3>SSB <BAND:3>10M <RST_SENT:2>59 <EOR>

2. Comma Delimited (csv).

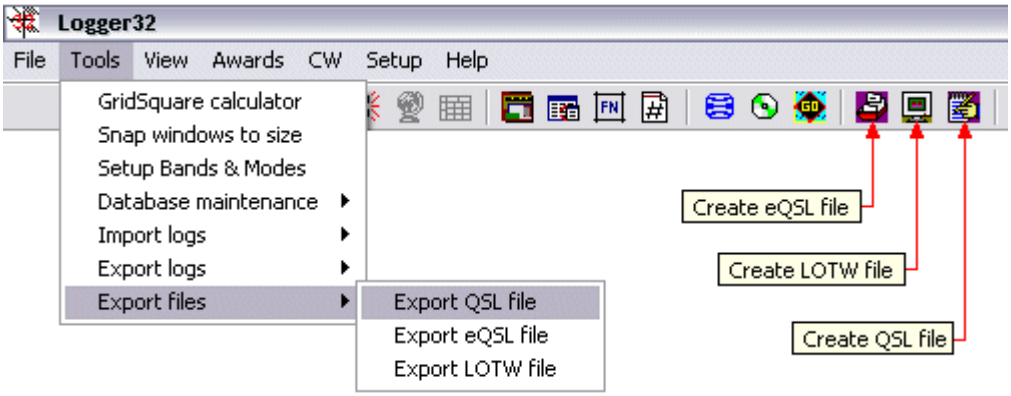
The first 4 lines of the CSV file have details about the data it contains, the 6th line shows the field headers" and the following lines contain the QSO records. here is an example of a portion of a CSV record:

"KE1EH","RI,KENT","","NA","","03","","291","28.305000","","","06","","","SSB","Rusty"

CSV files can be easily imported into many other programs, including Microsoft Excel. You may have to delete the first 4 lines to do so in some programs.

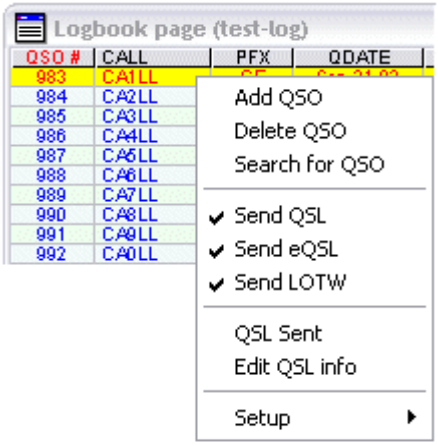
To export your log:

From the Main Toolbar, select the Tools Menu, then the Export Logs option, then choose ADIF file.



Logger32 will prompt you for the filename you wish to export your QSO records to. You can choose an existing file (doing this will overwrite all data in that file), or you can create a new file.

A popup window will then prompt you for some additional information:



Select the appropriate operator you wish to export QSO records for, or choose "All Operators".

If you place a check in the Partial Log box, you will then be asked for the starting and ending dates for the range of QSO you wish to export.

When you click Start, Logger32 will begin exporting your QSOs. You can click Abort any time after this point to stop the

Importing Logs

B. Charles Sutton W1MCP

For specific instructions on transferring your logs from Logger16 to Logger32, please refer to the help topic: Logs from Logger16 and Other Programs".

Logger32 accepts one form of input file know as ADIF. Logger32 follows the ADIF standards and will import those files that also follow the standards. There are some programs that do not follow the standards and you will have to modify them before they can be correctly imported into Logger32. Logger32 will identify any and all QSO's that are not formatted correctly and will identify the problem.

Here is a small sample of an ADIF file:

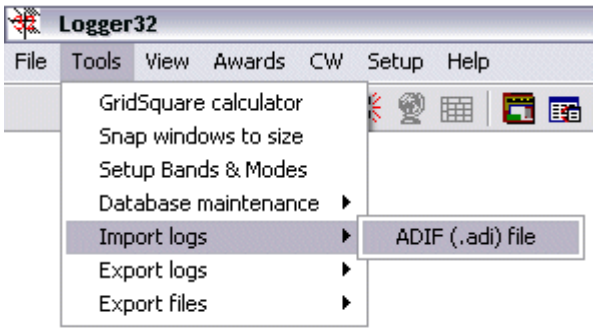
<CALL:5>KE1EH <QSO_DATE:8:D>20000402 <TIME_ON:6>000016 <MODE:3>SSB <BAND:3>10M <RST_SENT:2>59 <EOR>

While there are many other fields that can be included in an ADIF record, this will give you an idea of what the file should look like.

One of the ADIF fields is the operator field. This field is used to identify the callsign of the operator that made the QSO. You can use this field to keep track of the different callsigns you may have had. If you wish to use this kind of tracking it will be easier if have one ADIF log for each different callsign. Logger will allow you to display QSO data and statistics based on an individual operator, or for all operators.

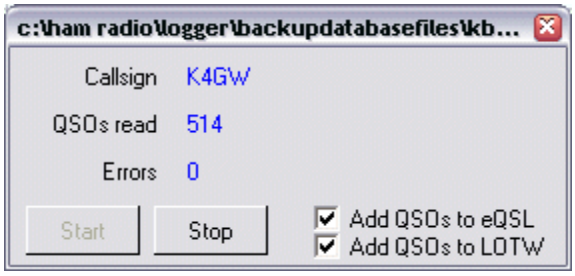
Before importing your ADIF log, be sure the Logbook Entry Window is displaying the correct operator Callsign, if it isn't, change it accordingly. While importing your logs, Logger will search for the operator field and apply it to each QSO, if the field is not present your ADIF file, logger will use the operator currently being used. Before the import starts, a dialog popup window will remind you this and show the current operator callsign that will be used as the default.

From the Main Toolbar, select the Tools Menu, then the Import Logs option, then ADIF file.



Logger will prompt you for the file you wish to import. (NOTE: Logger will only look for files with the ADI extention). Highlight the you wish to import and click on the OPEN button.

A popup window will provide you with a few options at this point:



Start Button: Clicking this button will start the import.

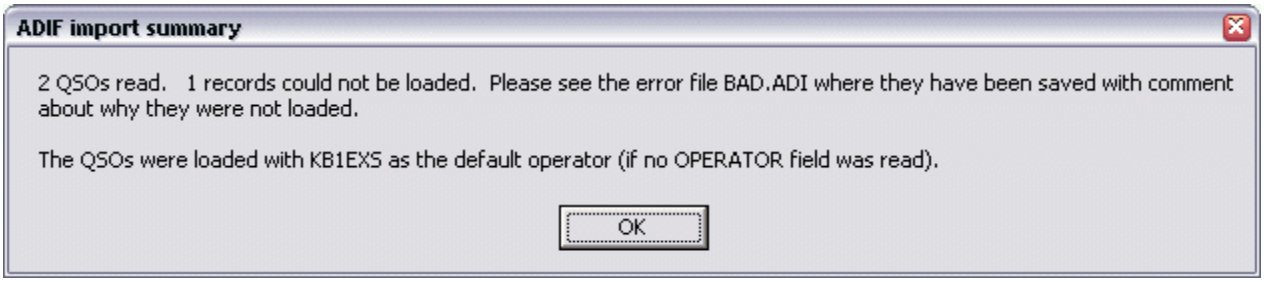
Stop Button: Clicking this button will stop the import. (Note: Any QSO's that were added before pressing Stop will remain in logbook).

Add QSOs to eQSL: Checking here will flag each imported QSO to be included with an eQSL export.

Add QSOs to LOTW: Checking here will flag each imported QSO to be included with a LOTW export.

More information on these two exports is included in the "Exporting Files" help topic.

After Logger32 has completed the import a popup window will open showing you the total imported QSOs and any errors that found.



In this example, you can see that one QSO was found to be bad and could not be imported. Logger32 will generate a file named BAD.ADI. You should open this file in a text editor (such as notepad) and make any corrections needed, save the file with a name, and then import the newly created .ADI file. Here is an example of the error reporting:

Error in the <QSO_DATE:x> field ....

<CALL:5>CA1LL <QSO_DATE:8:D>04052002 <TIME_ON:6>230814 <MODE:3>SSB <EOR>

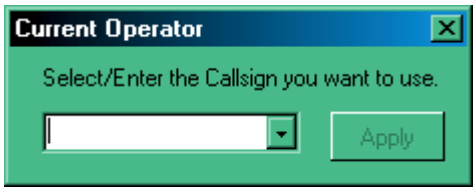
The ADIF standard requires the date to be in the format of YYYYMMDD, and as you can see, this record does not comply.

For additional information on importing logs, please refer to the help topic: "Transferring Logs from Logger16 and Other

Change Operator

Geoff Anderson G3NPA

If you right-click on the [{Link to topic Logbook Entry Window:Logbook Entry window}] and select "Change Operator" from the menu, the Current Operator dialog box will be displayed. Simply enter a new callsign into the edit box, or using the drop-down select a previously entered callsign and click the "Apply" button.



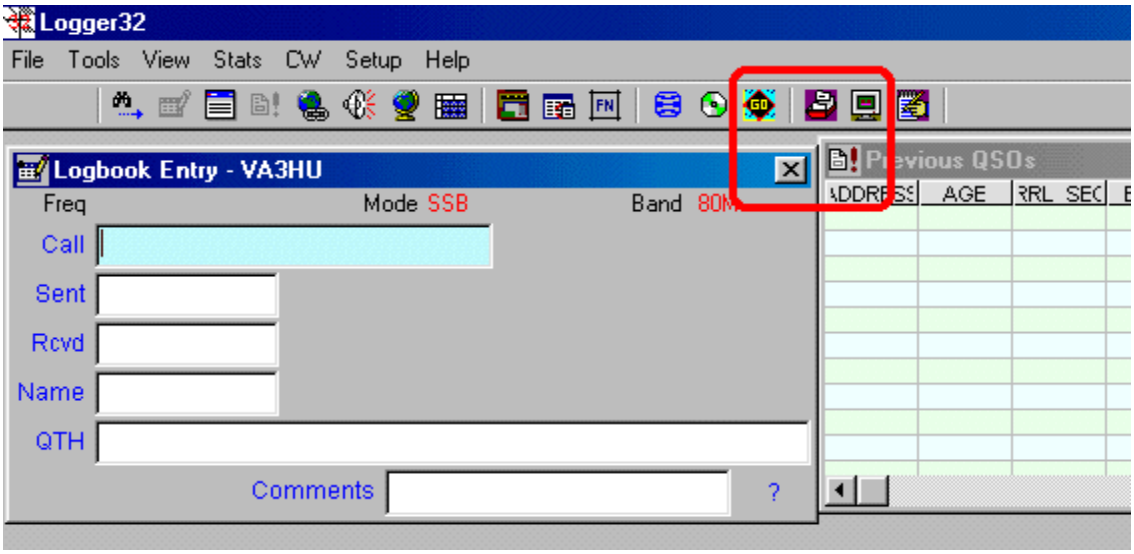
Snap Windows to Size

Bob Furzer K4CY

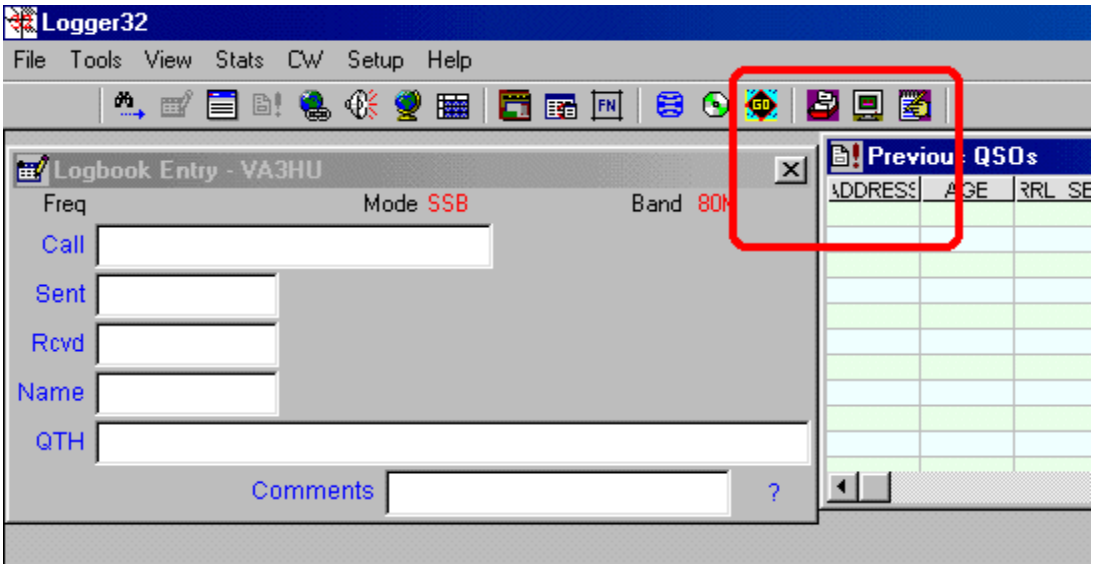
Snap Windows to Size is a function that attempts to align and resize all of the main logging windows to the nearest 25 pixels on screen.

It is difficult to drag and resize all windows to be exactly the same size, at the same width, and all neatly at the same height using mouse. One can get close, but often not exact.

Snap Windows to Size is based on the nearest 25 pixels to each window top, left, height, and width. Let's assume a simple case only two windows. With the mouse, you have dragged the Logbook Entry Window to a location where its top is 20 pixels below top of the Logger32 main window, and the Previous QSOs Window is moved with the mouse to a position 2 pixels from the top of Logger32 main window. You're almost there, but the windows are still not exactly in line (they are in fact, 18 pixels apart).

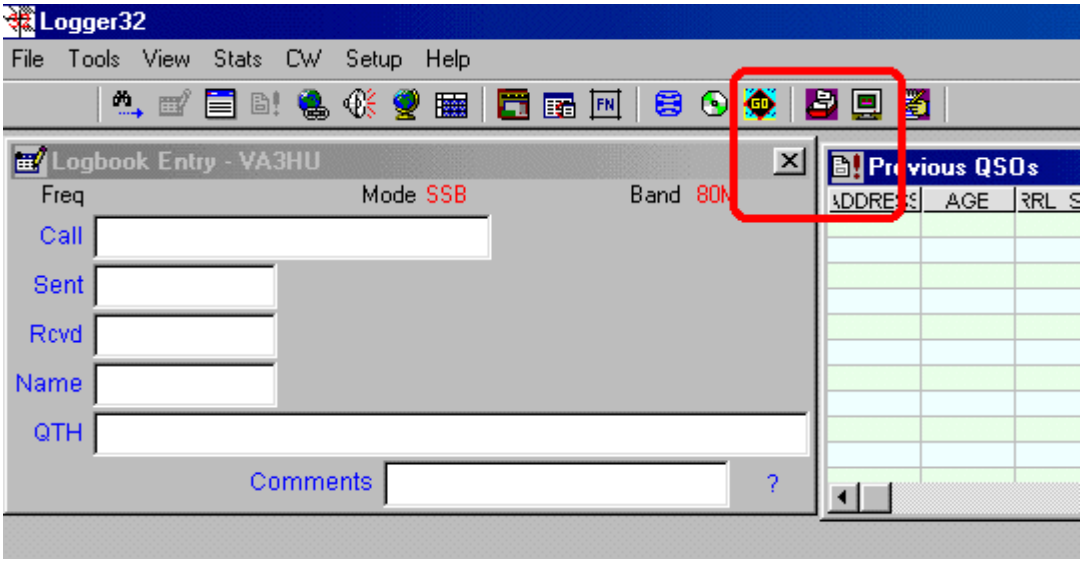


Select Snap Windows to Size, and the top of the Logbook Entry Window will snap down to 25 pixels from the top of the Logger32 main window, and the top of the Previous QSOs Window will snap to the top (0 pixels) of the Logger32 main window.

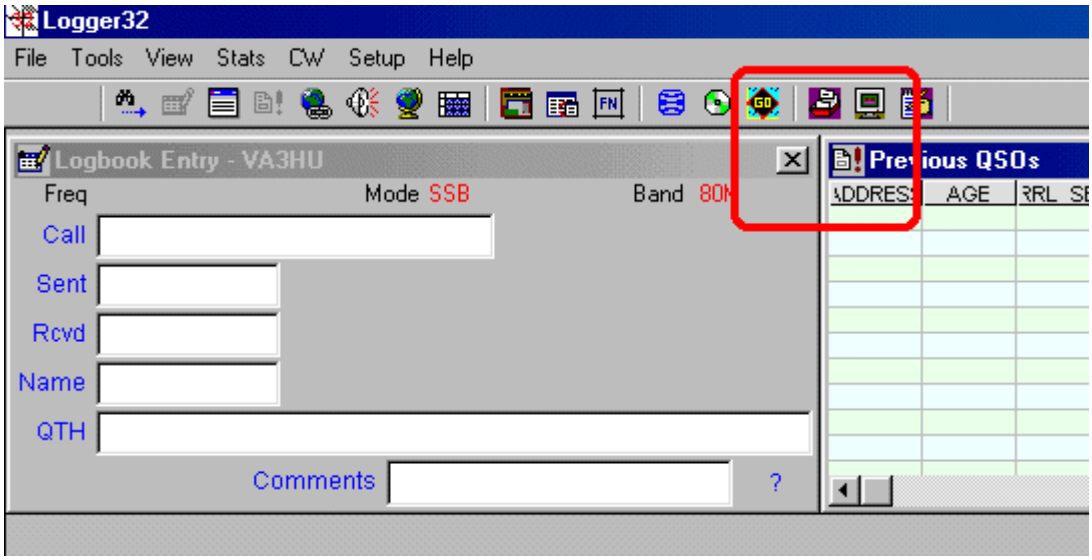


The tops of the two windows are now 25 pixels apart - worse than before. However, the tops of the two windows are now set at magic 25 pixel positions apart on the Logger32 main window. Which position do you prefer?

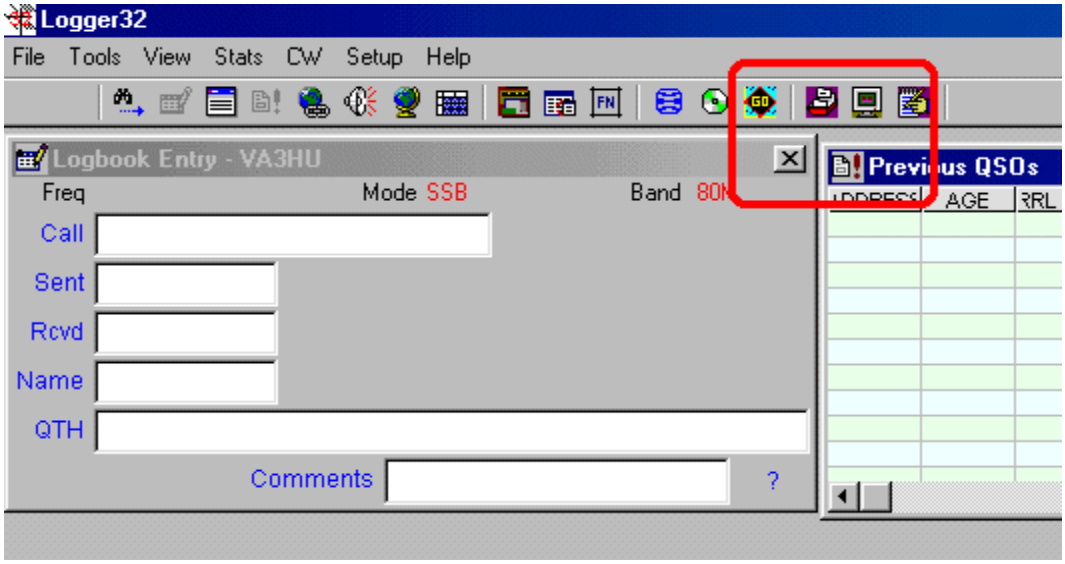
Let's assume the Logbook Entry Window at 25 pixels from the top. Drag the Previous QSOs with the mouse so the top is very to being aligned to the top of the Logbook Entry Window, let's say it's at 27 pixels (just a little higher).



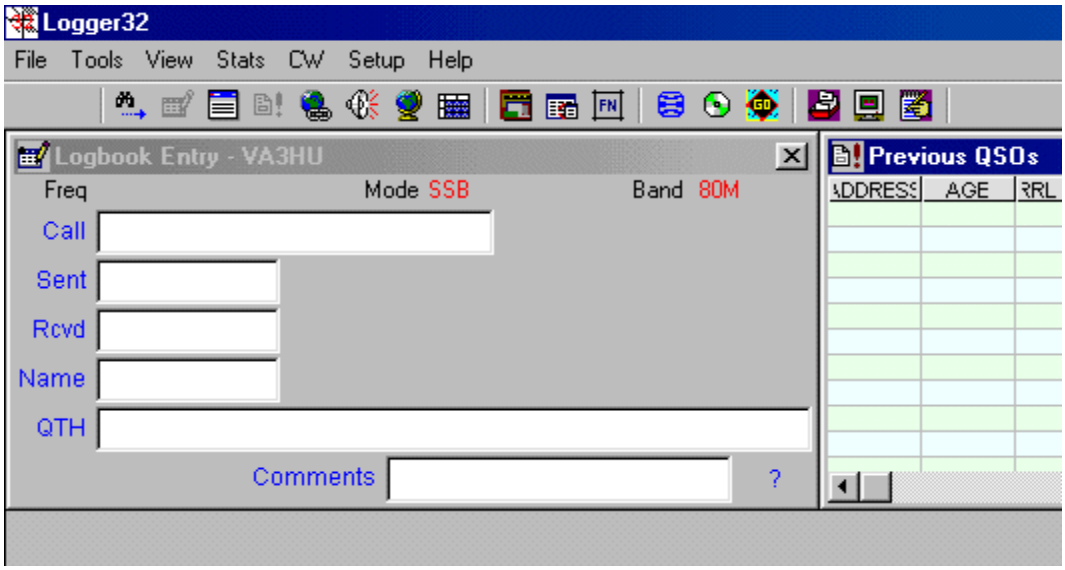
Select Snap Windows to Size, and the top of the Previous QSOs Window will snap to 25 pixels, and the tops of both Windows are now exactly aligned.



The above example was worst case. If you were lucky, when you first aligned the Logbook Entry Window and the Previous QSOs Window, you would have gotten closer than we did above. Assume the top of the Logbook Entry Window was at 10 Pixels and Previous QSOs Window was at 12 pixels from the top of the Logger32 main window.



Selecting Snap Windows to Size would have aligned the tops of both Windows at exactly the same height (0 pixels from the top of the Logger32 main window).



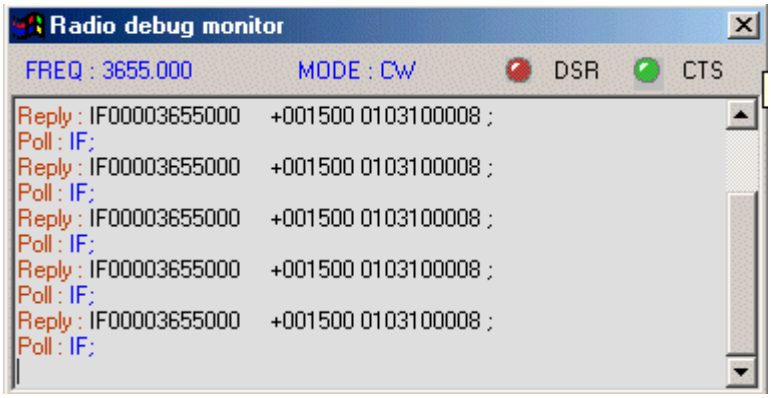
A reminder - Snap Windows to Size adjusts all four dimensions of the windows (Top, Left, Height, and Width), so the same for aligning windows side by side, and one above another.

Easy huh?

Radio Debug Window

Hew Lines VA3HU

From the Setup Menu, selecting the Radio | Show Radio debug window menu item will display the Radio Debug Window. The following picture displays communications between Logger32 and a Kenwood TS-870.



This window monitors the serial link between Logger32 and the radio and displays:

The hardware status of the serial port using two LEDs to show the current state of the DSR and CTS hardware signals;

Transmitted data from Logger to the radio - in **blue**;

Received data from the radio - in **black**; and, if the serial link is correctly configured,

the radio frequency and mode of operation.

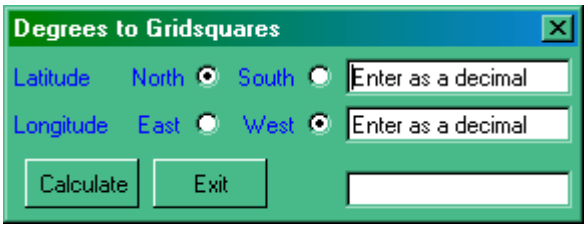
Grid Square Calculator

Geoff Anderson G3NPA

Should you have the need to calculate a Grid Square reference, then a simple converter is provided which will accept a latitude longitude reference and produce the appropriate Grid Square identifier.

On the top button bar, click on the 

button to produce the window below



Enter the Latitude and Longitude and select the appropriate North/South and East/West buttons, then click on "Calculate." The Square identifier will appear in the pane on the bottom right.

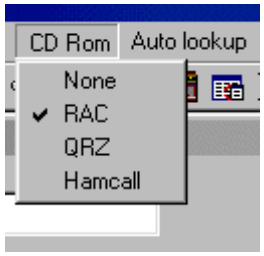
Note that the latitude and longitude should be entered as a positive decimal number. As an alternative, a right-click on either of two entry panes will allow for the Lat/Long entry in degrees, minutes and seconds.

Callsign lookup

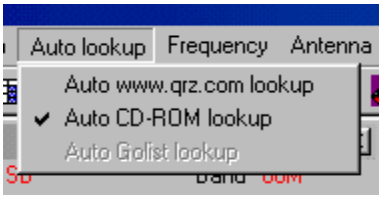
Geoff Anderson G3NPA

From CDROM

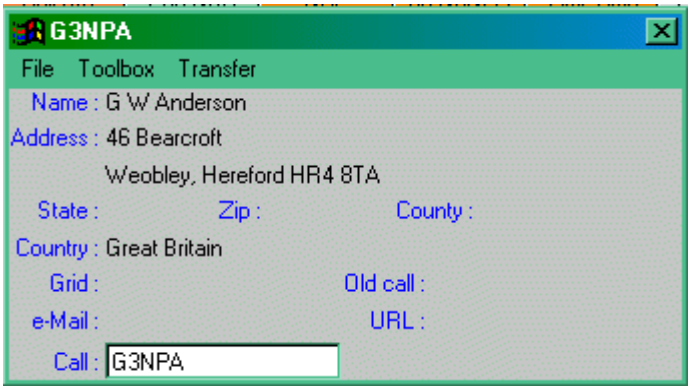
Using the menu item **Setup|CDROM**, select the CDROM being used.



If you wish an automated lookup from the CDROM, then also check the item **Setup|Auto lookup|Auto CD-ROM Lookup**.



If you have the automatic lookup selected, a dialog box will be automatically populated with information after entering a callsign in the Logbook Entry Window and pressing the TAB key or moving the cursor to another field with the mouse. The display will be similar to that shown below.



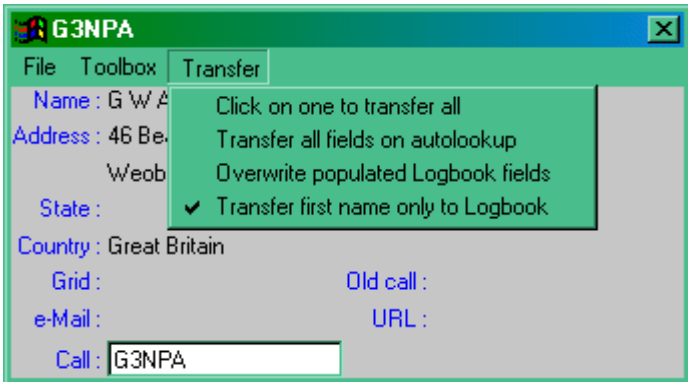
If you are using the manual mode of lookup, after entering the callsign in the Logbook Entry Window you must click on the icon under the menu bar.

From QRZ.com

A similar panel will be produced if you wish to use the QRZ.com facility but YOU MUST be connected to the internet before this work.

If you wish an automated QRZ.com lookup, then check the menu item under **Setup|Auto lookup|Auto www.qrz.com**, otherwise click on the QRZ.com icon under the menu bar.

Facilities are built in to allow for the transfer of fields, from the CDROM or the online QRZ.com site lookup tables, into the Log window – either automatically or manually. Check one or a combination of menu options to achieve the desired results. Note that both the QRZ and the CDROM lookups have their own display windows and therefore different options may be set up for each.



From the GO List

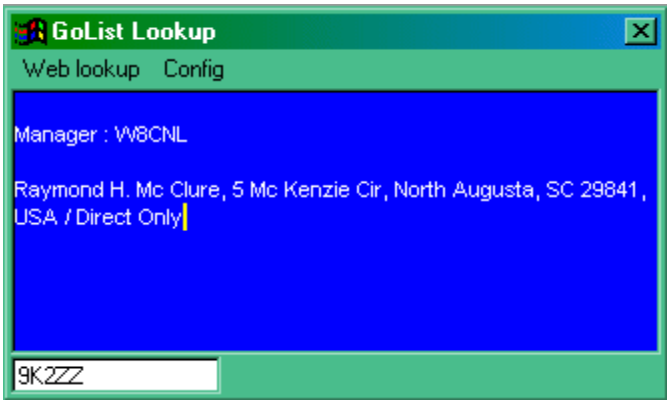
Like the CDROM and QRZ.com lookup system for obtaining individual QTH data, Logger32 also has the ability to search for QSL manager information using GoList. There is a built in database which was current when Logger32 was first released, and you are reminded that this will quickly go out of date.

The Web database is open to non-subscribers of the GoList database for limited monthly lookups (currently 30 lookups per Subscribers have Unlimited lookups for a year. More information may be found on the GoList web site www.GoList.net

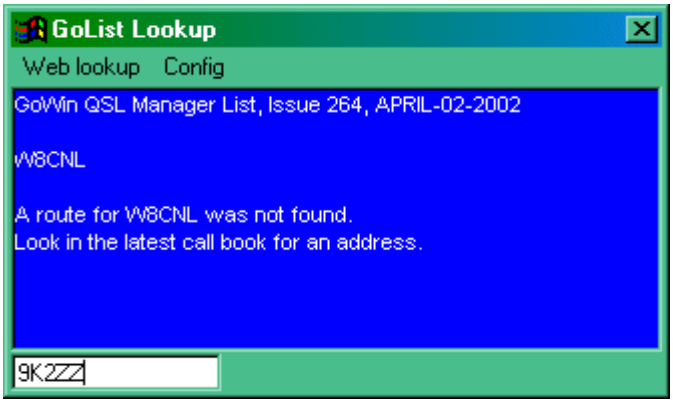
To obtain the QSL manager information, enter the callsign into the Log Input page and click on the GoList icon

Alternatively, click on the icon first, enter the callsign and either press <Enter> to get the information from the local source, or (assuming that you are already connected to the internet) click on “Web lookup” to collect from the GoList database.

Lookup from web site



Lookup from local database



If you are a licensed user of the Web based GoList service, then the facility to enter your User ID can be found under the Config menu.

Please note that there are no automatic facilities for the transfer of information from the GoList window into the Log Input window. The normal cut and paste techniques, however, will work should you need them.

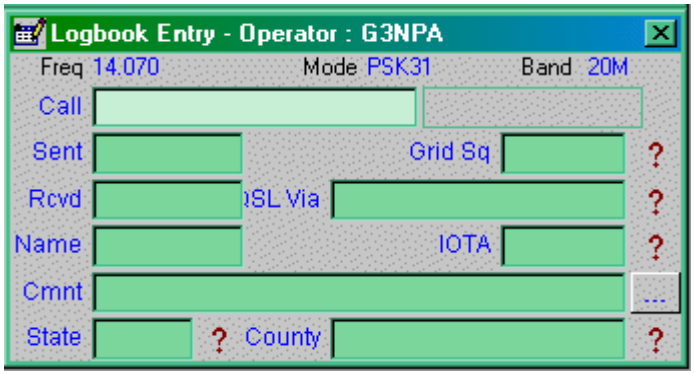
Notes and Comments Window

Geoff Anderson G3NPA

In Logger32 there are two log columns in which additional information connected with a QSO may be kept. One is known as Comments and the other as Notes. There is a subtle difference in the way these two functions work and a considerable difference the way information is displayed. In summary, the use of "comment" is quick and easy to use, but not so easy to retrieve the information, whereas the use of "Notes" is perhaps a little more time consuming, but the presentation of the information is done on callsign basis. Either (or both) method(s) may be used at will.

Comments

Comments are entered into the logbook via the Cmnt filed in the Logbook Entry window. Click on the button as shown below rotate the field round so that the title Cmnt appears on the left of the entry pane. Use the TAB key to place the cursor into this pane and enter the required text. If you need to return to another pane for the entry of other data – use the TAB key again. Anything typed in here will be stored in the Comment field in the logbook following the entry of all the data on pressing the <Return> key.

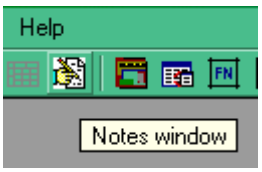


The  button will cause the fields on this line to toggle between Comment, QTH and Address.

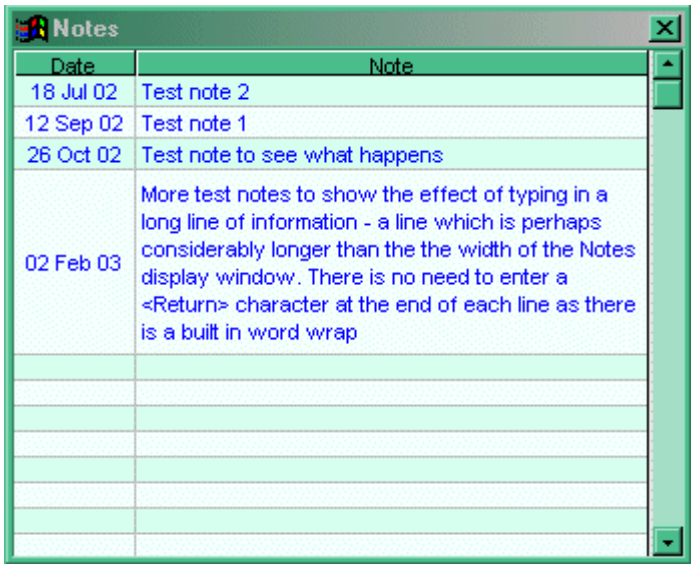
To view any "comment" you will have make sure that the comments column in the logbook is made visible (see Grid Layout Setup) and you will have to scroll through the Logbook.

Notes

Notes are entered into the logbook via the Notes window. This window is opened by clicking on the Notes icon on the toolbar.

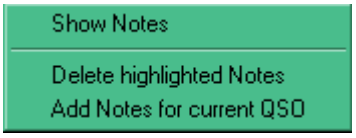


If there is no callsign entered in the Logbook Entry window or the particular callsign does not have any notes associated with then table will be blank. If a callsign is entered into the logbook entry window and there are notes associated somewhere in logbook, then the table will fill with the appropriate details – as the example below shows.



If you left click on anyone of the notes in the table, it will be highlighted and the logbook will also highlight that particular

To enter a note you must have the Notes window visible and have inserted a callsign into the logbook entry window. Right on the Notes window to bring up menu shown below:-



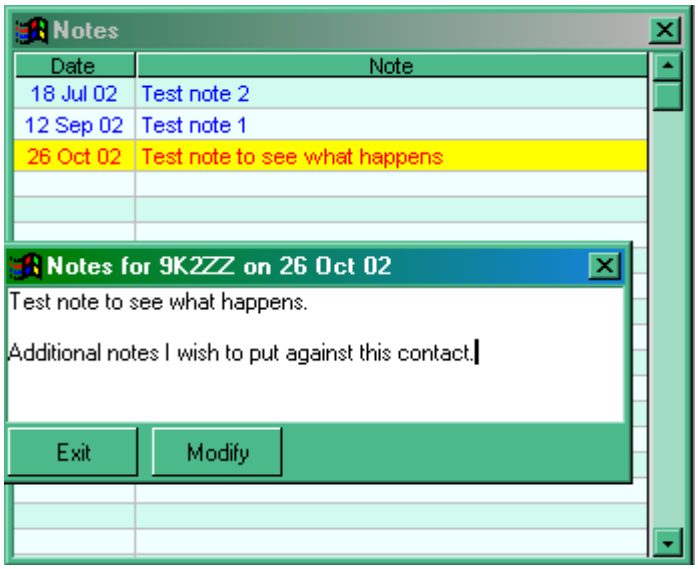
(Some of the above options may be greyed out)

If just adding a note, click on "Add Notes for current QSO" and type your text into the small window that will appear. Once you have completed this task, Exit from the text window and return the focus back to the Logbook Entry Window. You may then continue with entering whatever further QSO data you wish before recording all the information using the <Return> key.

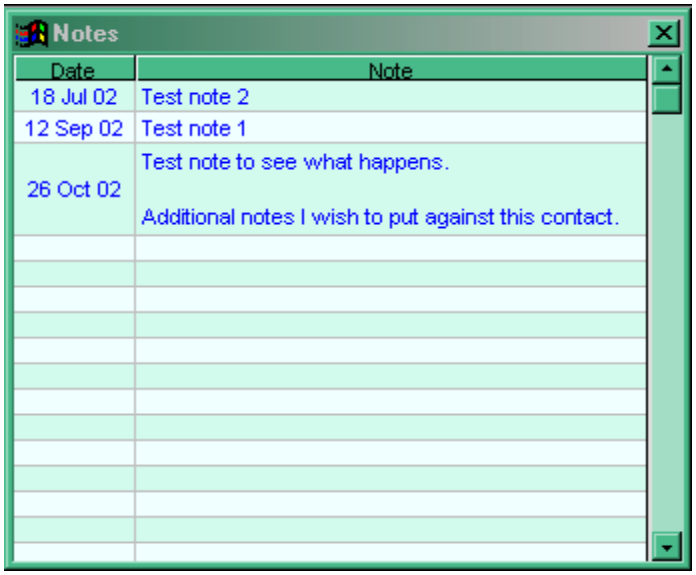
You may also delete a note from the Notes Window.

The Show Notes facility is a bit of a hangover from the development and although it works, it will not give any further information. Please appreciate that there is NO edit facility for notes apart from doing so in the logbook itself.

You can modify a previous note should you wish to do so. Right click on the note in question and select “Show Notes”. This bring up a new window containing the original note. You can now type any additional text or modify the existing.



End the session by clicking on the “Modify” button.



Reformat QSO Numbers

Hew Lines VA3HU

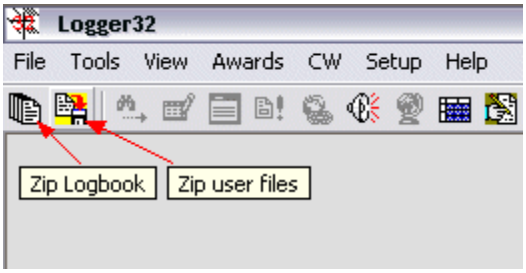
Selecting this Tools menu item will allow you to re-number the QSOs in your logbook. If you have manually entered any QSOs in your logbook with dates and/or times in the past, if you sort on date, the display will show QSO numbers out of sequence. This function will re-number your QSOs in the correct order.

Backing Up Logger

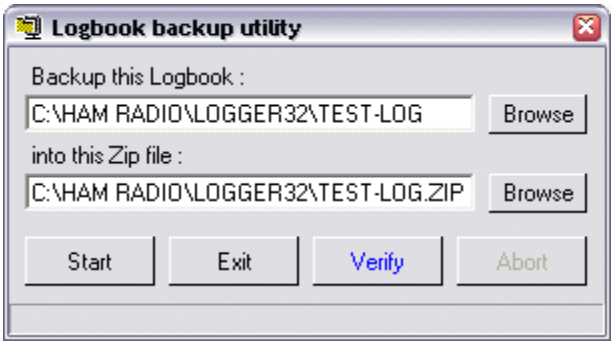
B. Charles Sutton W1MCP

It is STRONGLY recommended that you backup your files often.

There are two different backup options within Logger32, ZIP Logbook and ZIP User Files, both of which are accessed from the toolbar.



1. ZIP Logbook - This option will compress your logbook files into the popular PKZip format. Only one logbook can be backed at a time. If you have several logbooks you will need to perform this backup once per logbook. Clicking on it's icon will bring up following menu:

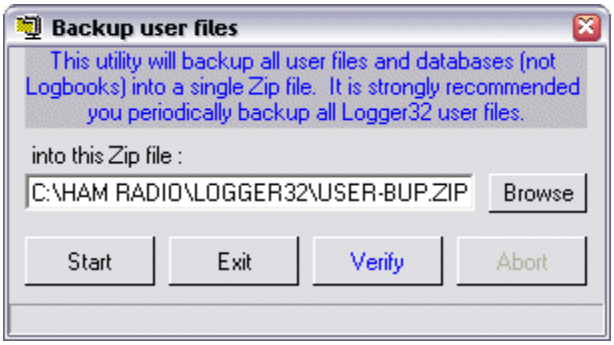


In the first line, select the logbook you wish to backup. In the second line, provide the path and name of the ZIP file you wish to create. **NOTE:** If you select the A: drive, Logger32 will automatically span multiple floppy disks if necessary.

Press Start to begin the backup, Exit to leave this window (without backing up the logbook), Verify to check if the archive was created error free, and Abort to abort a backup in progress.

The very bottom of the window will show the status of the backup and any instructions necessary.

2. ZIP User Files - This option will compress your User Files into the popular PKZip format. The User Files includes all non-logbook files that you may have modified while using Logger32. Examples include: all .ini files containing your prefered setup, country databases (and support files), IOTA databases, etc. The number of files backed up during this operation will depend on you use Logger32. As an example, my current version contains 32 files.



In the first line, provide the path and name of the ZIP file you wish to create. **NOTE:** If you select the A: drive, Logger32 will automatically span multiple floppy disks if necessary.

Press Start to begin the backup, Exit to leave this window (without backing up the logbook), Verify to check if the archive was created error free, and Abort to abort a backup in progress.

The very bottom of the window will show the status of the backup and any instructions necessary.

3. Do it yourself - You can also copy your entire Logger32 directory to another drive, networked computer, or burn a copy to a

Logger32 does not store any configuration settings in the registry at all.

RESTORING YOUR FILES - If you need to restore your backed up files, you will need a program such as WinZip or PKUnzip, or many of the other programs capable of reading a ZIP file. Simply uncompress the files back into the Logger32 directory.

Compressing Logbooks User Files and Databases

Geoff Anderson G3NPA

Zip Logbooks

This utility will backup the Logbook files into a single Zip file. It is strongly recommended that you make such backup copies on a regular basis.

[One of the two statements below is correct and the other is wrong. At the moment I don't know which is correct but I'm trying to find out from BobF. I will advise ASAP]

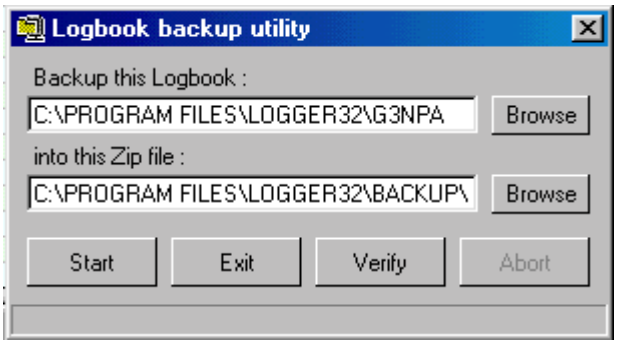
Note: You do not need a file compressing program on your computer to use this utility to save the files. However, you will require WinZip if ever you need to expand the files for use.

Note: You will need to have a file compression program like WinZip installed on your computer before this utility will function correctly.

To Zip your logbook:

1) Click on the Zip Logbook button on the toolbar

to open the following window



2) Set up the logbook name in the “backup this logbook” pane by either typing in the path and file name (without the ISD extension) or by using the “browse” button to locate the file. Note that if you have not renamed you log file it will have the name – Logbook32.ISD

3) Set up the destination ZIP file path and filename by either typing in the details or by using the browse button.

4) Click on “Start”

When the files have been saved, there will be an indication in the bottom pane of the window that 3 files have been zipped.

Zip User Files and Databases

This utility will backup all user files and databases into a single Zip file. It is strongly recommended that you make such backup copies on a regular basis.

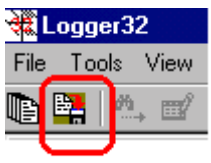
[One of the two statements below is correct and the other is wrong. At the moment I don't know which is correct but I'm trying to find out from BobF. I will advise ASAP]

Note: You do not need a file compressing program on your computer to use this utility to save the files. However, you will require WinZip if ever you need to expand the files for use.

Note: You will need to have a file compression program like WinZip installed on your computer before this utility will function correctly.

To use the utility:-

1) Click on the Zip Logbook button on the toolbar



to open the window shown below.

2) Set up the destination ZIP file path and filename by either typing in the details or by using the browse button.

3) Click on “Start”

When the files have been saved, there will be an indication in the bottom pane of the window that “xx” files have been zipped.

MACROs, Hot Keys and Programmable Buttons

Randy Tipton, WA5UFH, Geoff Anderson, G3NPA, and Hew Lines VA3HU

Overview

What are Macros, Programmable Buttons and Hotkeys ?

Logger32 is user-friendly and can be customized to your own personalized likes by using the programs built in MACRO
These commands can be used to "program" up to 36 programmable buttons in both the Soundcard Data Widnow and CW

Each button can be programmed using MACROs and/or text and can be given a label and color. By using your imagination, and working with the available list of MACROs, you can create files which will make operating PSK , RTTY and CW more enjoyable easier.

This section is intended to be a reference document for details on how to program the buttons using the MACRO language. details on selecting the number of buttons to display and some suggested functionality to assign to those buttons for each of the windows can be found in the sections on the Sound Card Data Window and the CW Machine.

Programming the Buttons

Default Hot Keys

The programmable buttons may be displayed in up to three rows of 12 buttons. Each button has a default hot key assigned to it follows:

- The top or first row of buttons defaults to the F-keys, (F1 through F12);
- The middle row of buttons defaults to Alt-F-keys (hold down Alt and press the function key); and,
- The bottom row of buttons corresponds to Ctrl-F-keys (hold down Ctrl and press the function key)

Pressing any of the hot key combinations will execute any script programmed for the corresponding button.

The default Hot Keys may be changed as part of the button programming process if you wish.

In addition to the User Definable Hot Keys, the following Hot Keys have fixed functionality within the Sound Card Data Window.

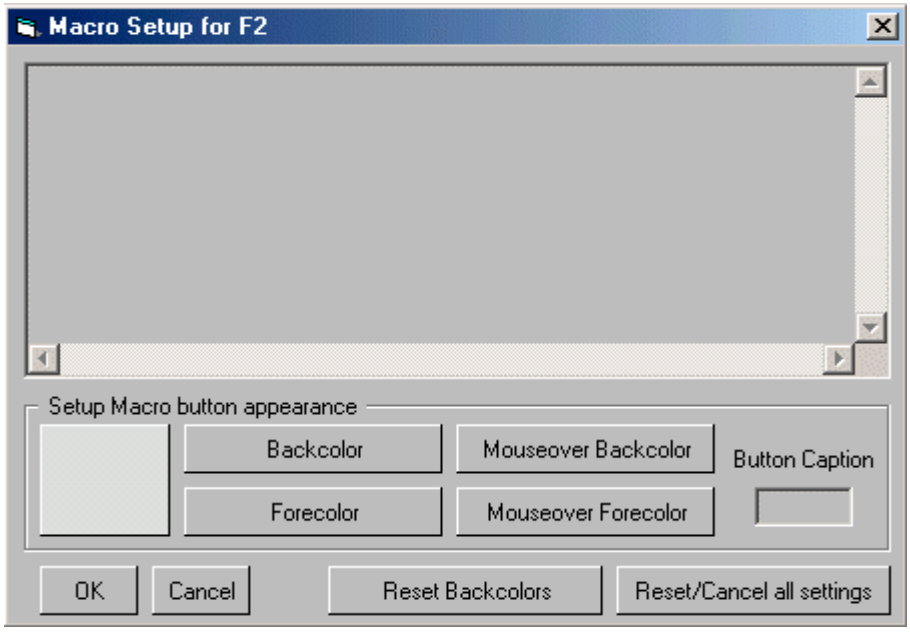
ESC - Change from Transmit to Receive. In order for this functionality to work correctly, the focus must be in the Sound Card Data Window.

INS - Toggle the reception of data on and off so scroll back in the RX window is possible. The RXWindow background will turn while data input is suspended.

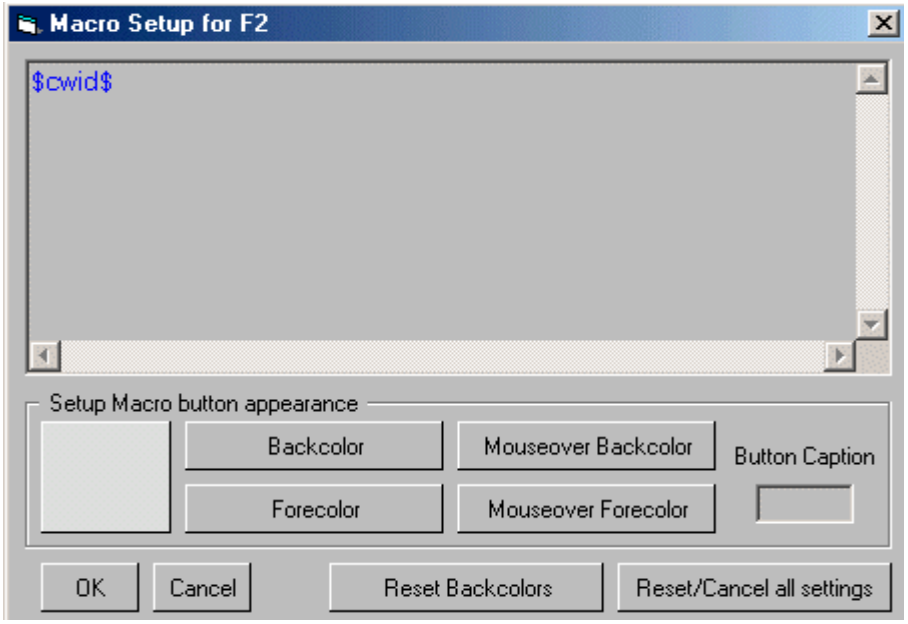
PAUSE/BREAK - Toggle between Transmit and Receive. In order for this functionality to work correctly, the focus must be in the Sound Card Data Window.

Programming the Routine

To start, simply right-click on the button you wish to program and the Macro Setup window will be displayed.

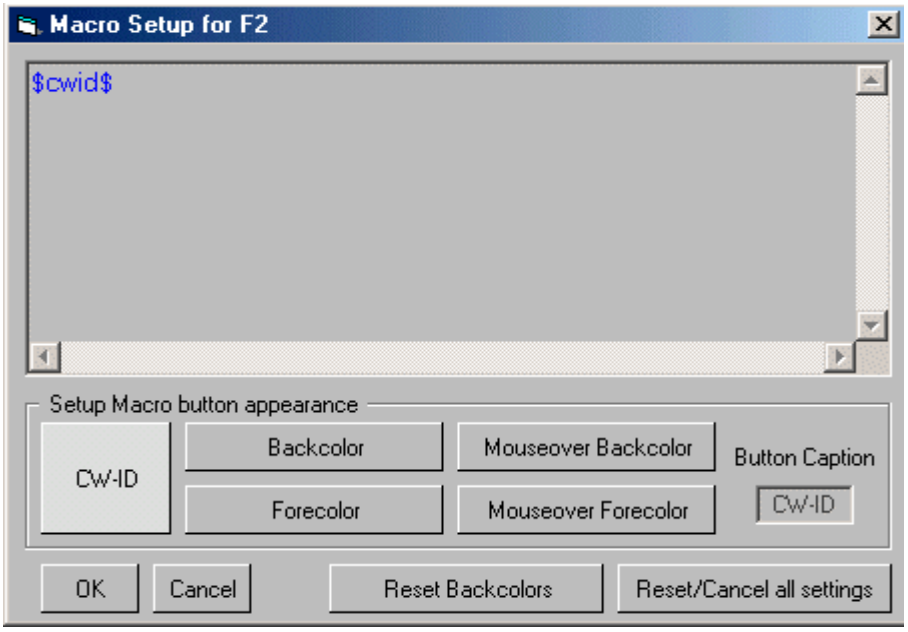


The Hot Key currently assigned to that button will be displayed in the Title bar (**Macro Setup for F2** - the second button on the top first row). To program the button, click in the text window and enter any macro commands (those beginning and ending with $) text required to execute the functionality required for this button.



In order to enter a character that is not available on your keyboard, you must enter the ASCII code for that character. This is done by pressing the <Alt> while you type the four digit code for the character on the numeric keypad. For example, to type the "¿", hold the ALT key down and type 0191 on the numeric keypad (you must be in Num Lock to do this). When you release the key, the ¿ will be displayed. When you type a character this way, you must enter a four-digit number, so for the ASCII 191, you must type 0191.

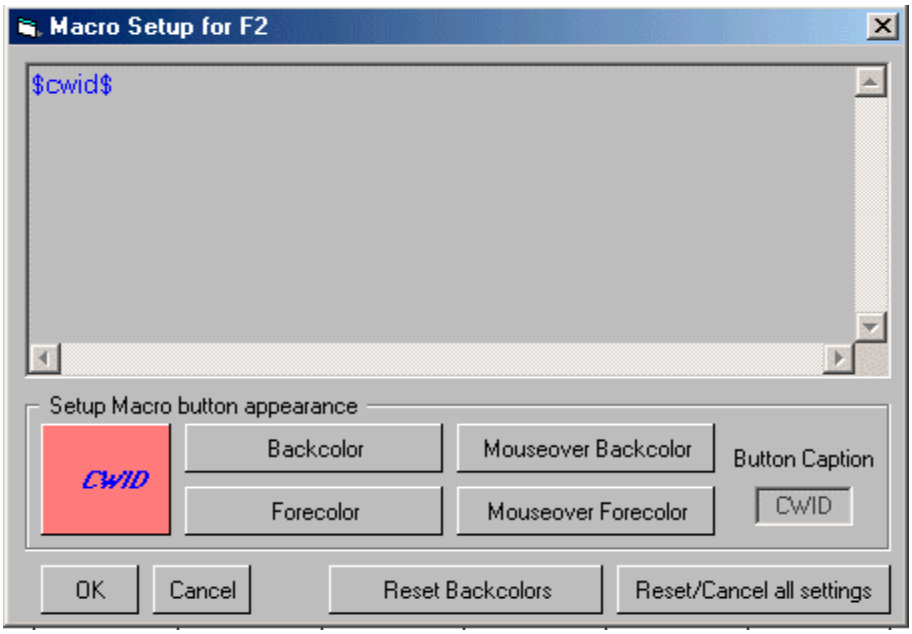
After entering the routine, enter a name into the Button Caption edit box at the lower right. This is the text that will be displayed on the button itself.



You can also program the following features of each macro button:

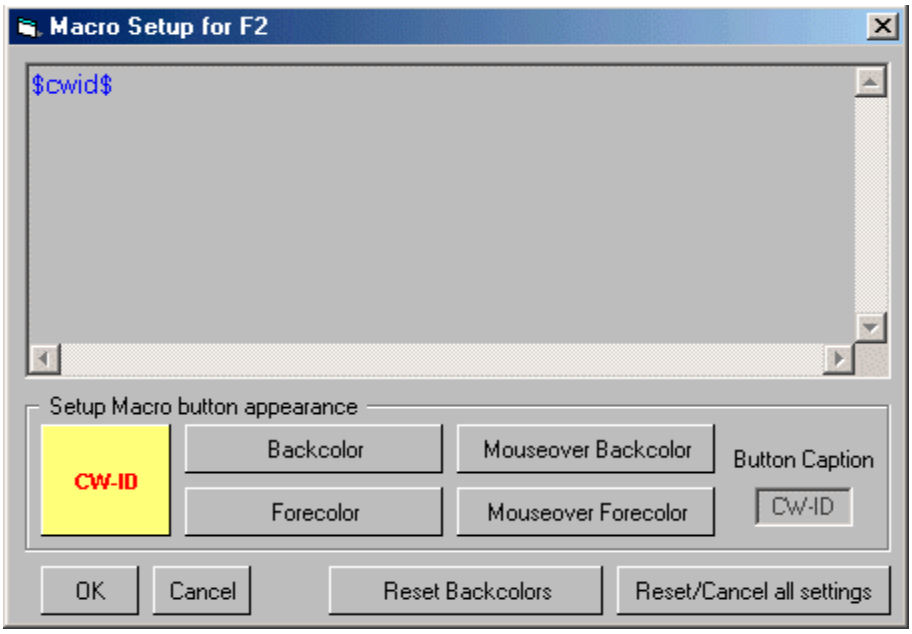
Back color - This displays a standard windows color selection dialog box allowing you to select the color of the background of the button.

Fore color - This displays a standard windows font selection dialog box allowing you to select the type, style and color of the font be used on the button. Note that even though the position of the text on the button in this window is not correct, it will be on the button in the Sound Card Window or CW Machine.



Mouseover Back color - This displays a standard windows color selection dialog box allowing you to select the color to which background will change when you drag the cursor over it.

Mouseover Fore color - This displays a standard windows font selection dialog box allowing you to select the type, style and to which the font will change when you drag the cursor over it. Note that even though the position of the text on the button in window is not correct, it will be on the button in the Sound Card Window or CW Machine.



You can also restore the default background colors (a delightful shade of gray) using the Default Back Colors button.

When the Macro Setup is completed, and you are ready to save it, press the **OK** button.

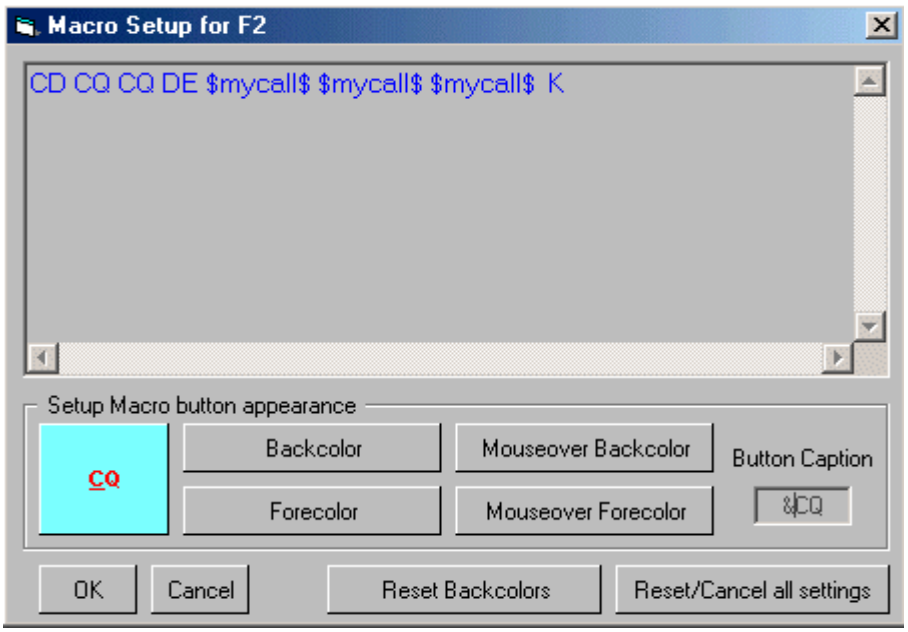
Pressing the **Cancel** button will cause the Macro Setup window to close without saving your work.

Delete/Cancel all settings will restore the button to the way it was before you began editing it. If it had a script, that script will be restored; if it was blank, it will return to blank.

User Assigned Hot Keys

In order to make your buttons more user friendly, consider the use of 'User Defined Hot Keys". It may be easier to remember that the simultaneous combination of Alt -C (rather than F1) is the routine for calling CQ.

User Defined Hot Keys are assigned to a button by using an ampersand (&) in the Button Caption immediately preceding the character you wish to use as the Hot Key. For example, entering "&CQ" in the Button Caption field will cause the button text to "CQ" and allow the pressing of <Ctrl-C> to be used as the Hot Key for that button. Note that the underline under the "C" indicates Hot Key visually.



A Button Caption of "Msg &1" would display as "Msg 1" on the button and use <Ctrl-1> as the Hot Key.

An extension of this feature allows the use of special characters on the Macro buttons. During Macro Setup, entering the ASCII code of any special character will display that character as part of the caption text. For example, entering caption of a button as chr$(191) would display "¿" as the caption of the button.

Testing the Buttons

It is strongly recommended that you test each button after it has been programmed. With the radio turned off, and with either the Sound Card Data Window or CW Machine open, click on the button to execute the macro and observe its operation in the transmit and receive windows. If the button has commands to switch the radio to receive or transmit, observe that those operate properly watching the Tx/Rx indication in the appropriate window. If there is a problem with a button's operation you can edit it by right clicking on the button and making whatever changes are necessary. Also execute the button by pressing the assigned Hot Key to ensure that the Hot Key is correctly programmed. It is better to find out about problems before sending the contents of the macro live QSO!

MACRO Commands

Many of these commands require a radio controlled by Logger32 via a serial port for their effective operation. These commands colored Red.

afc PSK RTTY

Toggles the AFC function on and off.

$align$ PSK RTTY

Re-tunes the radio so the captured signal appears at the default RX frequency.

$ascii(n)nnn$ PSK

Inserts the ASCII code ((n)nnn) of a character than cannot be entered from a keyboard into the output text string (if the first digit is zero, it is optional. see the section on More Difficult Macros).

$band$ CW PSK RTTY

Inserts the current band displayed in the Logbook Entry Window into the output text string.

$bpsk$ PSK RTTY

Change the operational mode of the Sound Card Data Window to BPSK (note 1)

$call$ CW PSK RTTY

Inserts the callsign currently displayed in the Logbook Entry Window into the output text string.

$clear$ CW

An immediate command to clear the TX Buffer and callsign panel. ONLY works if keyer is in a Manual Tx. [see Note 2].

$clearbuffers$ PSK RTTY

Clears the TX Window and Buffer as well as the RX Window. Stops transmission but DOES NOT return to RX.

$clearlog$ PSK RTTY

Clears the Logbook Entry Window.

$cleartxbuffer$ CW PSK RTTY

Clears the TX Buffer.

$command$ **PSK** **RTTY**

Sends the text string following the command to a radio controlled by Logger32.

cw **PSK**

Sends the text string following the command (up to 40 characters) on CW and switches to RX.

$cwid$ **PSK**

Transmits a CW ID string at the end of the current transmission and switches to RX.

$down$ **PSK** **RTTY**

Moves the main passband down 1 Hz. If AFC is locked on, this command will have no effect.

$file$ **PSK** **RTTY**

When followed on the same line with a fully qualified textfile name ($file$C:\LOGGER32\MYFILE.TXT), this command will load the contents of that file into the TX buffer. If only the filename is used, the command will default to the Logger32 directory.

$hexcommand$ **PSK** **RTTY**

Sends the hexadecimal string following the command to the radio.

log **CW** **PSK** **RTTY**

Enters the data currently displayed in the Logbook Entry Window into the Log.

$logimmediate$ **PSK** **RTTY**

Logs the QSO and clears the buffer immediately.

$longdate$ **PSK** **RTTY**

Inserts the current date into the output text string in the form dd-mm-yy.

$longdateandtime$ **PSK** **RTTY**

Inserts the current date and time into the output text string in the form dd-mm-yyyy, hh:mm:ss.

$longtime$ **PSK** **RTTY**

Inserts the current time into the output text string in the form hh:mm:ss.

$loop$ **PSK** **RTTY**

Causes a five (5) second delay after the macro has completed, then re-starts the macro (see the section on More Difficult

$mode$ **PSK** **RTTY**

Inserts the mode currently displayed in the Logbook Entry Window into the output text string.

$mycall$ **CW** **PSK** **RTTY**

Inserts the call of the current logbook into the output text stream.

$name$ CW PSK RTTY

Inserts the contents of the Name field currently displayed in the Logbook Entry Window into the output text stream.

net PSK RTTY

Toggles the Net function on or off

$qpsk$ PSK RTTY

Changes the mode to QPSK (See Note 1).

$qpsk=I$ PSK RTTY

Changes the mode to QPSK-Inverted (See Note 1).

$qsx+/-nnnn$ PSK RTTY

Shifts the transmit frequency of the radio up or down by nnnn Hz. $qsx-2000$ shifts the frequency transmit frequency down by 2 kHz, $qsx+1500$ shifts it up by 1.5 kHz. This shift is terminated by the $simplex$ command.

$qsy(nn)nnn.(nn)$ PSK RTTY

Immediately changes the radio frequency to the specified value (nnnnn.nn). For example - $qsy7070$ or $qsy14070.22$.

qth PSK RTTY

Inserts the contents of the QTH field currently displayed in the Logbook Entry Window into the output text string.

$radioandtone$ PSK RTTY

Returns the RF center frequency (radio carrier frequency plus audio tome frequemcy) when in PSK mode. Returns the RF of the Mark tone (radio frequency plus the mark tone audio frequency) in RTTY mode (see the section on More Difficult Macros).

$radiofreq$ PSK RTTY

For radios controlled by Logger32, returns the nominal RF carrier frequency of the radio (see the section on More Difficult

$receive$ PSK RTTY

Switches the radio from transmit to receive.

$receivedrst$ PSK RTTY

Inserts the received RST report currently displayed in the Logbook Entry Window into the output text string.

$reset$ CW

An immediate command to reset the parallel port, the serial port CW keying and/or the PTT control lines to a low state (un-key the radio). [see Note 2].

$rtty$ PSK RTTY

Changes the mode to RTTY (See Note 1).

$rttybpoff$ RTTY

Turns the receive bandpass filter off.

$rttybpon$ **RTTY**

Turns the receive bandpass filter on

$rttyfigures$ **RTTY**

Shifts the RTTY transmission into Figures mode.

$rtty-I$ **PSK** **RTTY**

Changes the mode to RTTY-Inverted (see Note 1).

$rttyletters$ **RTTY**

Shifts the RTTY transmission into Figures mode.

$rttymarkfrequency$ **RTTY**

Returns the RTTY Mark frequency. This frequency will change depending on the commands $rttynormal$ or $rttyreverse$.

$rttynormal$ **RTTY**

Operate RTTY using normal shift (LSB).

$rttyreverse$ **RTTY**

Operate RTTY using reverse shift (USB).

$rttysetup$ **RTTY**

Display the MMTTY setup dialog box. This is the equivalent of selecting the "Setup" button of the RTTY Toolbar.

$rttyshift$ **RTTY**

Returns the current setting of the RTTY Shift (normal or reverse).

$rttysquelchoff$ **RTTY**

Turns the RTTY Squelch off.

$rttysquelchon$ **RTTY**

Turns the RTTY Squelch on.

$rxtonefreq$ **RTTY**

Returns the Mark tone currently displayed in the second panel of the Sound Card Data Window Statusbar (see the section on Difficult Macros).

$sentrst$ **PSK** **RTTY**

Inserts the contents of the RST Sent field of the Logbook Entry Window into th output text stream.

$serialnum$ **PSK** **RTTY**

Returns the serial number of this QSO.

$shortdate$ **PSK** **RTTY**

Inserts the current date into the output text string in the form dd/mm/yy.

$shortdateandtimne$ PSK RTTY

Inserts the current date and time into the output text string in the form dd/mm/yy hh:mm.

$shorttime$ PSK RTTY

Inserts the current time into the output text string in the form hh:mm.

$simplex$ PSK RTTY

Restores simplex operation by returning the Transmit frequency to the Receive frequency after a qsx command.

$speed-$ CW

Temporarily increases the Dot length by 4 ms (CW speed will be slower).

$speed+$ CW

Temporarily decreases the Dot length by 4 ms (CW speed will be faster).

$CWspeeddn$ CW

Permanently increases the Dot length by 2 ms (CW speed will be slower).

$CWspeedup$ CW

Permanently decreases the Dot length by 2 ms (CW speed will be slower).

$starttime$ PSK RTTY

Records the current time as the QSO start time.

$transmit$ PSK RTTY

Turns the transmitter on and transmit any text in the TXWindow.

up PSK RTTY

Moves the main passband up 1 Hz. If AFC is locked on, this command will have no effect.

$upperorlower$ PSK RTTY

Returns a plus sign (+) if the radio is in USB mode or a minus sign (-) if the radio is in LSB mode (see the section on More Difficult Macros).

$version$ PSK RTTY

Enters the version number of Logger32 into the output text stream.

[RTTY

Turn RTTY diddle off. This command also works if type into the TxWIndow.

] RTTY

Turn RTTY diddle on. This command also works if type into the TxWIndow.

^ Concatenatikon of adjacent letters. [see NOTE 3].

Note 1: These commands are designed to change the operational mode of a radio controlled by Logger32. Since these change mode, they can be invoked from any other mode. They are ignored if the radio is transmitting so they cannot be used is macro statement that is meant to execute while the radio is transmitting (e.g. "Fred – QSY to 14080",$RTTY$,$qsy 14080.00$).

Note 2: These commands can be used ONLY as a stand-alone MACRO. NO other text can be included in the command.

Note 3: Concatenated CW letters like AR, SK, BK, etc, are simulated by MACRO text with a ^ (caret) between the letters to be joined. e.g. A^R, S^K.

Note 4: MACRO commands are only available via the buttons. They may not be typed manually in the TX WIndows.

A few MMTTY macros work in the RTTY mode of the Sound Card Data Window:

] diddle on

[diddle off

~ pause

%T UTC time

%t UTC time

%D UTC date

More Difficult Macros

This section provides examples of how to use some of the more difficult or unusual Macro commands.

$asciinnn$ - This command inserts the ASCII code (n)nnn of a character than cannot be entered from a keyboard into the output text string. For example, the ASCII code 191 will display the symbol "¿". So the macro command $ascii191$Que pasa? Will "¿Que pasa?" into the output text string. If the first digit is a zero, it is optional with this command, you can use either three or characters. In other words, $ascii0191$ or $ascii191$, entered in a macro command, will both generate the character "¿".

The character, tilde (~) cannot be typed into a macro, but if you need the tilde character, use $ascii0126$ in its place, and the tilde character will appear.

Example 1:

Set up a Macro button (say F12) that has the command $ascii0176$ and a

button caption of chr$(0176) and save it. Simple enough !

Now, with the cursor in the TxWindow, enter the text "The temp here

today is 90<F12>F. (Bet you're wondering how I did that ...)"

$upperorlower$, $radiofreq$, $rxtonefreq$, and $radioandtone$

These commands are applicable to both PSK and RTTY.

Here is an example of how to use these them in PSK:

The following text is entered into the text window for hot key <F5>

Your exact frequency is $radioandtone$. Here's how I figure that out ... My receiver is on $radiofreq$. I am receiving your signal $rxtonefreq$. Therefore your actual signal is $radiofreq$ $upperorlower$ $rxtonefreq$ = $radioandtone$.

the Button caption is set to "FREQ IN" and the Back color is set to blue.

Here is that macro on a button in Zakanaka:

Pressing the F5 key or clicking on the button titled "FREQ IN" will now insert the following text into the Tx Window for

If you wanted to send the same message using RTTY, you need only change $rxtonefreq$ to $rttymarkfrequency$ in the macro

A really long macro that takes the place of all brain activity on the part of the ham operator

Bob Furzer K4CY, the author of Logger32, came up with this macro that you can assign to a button. If you ever work him and you see this, he has probably fallen asleep. But it sure is neat to have all this power.

Good to hear you again. I see you are in my log $numqsos$ times

Just goes to prove that a) I am a DX hog, and b) you can

work DX with a mouse). Our last QSO was on $lastqsodate$ at $lastqsotime$.

I note it was also here on $lastqsoband$ $lastqsomode$.

An example of several macro commands that refer to data in Logger

Here is an example of a single macro that makes use of the following commands that all refer to data in the current Logbook:

- $numqsos$
- $lastqsodate$
- $lastqsotime$
- $lastqsoband$
- $lastqsomode$

$command$ and $hexcommand$

These commands are used to send strings of commands to the radio serial port in either ASCII ($command$) or hexadecimal ($hexcommand$). You can see these codes being sent to the radio in the Radio Data window. The topic Direct Control of Radios shows how to use these codes for some radios.

Normally, control of the radio is handled by Logger32, but these commands can be used to implement functions not already in Logger32. Program them into macro buttons so you can invoke a command sequence with a script assigned to a single macro button. For example, you could program a macro button to select filters in your radio.

A Warning About Callsigns

When you use macros to send your callsign at the end of a transmission, especially in RTTY mode, it is wise to put some spaces and the letter K after your callsign. When the receiving station displays or prints your transmission, there may be "garbage" characters that appear immediately after you end your transmission. This is because the receiving station's squelch could take a second or two to adjust to the no-signal condition. If your callsign was sent as the last item of text before you turn off the carrier, other station may add some "garbage" characters to it. For example, "... de KX2A" may become "... de KX2AP" because a "garbage" P was displayed when the carrier went off. However, "... de KX2A K" would be displayed as "...de KX2A KP," and it unlikely that the receiving station will confuse the callsign.

System Time Adjustment

If you decide to use a time stamp (some contests even require this) then you may want to be sure that your computer system is correct. See the section describing the Atomic Clock.

Computer Tuneup

Jan Ditzian, KX2A

During the development of Zakanaka, the predecessor of the Logger32 Sound Card window, some users reported complaints like:

- Letters appear slowly on the display
- The mouse cursor moves slowly or jerkily
- The mouse cursor disappears
- The display freezes
- The program freezes and must be removed with ctrl-alt-del
- The whole machine freezes and must be rebooted.

The underlying problem may be that the computer is overloaded. There are a number of ways in which this can occur:

- There is too much for the CPU to do in real time
- There is a need for more computer memory (RAM) than is available
- There is more for the display processing subsystem to do than it can handle.

When the MMTTY engine detects a shortage of CPU resources, the CPU LED at the lower right turns red for a few seconds.

Reducing CPU Usage

The most likely cause of problems is that your CPU cannot keep up with all the activity you are asking it to do. Actually, you need not shoulder all the blame: Bob Furzer and Makoto Mori helped to load down your computer when you run RTTY, the people at company that installed your operating system and associated software may have sneaked a CPU load onto the computer (these the folks from whom you purchased the computer), and the gremlins who are on the payroll at Microsoft may have sneaked something onto the computer as part of Windows, and other programs you run may have installed components that are running when you do not realize it.

The following recommendations are ways to reduce CPU usage. A few of these items apply to general operation, and work for PSK31 and RTTY modes. However, most of these items are specific to RTTY operation, where CPU usage seems to be higher. We shall begin with the general items.

CPU Power Saver Mode

If you have problems, there is a simple first step. The Sound Card Data window has a "CPU Power Saver Mode," in which it skips every other screen update. This reduces the load on the computer and display system by halving the number of display processes that run in a given amount of time.

To implement this solution, simply Click **Toolbox**, **CPU Power saver mode**. This procedure works for both PSK31 and RTTY.

CPU Power Saver and Logger32.ini

If your setup is so near the edge of operation that you cannot get RTTY working, you can implement Power Saver mode before Logger32 starts. Open Logger32.ini in a TEXT processor (e.g., Notepad.exe, not MSWord), look for the first group of statements, under the heading [Settings]. At the bottom of this group, just before a blank line and then the words [Main Tuning Window], is a statement like:

EnergySaver=Off

Change this to:

EnergySaver=On

If the statement is not there, and the [Settings] group ends with a statement about AFC, then add the above statement on the line after AFC, as the last line of [Settings]. Be sure to keep a blank line before the next group of settings.

Run Only Logger32

Try exiting all other programs and run only Logger32 and see if it runs properly. If this is the case, there is a reasonable possibility that you do not have sufficient memory (RAM) in your computer system to run Logger32 along with the other programs that you to run. However, it could mean that your CPU is too slow.

64 mBytes of memory should be able to handle Logger32 in RTTY mode plus a few other programs running under Windows 98.

Remove Programs By Using MSConfig

Many computers that come with Windows have additional programs also loaded. In fact, Windows does this without being explicit about it. You may find a task scheduling program, virus checker, power management, sound card controls, fax receive software, modem sharing software, internet hacker protection software, a screen saver, and so forth, all running without anyone telling you about them. Many of these programs make themselves known at the lower right, on the taskbar.

Clean out your computer

In Windows 98, it is possible to stop most programs other than the ones you want to run. In Windows 98, Click **Start | Programs | System Tools | MSConfig.exe** to run MSConfig. If it is not there, use Windows **Find** and click MSConfig.exe it to run it when you find it.

- When MSConfig is running, you will see a series of tabs. Go to the rightmost tab, Startup, and write down every program that has a check mark next to it. This is your insurance that you can restore the old setup. You could create a backup the General tab, but we will use the simple approach here

- Now click on every program in Startup, and you will remove each check mark

- Return to the General tab and click Selective Startup

- Press OK and reboot the computer. The only programs that will appear in your system tray at the bottom right of the Windows display will be those that bypass Startup and still work themselves into the boot procedure.

Try Logger32

At this point, you should run System Monitor and see how much CPU usage you have. Begin a log of this usage, and make notes about what uses a lot of CPU power.

At this point, nothing is running in your computer except the operating system (Windows). This is a good time to exercise and see whether it runs. Be sure to use all the features that you can use, and do this for a while. Especially, try RTTY, use BPF Notch, transmit (you do not have to actually put a signal on the air) and move the cursor. Switch among all modes (BPSK, QPSK, Tune, RTTY) using both techniques. Bring up some macros.

Restore Programs

Go back to the Startup Tab and selectively add those programs that you really want to run all the time, such as a virus checker, sound card controls, and possibly power saver monitoring software. Reboot again.

Run the System Monitor to see the level of CPU usage. This program itself uses CPU power, of course, but not too much. However, once you have done the measurements you need to do, you can stop running it. There is no need to run this program the time.

If you have enough time, you might want to add programs slowly. You might choose to add only your virus program at first, since you will almost certainly want that back in position if it can run at all. Try things with that program and Zakanaka for a day, then another program.

If you find that your computer does not operate as it should, scrounge around on your desk for that piece of paper telling you all processes that used to run and put checks next to them again with MSConfig. You can do this for one program at a time, if you unsure what they do. Restore only those programs you need.

Each of these programs has a purpose, the question for you is, do you need them as much as you need Logger32 ? Of course, know the answer to that question.

Turn Off XY Display in RTTY Mode

The XY display mimics the old oscilloscope phase display that once was needed for RTTY operators to adjust mark and space to proper value. You are properly tuned to mark and space frequencies when the ellipses are vertical and horizontal.

The XY display is a big consumer of computer resources, but has less importance than it used to have, because the AFC feature can tune in signals for you.

If you are operating AFSK, first go to RTTY mode and then set your AFC to Free. To do this, click **Setup | AFC/ATC/PLL** Tab, click Free in the AFC area at the left. Click **OK** to save this value. Now turn on **AFC** on the RTTY toolbar. When you click a to copy it, both the mark and space (shift is the distance between them) can vary, and the computer will automatically adjust and shift so reception is as good as it can be. There is no need for the XY display, so you can turn it off at the RTTY toolbar to reduce CPU usage.

An interesting note is that the fast Fourier transform (FFT) processing that underlies the XY display continues to take place during transmit. Turning off the XY display decreases the CPU load during both receive and transmit.

Note: Be careful, turning off the entire tuning window in the View menu does not stop the processing for the XY display. You turn off the XY display at the RTTY toolbar.

Turn off RTTY Notch

The RTTY Notch function is invoked by left-clicking the mouse with the cursor in the analog frequency display area. Examination with the Windows System Monitor reveals that Notch is a heavy user of CPU resources.

Turn Off RTTY Receive BPF

The bandpass filter also is a heavy user of resources, so if you can avoid this you will ease the CPU load. You may want to between BPF and Notch if you occasionally have problems.

Turn Off RTTY Oversampling

Turn off the oversampling mode of the limiter. Click Setup, Demodulator Tab and uncheck the Over Sampling box in the middle.

Avoid the RTTY FIR Demodulator Filter

The default filter is IIR. The FIR filter seems to use more resources than either the IIR or PLL filter.

Do Not Use RTTY Tx Filters

The Tx BPF (bandpass) and Tx LPF (lowpass) filters work to keep your transmit audio signal narrow and clean. However, they take processing power during transmit. If you have problems during RTTY transmit, try clicking Setup, TX Tab, and uncheck two items at the lower left. However, if CPU usage during transmit is not a problem, leave these filters in place.

Reduce Sound Card Buffer Size in RTTY Mode

This recommendation can have profound effects on the transmitted signal, and should probably be a last-ditch effort to get to operate in RTTY transmit. Other changes should be tried first. You can reduce the size of the sound card buffer as long as the transmit audio does not begin to break up. This is tricky to adjust.

Click **Setup**, **Misc** Tab, and look to the left for the window labeled Buff. The default is 1024 bytes. Too low a number can chop the transmitted audio. Too high a number can create transmit delays.

Calibrating the Sound Card

Jan Ditzian, KX2A

Calibration for RTTY and for PSK31

Computer sound cards are supposed to run at a given clock frequency, which controls the sampling frequency, most often 11025 Hz. However, most cards are not that accurate, and errors of a few to many Hertz are common. It is possible to measure the sampling frequency of the computer sound card and then to put this information into Logger32. Logger32 will then know, for instance, if the sound card sampling frequency is 11028 Hz., and will use this in its calculations instead of 11025. The sound card frequency is not changed.

The next few sections discuss two ways of calibrating Logger32 in RTTY mode. Once you have done this, you can use the value you have found to modify the Logger32.ini file to improve PSK31 operation. The PSK procedure will be found following the RTTY calibration procedure.

Calibration Using a Frequency Counter

1. Set the frequency meter to measure the audio frequency of the audio output from the sound card (the line that goes from sound card to the audio input of the radio.
2. Turn off AFC on the RTTY toolbar.
3. Click **Setup**, **Misc** Tab and make sure that the clock at the lower left is set to 11025 Hz.
4. Turn off diddle on the **Tx** Tab.
5. Set the mark frequency to 2000 Hz. on the **Demodulator** Tab.
6. Click **OK** to close this display.
7. Go to transmit. Do not put the transmitter on (turn off vox or disconnect the PTT line), and do not send characters. You want to transmit only the mark tone of 2000 Hz.
8. Measure the frequency of the tone.

The actual sampling frequency, which is supposed to be 11025 Hz., can be calculated from the measured tone. The proportion of error of the tone shows how far the frequency is off. For example, with a mark frequency of 2000 Hz., and a measured tone of Hz., the actual sampling frequency must be high. It is (2010/2000) X 11025, which is 11080.125 Hz.

1. Click **Setup**, **Misc** Tab and set the frequency to 11080, you will be very close to the correct value.
2. Click **OK** to exit Setup.
3. Exit Logger32 and restart it.

Calibration using a Time Standard on Short Wave

Logger32's MMTTY RTTY engine has a special display that allows you to find the true clock frequency of the sound card using an accurate 1 second tick. Here are some stations around the world that broadcast ticks each second.

≠####**WWV WWVH**	2500.0 5000.0 10000.0 kHz
≠####**GBR**	60.0 kHz (SSB)

⁄####**RWM**	4996.0 9996.0 14996.0 (SSB)
⁄####**CHU**	7335.0

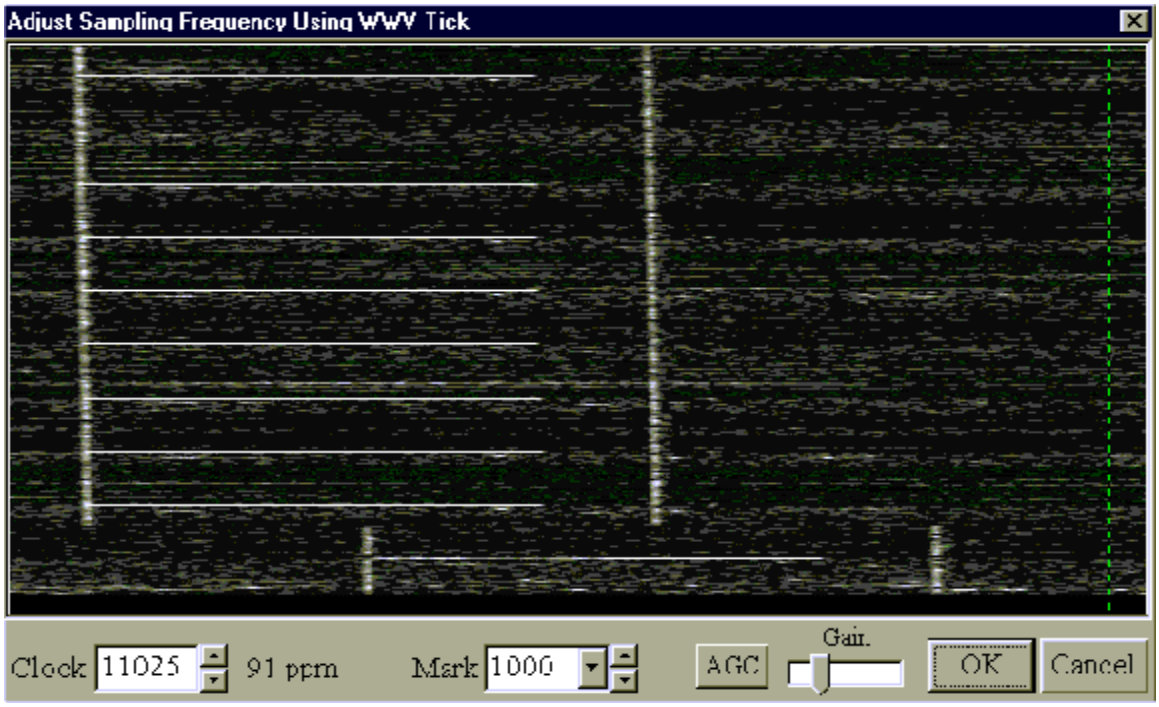
How the Calibration Procedure Works

The MMTTY RTTY engine has a calibration routine that listens to the sound card for two seconds (when the sampling frequency around 11025 Hz.) and paints a picture across the screen of the sounds during those two seconds. If the clock window says that this takes 11025 Hz. then the software puts 11025 dots across the screen. If the clock window is adjusted to say that this takes 11030 Hz., then 11030 dots are painted across the screen. If the value (11025 or 11030) is correct, then this will result in the ticks occurring in exactly the same place on the screen every two seconds. Over time, there will be two vertical lines of ticks down the screen. However, if the clock number is incorrect, then it will take longer or shorter than two seconds to see two ticks. The white spot that shows a tick will be painted a little earlier or a little later each sweep, resulting in slanted lines.

Time Standard Calibration Procedure

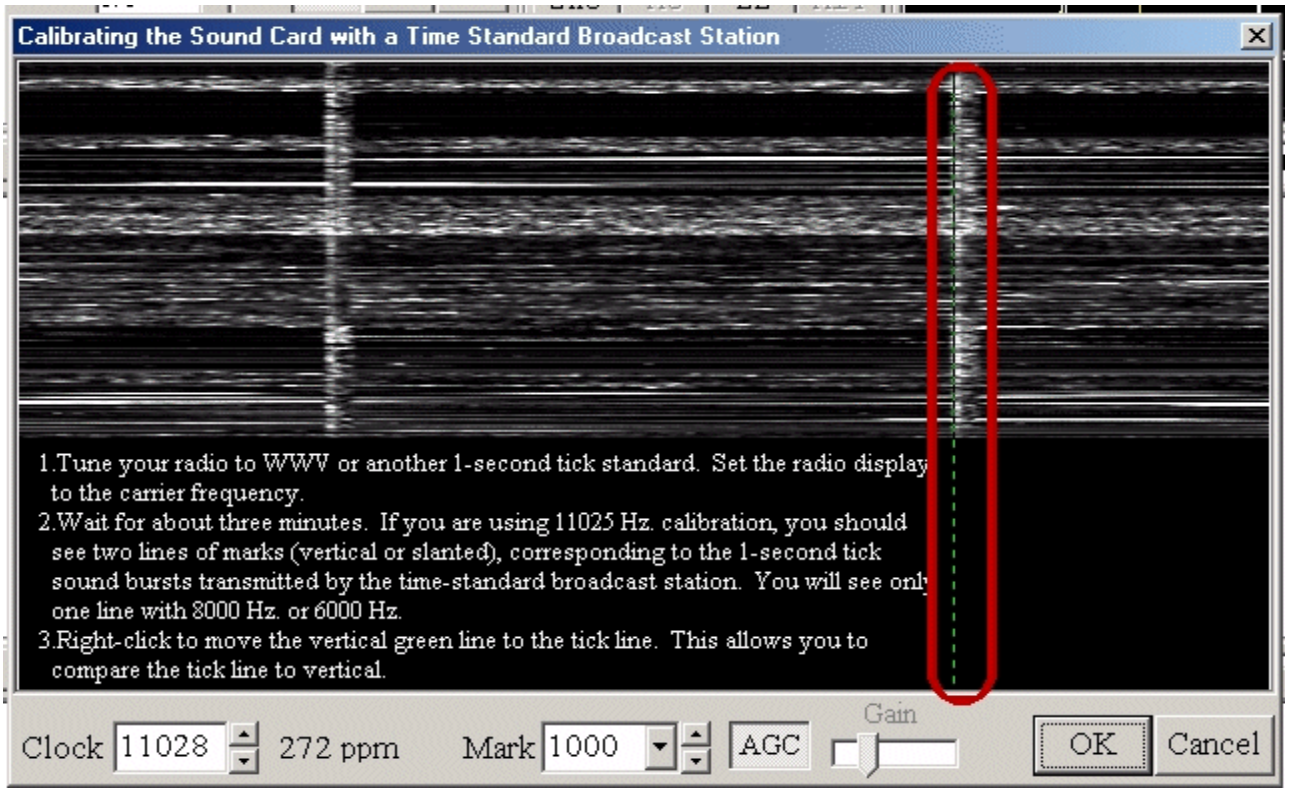
1. Click **Setup**, **Misc.** Tab.
2. Turn off the AGC with the button at the bottom (button should be up).
3. Tune your radio to the 1-second tick standard. Set the radio display to the carrier frequency.
4. Wait for about three minutes. If you are using 11025 Hz. calibration, you should see two lines of marks (vertical or corresponding to the 1-second tick sound bursts transmitted by the time-standard broadcast station. You will see only line with 8000 Hz. or 6000 Hz.
5. Right-click to move the vertical green line to the tick line. This allows you to compare the tick line to vertical.
6. Left-click a low tick burst mark (bottom one if possible), and move the cursor to the top of the line. You will see a yellow on the display.
7. Overlay the yellow line with the tick mark line, and left-click a high burst mark (top one if possible).
8. This will automatically put the correct clock frequency in the adjust window.
9. Watch for a few minutes to make sure that the new tick line is vertical.
10. Click **OK** to leave this display.
11. Click **OK** to leave the setup display and to memorize the new value.
12. Restart Logger32 for the new clock value to take effect.

Here is the calibration display showing a sound card clock that is pretty close to its intended value of 11025 Hz.

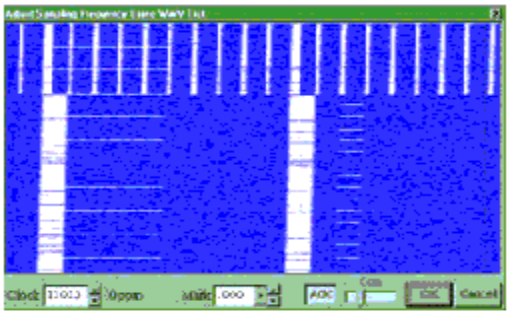


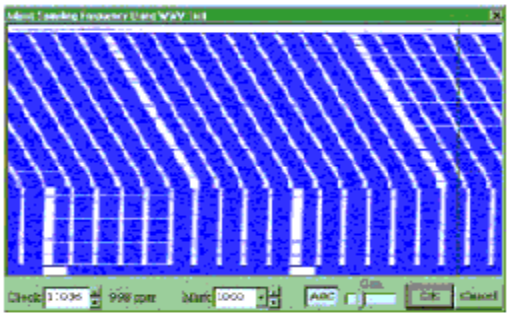
Here are pictures of some calibrations performed in Europe, using MMTTY and different time standard stations.

This is GBR, in Great Britain. The time ticks are wide, but you can pick any consistent spot on the time tick and use it as the focal point for clicking. The arrows show possibilities for the first and second clicks.



Here are two pictures of Russian time standard station RWM. The first shows a properly adjusted display. The second illustrates error of 1000 ppm. Note the slanted lines. This will occur with any time standard if you have an error of 1000 ppm.





Hints

- The green and yellow lines are provided by MMTTY as a vertical reference to compare to the tick line.
- If the tick line is wide, reduce the sensitivity with the control at the bottom. If it is still wide, make sure to click at the same relative place on both top and bottom ticks (e.g., left edge).
- If the display is quite slanted at first, repeat this calibration two or three times. The last time should make only a small change.
- If the time standard station roadcasts a strong tone along with the ticks, and you have trouble seeing the tick line, it is possible to use manual or automatic notch to get rid of the steady tone. The automatic notch is probably too slow to the ticks.
- Right-click to move the vertical calibration reference line without beginning the procedure. This lets you look at the tick in comparison with the vertical standard.

PSK31 Calibration Procedure

The calibration for PSK31 involves adding a line to the Settings area of the Logger32 INI file (Logger32.ini) that looks like this:

[Settings]

Clock Error PPM=xxxx

Where xxxx is the adjustment for the clock error in PPM (Clock speed is 8000Hz in PSK). A plus sign (+) makes the clock go and a minus sign (-) makes the clock go slower. The value xxxx must be in the range of +/- 10000.

The MMTTY adjustment screen shows the adjustment in PPM to the right of the display of the actual sound card clock frequency. Copy this number down when you do the calibration in RTTY mode and put it in the Logger32.ini file in the Clock Error PPM line.

Here is an example:

1. Do the RTTY calibration and arrive at a new value of 11026 Hz., in place of the base frequency of 11025 Hz.
2. Just to the right of 11026 is the display of 91 PPM.
3. Since the new frequency is faster, use a plus sign.
4. Add the new line to Logger32,ini, in Settings, Clock Error PPM=+91. Note the spaces in the new line.

Transmitting a Clean Signal With PSK31 and RTTY

Jan Ditzian, KX2A and Jim Hargrave W5IFP

When it comes to keeping our transmitted signal clean, most of us operate within guidelines. However, we also rely on the hams with whom we speak to warn us of distortion.

When we operate phone, distortion degrades the transmitted signal in a way that makes us hard to understand; we sound
When we operate CW, we may receive feedback about AC on our signal, or a chirp, or a click. In both these situations, the other stations are likely to say something to us. However, when we operate PSK31 or RTTY, distortion is a bit harder to recognize. The common types of distortion do not affect our own signal copy as much as they cause interference to other stations operating

This is why it is important for us to be aware of the kinds of distortion effects we may see, how to recognize them, how to discriminate transmitted distortion from distortion introduced by strong signals overloading our own receiver, and how to set up hardware and software so as to transmit a clean signal.

Some Definitions

In this discussion we refer to a transmitter, although most hams use transceivers. This is to clarify the fact that we are discussing the transmitted signal. Reference to audio means the input to the modulator of the transmitter part of the transceiver, from the card, **not** to the audio output of the transceiver, which is used by the computer to decode the digital signal.

How to Recognize Distortion When Receiving Another Station (the Other Guy's Problem)

The most common effect of distortion during digital operation is the generation of extra audio tones. If we transmit a tone of 1000 Hz., nonlinearity in our transmitter can also cause us to generate tones of 2000 Hz., 3000Hz., and so forth. We can also generate random tones that are not harmonically related to the fundamental tone. If we use a wideband waterfall display, during reception see these tones as additional lines, which disappear as soon as the fundamental (distorted) signal stops.

Some PSK31 programs, such as Logger32, have digital readout of the intermodulation distortion (IMD) of the received station. transmitting station must idle for a few seconds to provide a stable reading on the receiving station's Logger32 IMD display. Logger32's rule of thumb is that one should try for at least of -23 dB (more negative is better). If the IMD is -23 dB or lower, the reading will be in green. Greater than that will be in red.

Basic Steps to a Cleaner Digital Signal

The first step to take to keep the signal clean is to turn off the speech compressor in the transmitter. Speech compressors are designed to give a high average signal level during speech, to give the voice more "punch." This may be acceptable on phone, is it disastrous with digital signals transmitted with AFSK.

The second step is to barely give the automatic level control (ALC) anything to do. If possible, set the microphone gain low that the ALC indicator (meter or light) shows little activity.

Modulation of the Transmitter By a Sound Card

With a sound card-based digital system such as Logger32, MMTTY, DigiPan, or any of the SSTV computer programs, connect the output of the sound card to the input of the audio modulation in the transmitter. This input may be the microphone input, or it may a separate connection intended for input of non-voice signals. Either way, the sensitivity of the input is usually high. This means that it takes a very low ac voltage, generally around tens of millivolts, to properly modulate the microphone input stage of the transmitter.

A sound card speaker output typically generates 100 millivolts to 5 volts, because it is intended to drive an unamplified speaker so that the computer operator can clearly hear the sounds. Therefore the sound card output voltage can be 100 or more times as as the microphone input was designed to handle. The next few sections discuss how to deal with this problem.

Transmitter Audio Input Stage

Microphone Gain Control

When a ham who operates phone thinks of preventing overmodulation, the first thought is to reduce the input sensitivity of the transmitter audio by using the microphone gain.

The microphone gain control works fine at preventing overmodulation when a regular microphone is connected to the audio input, and the cause of the overmodulation is the strong voice of the operator, generating a slightly higher voltage at the microphone than it was intended to handle. However, when the input is not the few millivolts for which it was designed, but instead is 100 or

more times too great (as in our sound-card-to-microphone situation) , distortion can occur in the first audio stage even before the signal has reached the microphone gain control. No matter how low the operator sets the microphone gain control, the distortion already happening before the control. Even if the operator were to reduce the microphone gain so low that it barely modulated the transmitted signal at all, that modulation would be distorted. Instead of reducing the mic gain, reduce the level of the input signal.

Windows Gain Control

Lowering the voltage output from the sound card eliminates the audio (microphone) stage distortion. "Alright," says our ham, "I will use the computer mixer or volume control thoughtfully provided by my friend Bill, at Microsoft, when he created and I will move it down until the output voltage from my sound card is low enough for my transmitter microphone input."

Well, there is still a problem. That volume control was designed to vary the voltage through a range of reasonable output for a speaker. The control and the sound card were not designed to be adjusted so precisely as to be reliably set at 5 millivolts.

Use an Attenuator to Reduce the Output of the Sound Card

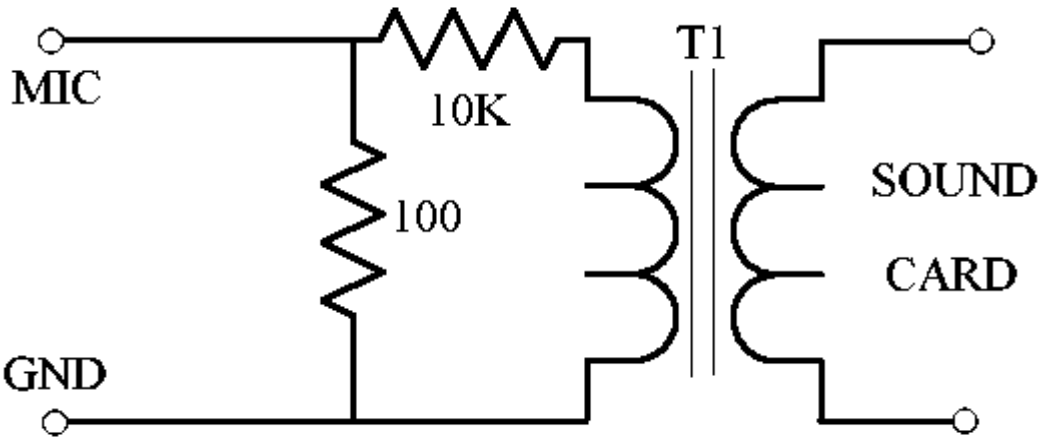
The answer is a hardware solution--build an external attenuator to fit between the sound card output and the microphone input. Build a 100:1 voltage divider out of ¼ or 1/8-watt resistors, to reduce the voltage reaching our transmitter audio stage. A practical design consists of a 10,000 ohm (10-kilohm) resistor in series with the audio output from the sound card, and a 100-ohm resistor connected across the audio output, from the hot wire to the ground wire.

If we build such a divider, we will probably find that the microphone gain control on our transceiver now needs to be closer to we normally keep it for phone operation, because we are feeding it a signal more in line with a microphone-level signal. If you to get really fancy, you can replace one resistor with a potentiometer to adjust the attenuation.

Ground Loop Problems

Even after doing these things, we may still have ground loop hum problems. An isolation transformer will reduce ground loops. a 1:1 isolation transformer between the voltage divider and the computer. Radio Shack sells one as part number 273-1374. the connectors for the attenuation/isolation network on an insulator, to keep the computer and the radio isolated from each other. When we test this interface, there should be no DC path between the two external connectors, either on the hot or the ground In the year 2000, a voltage divider built to the above specifications could be constructed from new Radio Shack parts for about $10.00, including the case and a pair of phono jacks.

Here is a schematic diagram of this divider and 1:1 transformer.



RF Feedback Problems

We may need to add bypass capacitors between the hot and ground connections, on both sides of the interface, to reduce caused by RF feedback from the transmitter into the sound card. We can also try ferrite beads on both hot and ground leads.

The Digital Mode Interface

Here is a link to a number of interface designs to go between the sound card output (speakers or headphone out) and the microphone or audio input at the transceiver. In addition to the interface between the sound card output and transceiver audio

this excellent site has schematics for interfaces that allow us to operate the push-to-talk (PTT) line of the radio from a Com port on the computer, yet keep the two components completely isolated by using an optoisolator. There are designs for switching PTT the RTS or DTR line, and the diagrams give the pinout on the computer DB-9 or DB-25 for each line.

http://www.qsl.net/wm2u/interface.html

There are numerous manufacturers of such interfaces. The earliest of these commercial devices was the RigBlaster.

Transmit Tone Selection to Reduce Harmonics

We have discussed how to adjust the signal to reduce harmonics, and how to build hardware to reduce harmonics. There is trick to reduce harmonic generation, but it requires that we tailor our operating procedures. We can generate high tones, say 1600 Hz., rather than low tones. In this way, the second harmonic we may generate will be at 3200 Hz., which is attenuated by filtering already in the transmitter. Commercial ham transceivers roll off their audio by 3000 Hz., sometimes even lower. Even if there is distortion that creates a harmonic tone, it will be attenuated by the filtering in the transmitter, as long as the harmonic is greater than 3000 Hz. The higher we generate our tones, the more attenuation of the harmonics will take place.

Logger32 has a special **align** function that can help to generate high tones. We point and click on a signal, whether high or low in the receive range, but if the radio is computer controlled, we can invoke the align function to retune to put the operating higher in the transmit/receive range. See align in the Using Logger32 topic.

High Tones, Low Tones, US vs. EU Standards

The US and Japan standard for RTTY tones is called "high tones." Mark is 2125 Hz. and space is 2295 Hz., and shift is 170 Hz. High tones is the original default for the HAM button in both MMTTY and in the MMTTY module for Logger32, and it reduces harmonics as described above. The European standard is called "low tones," where mark is 1275 Hz. and space is 1445 Hz. If choose to use the low tone approach we will not have the extra harmonic reduction. Of course, if we generate a clean signal to begin with, this decision may not make much difference.

Very Strong Received Signals

It is possible to be fooled into thinking that someone is distorting or generating harmonics although they are not doing so. This happens when a received signal is so strong that it creates distortion within the receiver. This is not the fault of the transmitting station, any more than it is that station's fault if the receiver agc desenses on CW or phone operation because the signal is strong.

The danger is that a strong signal will overload your receiver, and you will see a low IMD on the meter, with lines on the display. You will give the poor guy on the other end a warning about his distortion, but, in fact, his signal is clean.

If you see a station with lines on the display and a low IMD, first check to see if it is very strong. If it is not strong, you can trust the indicators. If it is strong, try adding attenuation to the front end of your radio with the radio's attenuator button. If the IMD and lines improve (IMD becomes more negative), then this suggests that the problem is not with the other station, but with your receiver, and you need not warn the other fellow about his distortion. If IMD stays the same, then please warn him so he can fix problem.

Self-Test of Our Own Signal

Here is a procedure to check the quality of our PSK31 signal. This procedure was developed by Peter, G3PLX. If we generate a clean PSK31 signal, this is pretty good evidence that we will generate a clean RTTY signal from the same computer, transmitter, interface hardware, and software settings.

Please note the term averaging (or RMS) RF power meter. This is extremely important. A peak-reading meter will not show the expected results, it will show high power at all times. Follow this procedure:

1. Transmit a single tone (we use the Tune mode of Logger32 in PSK31 mode to do this);

2. Measure the output of the radio on an averaging RF power meter. This can be an external meter in average mode or it be the meter built into most modern radios, as long as this is an averaging meter. Many radios use a peak-reading meter, and this is not what we want here. Even an older external SWR bridge can be used, just use the forward position to get a relative reading. Note the reading; and,

3. Now switch from Tune to the PSK31 idle tone (BPSK mode of Logger32, no typing) and note the reading again. The

average (RMS) power reading should go down to half or less than half the power of the original average power reading.

If We Fail the Test

If the power does not drop by half or more when we go from Tune to BPSK, then we are probably generating substantial IMD. ultimate goal is to create a situation in which the microphone gain control is in the same position for both clean phone and AFSK input signals. This suggests that we are operating our transmitter in the manner intended by the manufacturer for audio signal inputs.

Here are some steps to reduce the problem:

- Set the microphone gain to the setting used for phone operation. Reduce the setting of the output gain of the sound card, using the Windows mixer controls. As mentioned previously, this control may not be precise enough to adjust to a satisfactorily low level without shutting down the signal altogether. If so, the voltage divider solution should bring sound output signal levels into a reasonable range for more precise adjustment;

- Use a voltage divider and a transformer, as explained earlier. Actually, we should have already taken this step before to operate at all. If we are already using a divider, perhaps we need to increase the 10 kilohm resistor to a larger value;

- Reduce the microphone gain at the transmitter. This may be a touchy adjustment. If we reduce the microphone gain and all that happens is that the tune power also drops and we simply run less power, this indicates substantial IMD before microphone gain control.

Operating Phone and AFSK With the Same Transceiver

Some transceivers isolate the microphone input from the separate (AFSK) audio input internally. Some do this by having using different PTT lines for the microphone input and for the AFSK input. Others respond to computer commands by switching in the AFSK input instead of the microphone. However, many radios do not have such a provision. In this case, we should disconnect microphone when we operate AFSK and disconnect the computer (or the interface) when we operate phone.

QPSK (Quaternary Phase Shift Keying) Operation

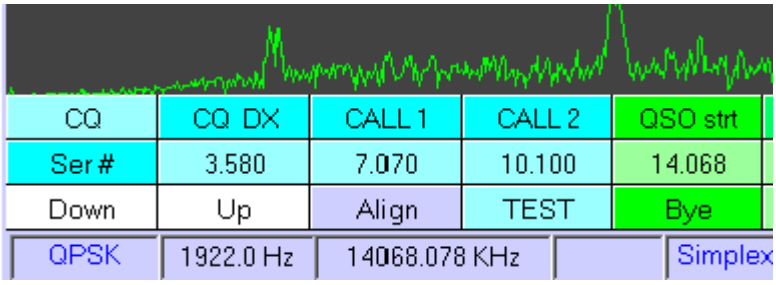
Andrew J. O'Brien, KB2EOQ

QPSK is referred to as an error-correcting PSK mode. Strictly speaking, it is not error-correcting in the traditional sense, but we'll leave that for another discussion. You will find it very useful in copying very weak signals. You will also discover that it is used less than BPSK.

The usual convention among QPSK'ers is to use BPSK to establish a QSO and then switch to QPSK You will rarely find someone calling CQ in QPSK mode. Some radio amateurs will switch to QPSK if a BPSK QSO with weak signals is producing poor copy. PSK veterans will point out, however, that while QPSK outperforms BPSK when weak signals are the issue, QPSK will perform no better than BPSK if **noise** is the signal limiting condition.

In the ancient, early days of PSK31, in the last century, QPSK was used as the mode of choice for some PSK nets, but that does appear to be the case in the 21st century.

Switch to QPSK with the mode pane at the left of the statusbar or with the mode menu selection.

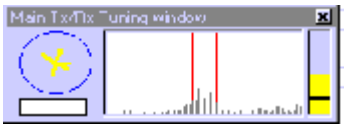


Tuning a QPSK Signal

Now that you have selected QPSK as your mode you'll need a little practice in tuning in a QPSK signal.

A QPSK signal looks different in the tuning window than a BPSK signal. It will be easier to use the Rx/Tx Tuning Window to tune a QPSK signal than to rely on the Waterfall display. You should also note that the idle signals are the same for BPSK and QPSK, When QPSK is sending data however, it is quite different in appearance from BPSK.

QPSK Looks Like a "Cross" in the Phase Scope of the Tuning Window



A QPSK signal tuned a few Hz. low

You can tune in a QPSK signal by using the same point and click methods you use for a BPSK QSO. You will discover that you have to be a little more precise in clicking on the signal in the tuning scope or in the waterfall/spectral display. At first you may nothing but garbled text on the screen, and may need to adjust the squelch and re-point your mouse on the incoming signal.

Note: Your rig's stability is more critical when using QPSK**.**

QPSK can perform better than BPSK when band conditions are poor due to polar flutter. At such times you may be able to get copy from a QPSK signal even though the "cross" in the tuning window is poorly formed.

Note: QPSK requires that BOTH stations in the QSO be using the same sideband! While this is not important for BPSK QSOs, it vital when using QPSK.

QPSK-Reversed

BPSK is demodulated the same way whether you are on upper or lower sideband. This is not true for QPSK, which operates like RTTY. You must shift the signal in a way that the decoder expects or it will not decode. In the case of QPSK, this leads to problems with standards, since the mode is so new.

In actual practice, most hams appear to be operating BPSK using AFSK and upper sideband. This means that, when they switch QPSK (without reversing), they must be decoded by the other station using upper sideband and QPSK (without reversing). However, the standard of RTTY operation is lower sideband, and this means that most hams, operating as just mentioned, are operating QPSK-reverse, based on the RTTY standard.

What this really means is that, when you and another station decide to switch to QPSK, if you do not know whether that station is using upper or lower sideband, there is a chance that you will not decode that station. If you click again on the mode pane, it will switch from QPSK to QPSK-reverse, and you should begin to copy.

One trick is to set all three Rx windows on the signal to be copied, set one aux window at QPSK and the other at QPSK-reverse. When you see which Aux window starts to print readable copy, switch your main Rx window to that mode and you can then

So What Is QPSK?

How QPSK Got Its Name

Peter, G3PLX, says in an article entitled "PSK-31, A new radio-teletype mode with a traditional philosophy," says that he called it "quadrature polarity reversal keying" (which of course would have come out as QPRK), but that everyone else calls it quaternary phase-shift keying (QPSK). It is an error-correcting mode that relies on four phase-shifts rather than two, to create the basic scheme.

Peter Martinez' (G3PLX) Description of QPSK

The QPSK mode used in PSK31 takes the binary data-stream, at the point where it would otherwise go direct to the BPSK modulator, and feeds that through a 5-bit shift-register. A logic operation then forms the parity function of the 1st, 2nd, and 5th

stages, and another forms the parity function of the 1st, 3rd, and 5th, giving two bit-streams at the same 31.25 bps rate as the original data. These two bits form a binary number, the four values of which are mapped to the four possible phase-shifts in the QPSK modulation. Thus a single data-bit from the source results in a 5-bit-long predictable sequence of 90-degree and 180 phase-shifts, interleaved with those of following and preceding bits.

In the receiver, a Viterbi decoder is used to keep track of all 32 possible combinations of guesses at the transmitted datastream, a running total of how well the received pattern of phase-shifts matches each guess. The clever thing about the Viterbi decoder is that it can be sure that if it throws out the worst 16 guesses before it receives the next signal (which doubles the number of to 32 again), it can never get it wrong, and after about 20 more signals, it can be pretty certain that its guess 20 signals ago was right. The snag is that it can only output its best guess after a delay of 20 signals, or 640mS in the case of PSK31. Longer Viterbi decoders are possible, but the amount of computation doubles at each extra signal delay, and for PSK31, which is used for live QSOs, the delay would be too long.

More Facts to Consider About QPSK

The relationship between BPSK and QPSK is that both have the same bandwidth, but that QPSK uses that bandwidth for two signals, shifted-from each other by 90 degrees. The extra signal is used to transmit redundant information for error-correction. reduces the signal-to-noise ratio for QPSK by 3 dB, in comparison to BPSK. The expectation is that the error-correction will more than make up for this difference. The results are not in, and one goal of current PSK31 activity is to evaluate and compare BPSK QPSK, to determine the situations in which each method is superior.

According to Peter, BPSK should be superior under conditions of ordinary noise (white noise or random noise) but that under conditions of fading or real-life interference (as contrasted with random white noise), QPSK may be superior. More evaluation is needed.

For a good introduction see NB6Z's excellent discussion of QPSK at http://www.teleport.com/~nb6z/psk31.htm.

*Peter Martinez has granted Logger32 permission to use his above description.

Screen Control Operation

Randy Tipton, WA5UFH and Jim Hargrave W5IFP

This topic discusses the way that Logger32 presents information on the screen. If you're competent with the manipulation of windows, you might skip this topic. Each user is encouraged to experiment with different screen configurations to find the one comfortable. It isn't our intent to tell you to use any particular configuration. Instead, we want to make you feel comfortable manipulating windows so you can decide how you want to use Logger32.

Logger32 screens can be configured to be as simple or as complicated as you desire. You decide the level of complexity.

If you only plan to use Logger32 without any other application, start Logger32 and operate it full screen size. Pick the resolution which best suits you.

Go to **Toolbox** for a variety of color settings for PSK31 and RTTY. You can set font colors, background colors for different colors for the waterfall, and colors for the RTTY XY scope. You can set colors for the audio frequency markers when you set markers using the **Settings**, **Audio frequency markers** menu.

Color

Set your screen display (**Settings**, **Control Panel**, **Display**, **Settings**) to a value **more than** 16 colors. High color (16 bit) is acceptable. Failure to set the color setting to a high enough value will cause problems with viewing the waterfall display.

Ways to Manipulate and View the Screens

Depending on how much of the Logger32 screen you wish to view, select a screen resolution starting with 800 X 600. If you wish see more of the Logger32 windows try 1024 X 768 or 1152 X 864. You need to go to **Settings**, **Control Panel**, **Display**, to set these values for all of Windows 95/98.

With this configuration when you click on a call you see it replicated in the Log Window. Also all the features of Logger32 can be seen at a glance. (e.g., previous QSOs, new country, past comments , distance, bearing headings).

Possible Operator Errors Using These Configurations

Why Logger32 Might Appear to Have Stopped Operating!

If you make a mistake in Logger32, such as not entering a frequency when configured for frequency input, or entering a wrong county for a state, the Error Window for Logger32 could be hidden behind the Sound Card window. Logger32 did not stop you just made a keyboard mistake. In this case click on the Logger32 Sound Card Window tool bar and drag it down so you can acknowledge the error window and correct your mistake.

Lost Windows

If you change screen resolutions, it is possible to leave pop-up windows such as the Individual tuning windows and Aux Rx outside the viewing area (especially at low screen resolution). The result is that you cannot find your window. To find your windows, return back to the higher screen resolution setting and close the windows before changing back, or place the lost inside the Main QSO window before changing to the next screen resolution. See the next item for information on how to set resolution.

Screen Size Resolution

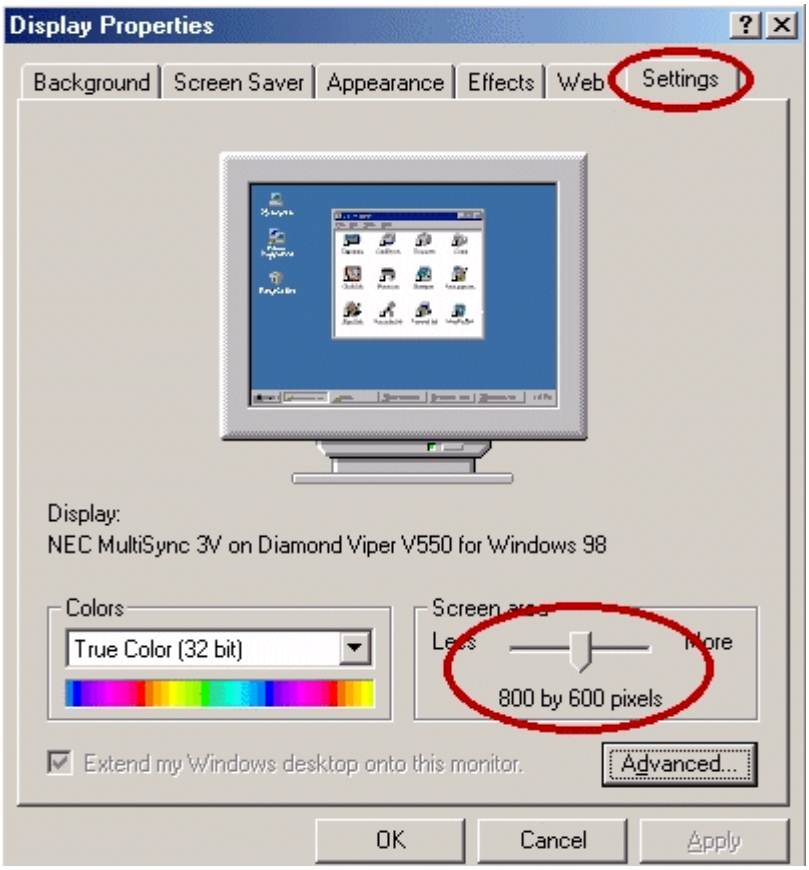
It is really up to every user to decide what is comfortable to your eyes. If you're running Windows 95/98 you can see what your system is capable of by doing the following:

1. Double-click on My Computer.
2. Double-click on Control Panel
3. Double-click on Display.

Below, you see the Display Properties Window (the layout might change from Windows 95 to 98 to 2000). The example Desktop area selected is 1024 X 768,with Small Fonts selected for Font Size. Notice that the Desktop area can be resized by clicking on either side of the scale pointer.

If you're going to try different screen sizes, you can check the box **Show settings icon on task bar**. This box requires that you further, to **Settings**, and **General**. By making the screen size resolution options available on the tool bar, you can to quickly your settings. Some configurations require restarting your computer, which can take a lot of time.

Examples of Screen Configurations for Windows ME.



With every screen configuration there is an option in Display / Settings to select either Large or Small Fonts. After changing from Small to Large or Large to Small your system might ask you to restart Windows to make the change effective.

Note: Different versions and releases of Windows, and variations in setup, may create variations in the exact sequence of commands you must use to get to a screen or display **setting option. These are Windows operations, not Logger32 operations.**

Resizing Windows Within Logger32

The Tx and Rx windows share a common screen area, and you can make one window larger and the other smaller by using the mouse to position the cursor over the splitter bar, which is the dividing line between the Tx and Rx windows. If you do this you will see a special cursor appear; now left-click the mouse and you can drag the splitter bar up or down. This will allow you to see more of what you type, while giving up some display area for received text.

Line Wrap

Line wrap works the same way for PSK31 and RTTY.

Rx Window Line Wrap

Logger32 displays received text in the Rx Window exactly as it is received. The only exception is that when text reaches the right hand edge, it wraps to the next line. There is no special line wrap: the next character (70) will appear at the left. It is up to the sending station to include carriage return/line feeds (CR/LF), otherwise words will be broken at character 70.

Tx Window Line Wrap

To transmit with line wrap, click **Settings**, **Line wrap on**. For RTTY, you must also check **Settings**, **Typing Preference**, **RTTY - send word out**. A check mark to the left of this choice means that it is on. On RTTY, if you do not check Send word out, then Logger32 sends letter by letter, and ignores the content.

When you are typing in the Tx window, text is wrapped between 63 and 69 characters. This means that when there are 63 characters in a transmitted line, Logger32 begins to look for a space in the typed input. When a space occurs between character

and 69, Logger32 generates a carriage return/line feed (CR/LF), the text wraps to the next line, and when you reach the end of word this CR/LF is also transmitted to the receiving station. If all goes well, his line will wrap when yours wraps. Remember, in RTTY mode you must have "word out" enabled.

If there is no space between character 63 and 69, Logger32 inserts a CR/LF after character 69 and puts what would have been 70th character on the next line as the first character. This CR/LF is also transmitted to the receiving station. This means that if see that words are being split between lines, you should try to type a carriage return (Enter key on the keyboard) before you reach that point. If you would rather send text without Logger32 putting in line wrap, turn line wrap off in the Settings menu by clicking it the check mark disappears.

Colored Frequency Markers

Logger32 provides a way to mark the frequency display scale for you to keep track of specific audio frequencies, even when you using a radio frequency display. This feature is useful in conjunction with the align feature.

Here is how you can put frequency markers on the display:

- Go to **Settings**, **Audio Frequency Markers** and specify an audio frequency for one of the four markers.

- Go to **View**, **Frequency Markers** and click on one of the markers to make it appear on the frequency display at its audio frequency.

You can also go to **Settings**, **Audio Frequency Markers** and left-click on one of the color squares and you will be able to change the color for that marker.

One application of the frequency markers might be to mark your default Rx frequency. You could choose the red marker, to correspond with the main passband indicator, and set your default Rx frequency as the audio frequency for this marker.

If you want a marker to go away, go to **View**, **Frequency Markers**, click it again and the check mark will disappear and the marker will no longer be on the frequency display.

Note: For more help on adjusting display properties and manipulating Windows applications consult your Windows Manual.

Slash-zero Option

You can have Logger32 print a slash-zero instead of a plain zero. Go to **Settings** and select **Use slash-zero for zero**.

Mouseover

There are a number of capture operations that can be performed on mouseover (passing the mouse cursor over the text), but you can disable this option if it does not work properly on your computer. Go to Settings, Receive window mouseover and click it to uncheck the option. When you do this, received text will no longer change color on mouseover, and the capture operations will work.

Low Level I/O Drivers - Port95nt.EXE

Geoff Anderson G3NPA

ALL USERS PLEASE TAKE CAREFUL NOTE - Some parts of Logger32 will not work unless you carry out the instruction given below

Logger32 requires the file DLPortIO.dll to be on your computer before some of the functions available will work. While the DLL and low level drivers are freeware, these files cannot be distributed in isolation and therefore the download is VERY much bigger than Logger32 needs, but the authors/owners do not make just the necessary components available separately. Once the .exe has been run, and the drivers installed, users can delete the .exe file if they so wish.

How to install the I/O drivers

1) If you are running WinXP, make sure you are logged into your PC as the ADMINISTRATOR. If you have a simple set up your PC with a single user, then this will be the default state. However if you have a more complex arrangement with users with different rights, then make sure that you are logged on correctly.

2) Locate the file port96nt.exe and double click on the file. This will start off the installation process.

3) During the installation, the program pauses to allow selections. It is strongly recommended that you use the default setting right through this process.

4) On completion of the install, reboot your PC.

More information about these drivers can be found at:- www.driverlinx.com/DownLoad/DlPortIO.htm

Shared Serial and Parallel Ports

Jim Hargrave, W5IFP

Logger 32 uses serial RS-232 ports to interface with the Radio, Rotor and Terminal Node Controllers (TNC). Logger 32 also uses Parallel ports for Antenna switching and CW transmit Interface. To accommodate limited hardware configurations, several of functions can be shared on the same ports, but some rules must be observed when setting them up. The TNC must be operated a dedicated serial port. The PTT is the most common shared function.

The port setup of each function is defined in the specific portion of this help file related to the respective functions. If you choose to use Shared ports, you must make sure that each shared function is setup in a manner that will not cause any conflicts.

The following Serial port combinations are possible:

- Radio Control, PTT and CW transmit.
- PTT and CW transmit.
- PTT, CW transmit and Rotor control.

The only Parallel combination that is possible is Antenna Switching and CW transmit including PTT. See below for specific rules must be followed if this configuration is used.

Serial Port configurations:

The following is a list of the signal lines used by each module in Logger32:

- **Radio Control**: TxD and RxD
- **PTT**: RTS and/or DTR
- **CW**: RTS for PTT keying and DTR for CW data.
- RTTY: TxD line is used in the FSK mode of operation.

There is also the TxD line used in the RTTY module if folk want to use FSK operation rather than AFSK

Specific details on pinouts and RS-232 signals for both [{Inner Link DB-9, Glossary:DB-9}] and [{Inner Link DB-25, Glossary:DB-pin connectors are available in the [{Link to topic Glossary:Glossary}].

Parallel Port configuration:

Antenna switching; Pins 2 thru 9

CW transmit: PTT on pin 22 and CW Data on pin 23

NOTE If the same Parallel Port is used for both the Antenna and the CW module, then the same Hex address must be specified in both setup configurations.

CAUTION

The Parallel port PTT only functions when using the CW machine. You cannot share Radio PTT on a serial port and CW PTT on a parallel port at the same time. NEVER connect a Serial and Parallel connection together. Equipment failure could result

If the parallel port PTT is used for the CW machine, then the PTT control from the Sound card would have to be by radio (assuming that the rig has only one external PTT control point). Otherwise the user must have an external PTT switching setup would provide complete isolation between the ports, either by mechanical switch or electronic circuitry.

PTT using a Shared Radio port

You may choose to operate a PTT line directly from a pin on a Com port, and also have Logger32 communicate with the radio for frequency information and software command control on the same Com port. In the Sound Card module, Click Settings, Radio Options, and select PTT by Shared Radio Port.

NOTE: The sound card in Logger32 allows the option to use DTR or RTS for PTT. However if you plan on sharing a serial port the CW Transmit, it is suggested that you use RTS so your PTT line will be compatible with the CW Transmit module, which is coded for PTT on RTS line and CW data on the DTR line. Both the PTT, and CW can be shared on the same Com port used for Frequency and Mode information exchange between the radio and Logger32.

When you set up your ports configurations, you need to check and make sure you do not have any conflicts between Modules. Port configurations can be found in the following five locations within Logger32:

Abbreviations

Hew Lines VA3HU

ADIF

Automated Data Interchange Format

AFC

Automatic Frequency Correction

AM

Amplitude Modulation

ASCII

American National Standard Code for Information Interchange

BBS

Bulletin Board System

bps

The number of binary digits transferred per second on a serial link.

BPSK

Biphase-shift keying

CAT

Computer Assisted Transceiver

CPU

Central Processing Unit, the heart of a computer.

CQZ

CQ DX Zone number

CR

ASCII Carraige Control charatcer or the "Enter" or "Return" key on a PC keyboard.

CSV

A standard data file format where fields of a data record are separated by commas.

CTS

Clear To Send - an RS-232 hardware handshaking signal.

CW

Continuous Wave

DSP

Digital Signal Processing

DSR

Data Set Ready - an RS-232 hardware handshaking signal.

DST

Daylight Savings Time

DTR

Data Terminal Ready - an RS-232 hardware handshaking signal

DXCC

DX Century Club

eQSL

An electronic QSL capability using the internet. Visit www.eqsl.cc for more information.

FM

Frequency Modulation

Freq

Frequency

FSK

Frequency Shift Keying

GMT

Greenwich Mean Time

HEX

Hexadecimal numbering system that uses base 16 with digits from 0..F.

HF

High Frequency

Hz

Hertz

IF

Intermediate Frequency

IMD

Intermodulation Distortion

I/O

Computer Input/Output

IOTA

Islands on the Air

ITU

International Telecommunication Union

ITUZ

ITU Zone number

KEPS

Keplerian Elements

KHz

Kilohertz

LED

Light Emitting Diode

LOTW

Logbook of the World, an ARRL project.

LSB

Lower SideBand

Mb

Megabyte

MHz

Megahertz

MMTTY

RTTY Encoding and Decoding engine written by Makoto Mori JH3HHT

ms

Millisecond

PC

Personal Computer

Pfx

Prefix

PKT

Packet

PSK31

A digital mode of communications using Phase Shift Keying at 31.baud, or about 50 wpm.

PTT

Push To Talk

QPSK

Quaternary Phase Shift Keying.

RAM

Random-Access Memory

RIT

Receiver Incremental Tuning

RTTY

Radioteletype

RSGB

The Radio Society of Great Britain

RTS

Request To Send - an RS-232 hardware handshaking signal

SSB

Single Side Band

SSTV

Slow Scan Television

TTL

Transistor-Transistor Logic

TNC

Terminal Node Controller

Tx

Transmit

UQF

Some weird Log Format

USB

Upper Sideband; or,

Universal Serial Bus

UTC

Coordinated Universal Time

VHF

Very High Frequency

VOX

Voice operated switch

wpm

Words per Minute

ZULU

Coordinated Universal Time

Glossary

Hew Lines VA3HU

American National Standard Code for Information Interchange (ASCII)

The ASCII character set is used in data processing and communications systems. It uses seven bits to represent letters, and control characters.

ASCII Character Codes Chart 1

Ctrl	Dec	Hex	Char	Code
^@	0	00		NUL
^A	1	01	☺	SOH
^B	2	02	☻	STX
^C	3	03	♥	ETX
^D	4	04	♦	EOT
^E	5	05	♣	ENQ
^F	6	06	♠	ACK
^G	7	07	•	BEL
^H	8	08	◘	BS
^I	9	09	○	HT
^J	10	0A	◙	LF
^K	11	0B	♂	VT
^L	12	0C	♀	FF
^M	13	0D	♪	CR
^N	14	0E	♫	SO
^O	15	0F	☼	SI
^P	16	10	►	DLE
^Q	17	11	◄	DC1
^R	18	12	↕	DC2
^S	19	13	‼	DC3
^T	20	14	¶	DC4
^U	21	15	§	NAK
^V	22	16	▬	SYN
^W	23	17	↨	ETB
^X	24	18	↑	CAN
^Y	25	19	↓	EM
^Z	26	1A	→	SUB
^[	27	1B	←	ESC
^\	28	1C	∟	FS
^]	29	1D	↔	GS
^^	30	1E	▲	RS
^_	31	1F	▼	US

Dec	Hex	Char
32	20	sp
33	21	!
34	22	"
35	23	#
36	24	$
37	25	%
38	26	&
39	27	'
40	28	(
41	29	)
42	2A	*
43	2B	+
44	2C	,
45	2D	-
46	2E	.
47	2F	/
48	30	0
49	31	1
50	32	2
51	33	3
52	34	4
53	35	5
54	36	6
55	37	7
56	38	8
57	39	9
58	3A	:
59	3B	;
60	3C	<
61	3D	=
62	3E	>
63	3F	?

Dec	Hex	Char
64	40	@
65	41	A
66	42	B
67	43	C
68	44	D
69	45	E
70	46	F
71	47	G
72	48	H
73	49	I
74	4A	J
75	4B	K
76	4C	L
77	4D	M
78	4E	N
79	4F	O
80	50	P
81	51	Q
82	52	R
83	53	S
84	54	T
85	55	U
86	56	V
87	57	W
88	58	X
89	59	Y
90	5A	Z
91	5B	[
92	5C	\
93	5D	]
94	5E	^
95	5F	_

Dec	Hex	Char
96	60	`
97	61	a
98	62	b
99	63	c
100	64	d
101	65	e
102	66	f
103	67	g
104	68	h
105	69	i
106	6A	j
107	6B	k
108	6C	l
109	6D	m
110	6E	n
111	6F	o
112	70	p
113	71	q
114	72	r
115	73	s
116	74	t
117	75	u
118	76	v
119	77	w
120	78	x
121	79	y
122	7A	z
123	7B	{
124	7C	|
125	7D	}
126	7E	~
127	7F	⌂†

† ASCII code 127 has the code DEL. Under MS-DOS, this code has the same effect as ASCII 8 (BS). The DEL code can be generated by the CTRL+BKSP key.

Baud

A measure of how fast individual signal elements could be transmitted serially through a system. Note: It is not that same Bits per Second bps.

Callsign

A default callsign to be used by Logger must be entered as part of the Initial Setup process. Additional callsigns for other operators may also be entered.

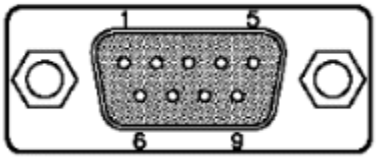
Coordinated Universal Time

Time zone of the Zero (0) or Greenwich meridian. Sometimes GMT or Zulu.

DB-9

A nine-pin connector used to connect to computer Serial (COM) ports.

Serial Port (DB 9 pin)
Male

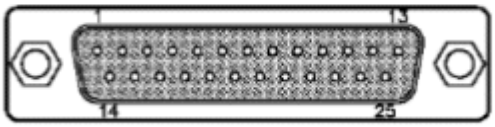


Pin	Signal
1	DCD (Data Carrier Detect)
2	RxD (Receive Data)
3	TxD (Transmit Data)
4	DTR (Data Terminal Ready)
5	GND (Signal Ground)
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	RI (Ring Indicator)

DB-25

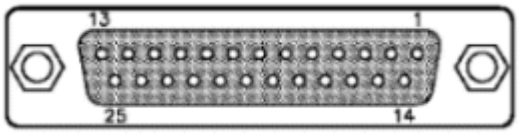
A 25-pin connector used to connect to computer Serial (COM) and Parallel (LPT) ports.

Serial Port (DB 25 pin)
Male



Pin	Signal	Pin	Signal
1	N/C (not connected)	20	DTR (Data Terminal Ready)
2	TxD (Transmit Data)	21	N/C
3	RxD (Receive Data)	22	RI (Ring Indicator)
4	RTS (Request To Send)	23	N/C
5	CTS (Clear To Send)	24	N/C
6	DSR (Data Set Ready)	25	N/C
7	GND (Signal Ground)		
8	DCD (Data Carrier Detect)		
9–19	N/C		

Parallel Port (DB 25 pin)
Female



Pin	Signal	Pin	Signal
1	Strobe	10	Acknowledge
2	Data 0	11	Busy
3	Data 1	12	Paper Empty
4	Data 2	13	Select
5	Data 3	14	Auto Feed
6	Data 4	15	Error
7	Data 5	16	Initialize
8	Data 6	17	Select In
9	Data 7	18–25	GND

Greenwhich Mean Time

A Windows standard time zone that corresponds to UTC and ZULU times.

Grid Squares

Grid Squares are used as an indication of a location based on the "Maidenhead" system of identifying a location within a "square on the earths surface" based on Latitude and Longitude and identified by six characters (two letters, two digits, another two letters). The first two letters Identify a 20 degree by 10 degree "field", followed by two digits designating a 2 degree by 1 degree "square" within that field. The last two characters are normally not used. This location methodology is used in almost all VHF contacts and contests.

Hot Keys

Keys that the may be assigned to programmable buttons to be used to execute that buttons functionality .

Islands on the Air Award

An award issued by the Radio Society of Great Britain in recognition of confirmed contacts with the required number of islands/countries since 1 Dec, 1964. Contact the RSGB for further details.

Keplerian Elements

A set of six orbital element numbers used to define and compute satellite orbital motions. Complete details can be found the ARRL Handbook. One source of this data is www.celestrak.com/NORAD/elements/amateur.txt

MACRO

A set of commands that can be used, along with plain text, to create limited routines or shortcuts to be assigned to the programmable buttons of the Soundcard Data Window and CW Machine.

MMTTY

An RTTY encoding/decoding program developed by JE3HHT whose main engine is used by Zakanaka to operate RTTY.

Parallel Port

The standard I/O ports of PC's that are normally used to connect to a local printer, normally identified as LPT1 and LPT2 . The standard hardware connector on the PC used for the Parallel Port is a female DB-25.

Programmable Buttons

There are 36 buttons available in the Soundcard Data Window and the CW Machine that are user prorammable using Logger32 MACRO commands, plain text, Hot Keys and color. These buttons are available in three sets of 12.

RS-232

The EIA-232-D (commonly referred to as RS-232) standard defines a system used to send data over relatively long distances. It is commonly used to send data anywhere from a few feet to 50 feet or more. The standard specifies the connection and signal lines.

Serial Port

The standard I/O ports of PC's that are normally used to connect to a serial device (modem, TNC or radio), normally identified as COM1 to COM4. The standard hardware connectors on the PC used for the Serial Ports are male DB-9 or 25 connectors.

Terminator

The terminator is the boundary between day and night. Its position changes during the day (it makes a complete circuit around the Earth in one day), and it also changes during the year. Daylight is longer in the northern hemisphere than in southern hemisphere from about March 21 to September 21, and daylight is longer in the southern than in the northern hemisphere during the rest of the year. The terminator more or less divides the Earth into halves: facing the sun and away from the sun. Logger32 also displays the Twighlight Terminator, defining a Twighlight Zone. These terminators are displayed in three different modes.

Zakanaka

A digital mode decoding and terminal program that uses no terminal unit, terminal node controller, or multimode
It does all its decoding using the sound card inside the computer, and it can interface with a radio using a COM port.
Zakanaka is an extremely cost-effective way of operating PSK31 and RTTY.

Direct Control of Radios

Geoff Anderson, G3NPA

Additional information for this topic was provided by G0WZY, DF3IAL, W4JSI, G3VFP, KX2A, W7DPW, KD6AZN.

Introduction

It is possible to use the $command$ and $hexcommand$ macro commands to send any legal command to a radio under control. Each radio manufacturer has its own set of commands, and these are changed as radios change. This topic has instructions for Kenwood, Yaesu, and Icom or Ten-Tec radios.

Note for purists: Radio control is normally included in macro scripts operated by the macro buttons. If you write a string of commands to be activated by a single macro button, every time you put a carriage return <CR> or a space within the macro sequence the <CR> or space will go into the transmit text buffer. It will be sent on your next transmission. If this is annoying you, simply concatenate the commands on a single line, with no space between sequential commands. If this is not you, don't bother.

For specific information on how to set up Logger32 to operate PTT using direct commands, see Configuring Push-to-Talk or the specific appendix for your radio.

Remember also that Logger32 has QSY and QSX macros. These macros do not require that you know any special codes. If you have the computer controlling your radio frequency, just click the Simplex/Split button on the Statusbar and Logger32 will change frequency as it switches to transmit.

Direct Control of Kenwood Radios

The original material for this section was developed on the Kenwood TS-850. It was then found to be partly applicable to the Kenwood TS-570 and TS-870. The fundamentals described may give an insight to those owning other equipment on how to construct macros in Logger32 to control their rigs.

Some of the suggestions will work with all Kenwood equipment having remote control interfaces. However, because of changes filter switching and the introduction of DSP since the release of the TS-850, the selection of filters and effective receiver and the associated command sequences will be slightly different.

The reader is left consult his/her radio's instruction manual and to experiment to achieve his/her own desired results.

Logger32 has two macros for the direct control of transceivers using a remote interface: one for those rigs which require a string command and the other for hex commands. The format of the macro is:

$command ....$ for strings and

$hexcommand.....$ for hex values.

Both macros allow for multiple commands. For example, filter selection and slope tuning can all be achieved using one

For Kenwood rigs, the $command$ string version is used.

In the case of the Kenwood rigs, the string to set various functions is composed of the following sequence:

- two alphabetical characters;
- various parameters; and,
- and a terminator to indicate the end of the command.

  For example, This command sets VFO A to 7.000 mHz:

  FA 00007000000; where FA is the command, the numbers are the parameter, and the semicolon is the terminator.

The most useful commands for rig control in connection with Logger32 are filter selection and slope tuning or filter bandwidth settings. Naturally, there are many combinations of the above, so the reader is left to his/her own but some of the codes required to perform these functions are included here.

Applying Macro Control to Select a Filter and Initialize Slope Tuning

Codes for Filter Selection for the TS-850

The Kenwood TS-850 command for this function is FLaaabbb, where:

- FL is the filter command,
- aaa and bbb are the codes required for the 8.83 kHz. and 455 kHz. filters respectively.

The aaa/bbb codes are:

- 000 = No select
- 002 = FM wide
- 003 = FM Narrow
- 005 = AM
- 007 = SSB (2.7 kHz.)
- 009 = CW (500 Hz.)
- 010 = CW narrow (270 Hz.)

So the Logger32 [{Link to topic MACROs, Hot Keys and Programmable Buttons:macro}] to set up the filters for 2.7 kHz./2.7 (8.83/455) would be:

$command FL007007;$.

For 500 Hz./500 Hz. the macro is:

$command FL009009;$

Macros for other filter combinations follow this pattern.

Codes for Filter Passband (Slope Tuning) for the TS-850

The Kenwood TS-850 command for this function is SHaa; (NOTE: this assumes you are using USB and is only really the 500 or 270 Hz. filters are selected), where:

- SH is the command for Slope High,
- aa is the code for the tuning position, in the range 00 to 20.

The following codes set the nominal filter center frequency as noted:

- 00 = 1450 Hz.
- 01 = 1300 Hz.
- 02 = 1100 Hz.
- 03 = 950 Hz.
- 04 = 800 Hz.
- 05 = 600 Hz.

So for a passband centered on 950 Hz., the full macro would be:

$command SH03;$

Example Codes for the filter bandwidth adjustment for the TS-870 and TS-570:

TS-870

$command FW0100;IS+1400$ Sets low to 1000 Hz. and high to 1400 Hz. for 400 Hz. filter width

$command FW0030;IS+3400$ Sets low to 300 Hz. and high to 3400 Hz. for normal use

TS-570

$command SH19;SL19;$ (Sets a 200 Hz. bandpass centered on 1 kHz.)

$command SH00;SL00;$ (Sets a normal bandwidth)

VFO/Memory Channel Selection for All Kenwood Rigs

Selecting VFO or Memory Channel

The command to set the VFO or to select a memory channel is:

$command FRx;FTx;$ (Note: that is a semicolon between the two commands)

FRx is the receive VFO selection, and FTx is the transmit VFO selection, while x is:

- 0 for VFO A
- 1 for VFO B
- 2 for memory

To set receive as VFO A, transmit as VFO B:

$command FR1;FT2;$

Note: Be careful when using this command. The right-click function to move the receive/transmit frequency to the preferred audio frequency (see Using Logger32) works only with the A VFO. The use of the line $command FR0;$ at the start of any [{Inner Link $align$, MACROs, Hot Keys and Programmable Buttons:$align$}] macro will ensure that the A vfo is selected.

Specific Memory Channel Selection for All Kenwood Rigs

The Kenwood TS-850 command for memory channel selection is MC_aa, where MC is the command and aa is the channel number. In this command string, a blank or an underscore is required between MC and the parameter aa. This command will only take effect if the memory channel has first been activated, as shown directly above. That is, you must set FRx or FTx to so that there is something for the selected memory channel to do.

Here is the command to select memory channel 05 for transmit and receive.:

$command FT2;FR2;MC_05;$

Combining Codes in a Macro

The above two rig commands (filter selection and slope tuning), can be combined to perform a complex procedure with one of commands. Here is an example (for a TS-850) to select an 8.83 mHz. filter for 500Hz with a passband centered on 950 Hz:

$command FL007009;SH03;$

Here is how to select the 270Hz/8.83 filter with a passband centered on 950Hz

$command FL010007;SH03;$

Here is a set of three macros that provide a range of choices:

If you choose to operate at aTx and Rx audio setting of 950 Hz., here are three macros to control the rig filtering:

- 2.7 kHz. filter with no change in the passband control $command FL007007;$
- 500 Hz. filter with a passband centered at 950 Hz. $command FL009007;SH03;$
- 270 Hz. filter with a passband centered at 950 Hz. $command FL010007;SH03;$

Additional Kenwood Macros

This material is by Gil Baron. It is possible to extend control over many parameters in newer radios that now provide computer control. The TS-870 is one such radio. It uses IF DSP filtering, rather than crystal or mechanical filtering.

Some amateurs have found it best to receive in CW mode and to transmit in USB mode. This might seem too complicated to use during a QSO, but you can implement these commands in macros and all it means is that your "transmit" and "receive" buttons will be macros instead of the transmit/receive pane in Logger32.

There is some preparation of your Kenwood radio for the following two commands:

- Set the menu item 24 to 1000 on your radio.
- Set RIT to +1.00 kHz.
- Set the preset audio frequencies in Logger32 to 1000.

Receive in CW mode (RXCW)

$command MD3;RD1;FW0005;$

This command script does the following three actions:

- Sets the radio to CW mode.
- Turns the RIT on.
- Sets the filter to 50 Hz.

Now follow or precede this sequence with a $receive$ command and you have the receive in CW mode command. The developer of this macro script calls it RXCW.

Transmit in USB mode (RTN USB)

$command MD2;RT0;FW0030;IS+3400;$

This command script does the following four actions:

- Sets radio to USB.
- Sets RIT off.
- Sets Bandpass filter lower to 300 Hz.
- Sets Bandpass filter upper to 3400 Hz.

Of course, you can select other modes and filters if you want. Just use these scripts but change the commands.

Direct Control of Yaesu Radios

This detailed information is for the Yaesu FT-990, and the FT-1000MP, however the fundamentals described may give an to those owning other equipment on how to construct macros in Logger32 to control their rigs. Some of the suggestions will work with all Yaesu equipment having remote control interfaces. However, because of slight changes between models, command sequences may be slightly different. The reader should consult his/her radio's instruction manual to understand the capabilities of these rigs and to experiment to achieve his/her own desired results.

Direct Control of Yaesu Transceivers

Logger32 has two macros for the direct control of transceivers using the remote interface: one macro for those rigs which require a string command and the other for hex commands. The format of the macro is:

$command ....$ for strings and

$hexcommand.....$ for hex values.

Both macros allow for multiple commands. For example, filter selection and mode selection can all be achieved using one instruction. For Yaesu rigs, the HEX version is required.

Applying Macro Control to Select a Filter

In the case of the Yaesu rigs, all commands sent from the computer to the transceiver consist of blocks of five bytes each. last byte in each block is the instruction code, while the first four bytes of each block are arguments: either parameters for the instruction or dummy values. It should be noted that the block **MUST** be five bytes long, no matter how many bytes are required in the argument; unused bytes should be filled with dummy values. It is suggested that one uses Byte 00 as a (although this is not essential, and the fill can be any hex value). No terminator is used.

For example:

00 00 00 01 0C will command the transceiver to switch to USB. 0C (zero C) represents the instruction code and 01 denotes USB. The remaining parameter bytes are filled with a dummy code of 00, because there is nothing else to tell the radio for this operation.

When constructing your own commands, it might be easier to create the code sequence from the right end (i.e., Instruction,

parameter) and then REVERSE it when writing the macro. In any event, take note that the least significant parameter digit side) should be first in the actual code.

The most useful commands for rig control in connection with Logger32 are filter selection, and slope tuning or filter bandwidth settings. Naturally, there are many combinations of the above, so the reader is left to his/her own preferences, but some of codes required to perform these functions are included here.

Codes for Filter Selection for the FT-990

The Yaesu FT-990 instruction code for this function is 8C, and it uses a single parameter code for the desired filtering:

00 = 2.4 kHz.

01 = 2.0 kHz.

02 = 500 Hz.

03 = 250 Hz.

So the complete macro to select the 250 Hz. filter would be

$hexcommand 00 00 00 03 8C$

or, to select the 2.4 kHz. Filter

$hexcommand 00 00 00 00 8C$

Macros for other filters follow this pattern.

If you send a command sequence to select a filter that is not actually installed in the radio, that sequence is ignored.

Codes for Filter Selection for the FT-1000MP

In the case of the FT-1000MP, there are two IF filters that can be controlled, one at 8.215 mHz. and the other at 455 kHz. are some examples for filter selection for the FT-1000:

$hexcommand 02 00 00 03 8C$ Sets the 455 kHz. filter to 250 Hz.

$hexcommand 01 00 00 03 8C$ Sets the 8.215 mHz. filter to 250 Hz.

$hexcommand 02 00 00 02 8C$ Sets the 455 kHz filter to 500 Hz.

$hexcommand 01 00 00 02 8C$ Sets the 8.215MHz filter to 500 Hz.

$hexcommand 02 00 00 00 8C$ Sets the 455Khz filter to 2.4 kHz.

$hexcommand 01 00 00 00 8C$ Sets the 8.215KHz filter to 2.4 kHz

Both the FT-990 and the FT-1000MP have IF-shift controls to move the passband center frequency when the narrow IF filters are selected, but there are no control codes to perform this function. With the IF shift control in its central position, the passband is centered on 1 kHz. in the USB mode and 2 kHz. in the Packet mode. In the FT-1000MP, there are control codes for the setting the EDSP, with which the user can experiment. For those who like to experiment, some examples are given below.

HP Filter (USB mode)

The upper frequency of the filter remains fixed on 2300 Hz. but the lower frequency may be changed to reduce the bandwidth follows:

$hexcommand 00 00 50 42 75$ produces a filter with the range 1500-2300 Hz.

$hexcommand 00 00 60 42 75$ produces a filter with the range 1800-2300 Hz.

$hexcommand 00 00 67 42 75$ produces a filter with the range 2050-2300 Hz.

LP Filter (USB mode)

In this case the lower frequency of the filter remains fixed on 2Khz and the upper frequency may be changed to reduce the bandwidth as follows:-

$hexcommand 00 00 90 41 75$ produces a filter with the range 2000-2700 Hz.

$hexcommand 00 00 80 41 75$ produces a filter with the range 2000-2500 Hz.

$hexcommand 00 00 70 41 75$ produces a filter with the range 2000-2250 Hz.

$hexcommand 00 00 00 40 75$ will switch the EDSP off

These macros have no effect if Packet mode is used on the FT1000MP.

Combining Codes in a Macro

Control codes can be combined to perform a complex procedure in one macro in one of two ways. Either each command is placed on a separate line, or they can be combined on one line as shown below. Both examples set USB with the 2.4Khz

$hexcommand 00 00 00 01 OC$ - sets USB

$hexcommand 00 00 00 00 8C$ - sets the 2.4 kHz. filter

Or combined

$hexcommand 00 00 00 01 0C 00 00 00 00 8C$

Note: It has been found that for the FT990 only two commands can be put in one line, but for the FT-1000MP this increases three.

Direct Control of Icom and Ten-Tec Omni VI Transceivers

It is possible to use the $hexcommand$ and qsy commands to set modes and frequencies in Icom radios that are in communication with Logger32. Read the above sections for general information on what to do and what to expect. This contains information specific to some Icom radios. The Ten-Tec Omni VI and VI+ use the same syntax. For the full syntax of these commands, consult the radio user's manual. There may be commands that work for one radio and not another, but the format is the same.

Icom radios do not have a transmit/receive command, but the Ten-Tec Omni VI does. Therefore, you cannot transceive via radio command with an Icom radio, you must use another form of t/r control. See the topic Configuring Push-to-Talk (PTT).

Default Address

Icom radios do not share a single universal default address, and the correct one must be set in the Logger32 setup for the radio. You will find this information in the instruction manual for your radio, or you can review your radio menu and find the in the radio. The IC-706MKII uses 4E, the IC-735 uses 04, the IC-761 uses 1E. See the topic, Interfacing a Radio for PC Control for information. The Omni-VI address is 04 by default, but it can be changed in the radio.

Setting a Frequency

The following example commands use a default address of 4E (IC-706MKII).

Set LSB on 80 Meters

Put the following in a macro button and execute the macro. The commands are hexadecimal numbers, so 0 is zero, not the letter O.

$hexcommand FE FE 4E E0 06 00 FD$

Set LSB, do not select a filter, use the one currently selected

$qsy3581.50$

Change radio frequency to 3581.5 kHz.

Set USB on 20 meters

$qsy14069.50$

Change radio frequency to 14069.50 kHz.

$hexcommand FE FE 4E E0 06 01 01 FD$

Set USB with a wide filter

The order of the qsy and hex commands is not important.

Some Filter Selection Commands

USB wide: $hexcommand FE FE 4E E0 06 01 01 FD$

USB narrow: $hexcommand FE FE 4E E0 06 01 02 FD$

LSB wide: $hexcommand FE FE 4E E0 06 00 01 FD$

LSB narrow: $hexcommand FE FE 4E E0 06 00 02 FD$

FSK : $hexcommand FE FE 4E E0 06 04 FD$

FSK narrow: $hexcommand FE FE 4E E0 06 04 02 FD$

Ten Tec Omni VI commands

Here is a similar example for the Omni VI:

LSB, 0.5 kHz. 6.3 IF filter $hexcommand FE FE 04 E0 06 00 04 FD$

The Omni VI manual documents the mode, but not the filter codes. Here is what you need to know:

- Each command begins with $hexcommand FE FE 04 E0 (assuming you left the radio address at the default)
- Right after E0, 06 means set mode/filter.
- Next, 00 means LSB, 01 means USB.
- Next 02=2.4, 03=1.8, 04=.05, 05=.25, all are 6.3 mHz. IF filter positions.
- If you set the last value to 06 this toggles the narrow (9 mHz.) filter, meaning if it is off, it will go on, and if it is on, it will go (we did not invent the code, we just report it).

Here are some of the useful Omni VI commands:

LSB mode $hexcommand FE FE 04 E0 06 00 FD$

USB mode $hexcommand FE FE 04 E0 06 01 FD$

FSK mode $hexcommand FE FE 04 E0 06 04 FD$ If you use FSK rather than AFSK.

Each of these can be combined with filter selection codes. In fact, to set the filter, you must specify a mode in the command. The following all specify LSB.

LSB, 2.4 kHz. $hexcommand FE FE 04 E0 06 00 02 FD$

LSB, 1.8 kHz. $hexcommand FE FE 04 E0 06 00 03 FD$

LSB, 0.5 kHz. $hexcommand FE FE 04 E0 06 00 04 FD$

LSB, Narrow $hexcommand FE FE 04 E0 06 00 06 FD$

Toggles the narrow 9 mHz. IF filter on and off.

For an Omni VI+, with two narrow filters:

LSB, Narrow 2 $hexcommand FE FE 04 E0 06 00 07 FD$

Toggles the second narrow 9 mHz. filter.

Remember, the QSX command works in all modes, USB, LSB, and FSK, so there is no need to call up special tricks to split.

Configuring Push To Talk (PTT)

Scott E. Thile, K4SET and Jim Hargrave W5IFP

This topic covers transmit/receive (T.x/Rx) switching using PTT controlled by Logger32. If you want to set up PC control of your transceiver go to Interfacing a Radio for PC Control and if you need to interface your PC sound card to your transceiver go to Interfacing a Radio to the PC Sound Card.

Logger32's Transmitter Keying Options

You can perform transmit/receive switching in four ways.

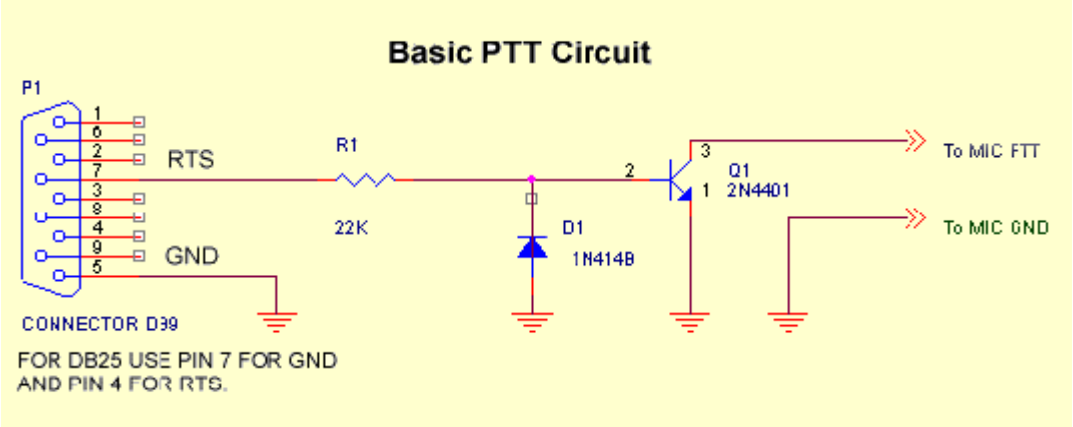
- Operate a push-to-talk (PTT) switch using a switched voltage RTS or DTR from a serial computer port, either the port for serial communication with the radio, or a separate serial port.
- Use transmit and received commands sent to the radio over a serial (Com) port.
- Use VOX in your radio so it turns on when audio comes from the computer.
- Operate the radio transmit/receive manually.

Key the Radio PTT line

Hardware Issues

In both cases of serial port keying, the PTT keying is accomplished by low/high voltage on pin 20 and pin 4 of a DB-25

connector (the DTR and RTS lines) connected to the serial port. The DB-9 equivalent pins are 7 and 4. To key the radio PTT line from DTR or RTS, a transistor interface circuit is required. This simple circuit will do the trick:

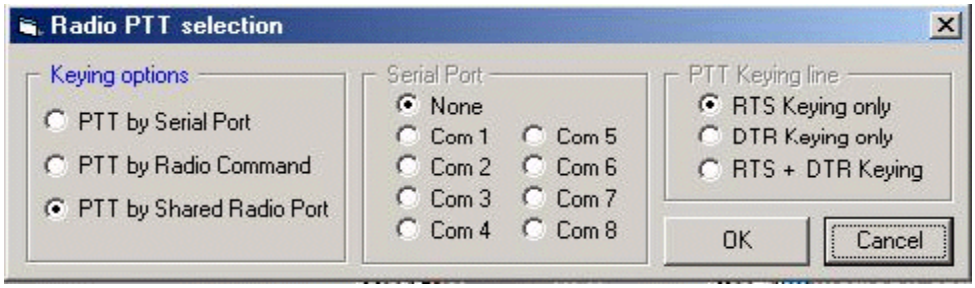


Click here for a list of links with additional PTT circuit and interface information. An excellent resource for PTT interface for the builder or purchaser is the site maintained by WM2U:

http://www.qsl.net/wm2u/interface.html

Software Setup to Operate PTT with a Com Port in Logger32

Here is how to switch the PTT line by using a Com port . This discussion assumes that you have built and connected an appropriate interface for the PTT line, as shown above. Select the appropriate PTT options. Click Settings, Radio PTT which brings up the following dialog box. The selections displayed are the correct ones to setup the radio for sharing the com port for radio control and PTT functions:



If you wish to use a separate com port for PTT or you do not have radio control, the following steps will provide the correct setup:

- Under Keying Options, select PTT by Serial Port.
- Under Serial Port, select the Com port connected to your PTT interface.
- Under PTT Keying line, select RTS for pin 4 (DB-25) or pin 7 (DB-9) operation (used by the circuit above). Select for pin 20(DB-25) or 4(DB-9) operation. Selecting RTS and DTR will set both pins to high. Make sure that your interface is connected to the appropriate pin for the method that you choose.

PTT Using a Shared Radio Port

You may choose to operate a PTT line directly from a pin on a Com port, as described directly above, and also have communicate directly with the radio for frequency information and software command control on the same Com port. Click Settings, Radio PTT Options, and select PTT by Shared Radio Port. Logger32 will key DTR or RTS on the same Com port for information exchange between the radio and Logger32.

CW and Sound Card operation may also be shared on the same port as the Radio Control. In the CW mode, PTT is automatically routed to the RTS line and CW data is automatically routed to the DTR line when in the CW mode.

To make this all work on the same serial port, you must select RTS as the PTT line in the PTT setup in the Sound Card SETTINGS. Open the "Radio PTT selection". Under keying options, select "PTT by serial port." Then select "RTS keying Now select "PTT by shared radio port". Your port is now configured to allow CW and Sound card PTT operation. For an appropriate CW data interface see the section on CW operation.

One Way to Keep From Having a Live Microphone During AFSK Operation

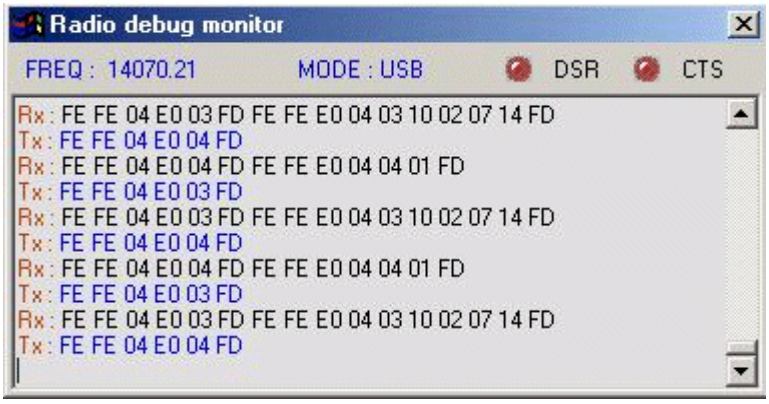
A number of modern radios, like the Kenwood S-570D, when keyed by closing a certain PTT input on the back, only accept audio from the rear panel audio input. With these radios, you can operate the PTT using a direct line from a serial port to the rear panel PTT, and apply the AFSK signal to the rear audio input. You will never have a live microphone during AFSK operation, even if the microphone is left connected.

Direct Command of Transmit/Receive Using the PC-Radio Command Interface

Certain models of Kenwood. Yaesu, Kachina, and Ten-Tec radios can be switched between transmit and receive when the sends the appropriate command. At the present time, Icom radios support many commands (see Direct Control of Radios) but the transmit/receive changeover. Ten-Tec uses the Icom command set, but includes a Tx/Rx changeover command. Since the following discussion tells how to configure the interface so you can talk to your radio, you may want to do this for your Icom, so you can exchange mode, frequency, filter, and other information between the computer and the radio.

Radio Debug Window

You can monitor the commands sent between Logger32 and your radio. Click Setup | Radio | Sow Radio Debug Window. Here is what you will see:



Notes About Radio Control of Transmit/Receive

- With some radios (Yaesu FT1000MP, Kenwood), if you operate PTT by sending a command over the serial port, the microphone input remains active.

- If you have a problem controlling Tx/Rx, try speeding up or slowing down polling. Specifically, try the values 500 msec. 1000 msec. It is possible to be too slow or too fast.

- If you continue to have problems, you can bring up the Radio Data window (Radio button) to look directly at the codes to and from your radio.

- Once you activate transmit using a radio command, if the computer locks up or crashes, you may have difficulty taking the radio out of transmit mode. You should examine your radio and manual closely, and determine what steps you can this situation. For example, with a Ten-Tec Omni VI, if you are unable to send the software receive command, you turn the radio off and back on.

- If you use a Ten-Tec Omni VI (or VI Plus), remember that you must set the address to 04 under the Icom setup, then go Ten-Tec and select the Omni VI.

Vox Control of Transmit/Receive

An easy way to control Transmit/Receive is to use the vox in the radio. Set the vox sensitivity so that the input signal keys the

vox. If you use vox, you may find that the radio does not turn off, but cycles on and off when you try to go to receive. You can stop this by bringing up the full set of Windows audio mixer controls and making sure that only the ones you need to transmit and receive are turned up or enabled.

Manual Control of Transmit/Receive

Manual operation is, to be honest, a nuisance. It requires that you operate the PTT with an external switch and also tell Logger32 when you want to go to transmit and to receive. You will find that you sometimes forget to key the transmitter although you have already started transmitting audio out of the computer. This method should be used only for initial setup testing purposes. One of the more automated methods should be instituted for regular operation.

One Input At a Time, Please

When you key the radio, make sure that you are not sending one audio signal from the computer plus one from the at the same time. On many radios the microphone input and the rear panel input are active at the same time. If this is the you should disconnect the microphone from the radio whenever you operate AFSK.

You may choose to use a device that connects to the microphone input and allows you to switch between a microphone and another input source. There are devices on the market that do this, and also have the interfaces and wiring for PTT, and for reducing and isolating the AFSK signal from the sound card. See Information on the WWW.

Interfacing a Radio for PC Control

Andy Obrien, KB2EOQ

Many modern radios allow the radio CPU to be interfaced with software products. Radios can send data about operating parameters, and can receive commands. Some HF radios manufactured since 1990 can be interfaced to a computer via serial (Com) port connections. If your radio is capable of PC-to-Radio interfacing, this will enable many features within Logger32 that will find useful.

Benefits of a Radio Connection with Logger32

Here is what Logger32 can do in PSK and RTTY mode when there is a radio communicating with the PC. You should also read sections on Macros and Direct Control of Radios.

Display radio frequencies on the analog Display frequency scale (go to View, Frequency Display, Display Frequency from Radio)

Display radio frequencies on pane 3 of the Statusbar.

Set the transmit frequency to that of an Aux window by turning Net off and then clicking on pane 3 in the Aux window (see Operating Split By Transmitting at an Aux Window Passband Frequency).

Automatically retune your radio so that you are transmitting a tone of a selected audio frequency while remaining on the same transmitted radio frequency (see align).

Retune your radio to a favorite frequency using Macros.

Set the receiver filter bandwidths using Macros.

Select mode and sideband using Macros.

Operate split frequency (separate trnsmit and receive frequencies) using Macros.

The Macros topic has a list of all macros in Logger32. The Direct Control of Radios topic discusses how to use those macros that are specifically designed to control the radio over the Com port.

Connecting a Radio to Your Computer and to Logger32

General information is provided here to interface radios to Logger32. Detailed interface instructions for some specific radios may found in the appendix for those radios.

You will need to refer to your radio instruction manual for details of the exact protocol used by your radio, the communications port (com port) settings, and the cable and interface requirements.

In Logger32, you must first configure a port to communicate with your radio. Do this in the Config menu at the top of Logger. You must do this first, and have your radio on before doing the next step.

Icom and Ten-Tec Radios require a specific address for the radio type. This address can be set within Logger. For example, how to set up an IC-751 in the Logger program, Click On Config (at the middle of the second ToolBar). Click On Radio Type. Icom. Click on IC-751. Input the Radio Address (in Hex) - i.e. 1C for an Icom 751. Click the Red check mark. For a Ten-Tec you must first go to the Icom radio type and set the port to 04 (the default port for al lTen-Tec radios, set the port address, and go to Ten-Tec and select the radio.

Note: You must have your radio connected through a Com port, and have the port selected and communicating with your radio before using Radio Type, or Logger may freeze and have to be closed via Ctrl-Alt-Del.

Radio Debug Window

To assist in setting up the communications there is a Radio Debug window that displays the data sent to and received from the radio. In Logger, click the Radio button at the top of Logger. In Logger32 standalone, click Toolbox, Radio debug window.

Logger Bandplan

Not all radios return their mode when interrogated. Also, when attempting to QSY a radio to a DX Spot some guess work is in determining the mode to put the radio on (i.e. Is a DX Spot on 14080 a CW, or RTTY spot?). To address this difficulty, see the Logger Help Topic Bandplan, in the Logger program.

Polling Speed

You must set the speed at which the software polls the radio for information. The slower you set it, the more delay you will see you change frequencies, but the less likely it is that you will overload your computer.

In Logger32 standalone mode, click Settings, Radio control options to set the polling speed in milliseconds. 500 msec. is fairly A larger number will slow down polling.

Logger32 communicates with a connected radio under the following conditions:

Auto-Poll: The auto poll option is enabled on the Logbook Config window (accessed from the Logbook entry window).

FREQ: Clicking the Freq Button on the Logbook data entry window will read the radio frequency and mode. This will set the Band/Mode of the Logbook.

DX: Clicking the DX Button on the Logbook data entry window will (if you have a Callsign entered) automatically read the frequency, and make a DX spot on a Packet Cluster. You select where to send the automatic DX Spot (to the Packet port, to a Telnet connection, or to a Data port - or any combination).

DX Spot: Clicking on a DX Spot (in the DX Cluster window) will read the radio frequency (for later reference), and set the to the frequency/mode of the DX Spot.

Reset: Clicking the Reset button (if it is active) on the DX Cluster window will return the radio to its previous frequency/mode (before you clicked on a DX Spot).

Display Frequency from Radio

Click View and then select Frequency Display, then Display Frequency From Radio. Logger32 will, if computer-radio is operating, display the frequency from your radio at the bottom of the Rx window. The advantage of this feature is that the

will change when you shift bands.

Logger32 will now display on-screen information from your radio, and use the information for your log and for transmitting information in a QSO. Frequency, Mode, and Band are the primary features that your radio will share with Logger and Logger32 . This information can then be used via the Macro feature.

Using a Commercial Computer-Radio Interface

You can build an interface to provide hardware isolation and signal reduction in the audio line from the computer to the radio The topic on Interfacing a Radio to the PC Sound Card provides the information you need. This interface requires no power, but only operates in the transmit audio line.

The topic Information on the World Wide Web can help you find a commercial interface to operate between your computer sound card and the radio. Some interfaces have features such as providing extra connectors and switches to allow you to switch mickrophone and computer, and adjustable signal levels so you can set the computer audio at exactly the same level as the microphone audio. Each model of interface is different, and you must read the instructions for the interface to see how to use it.

However, if your radio interface gets its DC power from the computer over the RTS, DSR, or DTR lines, it may not work properly Logger32. You should try to provide power from the radio or from an external power source.

Radio Settings

The interface settings for the following radios are found in the specific appendix for that radio:

- ICOM IC-746
- Kenwood TS-440S
- Kenwood TS-570
- Kenwood TS-870
- Kachina 505
- Ten-Tec Paragon
- Ten-Tec Omni VI or Omni VI Plus

If your radio is not in this list, the following information may prove helpful. Manufacturers often use the same communication for their complete line of amateur equipment. If your radio is not in the above list, the settings for a similar radio by the same manufacturer may work or prove a good starting point ofr experemintation. A good example is the ICOM series of radios. To date, ICOM radios except the IC-735 will work with Logger32 by using the "Icom (not IC-735)" radio setting. As a result the settings specified for the IC-746 should work for all except the IC-735.

Interfacing a Radio to the PC Soundcard

Scott Thile, K4SET

There are the two things you must do to interface the radio to the PC Sound Card:

Get audio from the radio to the computer so Logger32 can decode received signals; and,

Get audio from the computer to the radio so you can transmit a PSK or RTTY signal.

All other interfacing (PTT, radio control, interaction with Logger32) is covered elsewhere in this Help file. Depending on your configuration and operating preferences, you may want to refine this set-up. For instance, you may want to buy a commercial interface that takes care of some of the connections that will be explained in this topic. Check these additional resources for more involved Information on the WWW.

See Help Topic: System Requirements for information on what is needed within your PC to allow operation of the software, and Interfacing A Radio for PC Control for information on connecting your radio to use Logger32's PC control features.

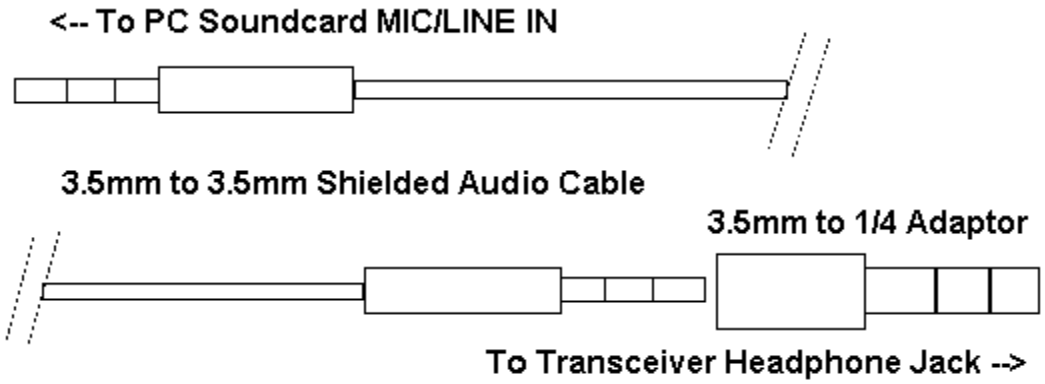
Note: It is VERY important that you have installed the latest Microsoft patches and upgrades to your version of Windows. Go http://www.microsoft.com/downloads/search.asp

Receive Interface

To receive and decode digital mode signals, connect the receive audio to either the PC sound card line in or mic in port. The simplest way to do this is to use three-conductor shielded audio cable between the receiver's headphone jack (usually a 1/4" PHONO Jack) and the sound card's line or mic in jack (most often a 3.5mm stereo "mini-phone" jack). The sound card's line in is a better choice than the mic in jack, because the line input is harder to overload, but either will work. Some sound cards only have a mic in jack. You must adjust the Windows Recording Volume for the correct input levels, as described below.

It is also possible to purchase a commercial interface that will tailor your input and output sound card audio to your radio. See Information on the WWW.

Here is a receive audio cable using a pre-made (Radio Shack) 3.5mm to 3.5mm stereo audio cable and a 3.5mm to 1/4" stereo adapter for the transceiver side.



In some setups, with the headphone jack part of the way in, you can monitor transceiver audio through the radio speaker while sending the audio to the sound card. This is a great aid in tuning signals by ear while monitoring them on Logger32's tuning

With this simple cable (no soldering required) you're ready to try to receive digital mode signals with Logger32.

Set Receive Audio Levels

It is important to adjust your sound input and output levels. This is done with the Volume and Recording controls in Windows 98, 95 and NT. Logger32 enables you to get to these controls from within the program. First, let's look at a warning feature by Logger32.

Receive Overload Warning

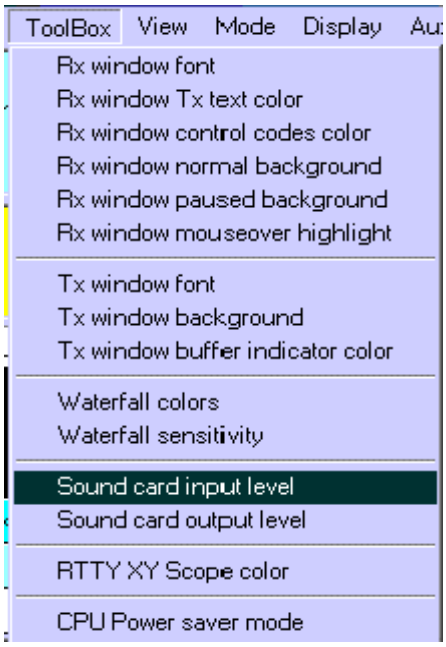
Logger32 has an overload warning to let you know if audio from the receiver is overdriving the computer sound card. The background of the spectrum/waterfall display turns red when input audio level is too high. However, if you reduce the audio too much, this is like turning down the RF gain on your transceiver, and weak signals are not detected. You can see how this

works by bringing up the Sound Card Input Level control (Toolbox) on top of Logger32, and sliding the control up until you see the display turn red.

Some sound cards do not overdrive easily, and others do. Some cards may have an AGC or some other limiting system. The popular Creative Labs (copyright) cards overdrive if the level is set too high.

Now that you see how the Overload Warning works, go to Settings and set Overload Warning on.

Click on Tool Box, Sound Card input level, like this:



This brings up the Recording mixing console. Note: In Windows 95 this feature brings up the Volume Mixer. From the volume click on Options, then Properties, then select the recording radio button. Make sure the input(s) you are using (Mic or Line) are selected in the check boxes, and then click OK. This will bring up the Recording mixer window.

For the next adjustments, arrange your Logger32 window and your Recording mixer Window so that you can easily see both windows and switch between the two. Set your transceiver's audio (listening) volume to a comfortable listening level. You should able to see both windows like this.

Depending on your setup, adjust the mic or line level input controls and the overall recording level (far left slider). The best way to set these levels is to tune in digital mode activity with your transceiver, and then click on the area of the strongest activity as in the spectrum display (lower segment of Logger32's main operating window) to direct Logger32's attention to that QSO. Turn the Overload Warning.

Start by setting the overall recording volume in the center of its adjustment range. Adjust the input level on the mic or line input you can clearly see the signals on the spectrum display, but they do not turn the display red. Signals will not reach the top of the spectrum display if they are adjusted properly.

Overdriving these inputs will severely degrade your copy. Adjust for the minimum record levels, while still providing a good in Logger32. It may be necessary to reduce the overall recording level as well as the mic or line inputs to achieve this. It may be necessary to attenuate the signal between the transceiver and sound card, especially if you're using the mic input of your card.

If you don't see any receive activity on Logger32's displays, make sure that your mic or line input control is not muted ("Mute" is a check box next to the slider in your record mixer) and also doublecheck all connections. It is possible to overdrive the sound card, and may need to attenuate the input signal. It is also possible that the sound card is incompatible with Logger32. Some hams found that sound cards built into the motherboard do not work. The only solution to this problem is to disable the on-board sound card in Windows' Settings, Configuration, System menu, and install a separate sound card.

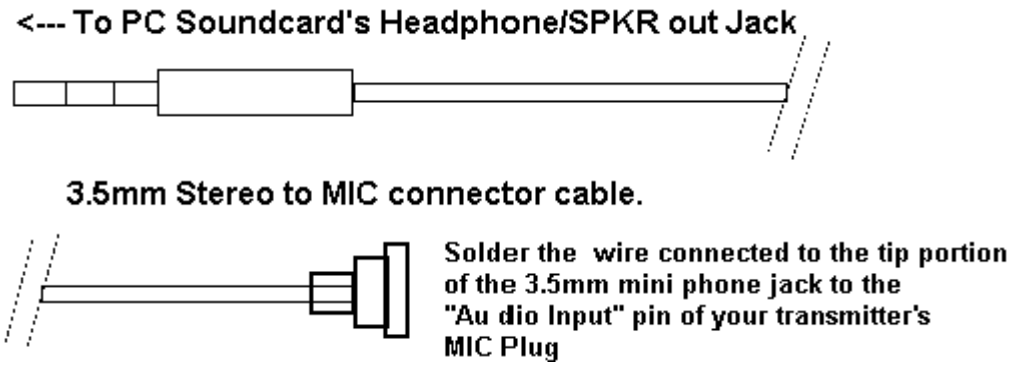
After these receive adjustments are made, try to copy some QSOs by tuning them in using Logger32's tuning indicator(s) as above and described in Tuning Display and Controls, in the topic on Receiving PSK31.

Transmit Interface

To transmit digital signals, you need to connect the sound card output (often through an isolation transformer, or 100:1 attenuator) the transmitter microphone or AFSK input. The following picture shows a direct connection, but many transceivers and sound will need the voltage divider shown later in this section. However, please check the instructions for your rig. Some radios have a divider in the rear audio input, but do not have it at the microphone connector. If you connect to the rear input, you do not need external divider. One radio that does have such a divider is the Kenwood TS-680.

Also, make sure that you do not use speech processing in the radio. Any type of speech processing will distort the audio, and this distortion hurts digital signals more than speech signals.

Overdriving your transmitter audio stage in PSK31 creates big IMD problems, and is a major cause of interference in this mode. It very important to get this right. Be sure to check in your first QSOs to make sure that you do not have a high IMD. Many PSK programs, like Logger32, read this value out on received signals. You must give the other station about five seconds of idle for him/her to get a stable IMD reading.

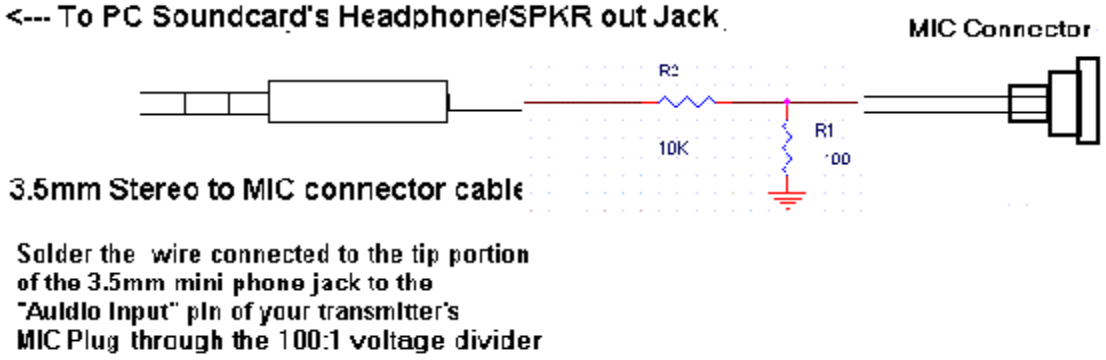


With the above interface connected, and your transceiver's antenna jack connected to a dummy load, set the audio output level of your PC sound card to match your transceiver's input circuit.

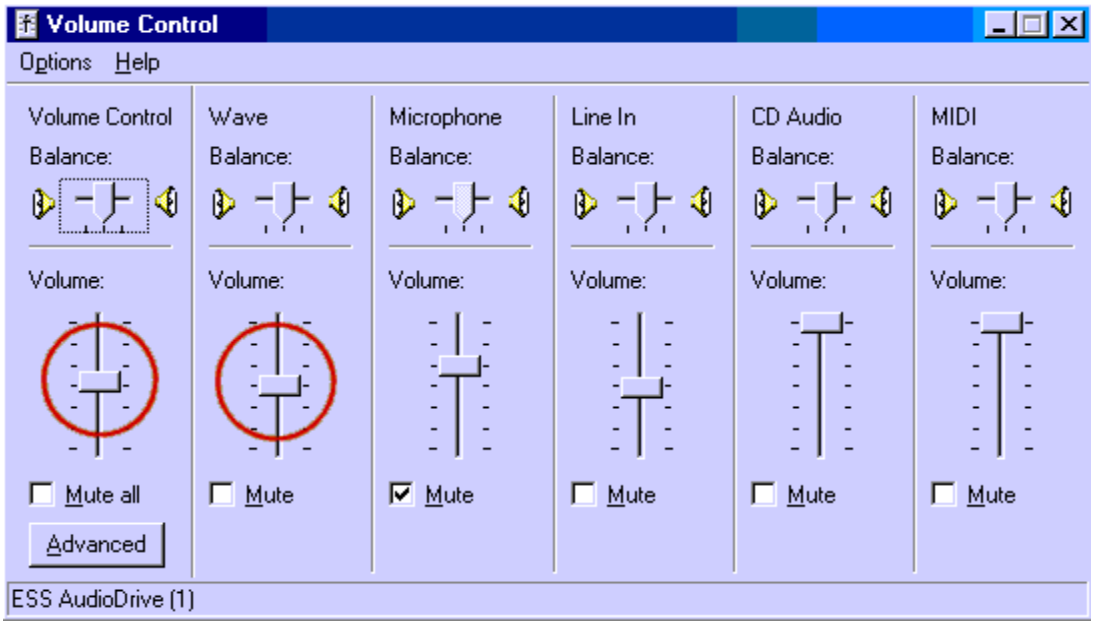
Voltage Divider Output Connection

In most cases the sound card provides too much drive for the radio's audio stage. Even setting the computer mixer output control its lowest level, you may still have a high IMD value. You are actually overdriving your radio's microphone input stage before the gain control, so no matter how low you set the mic gain, you are already distorting. It is strongly recommended that you use a voltage divider to reduce your sound card output. You can make or purchase add-on hardware designed for PSK and other digital modes that includes this circuitry. For more information see Information on the WWW.

Here is a voltage divider. If you want greater control, you can replace the series resistor with a potentiometer:



Again, it is extremely important to match your sound input and output levels. To set the output level we bring up the Windows Volume control just like we did with the Recording Control panel before, only this time we select ToolBox, then Sound card output level. This brings up the Volume Control mixer.



Set Transmit Level

These audio output adjustments are best made with your transceiver connected to a dummy load. Set your transceiver mic gain control slightly above its minimum setting and make sure your rig's VU meter (or modulation indicator) is set to monitor ALC. rigs do not have such a meter, and use only a light. Your VOX settings (if you're using VOX) should be adjusted as you normally have it for your other modes, and it should be engaged. If you're not yet using VOX or PTT (more info on that in Configuring to-Talk), you can make these adjustments by manually engaging transmit on the rig at the same time that you tell Logger32 to transmit.

Prepare to Adjust the PC

Again, make Logger32 active in one window and the Volume Control mixer in a second window, as you did for the recording settings. Click on Tool Box, Sound Card output level. For now, slide the Windows Volume Control to a minimum (all the way and the Wave slider at just slightly above the minimum setting.

Put Logger32 in the tune mode by clicking Mode, Tune. (Tune should now appear the lower left hand corner of the statusbar. It is also possible to cycle through the modes by clicking in the mode pane of the Statusbar.

Next, click on the small blue Receive indicator in the pane in the middle part of the Statusbar. Receive (blue) changes to Transmit (red), and Logger32 transmits a single tone in the Tune mode. To return to receive mode simply left-click the same pane again, which now says Transmit. You can also toggle between transmit and receive by pressing the Pause/Break key on your keyboard.

Don't lose track of how long you are transmitting. You can overheat your finals.

Here is what this setup should look like with both windows visible:

SC7 here

Adjust Rig Audio and Vox

There is a lot of interaction between the vox level setting and the audio setting.

Slowly raise the Volume control on the mixer until the rig's vox circuit engages and the radio starts transmitting. If vox has not engaged by the time the Volume control is midway up the slider scale, then raise the rig's mic gain slightly and try again. Watch rig's ALC indicator. You want a minimum reading here, indicating that there is just enough audio to drive the rig, but not so much that you run the risk of overdriving the mic input. Overdriving the mic input circuit is a common cause of distorted and wide signals when using this type of sound card set up. In fact, any operation of the rig's ALC means that it is distorting your transmitted PSK31 is especially sensitive to these settings, but all the digital modes will suffer. Voice signals are not as distorted by the action ALC.

If vox does not seem to operate at low enough audio levels, you may want to set the levels by manually putting your rig into then setting the levels to optimize your audio signal (again you should just see your ALC indicator moving). After this, reset your vox circuit to trip at that level of input. If you normally use vox, then the voice setting should be OK, but if you have not set your level, you may have to do so. You can do this by manually putting your rig into transmit, adjusting the transmit level for the above no-ALC level, and then adjusting your vox gain so the rig goes into transmit when you send it a tone.

If your radio does not return to receive, but keeps cycling between receive and transmit when you use vox, then another input is operating the vox circuit. Go back to the Volume control mixer, bring up all the controls, and mute every one. Now, uncheck the (s) you need to output a tone, and the one you need to get a display on the Logger32 screen. Leave all the others muted or all the way down. Remember, you can hear the output tone in your speakers.

The optimal setting when using the above interface will usually set your sound card output (Volume and Wave Control settings) low, and your radio's mic gain control is at a little lower than normal for SSB operations. If you are unable to control the audio these controls at reasonable levels, you very likely need to add attenuation between the sound card output and the rig's mic You can also try using a direct audio input on your accessory jack or rear panel (if your rig is so equipped). This may avoid your pre-amp circuit and be a better choice for signal matching, however this may also make it impossible to use your VOX circuit for engaging your transmit and receive modes. Some radios do not connect vox to the rear input.

Once you've optimized these settings, make a note of the positions of your rig controls as well as the Windows Volume and Recording mixer positions. You may make changes for other software and operating modes, and this makes it easier to reset for Logger32.

There is an additional adjustment that you can make to tell Logger32 the actual value of the sound card clock. This adjustment holds only for the RTTY mode. See the topic Calibrating the Sound Card.

Note: Some commercial interface units get their power from the computer via DTR, DSR, or RTS lines. Logger32 may not work properly with this type of interface. You must modify the interface so that it gets power directly from the radio, or from some source, but does not use the DTR, DSR, or RTS line for power.

PTT Possibilities

A spare serial port is an advantage, to allow direct keying of the radio (see PTT Circuit). You can also use software, vox, or keying of the radio. See the topic Configuring Push-to-Talk for more guidance. For vox keying, also see Interfacing a Radio to PC Sound Card.

If you have no unused serial port on your PC for PSK PTT, but do have a serial port which you use to interface to your radio (for Frequency/Mode control), you can share this port with PSK PTT. The Push-to-Talk topic has information about this. Logger32 not operate the PTT over a parallel port.

Additional Information on the Web

The following sites are recommended for additional information on PTT, optical Isolators, filtering, and attenuation circuits. Some sites have general information on PSK or other digital modes. Please do not ask the maintainers of these site for Logger32-information. If you need help with Logger32 or Logger32, try the yahoogroups reflectors, and any further sites you may find from those sources.

Plans

The WM2U page has radio-specific interface designs for sound-card-output-to-radio audio connections, and also for PTT connections. Ground loop solutions are addressed.

http://www.qsl.net/wm2u/interface.html

http://www.w5bbr.com/soundbd.html

http://www.ife.ee.ethz.ch/~sailer/pcf/ptt_circ/ptt.html

Interfaces for sale

These interfaces and interface kits provide various combinations of plug compatibility, sound card output voltage reduction and isolation, PTT isolation, and other features.

http://teleline.terra.es/personal/esteban1/ptteng.htm

http://sanduskyohio.com/lectrokit/

http://www.westmountainradio.com/

http://www.buxcommco.com/buxcat.html

http://www.mfjenterprises.com/

MMTTY

MMTTY is used as a plug-in engine to copy RTTY under control of Logger32. Here is the official MMTTY English-language site:

http://www.qsl.net/mmhamsoft

You can sign up for the MMTTY reflector, which operates like Logger32's reflector, by going to Yahoogroups as you would for Logger32 or Logger32. When you get there, sign up for MMTTY.

http://www.yahoogroups.com

Proposed frequencies for PSK31 QSOs

1838.150
3580.150
7035.15 for region 1 and region 3, and 7080.15 for region 2 *
10140.150
14070.150 <--- Very active frequency for PSK..
18100.150
21080.150
24920.150
28120.150

* The 7 mHz. band is much wider in region 2 (the Americas), and the IARU bandplan reflects this.

The plan for PSK31 activity has been to concentrate activity starting from the bottom edge of the IARU RTTY bandplan, upwards as activity increased. The exception is in the 10-meter band, in order to give hams with less than full privileges a chance meet.

The recommendation is to begin 150 Hz above the bottom frequency. Keep in mind that all you need is about 100 Hz. as channel separation.

Icom IC-735

W5IfP – Jim Hargrave

The IC-735 radio comes with the following factory default settings:

Hex address = 04

Baud rate = 1200

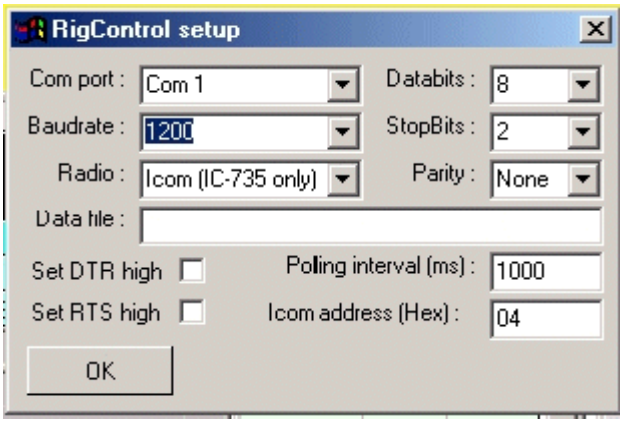
Transceive function = Enabled.

Although the default settings work very well with Logger32, it is suggested that you use "2 Stop Bits". It seems to work better.

If desired for faster performance, the baud rate can be changed to 9600 by moving jumper "D4" to position "D5" on J-22. J-22 is located inside the radio under the PA unit. To gain access you need to remove the top cover and the 4 screws attaching the PA You can set aside the PA unit by disconnecting the power cable to the PA unit.

NOTE - Contrary to other Icom series radios, the IC-735 will not communicate properly with Logger32 if you 'disable" the function. It muat be left in the factory default position.

The following shows a Logger32 setup for the IC-735 using factory default settings:



NOTE - DO NOT set the Polling Interval less than 250 ms as the IC-735 cannot respond to the Logger32 polling at an interval less than trhis.

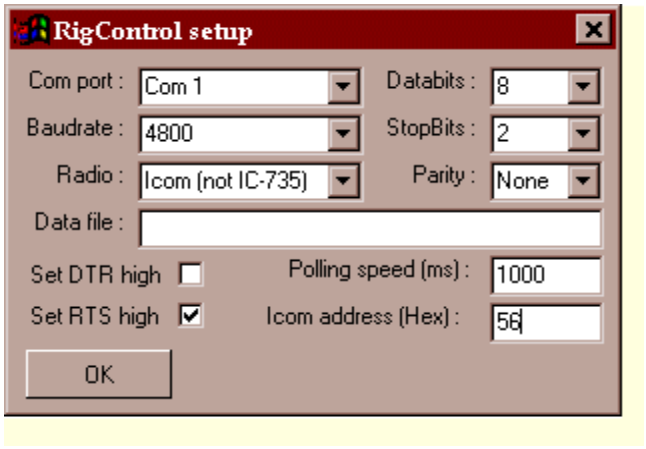
NOTE - Many commercial interface circuits use the computer RTS or DTR lines to power the interface circuitry. If you are using a Radio Control interface that derives power from the computer, you can set the DTR and/or RTS lines "HIGH" by placing a check mark in the box adjacent to them. If you set either of these lines High you will not be able to share the same Com port for CW operation. However, if your Interface will run on power from the DTR line, you may still be able to share the RTS line for PTT operation of the Sound card.

ICOM IC-746

Hal Miller, KB1ZQ

Radio IC-746 with ICOM OPC-662 interface cable*

Sample Settings are as shown in the figure below:



Com port and Baudrate are user selectable, making sure that the radio is set to the same settings.

Radio is set to Icom (not IC-735)

Set RTS high must be checked as this powers the OPC 662 interface.

Databits must be set to 8

StopBits should be set to 2, will work intermittantly with 1

Parity is set None

Icom address (Hex) can be user defined, however the default for the IC-746 is 56.

*OPC-662 Interface and cable are part of the ICOM RS-746 Package

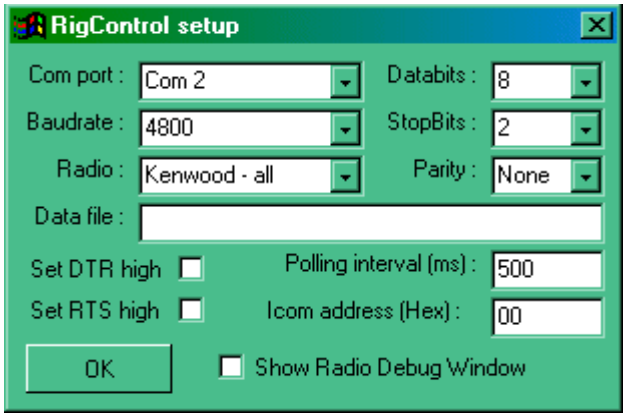
NOTES:

The default values of 9600 baud for the COM port and 1000 ms (1 second) for the Polling Speed should be used as a starting point for your configuration. If your radio and computer can handle faster baud rates you should select the highest baud rate provides reliable operation with your specific hardware. Reducing the value of the Polling Speed (increasing the rate of polling) will provide a faster and smoother display of all band, frequency and mode changes.

On the IC-746 menu, set the CI-V Transceive to OFF. This will stop the radio from sending data to the computer, preventing a "Runtime Error 13" error message.

Kenwood TS-850

Hew Lines VA3HU



Kenwood TS-570 TS-870

Hew Lines VA3HU

The procedure for Interfacing the Kenwood TS-570 and TS-870 transceivers to Logger32 is very simple, and almost identical for both radios.

The COM connector on the rear panel of the transceiver allows you to directly connect your computer using a standard RS-232C cable. You can still use all transceiver controls while under computer control.

The RS-232 cable must be a standard "straight" cable terminated with a 9-pin female connector at the radio end. The computer must be either a 9 or 25 pin female connector to match your computer serial port. If you wish to build an interface cable, only the following signals (wires) are required:

9 PIN CONNECTOR

Pin 2 – Transmit Data

Pin 3 – Receive Data

Pin 5 – Ground

25 PIN CONNECTOR

Pin 2 – Transmit Data

Pin 3 – Receive Data

Pin 7 – Signal Ground

SETTING UP THE RADIO

In order to use computer control with the radio you must set up the Communication Parameters section of the radios menu

TS-570

From Menu Nr 35 (Computer Interface), select one of the eight options. The recommended option is the Kenwood default of 96-1, or 9600 bps with 1 stop bit.

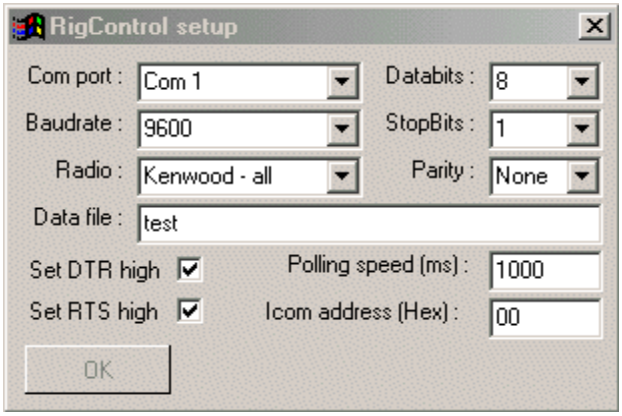
TS-870

From Menu Nr 56 (COM.RATE), select one of the eight options. The recommended option is the Kenwood default of 96-1, or 9600 bps with 1 stop bit.

After selecting the desired menu item, the radio must be turned off then back on for the new parameters to take effect on the port.

SETTING UP LOGGER

Both the TS-570 and TS-870 operate with No Parity and 8 Data Bits. Setting up Logger32 to control either the TS-570 or TS870 is very simple. From the Main Menu, select the "Setup" menu. From the Setup Menu select the "Radio | Radio Port configuration" menu item to display the "RigControl Setup" dialog box.



From the drop-down lists, select the following:

Com Port – the serial port to be used on the computer;

Baudrate – the Baudrate configured in the previous section (Setting up the Radio);

Radio – Kenwood – all;

Databits – 8;

StopBits – the number of Stop Bits configured in the previous section (Setting up the Radio);

Parity – None; and,

Accept all other defaults.

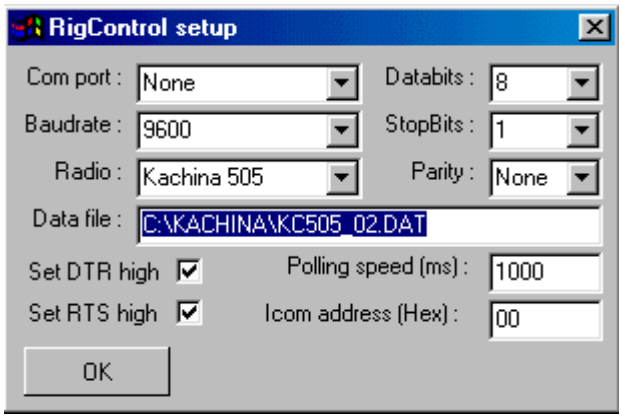
Click "OK".

NOTE : The default values of 9600 baud for the COM port and 1000 ms (1 second) for the Polling Speed should be used as a starting point for your configuration. If your radio and computer can handle faster baud rates you should select the highest baud that provides reliable operation with your specific hardware. Reducing the value of the Polling Speed (increasing the rate of polling) will provide a faster and smoother display of all band, frequency and mode changes.

Kachina 505

Hew Lines VA3HU

No COM port is required for this radio. The Kachina writes data directly to a data file on your computer. Setting up Logger32 to control the Kachina 505 is very simple. From the Main Menu, select the Setup menu. From the Setup Menu}select the "Radio | Port configuration" menu item to display the RigControl Setup dialog box.



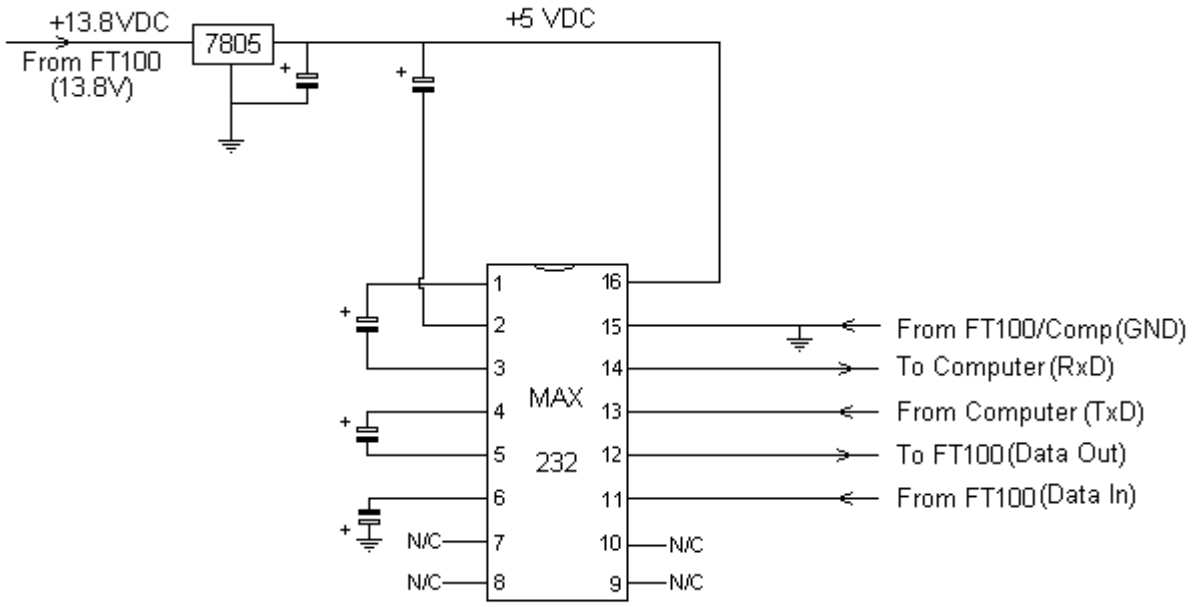
Select "None" for the Com Port, enter a fully qualified filename into the Data File edit box and accept all other defaults.

Yaesu FT-100

Barry Winch VA3WI

The procedure for Interfacing the FT-100 is relatively straight forward, provided you have a level converter to interface the computer's RS-232 signals to the FT-100's TTL signals. There are two ways to achieve this; the first is to acquire the Yaesu CT-cable, the second is to build your own.

Below are details of a home brew circuit using a minimum of components. If a MAX-233 is used instead of the MAX-232, then the capacitors are not required.



NOTE:

All Capacitors are 22uF 25V

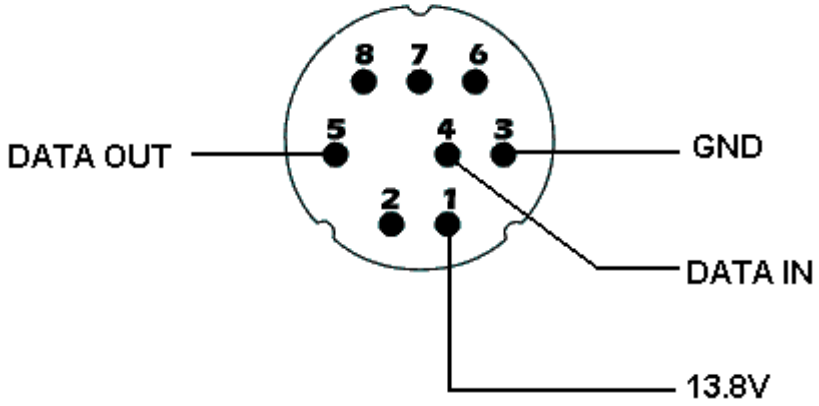
Signal Names in brackets for the FT100 refer to the pin names on page 4 of the user manual

Free Samples of the MAX-232 chip are available from WWW.MAXIM-IC.COM

The 13.8V can be obtained from the pig-tail on the FT-100, however a word of caution, be very careful that the 13.8v line is not shorted to ground, there is no separate fuse on this line, and a short WILL disable the transmitter. I know, I've done it!! If you are comfortable with this, then I suggest you use a separate 5v supply. Should you manage to short out the 13.8v line drop me an e-at barry@email.com and I'll send you the repair instructions!!

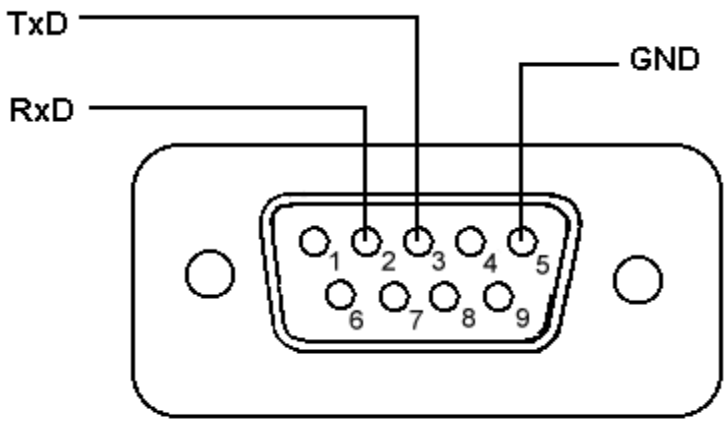
8 Pin Mini Din Connector

An 8 pin mini-din male connector is required to interface to the FT-100. The diagram below shows the pin connections FROM WIRING SIDE. The pin names correspond with the bracketed names on the circuit diagram above.



DB9 Connector

A female DB9 connector is required at the computer end of the cable. The diagram below shows the pin connections FROM THE WIRING SIDE. The pin names correspond with the bracketed names on the circuit diagram above.

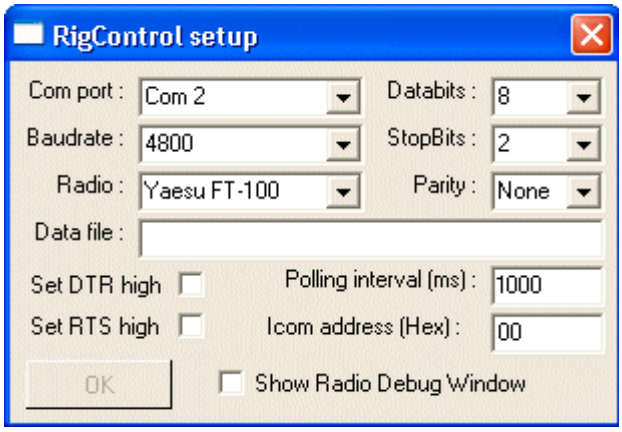


Setting Up The Radio

No Radio setup is required other than ensuring that the pig tail connector is at its default setting of CAT/TUNER. This is achieved through changing an internal hardware setting within the FT-100 (page 19 of the user manual).

Setting Up Logger

The FT-100 operates with No Parity, 8 Data Bits and 2 stop bits at a fixed baudrate of 4800. Setting up Logger32 to control FT- is very simple. From the Main Menu, select the "Setup" menu. From the Setup Menu select the "Radio | Radio Port configuration" menu item to display the "RigControl Setup" dialog box.



From the drop-down lists, select the following:

Com Port – the serial port to be used on the computer;

Baudrate – 4800;

Radio – Yaesu FT-100;

Databits – 8;

StopBits – 2

Parity – None; and,

Accept all other defaults.

Click "OK".

NOTE : The default value of 1000 ms (1 second) for the Polling Speed should be used as a starting point for your configuration. Reducing the value of the Polling Speed (increasing the rate of radio polling) will provide a faster and smoother display of all frequency and mode changes.

Yaesu FT-920

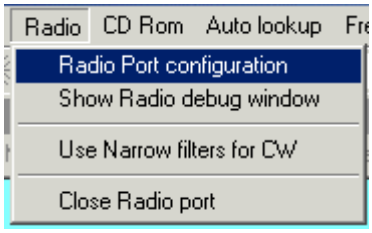
Jim Hargrave W5IFP

General

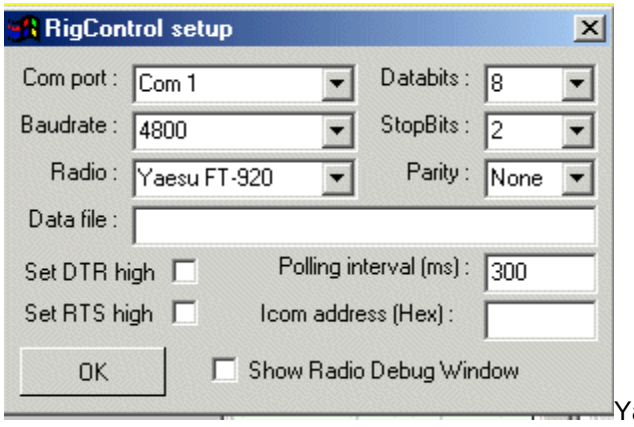
The FT-920 has a built in RS-232 Level converter for the CAT radio control system. However the user needs an interface to the RS-232 levels for PTT and CW data signals. The Audio for the Sound card operation can be connected direct via the rear connector, however it is recommended that be accomplished using a 1:1 isolation transformer and some means of level control. Logger32 can be configured to connect the CAT, PTT and CW functions using a single Serial port, or they can be wired using a different port for each function.

CAT setup

To setup the communication parameters in Logger32, click on "Setup" in the upper menu bar. Click on "Radio" and select "Radio port configuration.



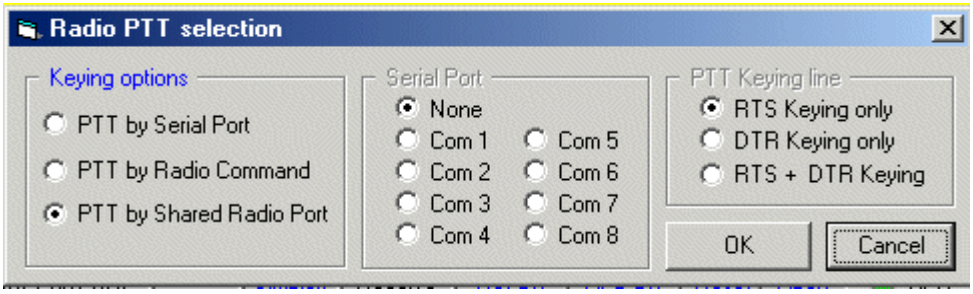
Select the Yaesu FT-920 and set the baud rate to 4800, 8 databits, 2 stopbits and parity to none. You can adjust the poll rate to your liking. A rate of 300ms seems to work well with Sound card functions. Leave the DTR and RTS boxes blank. You can ignore the Icom address



Yaesu FT-920

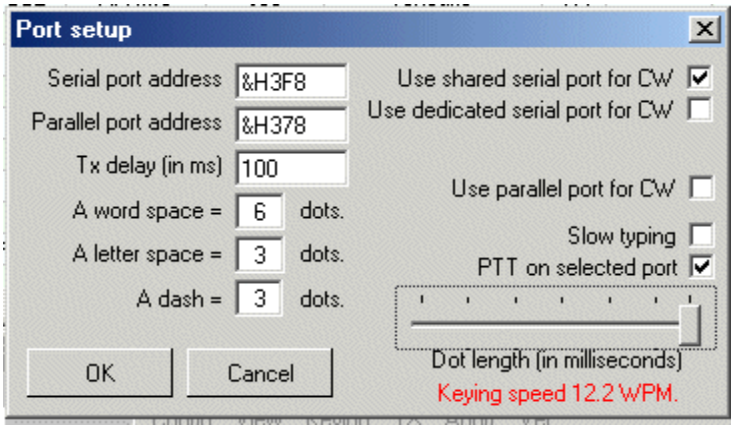
PTT setup

In the Sound card window, select "Settings" and click on "Radio PTT options. Set the parameters to the desired port. You can also select the Shared port option, which will allow CAT and PTT on the same port. This is the most efficient and simplest setup, if you already have a separate PTT interface, then you will need 2 ports. The following shows the shared port configuration.



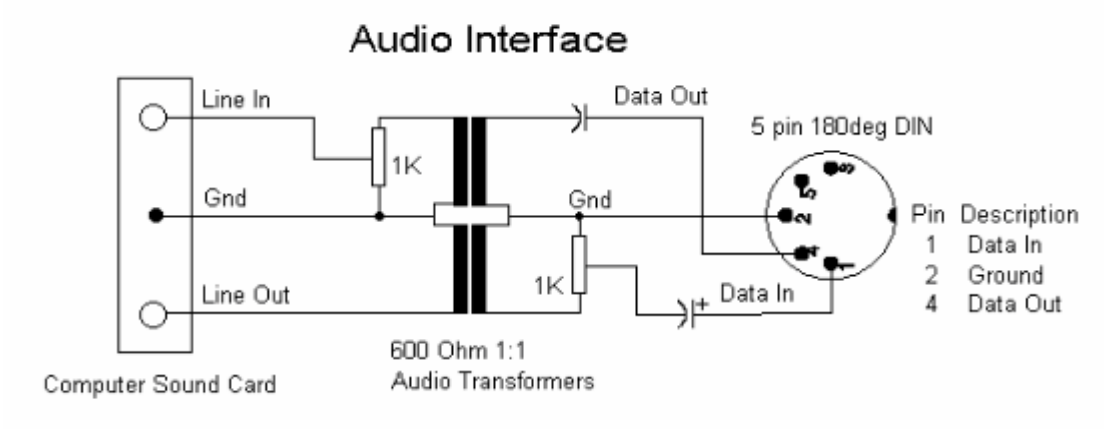
CW setup

Open the CW module, click on "Config" and select "Keyer setup". This setup provides the option of using a Parallel or Serial port. You must provide the address of the parallel or serial port you expect to use. If you have CAT capability, then It is suggested you use a serial port and configure it for Shared port. In either case the interface needed will be the same. You can also share the PTT functions on the same port.



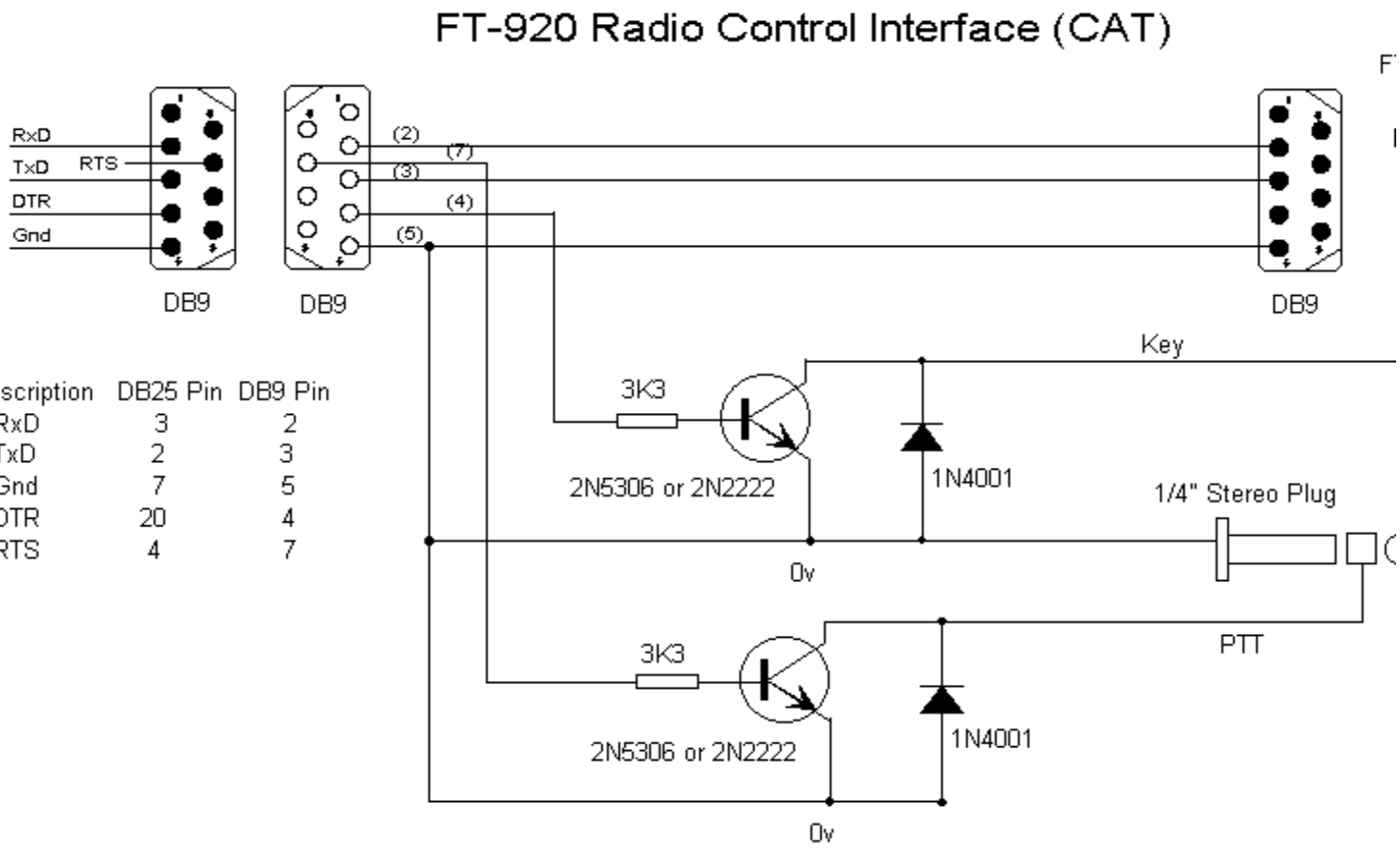
Sound Card Interface

Any commercial sound card interface should work on the FT-920 with appropriate wiring. The following is a suggested interface provides complete isolation between the computer and the radio. The potentiometers will provide external level adjustments so sound card settings can be left in a compatible setting for all software.



CAT, CW and PTT Interface

The CAT, CW and PTT functions can be combined into one single interface that will only use one Serial port. If you use this configuration be sure and follow the ground rules for the "Shared port setup" to make sure there is no conflict.



Radio Settings for Sound Card Operation

The AFSK-FSK slide switch on the back of the radio should be in the "AFSK" position. Select the desired SSB mode (USB or and then press the "DATA" button. This will automatically disconnect the microphone and make the "DATA" connection active. Follow normal procedures for setting up your power levels and sound card levels. See the Sound Card setup section for details

Radio Settings for CW and PTT Operation

If you use the "KEY" connection on the back of the radio for CW and PTT, you must set two switches for operation.

The PDL-KEY switch on the rear of the radio should be set to "KEY" for PTT functions. This setting will make the PTT line active all modes.

The "KEYER" switch on the front panel must be "ON" for CW operation.

KAM+ TNC

Mike Mace VK3SU

This section provides information on setting up Logger32 to operate with the KAM+ TNC using KAM-8.0 or 8.2 firmware.

I run my KAM+ in its default setting with these personal preferences:

INTFACE TERMINAL

CWPTT ON

ECHO OFF

HEADERLN ON

USERS 5/5

With these settings, the KAM+ will operate in the following selected modes correctly:

AMTOR

ASCII

CW

G-TOR

PACKET

PACTOR

RTTY

These modes are selected from the KAM+ Terminal mode using the CONTROL_C instruction. You must enter the **CONTROL_C (letter)** in full and it must be in **UPPER CASE**. Do not use abbreviations like ctrl^(letter) as this will not work. All this will do is send set of characters to the modem and it will reply with that lovely **$ EH?**

The KAM+ command set, however, is not case sensitive and commands may be entered in both upper and lower case. For example, "mycall" and "MYCALL" are both acceptable.

In the text descriptions and examples below, any text below that is bracketed by a "$" is a MACRO command described in the section MACROs, Hot Keys and Programmable Buttons.

AMTOR MODE

The AMTOR mode selection macros are:

CONTROL_CX for command mode;

echo on to see your transmitted text; and,

AMTOR to go to AMTOR stand by mode.

Or

CONTROL_CX for command mode;

echo on to see your transmitted text; and,

AMTOR$call$ to go to AMTOR calling the selected callsign.

The following KAM+ AMTOR instructions can be used in Logger32:

CONTROL_CA Abort link

CONTROL_CD Break link and stay in standby

CONTROL_CE	Returns to standby after transmit buffer is sent also puts +? If linked
CONTROL_CI	Inverts MARK/SPACE
CONTROL_CR	Immediately returns to receive mode regardless of TX buffer
CONTROL_CS	Selects the next MARK/SPACE shift (hz)
CONTROL_CT	Enters transmit mode
CONTROL_CX	Returns to command mode
CONTROL_CW	Sends the Who Are You inquiry

An example AMTOR macros is:

CONTROL_CT	Enter transmit mode;
Hello $call$,$name$ from mike de: $mycall$	Send his call,name and mycall;
You are 599-30-$serialnum$	Send report,zone and serial number;
CONTROL_CE	Return to standby

ASCII MODE

The ASCII mode selection macro is:

CONTROL_CX	for command mode;
echo on	to see your transmitted text; and,
ascii	to set 110 baud ASCII (default)

The following KAM+ AMTOR instructions can be used in Logger32:

CONTROL_CE	Returns to standby after transmit buffer is sent also puts +? If linked
CONTROL_CI	Inverts MARK/SPACE
CONTROL_CR	Immediately returns to receive mode regardless of TX buffer
CONTROL_CS	Selects the next MARK/SPACE shift (hz)
CONTROL_CT	Enters transmit mode
CONTROL_CX	Returns to command mode
CONTROL_Cn	n = baud speed as per manual {0 – 9 }

An example ASCII macro is:

CONTROL_CT	Enter transmit mode;
$call$ de $mycall$	Send his call and my call;
CONTROL_CE	Return to standby

To change baud rates, use the following instruction:

CONTROL_Cn

Where n = speed (baud)

1 = 45

2 = 50

3 = 57

4 = 75

5 = 100

6 = 110

7 = 150

8 = 200

9 = 300

0 = ascbaud

CW MODE

The CW mode selection macro is:

CONTROL_C	Return to command prompt
Echo on	See your transmitted text
cw 15	CW speed of 15 wpm

The following KAM+ CW instructions can be used in Logger32:

CONTROL_CE	Returns to standby after transmit buffer is sent also puts +? If linked
CONTROL_CL	locks transmit and receive speeds
CONTROL_CR	Immediately returns to receive mode regardless of TX buffer state
CONTROL_CT	Enters transmit mode, sending key strokes immediately
CONTROL_CU	Unlocks the speed to allow tracking
CONTROL_CX	Returns to command mode
CONTROL_Cn	n = CW speed as per manual {0 – 9 }

An example macro to call CQ is:

CONTROL_CT	Enter transmit mode
cq cq cq de $mycall$	Call cq 3 times followed by my call

cq cq cq de $mycall$ and again

cq cq cq de $mycall$ and again

CONTROL_CE Return to standby

An example contest macro is:

CONTROL_CT

$call$ ur 599 oc001 $serialnum$ de $mycall$ +

CONTROL_CE

Some TNCs require a short delay after issuing an CONTROL_x instruction or TNC command. For example, the KAM+ TNC does like a CONTROL_CT instruction to put it in transmit mode immediately following a CW speed set command. The KAM+ sequence:

CONTROL_CX

CW $speed$

CONTROL_CT

does not work correctly. The TNC takes several milliseconds to set the TNC speed before it is ready to receive input so the CONTROL_CT instruction must be delayed.

The Logger32 macro statement **$delay$** inserts a 250-msec. delay before executing the next macro statement. The following correctly sets the CW speed for the KAM+:

CONTROL_CX

CW $speed$

$delay$

CONTROL_CT

To change CW speed, use the following instruction:

CONTROL_Cn

Where n = speed (baud)

1 = 5

2 = 10

3 = 15

4 = 20

5 = 25

6 = 30

7 = 35

8 = 40

9 = 45

0 = 50

G-TOR

The G-TOR mode selection macros are:

CONTROL_CX	Return to command prompt
echo on	See your transmitted text
gtor	Sets G-TOR Standby mode

or

CONTROL_CX	
echo on	
gtor$call$	Sets G-TOR mode calling the specified station

The following KAM+ G-TOR instructions can be used in Logger32:

CONTROL_CA	Abort link
CONTROL_CB	Enter transparency mode {binary}
CONTROL_CD	Break link and stay in standby
CONTROL_CE	Returns to standby after transmit buffer is sent also puts +? If linked
CONTROL_CR	Immediately returns to receive mode regardless of TX buffer
CONTROL_CS	Selects the next MARK/SPACE shift (hz)
CONTROL_CT	Enters transmit mode
CONTROL_CX	Returns to command model
CONTROL_C0	Sets automatic baud rate
CONTROL_C1	Forces 100baud (irs)
CONTROL_C2	Forces 200baud (irs)
CONTROL_C3	Forces 300baud (irs)

An example G-TOR CQ macro is:

CONTROL_CT	Enter transmit mode
CQ CQ CQ DE $mycall$ $mycall$ $mycall$	Send CQ followed by my call
PSE ARQ IN GTOR MODE ONLY	Aditional text transmitted

K K K " " "

CONTROL_CE Return to standby

Packet mode (AX25)

The Packet mode selection macros is

CONTROL_CX Return to command prompt

echo off Do not view transmitted text

Ok, packet is pretty straightforward to most people (said with tongue in cheek). This mode is the default mode of the Kam+. The Kam+ is dual port in this mode {default switch STREAMSW 7E/$7C (~/|)} Which are the tiled and pipe keys.

Some commands will affect both ports and some will affect VHF port only, so we do need to specify port paths for either connect requests or beacon traffic. HF is port 1, VHF is port 2.

As the default mode is packet the CONTROL_C instruction is not required in the macro's. However, there does need to be a return at the end of the last command to instruct the TNC to execute the macro statements.

Macros to switch between VHF and HF with the TNC using the default settings are:

~a HF streamswitch character $7e or what you have set your switch to

|a VHF streamswitch character $7c or what you have set your switch to

NOTE: The 'a' can be any letter down to 'j' that is 10 user ports to use

An example macro to connect to a VHF Dx-cluster is:

|e

callsign of the cluster station

or if its on HF

~c

callsign of the cluster station

The following may be looked at if you are in the situation where your network is shared by

Dx-clusters, BBS's and APRS traffic.

The commands below are examples only you will need to enter your own callsign and calls of the high site digi-peaters with appropriate pathing. 3748.33ST14520.11E should be replaced with your Lat/long co-ordinates, in the format "degmin.sec".

Remembe the KAM+ is dual port in packet mode and if your HF is purely used for voice I strongly suggest that when entering commands into the TNC that you use the following format:

command set /command example beacon /e 20

The following commands will program your beacon to transmit on VHF only every 20 minutes

Command HF port/VHF port

BEACON E 10/E 35

BTEXT :blna :HF gateway is active 10.149lsb ui with gate hf->vhf

blt 1 E 00:05:00/E 00:20:00

blt 2 E 00:12:00/E 00:30:00

blt 3 E 00:22:00/E 00:40:00

blt 4 E 00:10:00/E 00:50:00

lt 1 =3748.33ST14520.11E- Station description

lt 2 =3748.33ST14520.11E- Station description

lt 3 =3748.33ST14520.11E- Station description

lt 4 :blna :HF-gateway on 10.149lsb ui with gate hf->vhf only

ltp 1 aprs v MMM/APRS

ltp 2 aprs v echo,MMM/aprs v LLL

ltp 3 aprs v MMM,OOO/aprs V WIDE2-2,LLL

ltp 4 aprs v MMM/aprs v trace2-2,LLL

this is not covered very well it the Kam+ manual. I got these from the manual of the new kantronics modem.

the above commands all correspond with each other:

blt2 – lt2 – ltp2 where:

blt is beacon times per port

lt2 is information that is to be beaconed

ltp2 is the port and path with digi-peater routes

PACTOR MODE

The PACTOR mode selection macros are:

CONTROL_CX Return to command prompt

echo on View transmitted text

pactor PACTOR standby mode

CONTROL_CX

echo on

pactor$call$ PACTOR the specified callsign

CONTROL_CX

echo on

ptlisten	PACTOR listening mode for FEC and ARQ

The following KAM+ PACTOR instructions can be used in Logger32:

CONTROL_CA	Abort link
CONTROL_CD	Break link and stay in standby
CONTROL_CE	Returns to standby after transmit buffer is sent also puts +? If linked
CONTROL_CR	Immediately returns to receive mode regardless of TX buffer
CONTROL_CS	Selects the next MARK/SPACE shift (hz)
CONTROL_CT	Enters transmit mode
CONTROL_CX	Returns to command model
CONTROL_C0	Sets automatic baud rate
CONTROL_C1	Forces 100baud (irs)
CONTROL_C2	Forces 200baud (irs)

An example CQ macro is:

CONTROL_CT	Enter transmit mode
CQ CQ CQ DE $mycall$ $mycall$ $mycall$ -- PTOR	
PSE ARQ	
K K K	
CONTROL_CE	Return to standby

RTTY MODE

The RTTY mode selection macro is:

CONTROL_CX	Return to command prompt
echo on	Display transmitted data
rtty 45	Enter RTTY mode at 45 baud

The following KAM+ RTTY instructions can be used in Logger32:

CONTROL_CE	Returns to standby after transmit buffer is sent also puts +? If linked
CONTROL_CI	Inverts MARK/SPACE
CONTROL_CL	Sends letters shift characters
CONTROL_CN	Sends numbers shift characters
CONTROL_CR	Immediately returns to receive mode regardless of TX buffer

CONTROL_CS Selects the next MARK/SPACE shift (hz)

CONTROL_CT Enters transmit mode

CONTROL_CX Returns to command mode

CONTROL_Cn n = baud speed as per manual {0 – 9 }

An example CQ macro is:

CONTROL_CT Enter transmit mode

CQ CQ TEST DE $mycall$ $mycall$ $mycall$

CONTROL_CE Return to standby

To change RTTY speed, use the following instruction:

CONTROL_Cn

Where n = speed (baud)

1 = 45

2 = 50

3 = 57

4 = 75

5 = 100

6 = 110

7 = 150

8 = 200

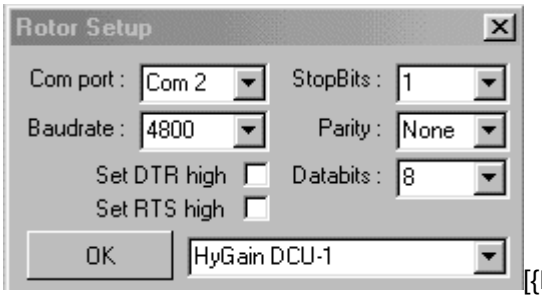
9 = 300

0 = ascbaud

Hygain E-Z Rotator

Hal Miller KB1ZQ

This section describes the setup for the HyGain / Rotor EZ Rotator control



[{Picture ez1.bmp}]

Com Port – Set to serial port rotor is connected to.

Baudrate – Set to 4800 for Rotor EZ.

StopBits – Set to 1

Parity – None

Databits – Set to 8

Rotor Emulation - set to HyGain DCU-1[{UDLinksOFF}]

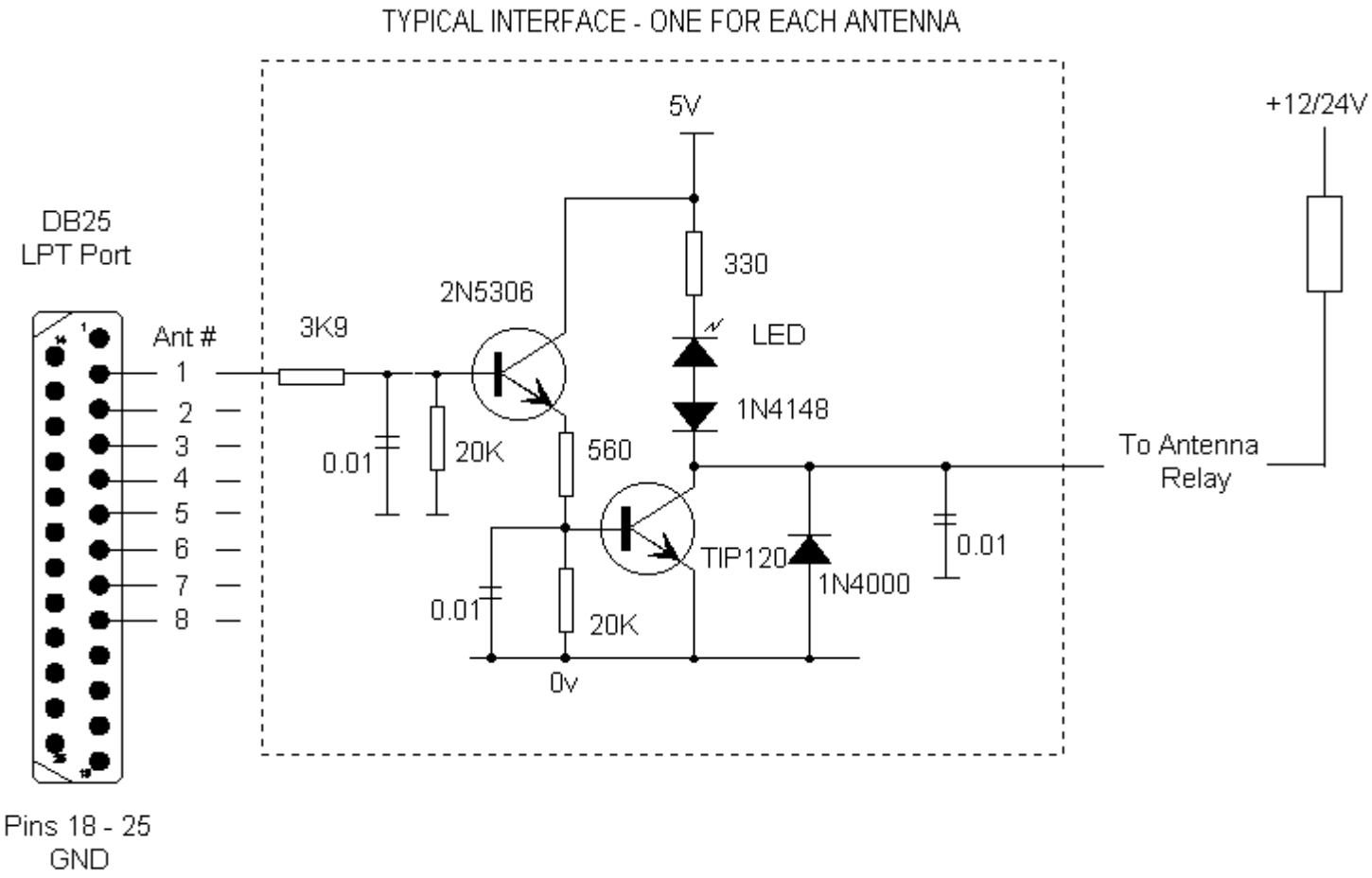
To control the rotor a call sign must be entered in the Logbook Entry Window then press the Control-A keys together (^A), the will swing to the direction of the station in the Logbook entry window.

Note: If Rotor EZ™ is used, the control chip must be the version allowing RS-232C communications. Rotors without this option will not work with Logger32.

Automatic Antenna Switch

Jim Hargrave W5IFP

Parallel port data lines are typical TTL logic levels of 0 and 5 VDC. These signals must be isolated and converted to operate antenna switching relays.The following interface will provide proper isolation of the parallel port data lines and supply sufficient power for most antenna switching relays. The TIP120 transistor should be mounted on an adequate heat sink. A duplicate should be built for each antenna relay to be interfaced to Logger32.



Amateur Data Interchange Format 1.0 (ADIF)

Hew Lines VA3HU

The purpose of the ADIF is to provide a standard interchange, independent of operating system or programming language, for amateur data that will permit easy and direct transfer of data conforming to the standard between various amateur programs as awards and contest sponsors.

Ever since software has become a part of amateur radio, there have been as many data formats as there have been ham radio software programmers. Hams have struggled with converting data among various formats. Several hams have been discussing a standard via an Internet discussion. In early 1996 KK7A promoted the idea of a standard for exchange of ham data. An internet reflector was set up for discussing such a standard. WF1B and WN4AZY, as publishers of commercial ham radio software, have taken the best suggestions from this discussion and formed a proposal. Ray introduced it at the 1996 Dayton Hamvention. Within year, this proposal has adapted adopted by most software publishers. We wish to thank everyone who has contributed to this

ADIF is infinitely extensible--it will never be outgrown. It can handle binary as well as text data. New data elements may be added this specification without "breaking" older implementations. It may be easily programmed in any language. The data itself is easily read by eye, and may implemented so as to be transferred via Internet without any encoding.

Many Logger32 Fields are being validated in accordance with the ADIF specifications and may only contain valid ADIF defined

The applicable ADIF data tables are detailed here for reference purposes. The ADIF specification is subject to change, and the current version may always be found at http://www.hosenose.com/adif.

VALID BAND ENTRIES

160M	80M	40M	30M	20M	17M
15M	12M	10M	6M	2M	1.25M
70CM	35CM	23CM	13CM	9CM	6CM
3CM	1.25CM	6MM	4MM	2.5MM	1MM

VALID MODE and SUB-MODE ENTRIES

MODE	SUB-MODE	Description **<<< What MODE is used for the last three ?>>>**
HELL	FH	Feld-Hell
HELL	PSKH	PSK-Hell
HELL	DH	DUPLO-Hell
HELL	FMH	FM-Hell
HELL	FSKH	FSK-Hell
HELL	SFH	SLOW-FELD Hell
HELL	CMT	Concurrent Multi Tone Hell
HELL	SMT	Sequential Multi Tone Hell
TOR	FEC	AMTOR FEC
TOR	SELFEC	AMTOR SELFEC
TOR	AARQ	AMTOR ARQ
PAC	UNP	PACTOR 1 UNPROTO
PAC	PARQ	PACTOR ARQ
PAC2	UNP2	PACTOR2 UNPROTO (DPSK)
PAC2	DBPSK	PACTOR 2 ARQ -- DPSK
PAC2	DQPSK	PACTOR 2 ARQ -- DQPSK
PAC2	8DPSK	PACTOR 2 ARQ -- 8DPSK
PAC2	16DPSK	PACTOR 2 ARQ -- 16DPSK
CLO	FEC-2DPSM	CLOVER FEC-2DPSM
CLO	FEC-BPSM	CLOVER FEC-BPSM
CLO	FEC-QPSM	CLOVER FEC-QPSM
CLO	FEC-8PSM	CLOVER FEC-8PSM
CLO	FEC-8P2A	CLOVER FEC-8P2A

CLO	FEC-16P4A	CLOVER FEC-16P4A
CLO	ARQ-BPSM	CLOVER ARQ-BPSM
CLO	ARQ-QPSM	CLOVER ARQ-BPSM
CLO	ARQ-8PSM	CLOVER ARQ-8PSM
CLO	ARQ-8P2A	CLOVER ARQ-8P2A
CLO	ARQ-16P4A	CLOVER ARQ-16P4A
PSK31	BPSK	PSK31 BPSK
PSK31	QPSK	PSK31 QPSK
SSTV	Martin1	SSTV Martin1
SSTV	Martin2	SSTV Martin2
SSTV	Scottie1	SSTV Scottie1
SSTV	Scottie2	SSTV Scottie2
SSTV	ScottieDX	SSTV ScottieDX
SSTV	AVTBW	SSTV AVT B&W
SSTV	AVT24	SSTV AVT24
SSTV	AVT90	SSTV AVT90
SSTV	AVT94	SSTV AVT94
SSTV	AVT188	SSTV AVT188
SSTV	HQ1	SSTV HQ1
SSTV	HQ2	SSTV HQ2
SSTV	P3	SSTV P3
SSTV	P5	SSTV P5
SSTV	P7	SSTV P7
SSTV	PD50	SSTV PD50
SSTV	PD90	SSTV PD90
SSTV	PD120	SSTV PD120
SSTV	PD160	SSTV PD160
SSTV	PD180	SSTV PD180
SSTV	PD240	SSTV PD240

SSTV	PD290	SSTV PD290
SSTV	Robot-BW8	SSTV Robot B&W 8
SSTV	Robot-BW12	SSTV Robot B&W 12
SSTV	Robot-BW24	SSTV Robot B&W 24
SSTV	Robot-BW36	SSTV Robot BW36
SSTV	Robot-C12	SSTV Robot Colour 12
SSTV	Robot-C24	SSTV Robot Colour 24
SSTV	Robot-C36	SSTV Robot Colour36
SSTV	Robot-C72	SSTV Robot Colour72
SSTV	WraSC2-30	SSTV WraaseSC-2 30
SSTV	WraSC2-60	SSTV WraaseSC-2 60
SSTV	WraSC2-120	SSTV WraaseSC-2 120
SSTV	WraSC2-180	SSTV WraaseSC-2 180
???	FAX480	FAX 480
???	AMFAX	AMFAX
???	FMFAX	FMFAX

Tips, Tricks and Troubleshooting

B. Charles Sutton W1MCP and Geoff Anderson G3NPA

GLOBAL:

Snap: There are 8 child windows that can be opened inside the main window. Once you have positioned and sized them, as you like, click the SNAP button on the toolbar to fine-tune their alignment.

Right click menus: All of the windows have menus that are accessed by right clicking in them. Even small items, like clock in the lower left hand corner, have a right click menu with options you can try.

Sharing Database Files: It was common practice among users of Logger (16) to share their database files. This is still possible with Logger32 but due to indexing restrictions, it is *absolutely imperative* that ALL the files be kept and shared together. These files include the Country, Offset and Alias files. They must ALWAYS be distributed as a COMPLELTE (of 12 files) and must NEVER be broken up. NOTE: If you use this group of files from another user, you must run a recalculate on your logbook! The reason is that the stats info is actually hidden in the Countries database files.

Sharing Database Files: It was common practice among users of Logger (16) to share their database files. This is still possible with Logger32 but due to indexing restrictions, it is *absolutely imperative* that ALL the files be kept and shared together. These files include the Country, Offset and Alias files. They must ALWAYS be distributed as a COMPLELTE (of 12 files) and must NEVER be broken up. NOTE: If you use this group of files from another user, you must run a recalculate on your logbook! The reason is that the stats info is actually hidden in the Countries database files.

I don't know what Bob will be doing about the stats refresh within the Countries database. If this is done automatically, perhaps a note is not necessary. Time will tell.. Anyhow I agree with you that a note of it at this stage is prudent - even if required in the finality of time.

Scroll wheel on mouse isn't working: Be sure the correct drivers were installed with your mouse, and if so, check with the manufacturer for updated drivers.

Need to see a calandar quick? Right click in the Logbook Window, select Add QSO and right click on the arrow next to the date. This will pop-up a calandar (be sure to click exit when you are done so as not to add a bad QSO record).

CLUSTER / DX SPOT WINDOW:

Stop Scrolling: (DX Spot Window): Having trouble scrolling back to a previous spot? New spots coming in so quick you can't get back to an older one? Right click in the DX Spot window and choose HOLD OFF DX SPOTS. This will new spots from being written to the DX Spots grid and refocusing you to the bottom. After your done with the older uncheck the HOLD OFF DX SPOTS and the spots that came in while it was on hold will populate the grid. You won't any! NOTE: While in 'freeze mode', the colored background of the title bar will flash to alert you that it is frozen.

Stop Scrolling: (Cluster Window): The same feature for pausing the scrolling of the DX Spot window is available here. Simply right click and choose HOLD OFF RECEIVE TEXT.

Instant Prefix Identification: See a callsign in the DX Spot window and you don't recognize the prefix? Hold your over the callsign and a tool tip will pop up with the country name. It will also tell you if or where that prefix is needed.

WWV Update: WWV Updates are sent every 3 hours, and most clusters transmit them. When Logger32 sees the WWV report it writes the data to the toolbar at the bottom of the screen. If you don't want to wait for the next report, send a request to your cluster: (SH/WWV) or add it to your logon script.

Like Logger, you will (when I get around to it) be able to activate the Cluster window simply by clicking on an TALK (or whatever message) in the DX Spot window.

Multiple Input: Logger32 allows you to send data to the DX Spot window from both the Telnet & VHF Cluster windows. choosing a different font color for vhf and telnet spots you will be able to determine the spot origin when it's displayed in DX Spot window.

Grid Colors: If using alternate background colors, and a spot comes in that does not require a color code, it will retain color of the grid. This can be confusing; it is not a bug, but something to keep in mind.

Num Lock LED blinks with DX Spots: You may notice the Num lock lamp "blinks" when clicking on a spot. (Note: The Num Lock lamp must be ON to see this). This is not a bug, but a limitation in Visual Basic: To navigate between the numerous windows and fields within windows, Logger uses the VB code SendKeys "{TAB}", 1. This causes the light to blink. VB does not provide a NoNumLockBlink function.

Can't remember what portion of the band a frequency falls into? Enter the frequency & a call sign in the Logbook Window (either manually or by clicking a spot), then look at the Worked/Confirmed Window, you will see the band & highlighted (you must have "show complex info" turned on).

PREFIX DATABASE MAINTENANCE WINDOW:

Can't remember the prefix you wish to edit? Know the country name but can't remember the Prefix? Click on any column heading to resort the database.

TRACKING WINDOW:

Map: Logger32 comes with a generic map for use in the tracking window. For those of you who like to "play", take a look http://www.satscape.co.uk/ under Maps. These maps can be renamed (to map.bmp) and used in place of the default NOTE: Rename the original map.bmp file in case you don't like the change and wish to go back. Other maps may also used, but the middle of the map must be centered over Greenwich, England. The size of the map can be resized considerably without image quality degradation, and may also improve program speed by using fewer resources.

LOGBOOK WINDOW:

Logbook Import: (Multiple Operators): When importing an ADIF file, Logger checks for an Operator field. If it is blank, Logger will import the log and assign the CURRENT operator call to all imported entries. If you have held more than callsign, you can export your current log in sections based on the dates you held a callsign. Before importing your log entries, change the operator callsign to reflect the call you had, then import it. Then change the operator to your current and import the rest. Your operator field will now reflect the correct callsign you held when you made the contact!

Logbook Import: (SPEED): Logger32 imports ADIF files rather quickly considering all the details it must analyze for QSO. If you have a very large file to import, you can increase the speed by having the grayline map in the foreground than the satellite tracking window, or by even closing the tracking window altogether.

I Sorted the logbook and my data is gone: When clicking on the header cell of an individual column to sort your keep in mind it will only display entries with matching data. If you sort by a column in which there is no data in that you will see a blank logbook. To see all your data again, simply resort by another column, such as the QSO# or DATE column header.

STATS WINDOW:

Logbook usage gauge: Logger32 calculates your total usage of the available space in the logbook based ob cluster usage. Disk spaced is grabbed in blocks (one at a time as needed), up to a maximum of 16,380 blocks then the considered full. Keep in mind that the logbook is dynamic which means that the more fields you store data in for a QSO, the more room it uses in the logbook. This is more efficient than a fixed format, which would allocate the same amount of space for each QSO without regard for the amount of actual data you store.

LOGBOOK ENTRY WINDOW:

If you use Logger32 to control your radio and are manually changing the VFO, you may see a popup warning window: ***The band had no entries that match a frequency of .00 Mhz. The Band and Mode have not been***
To resolve this issue, make a 'catch all' entry at the bottom of your Band Plan covering the frequency range .0000 to 100.000 (or higher).

For example: 10M,USB,.000000,100.000000,,LSB,,N,,,

Can't access the Lookup Tables?: Only the user defined fields #2, 3, 5, 6, & 7 can be set to show a "?" icon next to the field. If, for example, your setting up the IOTA field, be sure to use one of the field numbers listed above and activate 'Show Help Button' option.

SOUND CARD DATA WINDOW:

Previous users of Zakanaka:

The macro's in Logger32 are the same as Zakanaka. You can copy your macros from the Zakanaka.ini file and paste them into the appropriate area of the Logger32.ini file. Be sure to back-up your Logger32.ini file before attempting this.

Many of the user settings within the Zakanaka and Logger32 INI files are identical and with a little cut and paste work, the most significant of one's original settings can be transferred to work from within Logger32 without the to type them all in again. This procedure is not for the faint hearted and if you are in any doubt or have concerns, just set up the sound card window as though it was all new.

It is recommended that the following procedure be adopted should you wish you utilise your favoured settings:-

1) Make backup copies of the Logger32 AND Mmtty.INI files to be found in your default Logger32 directory. Do same with your Zakanaka.ini

2) Delete the Mmtty.INI file from your default Logger32 directory

3) Copy the Mmtty.ini file from your default Zakanaka directory to your default Logger32 directory.

Now for the more complex bit

4) Open the Logger32.ini file in your default Logger32 directory in Notepad or WordPad.

5) At the same time, open the Zakanaka.ini file from your default Zakanaka directory – also in Notepad or and arrange for BOTH sets of open files to be visible on the screen at the same time.

6) Using cut and paste, transfer the following sections from the original Zakanaka.ini to the new Logger32.ini – removing the original contents of course:-

[Waterfall Color]

[RTTY Macro]

[RTTY]

[Macro]

[Markers]

This will set up the most significant of your settings but it will NOT be all of them.

Do NOT attempt to transfer everything over from the original Zakanaka.ini file to the new Logger32.ini file unless you are absolutely certain of what you are doing as, in a number of instances, the parameters are held under different names or in different named sections.

Windows ME users: The com ports (DTR) becomes active as soon as the computer is switched on. This means that if one is using the PTT line (DTR) to control a rig, the rig will go straight into the transmit mode at this stage. To resolve issue see the Microsoft Knowledgebase article Q285894 at:

support.microsoft.com/default.aspx?scid=kb;EN-US;q285894

Right-Click Auto Fill Data is not showing up in the Log: The soundcard receive window has the ability to auto fill in in the Logbook Entry Window. By simply right clicking text in the receive window, you are presented with a list of fields choose from, and the selected data is sent to that field (see the soundcard section for detailed instructions on this For this feature to work, the field you are selecting data for in the right click list, must be one of the fields in the Logbook Entry Window for the data to properly transfer.

RADIO CONTROL:

Popup Window Error: The BandPlan has no entries that match a frequency of xx. The band has not been changed. This error is caused by several things, but the bottom line is that Logger32 wasn't able to read the frequency response from the radio correcty. If this happens often, the popup window can become a nuisance. To prevent the message, create a catch-all frequency range in your BandPlan with the range of 0 - 30MHz (or higher). You may wish also open up the file called ADIFBands.TXT and ADD to the bottom of the list the word "Gen" (for General). You can use GEN as the BAND in the bandplan and it will show up in the log input window. NOTE: By using this tip, it is log a contact that falls into this "gray" area. Logger32 will log the file with a band of GEN. If you then export the ADIF use elsewhere, the entry will not be compliant. If all of your operating frequencies are defined in your BandPlan, this shouldn't be a problem as the only way the GEM band could enter your log would be by operating outside your frequency.

Using DTR or RTS to power a radio interface. Many commercial interface circuits use the computer RTS or DTR lines power the interface circuitry. If you are using a Radio Control interface that derives power from the computer, you can the DTR and/or RTS lines "HIGH" by placing a check mark in the box adjacent to them. If you set either of these lines you will not be able to share the same Com port for CW operation. However, if your Interface will run on power from the DTR line, you may still be able to share the RTS line for PTT operation of the Sound card.

OPERATING SYSTEM OR HARDWARE LIMITATIONS:

16 Color vs. 256 Color: Running Logger32 in 16 color mode has not been tested, 256 or above is recommended.

Setup Menu Flags: Windows XP Limitation: There are several drop down menus located on the Main Setup Menu Bar that display your current settings. These menus are the Date Format, Time Format, CDRom, Frequency and DX Spot. you are using Windows XP and select one of these menus you may not see the check mark next to the setting you chosen. To refresh the menu and display the checkmark, simply drag your mouse cursor down the list. When you setting you had previously selected, the check mark will reappear. The check mark will remain until Logger32 is shut and restarted.

Stats window chopped off on bottom: This problem has only been observed when running Logger32 on XP. To fix open the screen display properties for XP, then select Appearance and then select Advanced. Click on the Title Bar or select Active Title bar under item: and change the font size to 8, then OK or accept the change. It seems they changed font size in the title bar to a 10-point font in XP while others used an 8-point font.

SYSTEM RELATED:

It is recommended that the latest version of Internet Explorer be installed.

Files that may need to be updated to run Logger 32:

COMDLG32.OCX	- Windows\System32	- v 6.0.84.18
MSCOMM32.OCX	- Windows\System32	- v 6.0.81.69
MSIMG32.DLL	- Windows\System32	- v 2.0.2600.0
MSWINSCK.OCX	- Windows\System32	- v 6.0.89.88
RICHTX32.OCX	- Windows\System32	- v 6.0.88.4
SIZERONE.OCX	- Windows\System32	- v 7.0.0.4
ARBUTTON.OCX	- L32 Dir	- v 1.10 or Later
VBIS5032.DLL	- L32 Dir	- v 50.32.3.3
WINLO.DLL	- L32 Dir	- v N/A - File Created 3/17/2001
WINLO.SYS	- L32 Dir	- v N/A - File Created 7/4/2000

VERIFY THESE ARE STILL AN ISSUE:

TOOLTIPS:

1) Tooltips on Tabs in the Telnet/Cluster window do not function under

Windows XP.

Loading ADIF file with PSK as mode:

So, BobF, how do you /will you overcome this as there will be lots of folk (hopefully) who will want to do as I did and their logs from (16)into (32).. Knowing of the problem I've cheated and edited my somewhat small file but this will be an onerous task for some! Will the "refresh" take care of this?

Charlie - can you make a note please for the hint and tips that a forced refresh after an ADIF load might well be required. Bob manages to do this automatically then we can drop the note from the list, but for now it might be as well to keep a reminder.

SETTING UP A SECOND LOGGER .INI FILE

Geoff Anderson G3NPA

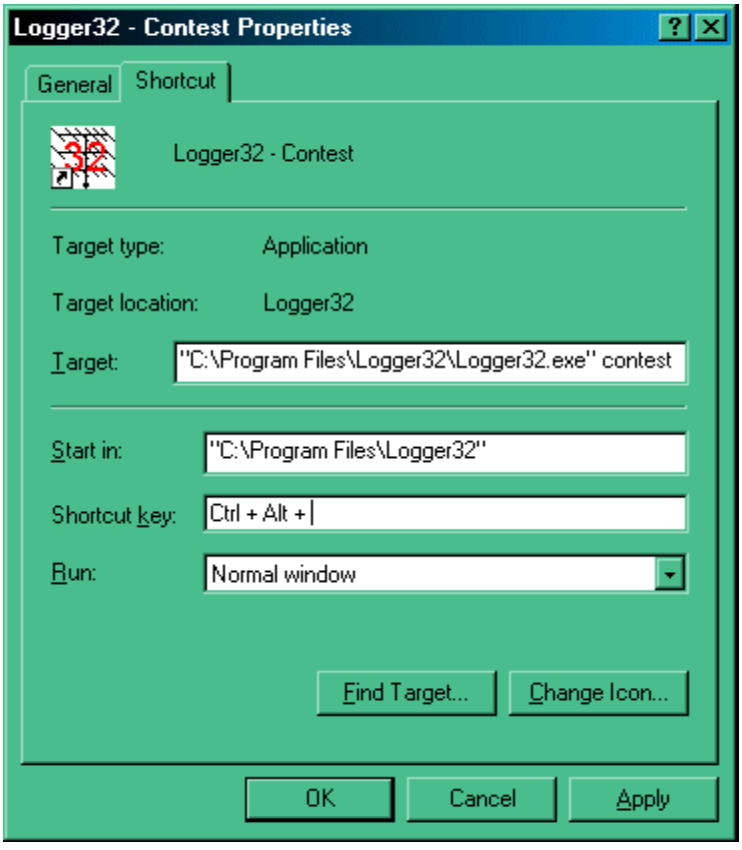
Logger32 has the ability to use the default (Logger32.INI) file, or to select custom configurations. An example of this might be a preferred standard layout for day to day use and to have a different arrangement for contesting, or possibly a second operator.

The command line for Logger is :- **C:\path\Logger32.Exe (Filename[.ini])**

Where filename[.INI] is the name of the ini file to load. The .INI extension is optional.

The INI file will always be placed in the application's directory. Note that filename .ini is optional and if not present in the command line, Logger32 will default to using the normal INI file.

An example of the shortcut properties for a second configuration (in this case contest) is given below. Remember that you will to create a file called Contest.ini and then to set it up as desired. The easiest way to do this is to make a copy of your existing Logger.ini file, rename it and place it into the Logger32 default directory. You can then modify it to suit.



Frequently Asked Questions (FAQ's)

Jim Hargrave W5IFP

Logger32 does not seem to work with my sound card, which is built onto my motherboard.

Several hams have found that **some** on-board sound cards do not work with Logger32. You can turn off the sound card with the System configuration of Windows (Start, Settings, Control Panel, System) and then install a new sound card board that is not the motherboard. In the U.S., surplus outlets sell usable boards for $20 to $50. Do not assume that your board does not work you have checked the mixer settings.

Something funny happened that did not happen before.....

Please try the following steps, in the order that they are presented. Please give each step time to work.

- Look over the rest of these troubleshooting files.
- Go to the Help topic that discusses this function.
- Shut down the function and invoke it again.
- Shut down Logger32 and restart it.
- Shut down Windows and restart it.
- Review the archives of the Hamlogger reflector.
- Ask for help on the Hamlogger reflector (http://yahoogroups.com/Logger32 to sign up).
- Gripe and complain.

Macros do not work properly or consistently.

- Are the macros typed with $ before and after? Example: $MYCALL$.
- Check the spelling of the long macros, like $upperorlower$.
- Do you have the latest PSKcore.dll?
- If a macro using $receive$ fails to transmit text before going to receive, add three carriage returns to the beginning of the macro.

Special characters do not appear when I enter alt-ASCII code.

- The characters MUST be entered on the NUMERIC keyboard, not the alphabetic keyboard.
- The alt key must be held down while you enter the entire four-digit ASCII code.
- See Macros for information on this subject.

When I type, I lose the mouse cursor.

Go to your mouse control software panel and see if you have "Hide cursor when typing" checked and uncheck it.

Logger32 does not show any signals on the spectrum display.

- Go to **Toolbox**, **Sound card input level** and make sure that you have not muted a control or set it too low. The word in this sentence includes any software that takes control of the audio.

- Check to see that your dog did not disconnect the connection from your rig's audio out to the computer.

The XY display does not appear in RTTY mode.

- Turn XY on.

- Click **View**, **Show Tuning Window**.

I lost a display that I used to have.

Check the **View** menu.

The waterfall display is missing or very hard to see.

Make sure that your Windows colors setting is set to something greater than 16 colors (**Start**, **Control Panel**, **Display**, **Colors**).

The tuning display shows no signals.

Click **Settings**, **Spectrum Sensitivity**, and increase the sliders to over half scale.

The align (frequency change) or QSY feature (right mouse click on the target signal) no longer works

You may be using a Kenwood radio in which this feature only works with one of the VFOs. Switch VFOs and try again.

I suddenly have distorted audio on PSK31 or on phone.

- Disconnect the microphone from your radio when you operate PSK31.

- Disconnect your computer sound card from the audio input to the radio when you operate phone.

- See Transmitting PSK31 for a discussion of problems you can have when transmitting with high or low tones.

- See your doctor, maybe your mouth is broken.

Sometimes my transmit audio is weaker than at other times.

- Your radio has a transmit as well as a receive passband. If your transmit audio begins to roll off at 2500 Hz., then you will find your transmitted signal to be weaker if you transmit and receive at 2800 Hz. from the carrier frequency (because radio's audio at that frequency is weaker), even though you may be able to copy a signal at that distance from the frequency.

- See Transmitting PSK31 for a discussion of problems you can have when transmitting with high or low tones.

When I use vox, the vox line does not drop at the end of transmission, it cycles on and off.

Go into the audio mixer and turn off any unused inputs to the sound card. If you are using line input, mute the microphone input or turn it down to zero. The problem with this solution is that it may turn off your speaker sound.

When I try to get Logger32 to copy a signal, it jumps to a stronger signal nearby.

This is the action of the AFC. You can turn off AFC in the Statusbar. You may have to turn it on occasionally if you lose copy.

When the other station turns it over, Logger32 changes frequency.

This is the action of the AFC. You can turn off AFC in the Statusbar. You may have to turn it on occasionally if you lose copy.

I lost one of the windows (tuning display or Aux Window).

- If you changed screen resolution, it might be off your screen. Go back to the old screen resolution, gather your windows the middle of your screen, and then reconfigure back to the new resolution.

- Some windows may be hidden behind other windows. If a window disappears, move other windows to see if it is hidden behind them.

When I press the <Ins> or <Insert> key to pause the Rx Window, all the text disappears and I just see white.

The <Ins> key pauses the incoming Rx text, but it turns the background white (no choice is allowed). This means that if normally view Rx as white letters on some background, now you are going to see white letters on a white background. This creates a visual challenge not to be overcome by ordinary mortal human beings. Try another font color besides white by using the **Toolbox**, **Rx Window font** command.

My Rx or Tx screen shows no text.

Did you set the font color to be the same as the screen color, so they cannot be distinguished from each other? Go to Toolbox and fix it.

My waterfall display has problems, sometimes after working properly for a while.

Some waterfall problems appear to be related to the use of power management (Windows automatically turns off the after a period of non-use) or screen savers. Try turning off power management (see Computer Tuneup) and/or the screen saver. The fact that things work well for a while suggests that only when the Windows considers using these features problem make itself known.

There are problems with the screen print (slow, characters appear out of order, wrong characters print) or other video problems.

- There are problems with some video cards and Windows. Try using less hardware acceleration (try one position lower at time) by doing the following:

- Click Windows **Start**, **Control Panel**, **Display**, **Settings**, **Advanced**, **Performance Tab**, and move the Hardware Acceleration slider to the left one position. According to W0EB, this may improve the performance of all your digital programs, but stick with Logger32.

- If you cannot change the waterfall colors, then it is very likely that the Display Performance Hardware Acceleration is too high. Logger32 uses a lot of processor power, and display acceleration may have to be reduces markedly.

I can run PSK31, but Logger32 gets slow or freezes in RTTY mode.

- You may be running out of computer resources with the extra load from the MMTTY engine. Try running only the you need or just Logger32.

- Try eliminating the Tuning Window. It is also possible to eliminate just the XY display (right-click in the circle).

- Use the **CPU Power Saver Mode** at the bottom of the **Toolbox** menu.

- Check the topic Computer Tuneup, in this Help file.

Everything appears in lowercase or UPPERCASE in PSK31.

Go to **Settings**, **Typing preferences** and choose whether you want all UPPERCASE, all lowercase, or if you want the shift key to work (as typed).

I cannot find my transmitted text in the Rx window. It transmits, and disappears from the Tx window.

Did you set the Rx Window font color (Tx) to the same color as the Tx background? Go to **Toolbox** and fix it.

I cannot see the frequency markers, even though I set frequencies in the Settings, Audio Frequency Markers menu.

Remember to turn on individual frequency markers with the **View**, **Frequency Markers** menu.

I received a Soundcard Error 12 message

Here is a list of conditions that can trigger this Windows message:

Input buffers overflowed

Timed out waiting for input buffers

Output buffers Underflowed

Timed out waiting for output buffers

Function isn't supported

Error value out of range

Invalid flag passed

Invalid parameter passed

Card doesn't support 16bit, 8000Hz, Mono format (0)**.**

Go to **Settings** on the Main Menu and change the way the figure zero prints to the screen. Your display may not be able print with a slash.

Jan Ditzian KX2A

I cannot get Logger32 to work.

Do you have the latest version of the dlls, especially PSKcore.dll?

Is there a Logger32 update that goes with the latest version of Logger32?

Set all program names to the correct versions, then reboot the computer, then try Logger32 again.

Make sure that all desktop or other shortcuts point to the versions that you want to use. If you are having problems, go directly to the programs with My Computer or Windows Explorer, and make sure that you start up exactly the program want to start (the correct copy of Logger32.exe).

Some versions of Windows 2000 seem to have problems running Logger32.

There are some files associated with Internet Explorer 5 that are needed for Logger32. Try installing a copy of IE 5 or onto your computer, to see if this lets your system run Logger32. You do not have to use IE 5 as your browser.

.**Logger32 runs slowly or freezes or has other problems indicating a busy CPU.**

Go to **Toolbox** and select CPU power saver mode.

I cannot run Logger32 long enough to select the CPU power saver mode.

- Open the Logger32.ini file with a text processor and add the following line at the end of the [Settings] section: EnergySaver=On.

- If there is already an EnergySaver=Off, change it to EnergySaver=On.

- Before you make these changes, copy this file, so if there is a problem, you can restore the old one.

I have a problem setting the "back" colors for a macro key.

Reset the back colors with the key at the bottom, then try again.

I received an error message during Logger32 installation.

- Try installing Logger32 again. Make CERTAIN that you close all programs before beginning the installation. Be cautious to close any modem connection.

- Sometimes Logger32 installs just fine despite other programs already running.

- Logger32 requires the use of some DLL files (dynamic linked libraries), and provides them. These may be older or newer than some you may have on your system. The Windows recommendation is to keep the newer DLL, but Windows will you to decide.

I try to start Logger32 from an icon and I receive a message that one or more files did not load, and the program fails to run.

Check to make sure that you have ONLY ONE COPY each of DWSPYDLL.DLL and SBC.VBX, on the c: drive, and that are in the directory containing LOGGER32.

I have an error in the time reported by Logger32, and my computer time is set to GMT.

- There is an error caused by the fact that the Windows time at zero degrees longitude (Greenwich, England) for England, includes a correction for daylight savings time, which that country uses. However, if you want to set your computer to or UTC time, and do not want a correction for daylight savings time, use Monrovia, which is in the same time zone, but not use the correction for daylight savings time. UTC time does not use the correction.

- All this would be moot if Bill Gates were a ham operator. He would have realized the trouble he was causing. Send him copy of the License Manual.

Logger32 prints everything except the figure zero (0).

Go to **Settings** on the Main Menu and change the way the figure zero prints to the screen. Your display may not be able to print with a slash.

I am not comfortable with the fact that when Logger32 installs, it changes system files.

- Like most large programs, Logger32 makes use of DLL and other files that must be located in places other than the target directory for Logger32.exe. There are programs that allow you to restore your old files if you see a problem develop. suggests:

  - SecondChance from PowerQuest

  - Go Back, from Wild File

Where can I find PSK31 operation?

Right here

When I run MMTTY.EXE from the Logger32 directory I get error messages.

Yes, you will, as not all the MMTTY files have been loaded into this directory. If you are running MMTTY just to change RTTY parameters, just ignore the error messages and press <return> until you reach the expected MMTTY opening

I installed Logger32 and use a Com port for t/r (PTT) switching. When I boot up the computer, the t/r switch is closed (transmit position) until I run Logger32.

There is a patch to fix this for some operating systems. Go to the Hamlogger reflector and there is a link to download this file.

I installed Logger32 and use a Com port for t/r (PTT) switching. When I boot up the computer, the t/r switch is closed (transmit position) until I run Logger32.

- W0MN solves this problem by turning the radio off and on.
- VE3TFZ solves this problem with a Rigblaster by not connecting the DTS line, and using only RTS and ground for PTT.
- VE3TFZ also suggests that you can remove a diode in the OR circuit, connects the DRT to the RTS line, but you must do some logic level measurements first to confirm which line is actually high.
- West Mountain Radio, the distributor of Rigblaster, has further information and a possible cure on their web page, http://www.westmountainradio.com/
- Try removing the PTT connection from RTS during Logger32 startup, and reconnect it after Logger32 is loaded.

If I connect the radio directly to the computer, things operate, but my audio levels are not right. But when I try to through my commercially made interface, the interface does not work.

If your radio interface gets its DC power from the computer over the RTS, DSR, or DTR lines, it may not work properly with Loger and/or with Logger32. You should try to provide power from the radio or from an external power source.

There are extra carriage returns in my transmit buffer after I use a macro.

- Carriage returns in a macro are seen as if they were text. They are transmitted when the buffer sent. To get rid of them, end the macro with the macro command $cleartxbuffer$. This will clear only the transmit buffer.
- The other way to eliminate the carriage returns is not to use them in the macro, but just run everything together on one

Logger32 is so broken, I have given up hope. I want to start over, but I want the new Logger32 to know what the old one knew (preferences, macros, and so forth).

If Logger32 will open and run, Suggest you backup your user files and logbook. This is the first and second block on the upper toolbar.

All of your settings, preferences, and Macros are kept in a single file named Logger32.ini. Copy this file to another
Then delete this file in your main Logger32 directory. Reinstall a new Logger32. Logger32 will now start up in default condition. Once you get it going you can then copy your old Logger32.ini back into the main directory and it will then have your original settings.