



HRD RIG CONTROL V6.3

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ABSTRACT

This manual contains instructions to install and activate the Ham Radio Deluxe software suite. Instructions are also included for connecting your radio, configuring and customizing the HRD Rig Control software including setup and operating the HRD Remote Control along with setup and using the HRD Remote Serial Port server and client software.

Compiled by the
HRD Tech Support Staff

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Chapter 1

Introduction To HRD

What is Ham Radio Deluxe?

Ham Radio Deluxe (HRD) is an integrated suite of software products for amateur radio. HRD has been called "The Swiss Army Knife" for ham radio operators. HRD is a software package that contains just about every utility any ham would ever use or need to automate his/her ham shack. The package includes the five (5) major modules, listed below, along with many sub-modules and utilities within each of the major modules.

Rig Control

Ham Radio Deluxe Rig Control provides rig control for over 100 supported radios through a richly featured full screen interface. Not only can you control your radio from a local computer, by utilizing the built-in Remote Server option, you can control your HRD software from any remote location, as long as you have access to an active internet connection.

Logbook

Ham Radio Deluxe Logbook provides QSO logging, DX cluster connectivity, callsign lookup, and awards tracking. Also included is with integration to LoTW, eQSL, Clublog, HRDlog.net and the QRZ.com Logbook). TCP/IP connectivity is also provided for contesters for real-time logging of their contacts from the N1MM and TR4W directly into their HRD Logbook. HRD Logbook supports both Microsoft Access and MySQL databases with strong features for backup and recovery.

Digital Master (DM-780)

Ham Radio Deluxe DM-780 provides most popular sound card digital modes with direct integration to Ham Radio Deluxe Logbook.

Satellite Tracking

Ham Radio Deluxe Satellite Tracking provides satellite operations with rig control and Google Earth integration.

Rotator

Ham Radio Deluxe Rotator provides control for many popular models of antenna rotators.

How It All Began

In early 2003 Peter PH1PH and Simon HB9DRV talked about developing a simple program to control the soon to be released ICOM IC-703. Maybe it was the beer, maybe the desire to give something back to the radio amateur community, however on June 6th, 2003 the first line of code was written, Ham Radio Deluxe (Ham Radio Deluxe) was born. By late 2005 the number of registered users stood at 20,006 – quite an achievement in such a short time.

In late 2011, Rick Ruhl (W4PC), Mike Carper (WA9PIE) and Randy Gawtry (KC0CBH) purchased the rights to the software and introduced the first commercial version of Ham Radio Deluxe in February, 2013 with the release of HRD Version 6.0.

This Guide

This guide was written to give the user general idea of how Ham Radio Deluxe is configured and operates. There are many areas where you **MUST** refer to outside resources, such as your radio's operator's manual, or even a website, in order to configure or understand some sections. We will make every effort to guide you in the right direction in areas where you will need assistance from outside resources.

If you are not into reading software manuals, please, at least read the **HRD V6.3 Quick Start Guide**. The Quick Start Guide is only 45 pages and will probably help you get HRD configured and running much faster than had you read nothing at all.

How to purchase Ham Radio Deluxe?

The Ham Radio Deluxe for purchase from the HRD Software LLC website (www.hrdsoftwarellc.com) or copy and paste

<http://www.hrdsoftwarellc.com/cgi-bin/store/commerce.cgi?pid=1>

Into your favorite web browser. The software is available for download or you have the option to purchase the software to be sent on a CD at an additional charge. HRD LC accepts major credit cards and PayPal.

HRD can also be purchased, on CD, from various ham radio distributors located worldwide. A list of distributors can be found on the HRD Software LLC website.

Getting Started With Ham Radio Deluxe

This chapter is devoted to explaining some of the policies, licensing, system requirements and other information of interest to you, as an end user, prior to downloading and installing the Ham Radio Deluxe software on your computer.

If you have any questions or comments, please feel free to contact HRD Software LLC via e-mail, phone or Support ticket.

HRD Help Links

Download Current version: <http://www.hrdsoftwarellc.com/setup.exe>

HRD V6.2 Manual: <http://www.hrdsoftwarellc.com/manual.pdf>

HRD Quick Start Guide:

<http://www.hrdsoftwarellc.com/HRD%20Quick%20Start%20Guide.pdf>

HRD Knowledge base: <http://tickets.hrdsoftwarellc.com/kb/index.php>

Website: <http://www.hrdsoftwarellc.com>

Support: <http://tickets.hrdsoftwarellc.com/index.php>.

Forums: <http://forums.hrdsoftwarellc.com>

YouTube Channel: <http://www.youtube.com/hrdsoftware>

System Requirements

Computer

Ham Radio Deluxe is designed for Windows Vista and Windows 7, 8, 8.1 and 10, also Internet Explorer 6.0 (or higher) is required. The HRD Software LLC support policy is we support the HRD software on Windows operating systems which are supported by Microsoft. We will NOT provide any support for Windows XP or older even though HRD may possibly run on these older operating systems.

There are no plans for a LINUX or Macintosh native version, Ham Radio Deluxe is known to run under Wine for LINUX and PC emulators for the Macintosh such as Parallels or Boot Camp. HRD Software LLC provides LIMITED support for our software run in these environments.

The suggested minimum computer specification is:

Windows Vista, 32-Bit

| | | |
|-----------------------------------|--|--|
| Processor | Ham Radio Deluxe DM-780 HRD Logbook | 2 Ghz 2.3 Ghz 2 Ghz |
| Memory (Installed RAM) | Ham Radio Deluxe DM-780 HRD Logbook | 3 Gigabytes 3 Gigabytes 3 Gigabytes |
| Hard Drive Storage | Ham Radio Deluxe DM-780 HRD Logbook | 20 Mb 20 Mb 50 Mb |
| Color Display | 1024 x 768 minimum | 1280 x 1024 preferred |

Windows 7, 8, 8.1 and 10, 32-bit

| | | |
|------------------|--|--|
| Processor | Ham Radio Deluxe DM-780 HRD Logbook | 2.4 Ghz 2.8 Ghz Dual Core 2.4 Ghz |
| Memory | Ham Radio | 4 Gigabytes |

| | | |
|-------------------------------|--|------------------------------------|
| (Installed RAM) | Deluxe DM-780 HRD Logbook | 4 Gigabytes 4 Gigabytes |
| Hard Drive Storage | Ham Radio Deluxe DM-780 HRD Logbook | 20 Mb 20 Mb 50 Mb |
| Color Display | 1289 x 1024 Minimum | 1920 x 1080 Preferred |

64-Bit versions of the Windows operating system

The requirements for any Windows 64-Bit system are the same as above, with the **exception of the Memory (Installed RAM)**. For optimum operation of Ham Radio Deluxe on a 64-Bit Windows system we recommend having a **minimum of 8 Gigabytes of RAM** installed in the computer.

Note: DM780 uses more resources than Ham Radio Deluxe when decoding many signals simultaneously. This is especially true if using SuperSweeper, therefore if you plan on using DM-780 we highly recommend the more ram installed the better.

Internet Connection

An active internet connection IS REQUIRED for the initial registration of Ham Radio Deluxe. Whether it's the 30-day Trial or the fully registered version, in order to validate the installation HRD needs to be able to connect to our License Server to record and validate your license. With the 30-day Trial, if no internet connection is present the trial period is limited to only 7-days.

Once activated HRD will run just fine without an internet connection, however, without the internet connection a lot of the functionality of HRD will be lost. HRD required an active internet connection to access the DX Cluster nodes, upload and download to and from LoTW and eQSL. These options are quite valuable if you are an Awards or DX chaser.

Other items that would not be available without the internet connection would be the automatic callsign lookup option using the online QRZ XML callsign lookup database which automatically populates data from QRZ into your logbook when you are in a QSO with a contact.

Uploading to Club Log and HRDLog.net would also be unavailable without the internet connection.

Other Software

In addition to the HRD software, we recommend having the following "FREE" programs on your computer for viewing demos, user documentation, YouTube videos and viewing many PDF files in our FAQ Database.

1. Adobe Reader Version 9 or newer
2. Adobe Flash Version 11 or newer.

If you don't have the above programs, they can be downloaded from the Adobe website at: <http://get.adobe.com/reader/> and <http://get.adobe.com/flashplayer/>

Google Earth is an interesting FREE addition to your ham software collection and is directly accessible from Ham Radio Deluxe.

Nova, a commercial software and Orbitron a FREE offering, both have the ability of being connected to the HRD Satellite Tracking software via a DDE server.

Radio Interfacing

You don't need a radio – Ham Radio Deluxe comes with built-in Dem-o-matic radio support (FT-450, FT-950, FT-2000, K2, Orion, TS-480, TS-570, TS-590 and TS-2000).

Ham Radio Deluxe is designed to be used with one of the rigs listed above. Some modules, however, can be used without a connection to a rig. Logging will work but will not be as automated. Satellite tracking is still fun without a rig connected. In fact, there are only a few of the above listed rigs that "really" work fully with the satellite module.

Some of the rigs listed above do not fully avail themselves to all the features of Ham Radio Deluxe. A number of the rigs do not provide Tx control easily. That is the limit of the rig, not Ham Radio Deluxe.

For CAT control, all radios require some sort of SERIAL connection between the radio and the computer. Some of the newer model radios are equipped with a USB port on the back of the radio. All that is needed there is a USB cable from the radio to a USB port on the computer. Other radios have a standard DB9 serial port on the back which either connects directly to a DB9 Serial port connector on the back of the computer or through a Serial/USB converter to a USB connector the computer, while others connect from an ACC or DATA plug on the back of the radio through a Serial/USB converter to the computer.

Many of these cables use the serial port. If you don't have a serial port all is not lost – USB serial converters are widely available. Also, there are options available that are USB based. One of these is HamLink USB from Timewave. This will allow rig control with most of the radios listed above.

Note: If you need a Serial/USB converter be especially aware of the type of chips and drivers that are in the converter you choose. We recommend ONLY converters with FTDI or SI Labs chipsets and drivers. We have found these to preform exceptionally well with HRD and other

radio related software.

Beware of Prolific chipsets and drivers. There are many of these on the market which are counterfeit and the chipsets are of poor quality. The drivers are also poorly written and will not work properly with HRD, especially if trying to use them on a Windows 7 or 8 system.

Some of the problems you may experience with these chipsets and drivers are system crashes, BSOD, program lock-ups, drivers won't install properly, comports disappear for no reason, just to name a few.

If in doubt as to what you need to connect your radio to the computer running Ham Radio Deluxe, contact Timewave either through their website at www.time-wave.com or phone 1-651-489-5080, or, try RT Systems at www.RTSystems.com. Either one can provide you with cables and connectors to meet your needs.

The future trend in radio control and interfacing is the USB connection. More and more radios will only have USB ports and not Serial or Parallel ports. The USB port will even pass audio as rig control with a few of the radios.

For the majority of the radios listed above, you will need to have a more robust interface if you need to send or receive audio. The audio recorder and PSK31 are two examples of this need.

For more interfacing information visit the Downloads page at <http://www.ham-radio-deluxe.com/> for [A basic guide to CAT](#) and [Audio interfacing](#) which contains many designs for both CAT and audio interfaces for use with Ham Radio Deluxe.

Check out the cable and interface solutions from:

- Timewave <http://www.timewave.com>
- Tigertronics <http://www.tigertronics.com>
- RT Systems: <http://www.rtsystemsinc.com>
- ZLP Electronics <http://g4zlp.ham-radio.ch/>

For more information on the various types of computer interfaces, see the section entitled "Computer Interfacing" in this chapter.

Supported Radios

You don't need a radio – Ham Radio Deluxe comes with built-in Dem-o-matic radio support (FTDX-5000, FTDX-9000, FT-450, FT-950, FT-2000, K2, Orion, TS-480, TS-570, TS-590 and TS-2000).

Ham Radio Deluxe currently supports these 'real' radios:

Alinco

| | | |
|-------|------|------|
| DX-77 | SR-8 | SR-9 |
|-------|------|------|

DZ Company

Sienna

Elecraft

| | | | |
|-----|-----|------|-------|
| K-2 | K-3 | KX-3 | KX-3s |
|-----|-----|------|-------|

FlexRadio

| | |
|----------|----------|
| PowerSDR | SmartSDR |
|----------|----------|

Icom

| | | | | |
|------------|--------------|---------------|-----------------|------------|
| IC-7000 | IC-703 | IC-706 | IC706 MkIIG | IC-707 |
| IC-7100 | IC-7100 V2 | IC-718 | IC-7200 | IC-725 |
| IC-726 | IC-728 | IC-729 | IC-7300 | IC-735 |
| IC-736 | IC-737 | IC-738 | IC-7400 | IC-7410 |
| IC-746 | IC-746 Pro | IC-751a | IC-751a (Piexx) | IC-756 |
| IC-756 Pro | IC-756 ProII | IC-756 ProIII | IC-7600 | IC-7600 V2 |
| IC-761 | IC-765 | IC-7700 | IC-7700 V2 | IC-775 DSP |
| IC-7800 | IC-7800 V2 | IC-781 | IC-7850 | IC-821h |
| IC-9100 | IC-910h | IC-970h | IC-R10 | IC-R20 |
| IC-R7000 | IC-R75 | IC-R8500 | IC-R9000 | IC-R9500 |
| ID-31- | ID-51-AE | ID-5100 | PCR-1000 | |

Kenwood

| | | | | |
|--------|---------|---------|---------|----------|
| R-5000 | TS-140s | TS-2000 | TS-440s | TS-450s |
| TS-480 | TS-50s | TS-570 | TS-590 | TS-590SG |
| TS-60s | TS-680s | TS-690s | TS-790 | TS-850 |
| TS-870 | TS-940s | TS-950 | TS-990 | TS-B2000 |

Microtelcom

Perseus

SDR-Radio

SDR-Radio

Ten-Tec

| | | | | |
|-------------------------|----------|------------|------------|------------------------|
| TT-Argonaut | TT-Eagle | TT-Jupiter | TT-Omni VI | TT-Omni VII (Radio) |
| TT-Omni VII (Remote) | TT-Orion | TT-RX-350 | | |

Yaesu

| | | | | |
|-----------|----------|-------------|-----------|-----------|
| FT-100 | FT-1000D | FT-1000 MKV | FT-600 | FT-767GX |
| FT-817 | FT-817D | FT-847 | FT-857 | FT-857D |
| FT-897 | FT-897D | FT-840 | FT-890 | FT-900 |
| FT-920 | FT-980 | FT-990 | FT-991 | FTDX-9000 |
| FT-2000 | FT-950 | FT-450 | FTDX-5000 | FTDX-3000 |
| FTDX-1200 | | | | |

Reminder: Many of the radios listed above have built-in CAT and Audio interfaces which can be accessed using ONLY a single USB connection from the radio to the computer. These usually require downloading a driver from the radio manufacturer's website to install on the computer to access the radio properly. Be sure to check with your radio owner's manual for information on how to connect the radio to the computer.

Computer Interfacing***Rig Control Interface***

The most important connections in a computerized ham shack are the ones between the rig and the computer. HRD Support handles many support requests every day and find the issue leads to issues with the connections between the radio and the computer.

Some of today's modern radios require ONLY a USB cable connected from the computer to the radio to provide BOTH rig control and the Audio Codec for the AFSK digital modes used in the HRD DM-780 software. These radios normally require the installation of a DRIVER which can be downloaded from the radio manufacturer's website. You can find the information on how your computer interfaces to a computer in your radio's user manual. There will also be instructions on where and how to download drivers for your particular radio, if needed, in the radio manual.

If your radio DOES NOT have an "All In One" type USB connection as described above, then you will need another solution to connect your radio to the computer.

Inexpensive RS232, USB and audio cables are built from low quality materials and usually do not have proper shielding, so, they are susceptible to RFI in the shack. The majority of the issues handled by HRD support, where the customer is having connectivity problems, strange

or intermittent behavior of the software or computer, even total computer system crashes can be traced to these cables.

When setting up your CAT system, consider using only quality cables and plugs for ALL the connections between the rig and the computer. Make sure ALL your equipment has good electrical and RF grounding, including the computer, and, DO NOT daisy-chain the equipment to a ground. Have each piece of equipment grounded separately.

RS-232 Connection

In general most radios require an RS-232 connection at the computer end. Most computers today do not come equipped with RS-232 ports. If you are using a desktop computer and it has extra PCI or PCI Express expansion slots on the motherboard, it is to your advantage to purchase an RS-232 card and install it in your computer. They can be found on E-Bay for around \$15.00, give or take. You can also check with a local computer supply store or your computer manufacturer to see if they have these available. Some Office Supply and Big Box stores like Best Buy, Staples or Office Max may carry these cards.



RS-232 PCI Cards

[OBJ]

USB/Serial Connection

For those who use laptops or computers where you can't install an RS-232 card you will have to have a good quality USB/Serial converter. Here's where things can get interesting. There are many of these converters available that are very inexpensive. Many of these inexpensive converters have poor quality chipsets and poorly written drivers. Due to the heavy load HRD places on the com ports many of these converters fail to function properly.



HamLink USB from Timewave (www.timewave.com)

All-In-One Interfaces

There are many "All-In-One" interfaces on the market from various manufacturers. This type of interface usually provides the convenience of only requiring one single connection to the computer, then connections from the interface to the radio that handles Rig Control, audio for the digital modes, true CW keying of the radio using the K1EL Winkeyer or some other chip that emulates the K1EL chip, and true RTTY FSK keying which many operators prefer because it allows you to take advantage of the filters in your radio while use of the RTTY AFSK mode does not. Many of these devices have built-in soundcards, which is preferred over using the computer's soundcard. The use of a second soundcard, whether it is a PCI card installed in one of the expansion slots of the computer, or an external soundcard, is highly recommended since it allows you to dedicate one card for your ham radio and digital communications while it leaves the other dedicated for sounds and audio directly from the Windows system so that one won't interfere with the other.

The All-In-One interface devices are normally more expensive than any other type of interfacing, but, depending on how you operate, this type of interface is well worth looking into.

Getting Technical Support

Our Technical Support Staff is always ready, willing and able to assist you with any problems you run into with the HRD software. Note that we are responsible for the **HRD SOFTWARE Only!!**

DO NOT E-MAIL THE SALES DEPARTMENT WITH SUPPORT QUESTIONS.

E-mailing support questions to the sales department creates 3 unfavorable situations. First, it takes our sales staff away from their specific job, which is handling e-mails and phone calls pertaining to the sale and shipping of the HRD software. Secondly, there is a chance the e-mail may get set aside to be handled later, then it could fall through the cracks and not get handled at all, and three, it slows down the chances of you getting in contact directly with a technician who CAN help you since the sales person would probably, if he/she does answer your e-mail, will send you a response telling you to "open a support ticket" for our support staff to handle.

Our support staff is available Monday through Friday from 6am to 5pm Eastern Time. If you are trying to get support and because of your work schedule or something else that doesn't permit you to contact us during normal business hours, our staff will certainly be more than happy to set up an appointment after hours or even on a weekend in order to assist you with a problem you may be having with our software.

The preferred method of contacting support is through our Support Ticket system. This system is accessed from our website by clicking on the "Support" page from the main menu and select the Support Ticket option. When a ticket is entered into the system, it is assigned a unique tracking number. All communications between the technician and the customer should remain in this ticket thread. That way we can track exactly what has been done and said about your issue and allows us to better troubleshoot your problem. We ask that you DO NOT enter more than one ticket about the same issue. This just confuses things trying to keep everything together and slows down the process of handling your support request.

We do make every effort to handle each support ticket within 48 hours of it's receipt. We do, however, sometimes get backed up and it might take us a little longer, especially during the summer when we are attending hamfests around the country. There are many of these hamfests where the entire staff attends, in which case the support department and the sales department will be closed during the time we are gone. Other times there may be only 1 or 2 people available to handle support and sales, which does slow things down, so, please, if we don't get right back to you, be patient. We will get with you just as soon as possible and will spend as much time as necessary to make every attempt to resolve your issue.

When you do contact support, whether it is by support ticket or on the phone, we are going to ask some questions which we need accurate answers for in order to be able to troubleshoot your problem. Below is a list of the most common things we ask for. Some of the items are required fields on all support tickets. Others are things that you need to provide either in the

text portion of a support ticket, in your e-mail or have available so you can give us the information on the phone.

- **Your NAME**
- **Your Callsign (required for all support requests)**
- **Your Radio**
- **Your Interface (How the radio is connected to the computer)**
- **Your HRD Version (In HRD click on HELP > ABOUT)**
- **Your Windows Version**
- **How much RAM is installed in your computer**
- **A detailed description of the problem your seeing. Please don't just say "I can't get my radio to connect". That doesn't really give us any information to use to troubleshoot. Tell us if you are getting an "error" screen and if you are, what "error" are you getting? What EXACTLY are you doing when the problem occurs? Small things that you may not feel important may give us clues as to what the problem is and how to resolve it.**
- **Include screenshots of the issue, if possible.**

If you call on the phone, there are times when we may ask if we may remote into your computer to troubleshoot the problem. We use a program called "Teamviewer" for all of our remote connections. Since Teamviewer is a FREE FOR PERSONAL USE program, many people already have the software on their computer, however, you may not have a version that is compatible with the commercial version we use. If you feel we may need to do a remote into your computer to help you, it would help and save a lot of time if you could download and save on your computer a special version of Teamviewer that we have our clients use. It is Teamviewer QS, a small executable file that does NOT install Teamviewer on your computer but rather is just an executable that allows us to connect to your computer. This version can be downloaded by going to www.hrdsoftwarellc.com and click on "**Support**" at the top of the home page. On the Support page, scroll down until you see the "**Teamviewer**" icon, download and save the Teamviewer QS program on your computer. Once you have it saved on your computer you can easily access it if asked to do so during a phone support call. You could also download the Teamviewer QS program by clicking on the link in the HRD Help Links at the bottom of this section.

Our technicians ARE NOT teachers. They are not there to teach you to use your radio. They do not teach you to use your interface, your computer or any other hardware in your shack. If you contact our support team with a problem and it's determined the issue is NOT with the HRD software, you will be advised on the next step you should take to get help.

We do ask that you at least make an attempt at using the "Self-Help" systems that are available for all registered and trial HRD users. We have the **Knowledge Database** in our support ticket system which can answer many of the commonly asked questions without having to directly contact a technician. To access the Knowledge Base, you can open the main HRD website page and click on the "Help (FAQ)" option at the very top of the page, or, you can use the link listed below in the "HRD Help Links". Other self-help options are the HRD Forums, the HRD Software Channel on YouTube and many, many specialized Yahoo Groups for radios, interfaces, software and just about anything else you may need some assistance with.

If you are unable to find the answer to your question through the above options, then feel free to call or open a "Support Ticket" and one of our technicians will be more than happy to assist you.

For those using the 30-Day Trial version, we remind you that you do have the full support of our highly qualified Technical Support Staff should you run into any problems installing or configuring the HRD software. If you do have any technical problems while installing or configuring HRD, please, DO NOT CONTACT THE SALES DEPARTMENT. They will NOT be able to help you. Please contact the support department directly either by phone or by entering a support ticket from the "Support" page on our website at www.hrdsoftwarellc.com or www.ham-radio-deluxe.com. The support phone numbers and other helpful links are as follows.

HRD Help Links

Download Current version: <http://www.hrdsoftwarellc.com/setup.exe>

HRD V6.2 Manual: <http://www.hrdsoftwarellc.com/manual.pdf>

HRD Knowledge base: <http://tickets.hrdsoftwarellc.com/kb/index.php>

Website: <http://www.hrdsoftwarellc.com>

Support: <http://tickets.hrdsoftwarellc.com>

Forums: <http://forums.hrdsoftwarellc.com>

YouTube Channel: <http://www.youtube.com/hrdsoftware>

Teamviewer QS:

http://download.teamviewer.com/download/version_10x/TeamViewerQS.exe

Support Hours: Monday - Friday 9am to 6pm EST.

Phone USA: 813-434-4650

UK/Europe: +44-1924-601057

Note: Support hours are subject to change contingent on the number of technicians available, hamfest and holiday schedules, vacations and/or other unforeseen events.

License Agreement

IMPORTANT: Before commencing using this Product, carefully read the following terms and conditions which have been accepted by your company ("Licensee").

- 1. DISTRIBUTION.** This Product may be distributed by HRD Software, LLC or its agents for use by Radio Amateurs. It may not be sold. The maximum charge allowed for the distribution medium is \$0.
- 2. GRANT OF LICENSE.** HRD Software, LLC hereby grants to Licensee ("You") and You accept a nonexclusive license ("License") to use this Product delivered pursuant and subject to this Agreement.

You agree that You will not assign, sublicense or otherwise transfer your right under this Agreement without the prior written consent of HRD Software, LLC. The purchased key cannot be transferred since it is based on YOUR callsign.

- 3. TERM.** This Agreement is effective from the day HRD Software, LLC grants this License, and continues until terminated. HRD Software, LLC may terminate this License if You fail to comply with any term or condition of this Agreement. You agree upon such termination to destroy this Product together with all copies in any form.

4. TITLE; CONFIDENTIALITY. You acknowledge that title and full ownership, trade secrets, copyright, patent rights to this Product furnished under this Agreement remain with HRD Software, LLC, whether or not any portion thereof is or may be validly copyrighted or patented. By accepting this License, You are only granted limited license rights to use the Product. You agree to treat the Product as HRD Software, LLC's proprietary information.

5. LIMITED USE: Ham Radio Deluxe - You require a license from HRD Software, LLC. You may not modify the product or merge the product into any other computer programs. You may not reverse assemble or decompile the program, in whole or in part.

Other Programs (PSK31 Deluxe, Digital Master 780, Mapper, HRD Logbook, Rotor).

6. LIMITED WARRANTY. HRD Software, LLC warrants that he has the authority to grant this License to You.

THERE ARE NO EXPRESS OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

7. LIMITATION OF LIABILITY. HRD Software, LLC shall not be liable to You or any other party for any amount whatsoever.

In no case is HRD Software, LLC responsible for any indirect, incidental, or consequential

damages, such as, but not limited to, loss of anticipated profits or benefits.

8. We reserve the right to refuse service and disable a customer's key at any time for any reason

9. GOVERNING LAW. This Agreement is to be governed by and interpreted in accordance with the laws of United States of America and the state of FL.

The place of jurisdiction is the place where HRD Software, LLC resides.

HRD Software, LLC is however also free to institute legal proceedings at the place where You are situated.

If any provision of this Agreement shall be declared invalid or unenforceable, such provision shall be deemed to be deleted, and it shall not affect the validity of any other term or provision of this Agreement.

10. TERMS. ALL Term in this Agreement are subject to change including but not limited to program, support, open source and anything else not covered in this Agreement.

11. WHOLE AGREEMENT. This Agreement is the complete and exclusive statement of the Agreement between us; and supersedes any proposed or prior agreement, oral or written, and any other communications between us relating to this specific granted license and the related obligations; and may be modified or supplemented only by a document signed by both parties to this Agreement.

NOTICE: HRD Software LLC reserves the right to change or amend this policy at any time without prior notice.

Software Support & Maint. Agreement

Included with your initial purchase of the HRD software package is a **NON-Mandatory Software Support & Maintenance Agreement**. What this means to you is, during the first year after your purchase, you can download each and every updated release of HRD and receive all NEW Features, bug fixes and additional databases, such as the Country List/Unique Callsign Database, at NO ADDITIONAL CHARGE. This is all covered under your initial purchase of the software.

After the first year, you will receive a notice from your License Manager that your key has EXPIRED. This does NOT mean that your software license has expired. Your license for the software is a LIFETIME license and will never expire. This means the Software Support and Maintenance Agreement has expired.

What this means is you can still download all updated releases of the HRD software to take advantage of BUG FIXES, for as long as you own the software, however, once the Software Support and Maintenance Agreement has expired, you will no longer be able to access any NEW Features added to the software after the expiration date of your agreement.

A few features, such as the automatic updating of the Country List and the Unique Callsign Database are an exception to the above agreement. These databases requires constant updating by our development team and therefore do auto-updating feature for these databases will end at the expiration of your Support and Software Maintenance Agreement, and will only be reactivated on renewal.

Renewal of your Software Support and Maintenance Agreement is HRD's way of maintaining cash flow in order to provide continued active development on the software. It also helps pay utilities, cost of running the website, sales and support staff salaries and other operating costs. The fee for this renewal is 1/2 (50%) of the effective retail price. Your support through renewals insures continued development and support for Ham Radio Deluxe. Please, support us so we can support YOU!

NOTICE: HRD Software LLC reserves the right to change or amend this policy at any time without prior notice.

30-Day Trial Policy

Due to much abuse, HRD Software LLC has had to re-vamp our 30-day trial policy. This policy will be strictly enforced.

When a version of HRD is loaded on your computer and is activated in the "Trial" mode, without entering an activation key, HRD automatically connects to the HRD License Server and creates a record containing the call sign you entered and the date. The server then calculates the 30 day expiration date and records that in the record. This provides our support staff with the information needed to provide trial users with full support during the trial period. If the computer that HRD is being installed on has an active internet connection, and the connection to the HRD License Server is successful, a 30-day trial will be granted. **It there is NO active internet connection, only a 7-day trial will be granted.**

There is one other restriction to the Trial version, at this time, and we are considering changing this at some point in the future. **The trial version can only be installed and run on ONE computer.** The drawback to this is you will not be able to run the trial version on more than one computer to test or evaluate the HRD Remote Server options. Other than this one drawback, the trial version is not crippled in any way.

HRD Software LLC will allow only ONE 30-DAY TRIAL for each **MAJOR** software release. A Major Release is one which has a version number that begins with "V6.2, V6.3, V6.4," etc.

If for example, you downloaded the 30-day trial for V6.3.0.400, you could test and evaluate that version for 30 days, however, since we do update the software for bug fixes on a regular basis, after your 30 day trial, you would NOT be allowed to download and have a 30-Day trial for V6.3.0.500, as that would still be considered the same **major release** you previously used. but a new build was released for maintenance purposes.

If you have already installed and run the 30-day trial using a major release, any additional attempts to install and run the same major version will result in the software NOT activating on your computer. The software will REFUSE to run.

If for some unusual reason or circumstance, you were not able to complete the full 30-day evaluation, you would be able to request a 10 day extension to your test and evaluate your CURRENT trial version.

The request for the extension must be submitted to the Sales or Support department by entering a Support Ticket ONLY. The extension will be granted at the discretion of HRD Management ONLY.

NOTICE: HRD Software LLC reserves the right to change or amend this policy at any time without prior notice.

HRD Activation Key Policy

An Activation Key is required for each callsign for each user of the Ham Radio Deluxe software. The original purchaser of HRD receives his or her activation key when they make the purchase. There are situations where more than one activation key is required and HRD Software LLC will provide these keys at no additional cost to the original purchaser.

Due to abuse by some who request additional activation keys for the HRD software, we have adopted, and will enforce, the following rules for issuing additional keys for the Ham Radio Deluxe software. If the qualifications for an additional key are met, HRD Software LLC will gladly issue an additional key at, **no extra charge**, to the registered owner of the Ham Radio Deluxe software.

Additional key requests **MUST** be made in writing and e-mailed to: sales@hrdsoftwarellc.com. The e-mail must contain the Primary HRD License holder's callsign as well as the callsign and any required documentation for the key being requested.

In the event there is more than one ham in the primary HRD license holder's household, provisions have been made in the software so that each operator can run HRD having their own unique setup. This is accomplished by creating a separate Windows User Account for each ham using the shared station equipment and computer. Each Windows user will enter their unique activation key into HRD and this creates a separate HRD experience for each user on a shared computer. This key is directly linked to, and is subject to, the same rules and limitations as that of the Primary HRD License Holder.

DO NOT open a support ticket requesting an additional activation key. This will only slow down the process since the Tech Support department does not have access to all records that may be required to verify the request and generate a key.

NOTE: HRD Software LLC verifies all callsigns for validity. For operators in the United States, we use the FCC ULS for verification. If you hold a foreign callsign, and we cannot verify it's validity in any other way, you may be required to submit a scanned copy of the Amateur Radio License Certificate, for the callsign, for which a key is being requested.

The following are the rules governing the issuing of Activation Keys. These rules will be strictly enforced by HRD Software LLC with absolutely **NO EXCEPTIONS**.

Primary HRD License Holder

HRD Software LLC provides an Activation Key for the person who purchases the Ham Radio Deluxe software. This key is based on the purchaser's legal amateur radio callsign and cannot be transferred to or used by any other operator. If the registered owner of the HRD software possesses more than one amateur radio license, an additional key may be requested, however we may request documentation to verify the additional call belongs to the Primary HRD License Holder.

Family Member Calls

HRD Software LLC will provide additional keys for immediate family members (spouse and/or children under the age of 18), who live in the Primary HRD License Holder's home. The physical home address for the callsign being requested must match that of the Primary HRD License Holder's address.

Inactive Calls

If the callsign for which you are requesting a key for shows up as inactive or expired, we will NOT issue an additional key. In other words, if you held a previous callsign, at some point in time, and we cannot verify it as an active call or you cannot provide a valid License Certificate showing it as being an active call, we will NOT issue a key.

Modified Calls

Callsigns with prefixes or suffixes (modifiers) ARE NOT SUPPORTED by the HRD Software Licensing system. If you are using a call such as F4/KB3NPH or KB3NPH/M, both considered MODIFIED callsigns. Modified calls are usually used on a temporary basis when you are operating outside of area or country (K6/KB3NPH or F4/KB3NPH), or if you are operating as a mobile station (/M), maritime mobile (/MM), aeronautical mobile (/AM), etc., and we cannot issue keys for these calls. Callsigns like this are normally NOT ISSUED by the Amateur Radio Licensing Agency in the country of origin. If you are using a modified call on a temporary basis, you could set up a "New Location" or "Guest" profile in the "My Station" profiles located in the HRD Logbook module, (Tools > Configure > My Station). If operating using Digital Master 780, calls like this could be typed directly into the macros instead of using the <tags> that would normally be used to insert your callsign into a macro.

Club Calls

Keys for Club Callsigns cannot be issued to individual club members. An additional key may be issued ONLY to the club trustees whose name appears on the license. If a trustee is requesting an additional key, they may be required to send a scanned copy of the club's license certificate which indicates them as the trustee for that call.

QSL Managers

We have received a few requests from QSL Managers who use the HRD software for their personal use and show an interest in receiving additional keys for callsign QSL management. We understand how this could assist these QSL managers in keeping track of those they manage, however, at this time we cannot provide additional keys for this purpose. At some point in the future, we may be able to provide feature, but for now, please don't ask. We don't like to say "NO" to anyone.

NOTICE: HRD Software LLC reserves the right to change or amend this policy at any time without prior notice.

Chapter 2

Important Installation Notes

Please Read Carefully!!!

HRD Software LLC highly recommends you never have more than one copy of HRD installed on your computer at any one time. This can and does in many instances create problems when attempting to use either one of the installations.

If you have been running the FREE (V5.x), following these instructions are even more important to insure a clean, trouble free installation of the software.

If you are upgrading from the FREE V5.x of the software, it's recommended, prior to installing the commercial version 6.x, that you first, follow the instructions in your manual to do a backup of your logbook, either to a folder on your computer outside the HRD file structure, or to a flash drive, One Drive, DropBox or other cloud storage area. If you are not familiar with this backup procedure, HRD Software LLC has created a YouTube video showing this operation. It was created using V6.0, but the procedure is the same for V5.x users. To view the video, please copy and paste the following link into your favorite Web Browser.

HRD Logbook Backup - Recovery: <https://www.youtube.com/watch?v=Py4vvj1bRZk>

If you have created custom Macros in the DM-780 software, please Save all your custom macros, again, to a location outside of the HRD file structure. If you are not familiar with saving your macros, please read your HRD Manual. There are instructions on saving your custom macros so if something happens, they can be easily reloaded into a new version, or restored in the event of a system failure.

If you have other custom layouts or configuration options selected, please make screenshots of the settings screens and notes of, for example, special layout files, etc, so you can restore these settings to the new installation.

Once you have all your items saved or at least notes made for the new installation, you can then open your Control Panel > Programs and Features, and proceed to uninstall the HRD software. The Windows installer will remove ONLY the HRD Executable, and associated files from your computer, so, it's important to remove the rest of HRD before installing the new version.

V5.x stored the user configurable, logbooks and other data in a hidden folder. First you will have to open your Control Panel, select the "File Explorer Options" or "File Folder Options", depending on your windows version. When that window opens, select the "VIEW" tab and on the View screen, locate the option to "Show hidden files, folders and drives" and put a tick in the radio button.

Once that is done, navigate to C:\users\\AppData\Roaming and locate the "Simon Brown - HB9DRV" folder and delete it from your computer.

Downloading HRD

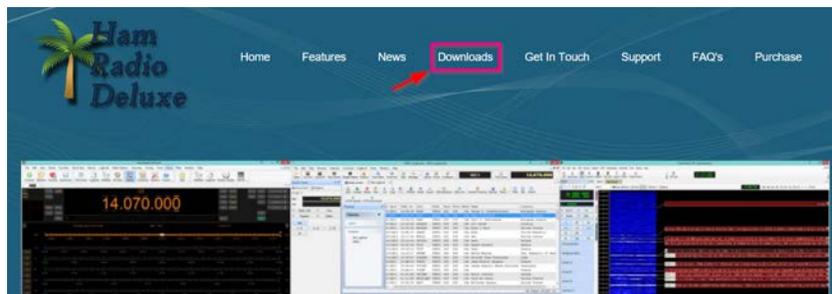
Although you may have purchased your Ham Radio Deluxe software through one of our distributors, or purchased it on-line with the option to have a CD shipped, it is always a good idea to check our website prior to installing the version you received on CD is the same as that available on-line.

We do many updates to our software. Sometimes as often as 2 or 3 new versions a week. The reason for the frequent updates is to fix reported bugs in the software, add new radios to our supported radios list, add new features, and other reasons. There is no fixed time frame on publishing a new release.

The CDs are mass produced and provided for our distributors in bulk orders according to what they feel they can sell in a certain period of time. Sometimes, we release a new version, or maybe more, before the distributor sells out of their current stock and re-orders. The CD they sell you, although is just fine to get up and running with, may be superseded by an update. The same goes for CDs purchased and shipped from our on-line store, so it's always a good idea to check to see if there are any updates to the software.

If you like to always have a CD copy of the HRD software on, just as a backup, you can always burn a copy of the downloaded setup file to a CD, or keep it on a flash drive for emergency use.

Downloading the HRD installation file is quite simple. Just open your favorite web browser and go to the Ham Radio Deluxe website by entering www.hrdsoftwarellc.com or www.ham-radio-deluxe.com into the address bar. Once on our website, click the "Downloads" link on the top of the page.



On the Downloads page, you will see two versions of HRD listed. One is indicated as "Full Version" and the other as "Trial Version". Select the proper option, download and save the setup.exe file to your hard drive. Unless you have indicated otherwise, the default location where it will be saved will be in your "Downloads" folder.

Once you have the Setup.exe file on your computer, you're all set to begin the installation as described in the next section.

Installing The HRD Software

Whether installing HRD from a CD or installing from the downloaded Setup.exe file, the first thing you should automatically do is disable any anti-virus software you may be using. Some anti-virus software packages see some files as a threat and will delete them during the installation. The reason for this "false positive", is some of the files in the HRD software are used to connect to and transfer data via specific ports on your computer to locations on the internet. Routines that handle, for example, the callsign lookup in the logbook module, or the DX Cluster, that depends on an internet connection to receive it's data may be detected as a threat just by the way it is coded in the software, or by the simple fact it connects to and interfaces outside of the computer to some other location. You can be assured, though, HRD does not contain any type of Malware or malicious code.

Once you have disabled your anti-virus, proceed to install the HRD software using either your CD or the Setup.exe file download from our website. We have made the installation of HRD as painless as possible. Once you start running the "Setup.exe" file or installing from the CD, just follow the on-screen prompts to complete the installation.

If you have any issues while installing the software, please, don't hesitate to contact HRD Support for assistance.

HRD File Locations

The following are the locations of all the HRD system and user files on your computer.

PROGRAM FILES: These are the executable and all HRD program system files.

Windows 32-bit Systems: **C:\Program Files\HRD Software LLC**

Windows 64-bit Systems: **C:\Program Files (x86)\HRD Software LLC**

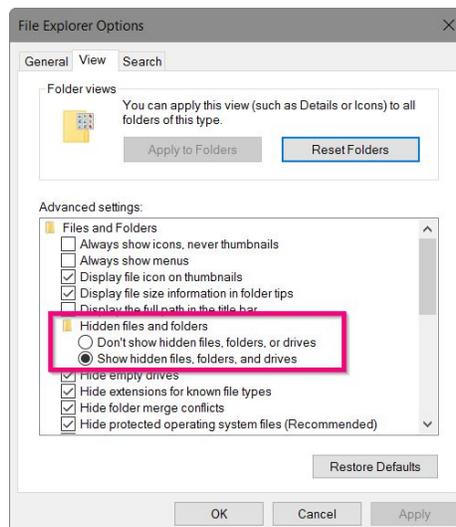
HRD USER FILES: These are all the user configurable files and where your Logbook files are stored.

All versions of Windows: **C:\Users\\AppData\Roaming\HRDLLC**

NOTE: The "AppData" folder mentioned in the link above is normally a HIDDEN folder and cannot normally be viewed.

In order to view this folder, open your Control Panel. For Windows 10, select the "**File Explorer Options**". For all other versions of Windows select the "**File Folder Options**".

When the File Folder/File Explorer option opens, select the "VIEW" tab on the top of the window. Look for the "Hidden files and folders" option and select the "Show hidden files, folders and drives" option as shown below. Once this is selected, click "Apply" and click "OK" and close back out to your desktop. You can now navigate to the **HRD User** file location indicated above.



Uninstalling The HRD Software

At some point in time, you may want to completely uninstall the Ham Radio Deluxe software. Whether you have chosen to uninstall or have been directed to do a complete uninstall by our support staff the following procedure will assist you in this task. Unfortunately, at the time this documentation was written, HRD does not provide an uninstaller in our software that will uninstall everything associated with HRD, so, a full and complete uninstall must be done manually.

Getting Started

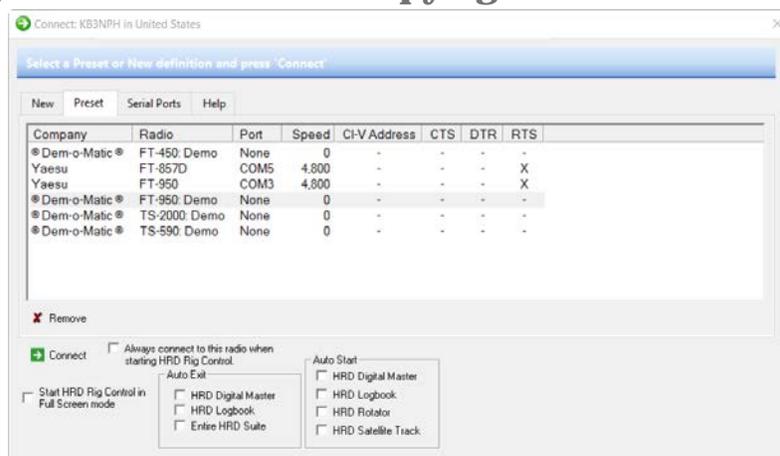
Before starting, make sure you have your HRD Activation key available. You will need it when you re-install the software. If you don't have your activation key, you can e-mail sales@hrdsoftwarellc.com and request they send it to you.

Next we need to make a backup of any Logbook databases you may have. DO NOT use an ADIF export for this step. The ADIF option does NOT include ALL the fields in your logbook database, so using this option would result in you losing part of the data for your contacts. You MUST use the BACKUP function in HRD for this step, and, you MUST do it for each database you have successfully configured in the software. These backups should be made to a Flash Drive, to your Desktop, to another folder in your Documents folder or to Dropbox or other cloud storage location you may be using.

If you are NOT familiar with making these backups, please click on the following link and watch the video on our YouTube channel. **HRD Logbook Backup - Recovery:**
<https://www.youtube.com/watch?v=Py4vvj1bRZk>

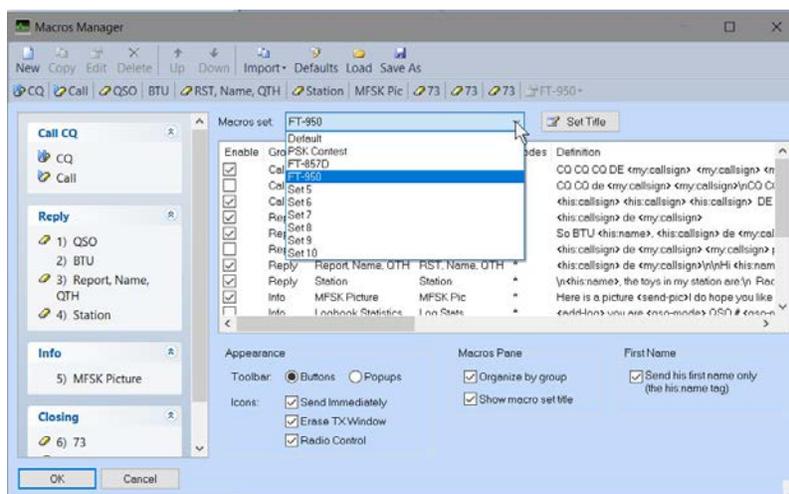
Rig Control Settings

Next, run HRD and in the Rig Control screen, click on the green "CONNECT" icon or click on "File > Connect" to open the Rig connection screen. In the Rig Connection screen, click on the "PRESETS" tab and either take a screenshot of this screen or copy down the settings used for each of the radios you have connected to HRD. Make sure you "grab" one of the vertical sides of this window and "stretch" it so you can see the complete line for each of the radios you have installed.



Saving Your DM-780 Macros

If you have custom Macros configured in DM-780, you will probably want to save these macros so they can be restored to the new installation. At this point, you will want to RUN your HRD software and open Digital Master 780. In DM-780 select "**Program Options**" and then select "**Macros.**" from the menu on the left. This will open your "**Macro Manager**"



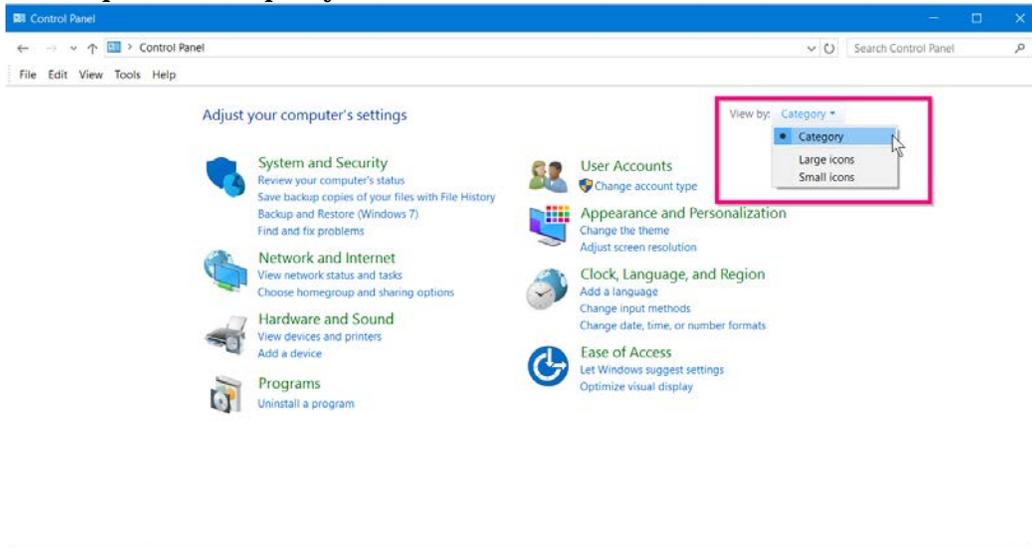
In the Macro Manager, click on the "Macro set" dropdown and highlight one of your custom macro sets as shown on the left. Next, on the Macro Manager Toolbar, click on the "Save As" button and navigate to a location where you want to save this macro set. The default name will be "DMMacroDefns", which you will need to change to some other unique name to indicate what the macros are used for. Do this same process for EACH of your custom macro sets. Each file will be saved as a .XML file in the location you have chosen.

Other DM-780 Settings

Again, in the DM-780 Program Options, select the Soundcard, PTT and Modes + IDs options and either take screenshots or write down the settings so you will have them and can restore them once you have done the clean install.

View Hidden Folders

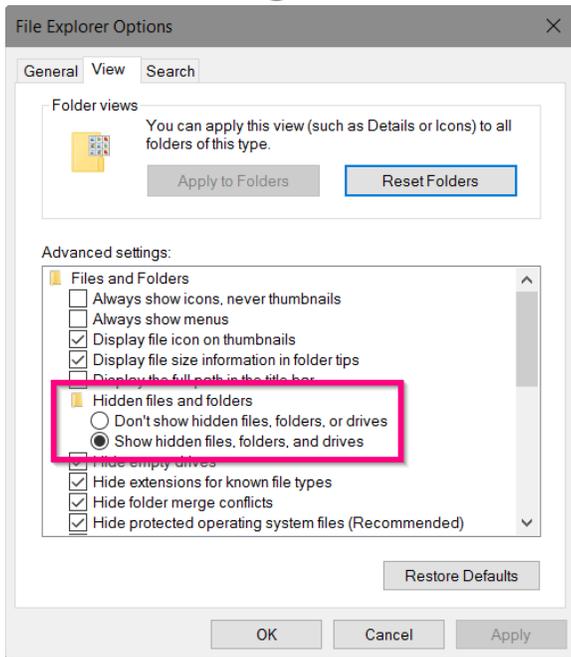
Part of the HRD files are stored in "hidden" folders. We need to make these files and folders visible. To accomplish this, open your "Control Panel".



If your Control Panel looks like the image above, click the "Category" option and select "Large Icons" or "Small Icons", depending on how good your eyesight is..... (I need the EXTRA LARGE icons.... HI HI).

If you're operating system is Windows 10, select the "File Explorer Options". If you're using a different version of Windows, you will select "File Folder Options".

HRD Rig Control V6.3



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In this window, select the **"VIEW"** tab at the top. You will now see the list of folder options shown.

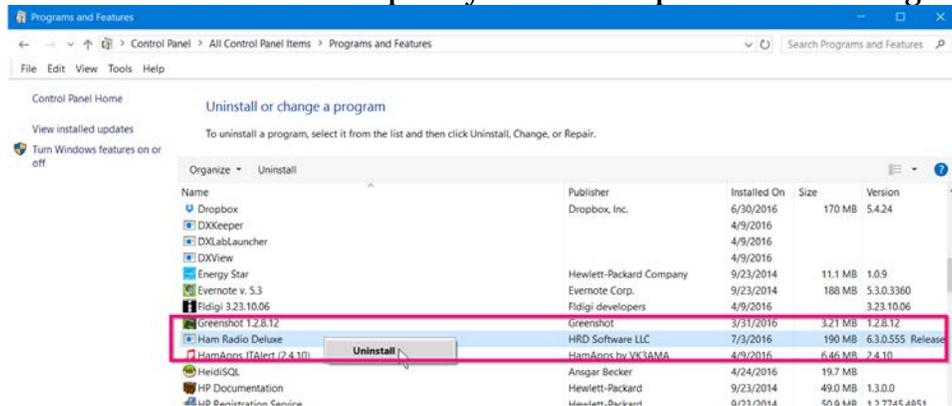
Locate the **"Hidden files and folders"** option as shown in the red box in the image to the left.

Under that option, put a "tick" in the option to **"Show hidden files, folders and drives"**.

Once your selection is made click "Apply" and then "OK" to exit this window and exit back to the Control Panel.

Uninstalling HRD

Again, open your Control Panel and select "Programs and Features". In the Programs and Features window locate and uninstall ALL versions of the Ham Radio Deluxe software. PLEASE make sure ALL versions are completely uninstalled prior to continuing.



During remote sessions we have seen where an error will sometimes occur while attempting to uninstall a version of HRD. This is usually due to the fact that another version of the software was installed incompletely or an attempt was made to uninstall and was not completed properly. If this happens to you, contact HRD support and you will receive assistance with resolving this problem. If all goes well and ALL loaded versions of HRD are uninstalled, continue with the rest of this procedure.

Delete All Residual Folders

Next we need to delete all residual HRD folders from the your hard drive. First, navigate to the C:\Program files or C:\Program Files (x86), depending on whether you using a 32 or 65-bit Windows system. In these locations, locate any folder that relates to Ham Radio Deluxe and delete the entire folder.

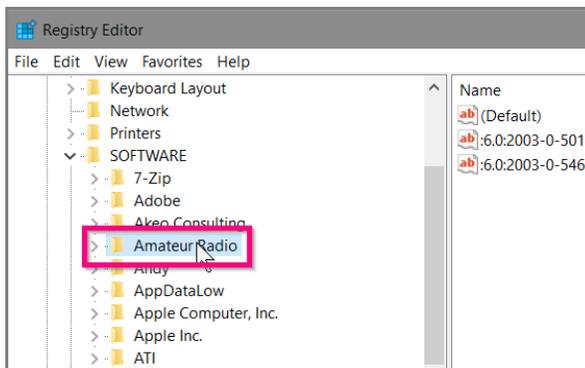
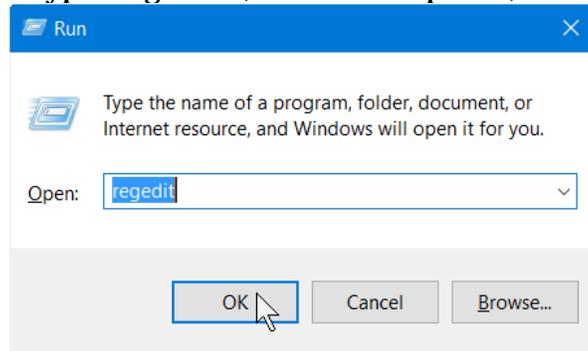
Locate and open the C:\Program Data\ folder and delete the HRDLLC folder.

Next open the C:\users\\AppData\Roaming\ folder and delete the HRDLLC folder located here. Also, in this Roaming folder, look for a folder named "Simon Brown" or "Simon Brown - HB9DRV" and delete it.

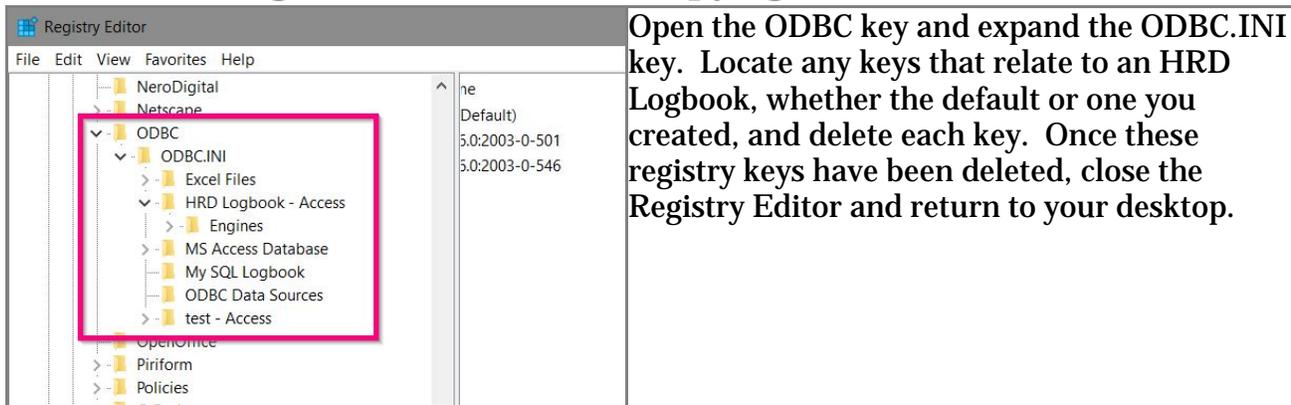
Delete Registry Keys

Our next step is critical and extreme care should be taken to delete **ONLY** the keys indicated here.

Hold the "Windows" key down and press the "R" key on your computer keyboard. In the "RUN" box, type "regedit" (without the quotes) and press "OK"



When the registry editor opens, select the "**HKEY_CURRENT_USER > SOFTWARE**" key and locate the "**Amateur Radio**" key. Left-click on the "Amateur Radio" key to highlight it, then, right-click and select "**Delete**". After deleting this key, continue down the listing and locate the "**ODBC**" key.



Open the ODBC key and expand the ODBC.INI key. Locate any keys that relate to an HRD Logbook, whether the default or one you created, and delete each key. Once these registry keys have been deleted, close the Registry Editor and return to your desktop.

Remove Data Source

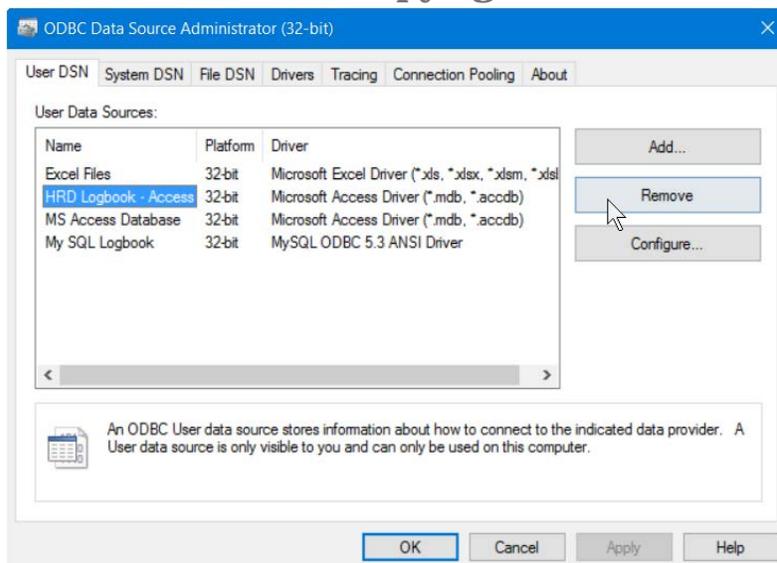
Now we need to remove the ODBC Data Source for each HRD logbook databases. At this point, you will have to know if your Windows system is a 32 or a 64-Bit system. If you are not sure which you have, open your Control Panel and select the "System" option. Carefully read the screen to see if you have a 32 or a 64-bit system Windows system installed.

Once you know which Windows system you have, press and hold the Windows key and press the "R" on your keyboard or type "RUN" (without the quotes) in the search window, to bring up the RUN window. Below are TWO options. Select the proper option and type the command in the RUN window.

For **Windows 32-bit**, enter the following command in the RUN window:
C:\Windows\System32\odbcad32.exe and then press the OK button

For **Windows 64-bit**, enter the following command in the RUN window:
C:\Windows\SysWOW64\odbcad32.exe and press the OK button.

When the ODBC Data Source dialog box opens, select each logbook database names. Left click on the database name to highlight it then click the "**Remove**" button as indicated below. On MOST systems, only the **Excel Files** and the **MS Access Database** options will be left after deleting all HRD Logbook data sources. When ALL Logbook ODBC Data Source Names have been deleted, click the "OK" button to close the dialog box.



Completing The Uninstall

Back on your desktop, check for any HRD icons that might be remaining. Right-click on any remaining HRD desktop icons and delete them.

You're now ready to reboot your computer. Once the computer has been rebooted, you can then download and install the current HRD release.

You will need to re-activate the software using your current activation key. You will also have to re-configure the com port settings in the Rig Connect Screen, which shouldn't be too much of an inconvenience.

When the Logbook opens for the first time after installation, and prior to attempting to restore your logbook database, click on "TOOLS > Configure > Settings" on the top menu, and make sure the option on the bottom that says "Create Default DB if Missing" is unchecked. If there is a check mark in this option, remove it by clicking on it.

Once you have done this, you can restore the Logbook database from the backup copy you made in the beginning of this process.

Following this process should give you a full, clean installation of the HRD software. It should resolve many of the so-called "bugs" some are seeing in the program.

If you have any further problems, or questions, don't hesitate to contact HRD support for assistance.

Chapter 3

Activating HRD

There are two types of activation involved with the Ham Radio Deluxe software. First is the **Trial Activation**. This activation allows you to install HRD on ONE computer and use the software for a 30 day evaluation period. The software is not crippled in any way and the trial gives you the opportunity to check out all the features of the software.

The second type of activation comes AFTER the trial period, if you choose to keep the software. This activation requires you to purchase an Activation Key, which when installed in the Trial version removes the 30-day limitation and activates your perpetual license for the software.

Since the software is registered to the owner's callsign, and NOT a specific computer, the Activation of the HRD software also creates the "HOME" profile for the registered callsign in the "My Station" page in the Logbook. The "My Station" profile is a GLOBAL profile file that provides station information used by all modules in the HRD suite of programs. Creating your "My Station" profile will be discussed in the Logbook manual.

Upon purchasing the HRD software an activation key will be provided. This key serves two purposes. The first is to remove the 30 day trial limitation from the trial version. The second purpose is to track and validate your Software Maintenance and update agreement.

Your initial purchase and activation includes a LIFETIME license to use the HRD software. Once activated, your license for using the software never expires. You are able to use the HRD software for as long as you like. This license also includes lifetime BUG FIXES, so, it's recommended you check our website often and download any new releases to keep your software up to date with any new bug fixes.

Your initial activation includes 1 full year of paid technical support from the HRD Support Staff. During that initial year, if you have any problems with the HRD software, you can contact the support staff either by phone or by entering a support request ticket on our website. The link to enter a support ticket is [HTTP://tickets.hrdsoftwarellc.com](http://tickets.hrdsoftwarellc.com)

After your first year, you will notice the License information in the HRD License Manager will turn "RED" and will indicate your initial license has expired. This does NOT mean the software will stop working. What this DOES mean is you can no longer receive paid support from our staff. It also means that, although you can still download and install each and every new release to benefit from the bug fixes, however, if any new features have been added after the expiration of your license, those new features will be "LOCKED".

If a LOCKED feature is something you would like to use, then you have the option of

purchasing a renewal license. This non-mandatory renewal will again give you one full year of paid technical support plus UNLOCK any new features that have been added to the HRD software. The renewal charge is 1/2 (50%) of the current retail price of the HRD software. NOTE: There is ONE exception to the above and that is the Country and Unique Callsign Databases. The information contained in these databases is constantly updated from various outside sources. We have to keep check on each and every one of these sources and manually update the Country and UCSDB so that when outdated, you can either automatically update it in HRD Logbook, or do a manual update. For this reason, the Country and UCSDB is included in the annual renewal, if you want to update it as changes are made. This is the only feature that EXPIRES once a year with the Support Agreement.

Trial Activation

Activating the 30-day trial version of HRD allows the operator to evaluate the software to ensure it will do everything he/she wants it to do prior to actually purchasing the software. We feel that a 30-day trial is very sufficient time for evaluating the HRD software. That is why we have adopted the Trial Policy we currently enforce.

During the trial period, the operator has full access to the software. Nothing is crippled. All features function as designed with the possible exception of the HRD Remote Server, due to the fact the HRD trial version can only be installed and activated on one computer. During the trial period, you also have access to full support from our support staff, should you run into any technical problems that you just can't resolve, so, during the trial, please, don't hesitate to contact HRD support should you need assistance.

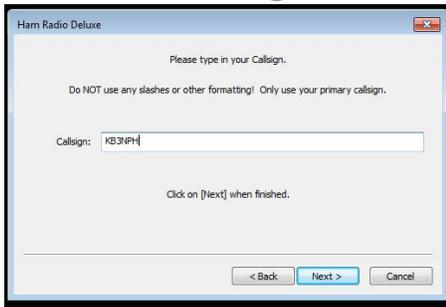
Beginning Your Trial

Upon starting HRD for the first time, you will see the following screens. Follow the instructions on the screen to activate your Trial version. An activation key is NOT required for the trial version.



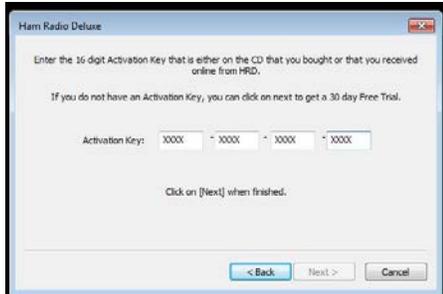
<-- **Welcome Screen**

If you are installing HRD's trial version, you will first see the W
Click on the [Next] button to continue.

**<-- Callsign**

If you are a licensed amateur radio operator, your callsign must be entered in this location. Click [Next]

NOTE: If you are an SWL or do not currently have your ham radio license, you can use any group of 3 or 4 letters and a single number from 0 to 9, such as ABC1, TABE4, GABE2 or something similar. Just make sure the group you choose DOES NOT in any way resemble any amateur radio callsign.

**<-- Activation Key**

Since we are activating the Trial version of HRD, you will NOT have an Activation Key, so, do not enter anything in this screen. **Just click the [Next] button to continue with the activation of the Trial version.**

After completing the above steps, the HRD License Manager will appear indicating you have activated the trial version and will give you the expiration date for the 30-day trial.

At this point, the HRD software has contacted our License Server and has recorded your callsign, activation date, expiration date of the trial. This information is used by the HRD Support Team. In the event you need support during the trial period, it ensures the technician can bring up your callsign and verify that you are a trial user and are eligible to receive the full support of our staff.

Now that your trial version of HRD has been activated, click on the "CONTINUE" button on the bottom of the License Manager to proceed with the configuration of Ham Radio Deluxe

Full Activation

Once you have completed the 30-day trial, or at any time during the trial, if you are completely satisfied the software will do everything you expect it to do, you have the option to purchase an activation key which will remove the 30-day limitation on the version of HRD you have used for the trial. There is no need to install this version and you will NOT lose any of your settings or logbook data when you update to the purchased version.

You can purchase your activation key in one of two ways. You can call our sales department, during normal business hours, and they will be more than happy to take your order. You could also make the purchase by using the secure website. Just go to the HRD LLC website (www.hrdsoftwarellc.com), and select the "Purchase" option from the top menu. You will be directed to the page where you can select the option to purchase the FULL version or RENEW your previously purchased activation key. You could also just enter the following link directly into your favorite web browser, which will take you directly to the secured link to complete

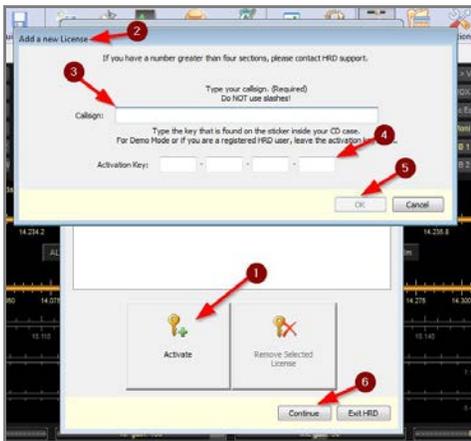
your purchase.

[HTTP://www.hrdsoftwarellc.com/cgi-bin/store/commerce.cgi?pid=1](http://www.hrdsoftwarellc.com/cgi-bin/store/commerce.cgi?pid=1)

Once you have made your purchase, you will receive an activation key, which consists of 4 groups of 4 alpha/numeric characters. All characters in the key are UPPER CASE, and there are no "0" (zeros) or "1" (numeral one) in the keys. Your activation key will be sent to you via e-mail, and you can copy and paste the key from the e-mail into the License Manager.

Entering Your Activation Key

Once you have your Activation Key, proceed by starting HRD. On the main menu of any of the HRD program modules, click the "HELP" option then select the "HRD License Manager" from the dropdown menu. When the License Manager opens, proceed as instructed below.



1. Click on the large "Activate" button
2. The "Add a new License" window will open
3. Enter your station callsign
4. Enter or copy and paste the activation key into the spaces indicated
5. Click "OK" to save your registration data. At this point the data entry window will close your new key should be indicated in the License Manager.

Once you have been returned to the License manager, you will probably have TWO keys shown in the License Manager window. If this is the case, click on the "old" key to highlight it, and click the large "Remove Selected License" button. This will remove the trial key or expired key from the License Manager. This is a necessary step to ensure your system recognizes the new key ONLY. When you have removed any old keys, click the "Continue (6)" button to proceed with the HRD software.

Adding Additional Keys

Many hams hold more than one active amateur radio license, and would like to be able to log calls using that callsign in the HRD Logbook. Also, many households have more than one ham that uses the equipment in the shack.

Each person using the HRD software must have his or her own activation key, likewise, an activation key is required for EACH callsign used in Ham Radio Deluxe. If you have more than one callsign or there are other members living in your household who are hams and would like to use the HRD software, HRD LLC will provide the additional keys, to the registered owner of HRD, at no additional charge. More information on this can be found elsewhere in this manual, or you can contact sales@hrdsoftwarellc.com if you have any further questions.

Additional keys are added to the HRD software by basically following the same instructions used for entering your activation key when you first registered the software. On the main HRD screen, or in any of the HRD Modules, click on "Help > HRD License Manager" to bring up the License Manager screen. On the License manager screen, click the large "ACTIVATE" button and enter the callsign and activation key for the call being added. Once you click "OK" a second license key will appear in the License Manager and a new "profile" tab, for that call, will be created in the Logbook "My Station" dialog.

Expired Activation Keys!

As mentioned earlier in the documentation, your Activation Key actually provides TWO functions. The FIRST function being to unlock the 30-day limitation in the Trial version, and provides a lifetime license to use the Ham Radio Deluxe software for as long as you like.

The SECOND function of the Activation Key allows us to track the Software Support and Maintenance Agreement that you agreed to when purchasing the your Activation Key. This agreement has a **non-mandatory** annual renewal fee of 1/2 (50%) of the existing retail price of Ham Radio Deluxe.

As mentioned, this renewal fee is not mandatory, however, purchasing an annual renewal for Software Support and Maintenance insures your Ham Radio Deluxe software will be kept up to date with all new features added, helps pay development costs, provides salaries for support and sales staff, pays for maintaining our website and other day to day expenses of running a company. By renewing this agreement you are supporting HRD Software LLC so we can provide continued and better support for YOU, our valued customers.

After the first year, your HRD License Manager will notify you that your activation key has expired. Again, this does NOT mean your current version of HRD is going to stop working. What it does mean is, although you can still download ALL future releases of HRD for the benefit of "bug fixes", any new features added after the expiration date of your license will be locked. It also means you can no longer get support from the HRD technical support staff. Support is still available, however, through our peer-to-peer forums on the HRD website, from our YouTube channel and from many Yahoo User Groups who can provide support for those with questions or need information about specific radios or hardware used with Ham Radio Deluxe.

Once you are notified that your Activation Key has expired, you will see, in the License Manager in the software, your Key information is now shown in "RED". If you choose to renew your Software and Support agreement, just go to the HRD website, select the "Purchase" option from the top main menu and select the option to "Renew" or "Update" the Activation Key.

Just like when you first purchased the HRD software, you will be sent a new Activation Key with a new expiration date. You proceed to enter the new key by following the instructions for "Adding Additional Keys". Once the key is entered and validated, you will see BOTH keys displayed in the License Manager. At this time, you need to left-click on the "expired" key to

highlight it. You then click on the "Remove Selected Key" button to remove this key from your system.

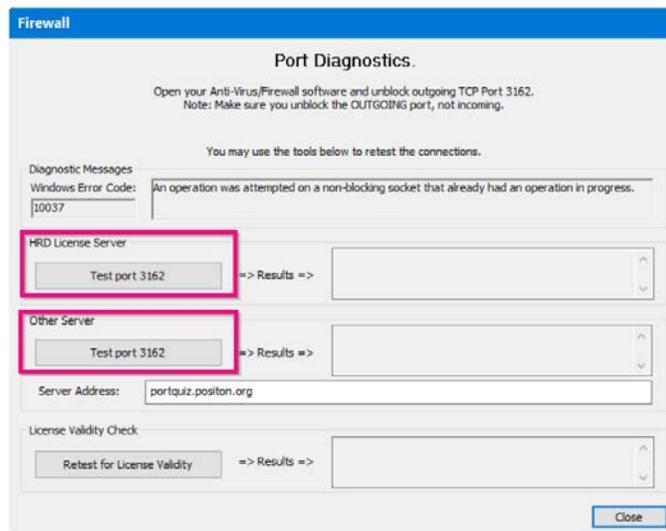
You now have access to paid support and the ability to use any new features for another year.

NOTICE: HRD Software LLC reserves the right to change or amend this policy at any time without prior notice.

Troubleshooting A Failed Activation

In the event your new License Key does not appear in the License Manager, the following instructions may assist you in activating the software.

The most common cause of a failed activation is port 3162 to the internet is being blocked either by your firewall or your anti-virus software. To test to see if port 3162 is being blocked, in the License Manager, double click on the "Globe" icon in the upper right corner of the screen. This will open the Port Diagnostics window as shown below.



In this diagnostics window, click on the button under "HRD License Server" that says "Test Port 3162" Watch the results in the box to the right of that button and see if it returns a "failure" to connect to the HRD License Server. If you receive a failure notice here, this indicates that something on your computer is blocking the port or, in some circumstances, your Internet Service Provider may have the port blocked for some reason.

At this point, you can try disabling any Anti-Virus and Firewall programs you may have running and re-try the activation process. You should also check to ensure you do not have a firewall in your router that could be blocking the port.

If disabling the firewalls and anti-virus fail to allow you to activate HRD, you might also try starting your computer in "**Safe Mode with Networking**" and attempt to active HRD from within Safe Mode. If this fails, contact your Internet Service Provider's support and see if possibly they have port 3162 blocked for some reason. Once you have the software activated,

restart the computer in normal Windows mode and proceed with your setup.

If all of the above fail to allow you to activate HRD, please contact HRD Support for further assistance.

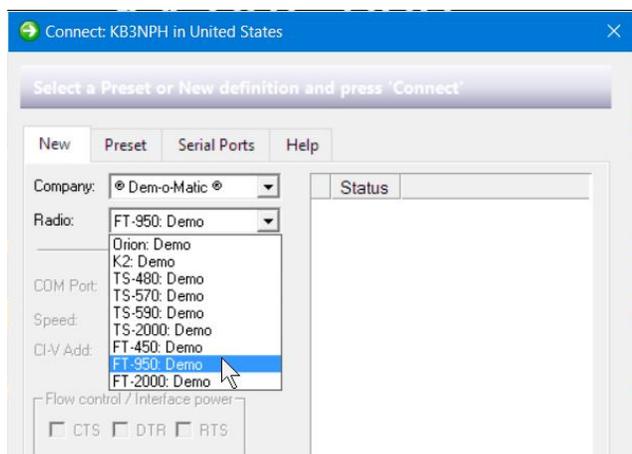
Chapter 4

Testing The HRD Software

We now have Ham Radio Deluxe installed and our radio ready to be connected, let's test the HRD software to make sure it is installed and operating properly. This is done using one of the built-in Dem-o-matic radios.

The Dem-o-matic radio is ideal for testing the software installation or demonstrating Ham Radio Deluxe without having to have an actual radio connected. Running HRD with one of the Dem-o-matic radios before actually connecting your radio equipment, you get the opportunity to make sure your installation went well and the HRD software is loading and operating as it should.

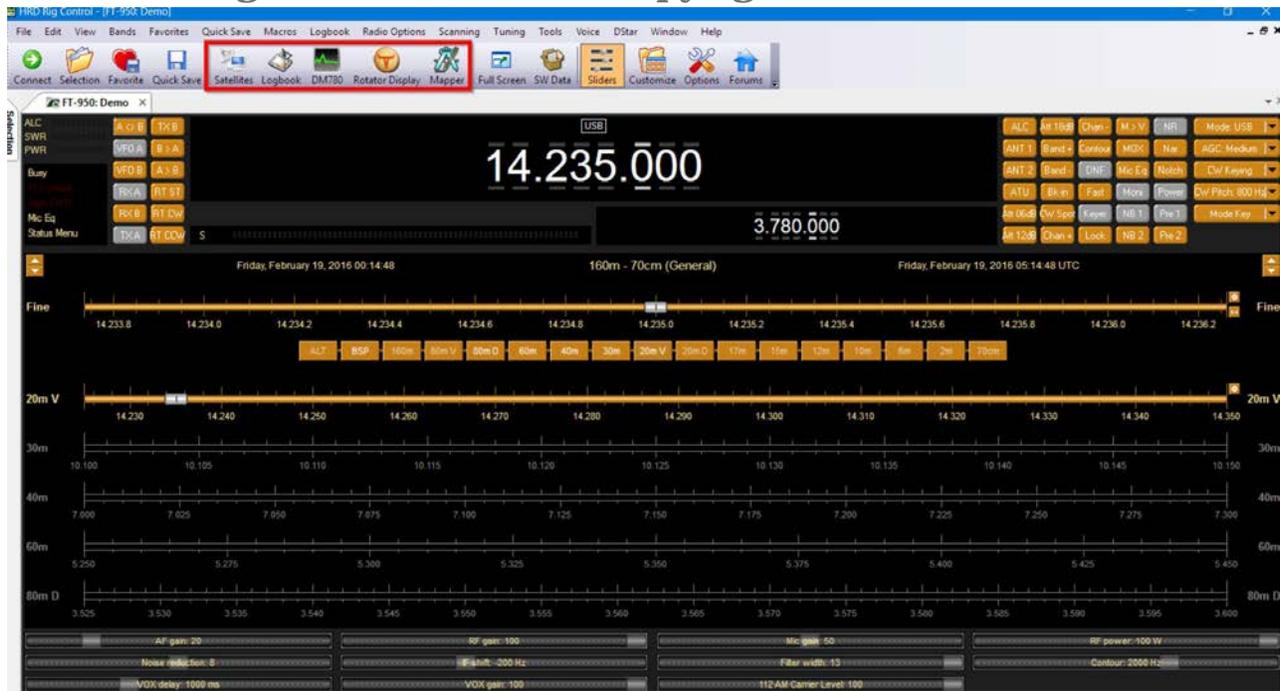
Run the Ham Radio Deluxe software by double-left clicking on the HRD Desktop icon. Once the splash screen has closed you see the Connect window. If you do not have the correct connection cable for your particular radio, select one of the **Dem-o-matic** radios so that you can open Ham Radio Deluxe.



<--**Dem-o-matic**

The Dem-o-matic radios do not need cables – simply select **Dem-o-matic** in the Company drop down, select an option in the Radio drop down, and then press **Connect**. This will then open the main Rig Control screen giving you access to the simulated HF radio chosen from the Radio dropdown menu in the configuration window.

Once you have selected the Dem-o-Matic radio as shown above, click on the "Connect" button to actually connect to the radio and bring up the Rig Control screen.



From the Rig Control screen, you can now start and test the other four modules of HRD by clicking on the individual icons shown in the "red box" on the Icon Toolbar.

The Dem-o-matic radio feature in HRD can also be valuable as a diagnostic tool. If you are having issues with HRD, you can run one of the Dem-o-matic radios to check if the issue you are having is related directly to the software or if it is between the interface and your own radio. If you run in the Dem-o-matic mode and the issue you are seeing disappears, you know the software is functioning as it should and the problem you are seeing is either related to the interface your using, such as the Com port drivers, cables or other hardware connected between the computer and the radio, or, possibly an issue with the radio itself.

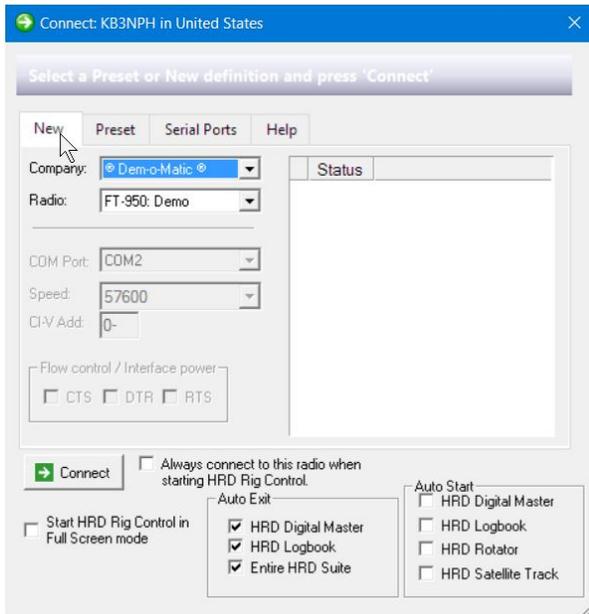
Rig Connect Screen

Once HRD has been activated the next screen you will see is the Rig Connection screen. Here is where you configure Ham Radio Deluxe to connect to the particular radio you are using.

The Rig Connect screen has 4 tabs across the top. Each tab contains specific information which helps HRD connect to your radio.

You will also notice other check boxes for additional options on the lower portion of the Rig Connect screen. When setting up HRD for the FIRST time, it is recommended you DO NOT check any of these boxes. The first and most important operation at this point is to connect to the radio and start the main HRD software. We will explain how to set these other options once we get the radio connected and the HRD Rig Control module running.

New Tab



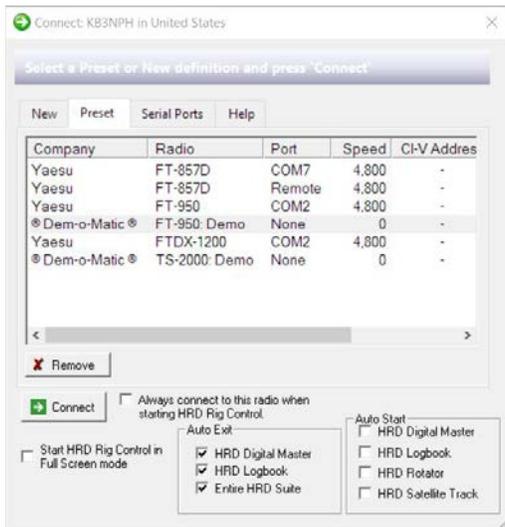
<--The New Tab

The "New" tab is used to configure HRD to connect to a new radio being added to the system. Here is where you select the radio Manufacturer and radio model. We also configure the Com port and port speed used by the Rig Control software in HRD to connect to the CAT firmware in the radio.

Other items that are configured on this tab are the CI-V address used by Icom radios and the Flow Control settings (CTS, DTR and RTS lines).

Note: Most Yaesu and Icom radios require only the RTS item to be checked while Kenwood requires the RTS and CTS to be checked.

Preset Tab



<--The Preset Tab

Upon first starting the HRD software, the "Preset" tab is empty. Once you have successfully configured and connected to your radio from the "New" tab, an entry will automatically be added to this tab with the information about your connection. This serves TWO purposes. First, it gives you a record of the configuration used to connect to your radio and the second is, if you have more than ONE radio connected to your computer and HRD, this is where you can select which radio or radios you want to connect during an operating session.

Once you have your radio or radios configured and connected to HRD we HIGHLY RECOMMEND you take a screenshot of this screen and keep it in a safe place. This will come in handy if for some reason you need to re-configure a radio connection for any reason you

have the actual settings used, so there's no guessing or searching for the settings needed.

When you have a radio or radios configured in the "Preset" tab, to start that particular Rig Control, just left-click on the selected radio and click the "Connect" button.

If you have a radio configured on the "PreSet Tab", which you no longer own or have connected to Ham Radio Deluxe, you can easily remove it from the Presets by clicking on the setup line in the display window, to highlight the unwanted configuration, and click on the "X Remove" located on the left just below the slider near the left center of the dialog box.

Serial Ports Tab



<--Serial Ports Tab

This tab displays the Com ports available on your computer. It can come in handy as a quick reference when trying to find what port your radio is connected to.

Just below the main window, there are two options which can be selected. One is to "Show ALL ports" and the other is "Only ports connected to PC".

If you have the "Show ALL ports" ticked, if you have ever had any device connected to this computer that required the use of a Com port, and a device driver was installed, it will show up in this list. If you have ports showing in this list that are no longer used or needed, it's recommended you uninstall the ports and drivers for the particular ports.

If you tick the "Only ports connected to PC" only the currently active ports are shown. These are ports that have devices connected to them, such as your printers, radios, or any other device that requires connection via a Com or printer port.

Help Tab

There is a 4th tab on the connection screen that, at the time this document was written, is not currently populated or used.

More Features

Along the bottom of the Rig Connect screen are a series of check boxes. These are used to allow HRD to start with the options you have selected.



1. Connect Button - We all know what this does. Clicking this button starts the HRD software.

The check boxes:

- Always connect to this radio when starting HRD Rig Control - If you have more than one radio configured to use with HRD, this allows you to select one specific radio you may want to start each time you start the HRD software. Just highlight the radio in the Preset tab, and check this box to start that radio when you start HRD.
- Start HRD Rig Control in Full Screen mode - Checking this box allows the HRD Rig Control to start in full screen, which means there are no menus and no toolbars displayed. This option isn't recommended for new users until you become familiar with the operation of HRD. If you check this by mistake and the screen does open in full screen mode, pressing your "F4" key, on the keyboard will return the display to the normal mode with menus and toolbars.
- Auto Exit - At the time this document was written, this option was disabled.
- Auto Start - Since some people use specific modules in HRD during their sessions, here you can select which modules you want HRD to automatically start when starting the main program from the desktop icon.

Connecting Your Radio

Before we start this next section, PLEASE DO SOME HOMEWORK!!!

VERY IMPORTANT!! - If your radio has the capability to connect to the computer via a USB connection, it will require a driver to create the virtual COM Port used to connect. BEFORE you connect the USB cable from the radio to the computer, you MUST FIRST download and install the driver. This is because if you connect the cable first, Windows will search the internet and install a "Generic" driver. These drivers may work, but you may also see problems. The reason, radio manufacturers have, in many cases, modified the drivers to suit their needs. Although the generic driver may work, it does not contain the tweaks the radio manufacturer applied for the driver to function the way THEY want it to. So, if the manufacturer of your radio provides a driver on their website, it's very important you download and install the specific driver suggested or posted on your radio's manufacturer's website and NOT allow Windows to install the generic driver.

Your radio owner's manual and the Ham Radio Deluxe manual are your BEST FRIENDS when it comes to configuring the Rig Connection. If you don't have these manuals, you can usually download your radio's operating manual from the manufacturer's website in PDF format. You can also download the HRD V6.x manual from the download page at www.hrdsoftwarellc.com.

Many of today's radios have extensive menu systems built in. During the connection process and at other times while configuring the HRD software, you may have to refer to locations in these menus to set options or make changes that effect the connectivity and operation of your radio with the HRD software. It is VERY IMPORTANT that you KNOW and UNDERSTAND how to operate the menu systems in your radio. There may be a time when you have to contact HRD Technical Support for assistance with some issue you are having and the technician may ask you to check certain menu options in the radio. Knowing how to do this is YOUR responsibility and not that of the HRD technician.

Read your radio's manual to find out exactly how it is supposed to be connected to a computer for CAT control. Some radios require special drivers to be loaded in the computer to access certain model radios. These drivers can usually be downloaded from the manufacturers website. All this information is in your radios user manual or from the radio's manufacturer tech support.

Please refer to ["Radio Interfacing" in the Introduction section](#). to review the requirements for Ham Radio Deluxe interfacing.

To connect your radio you will need to connect the necessary cables and install drives if needed. You must also do some configuring within Ham Radio Deluxe. This is usually a one time exercise.

Once you have all your cables in place it's time to turn on your radio, boot up your computer

and start Ham Radio Deluxe. The next screen you should see is the radio connection setup screen. This is where you select your radio and set some parameters to allow the Ham Radio Deluxe Rig Control software to connect to your radio.

Connecting Flex and SDR Radios

SDR radios present an entirely different situation. These radios require special SDR software such as PowerSDR, SmartSDR, or other SDR software as PART of the radio's operating system. They also require some virtual Com port and virtual Audio Cable software in order to connect with Ham Radio Deluxe and your SDR software. The Flex SmartSDR software package contains everything you need as far as the virtual Com port drivers and virtual Audio cable software. If your SDR radio requires some other software, your radio manufacturer or the dealer where you purchased your SDR radio should be able to help you with these items and assist you in getting your SDR up and running.

Once you have your SDR radio up and running, with all the required virtual Com port drivers and Audio Cable software loaded and connected, if you have any issues connecting with the HRD software, then, and ONLY then, the HRD Tech Support staff can assist you.

Let's Get Connected

The following section will guide you through connecting your own radio equipment to HRD. These instructions are rather generic, but they apply to ALL radios supported by the HRD software. In our examples we will be connecting to a Yaesu FT-950.

Note To Icom Users: All Icom radios and a few others that use the CI-V protocol for sending commands to and from the radios, have a special setting known as the CI-V Address. Each message (frame) sent to a rig or received from a rig contains two addresses. The destination (to-address) and the sender (from-address). Each model has it's own default CI-V address, which can be changed by the user. If two or more rigs of the same model are used on the bus (or level converter), you need to change the addresses of the rigs, each individual rig must have it's own, distinct address. Valid addresses as defined in the Icom CI-V Reference Manual (3rd edition) range from \$01 to \$7F.

There are some reserved addresses with special meaning:

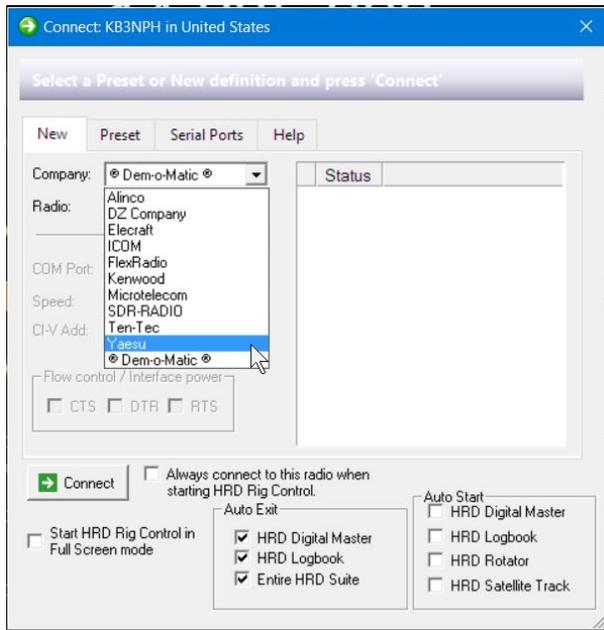
- **\$00:** Used as to-address, means all connected rigs.
Any rig with CI-V Transceive set to on should react to commands addressed to \$00.
Any rig with CI-V Transceive set to on addresses it's messages to \$00 when tuning the dial, changing mode etc.
- **\$E0:** Reserved for the controller, i.e. the computer. But to my knowledge no rig really cares where the messages come from, so any address could be used as from-address.
- **\$FA ... \$FF:** Reserved for protocol functions such as frame delimiters, Ok, Not-Good, collision signals, empty memory etc. These values must not be used as addresses.

Another setting in the Icom radios is the **CI-V Transceive**. Unless you are using other Icom

hardware that requires it, such as the PW-1, HRD recommends turning the **CI-V Transceiver to OFF** in the radio's menu system.

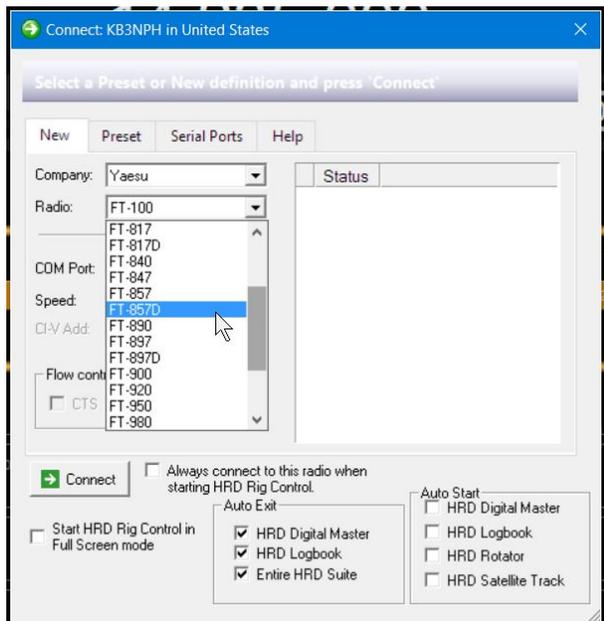
Kenwood: make sure Packet communication mode is switched OFF (if supported). Most Kenwood radios require CTS and RTS to be ON for flow control.

These options are set from within the radio's menus. You can find the menu number and directions on how to change these setting in your radio's owners manual.



<--**Company**

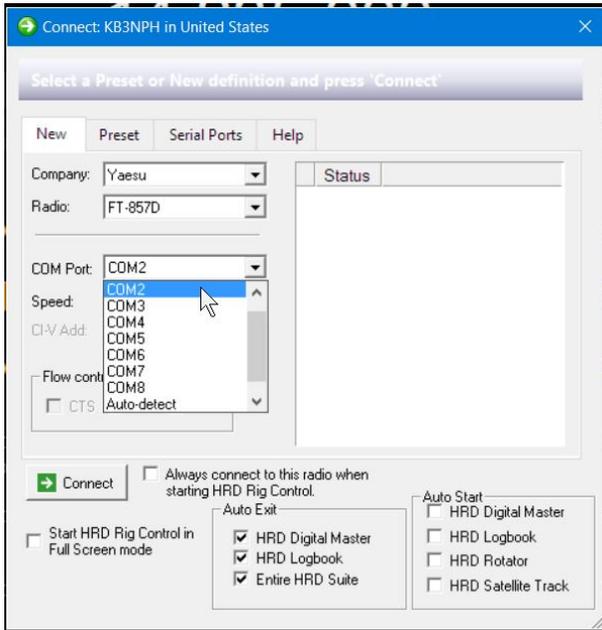
In the Rig Connection screen at the left, select the "Company" dropdown menu and indicate the manufacturer of your radio in this field. In this instance, we are showing "Yaesu" as the manufacturer. Once you have selected the manufacturer, move to the "Radio" dropdown.



<--**Radio**

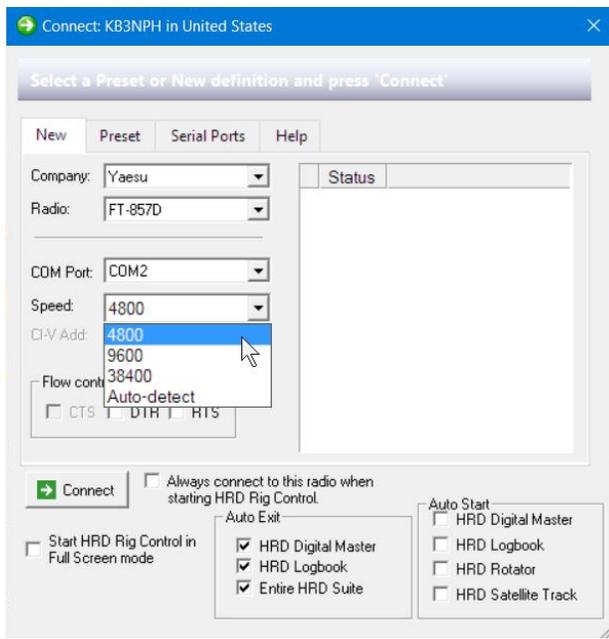
Here we select the Model of the radio we're connecting. This selection also selects the CAT command set used in HRD to control the radio you select.

<--COM Port



Select the Com port the CAT control interface uses to communicate with the radio's command set. You can select this based on observations in the Device Manager. If you are unable to determine what Com port is used, you can use the "Auto-Detect" function at the bottom of the Com port list. If using the Auto-Detect option, once you begin the connection process you will see, in the "Status" window how HRD tests each port connected to the computer to see if it finds your radio.

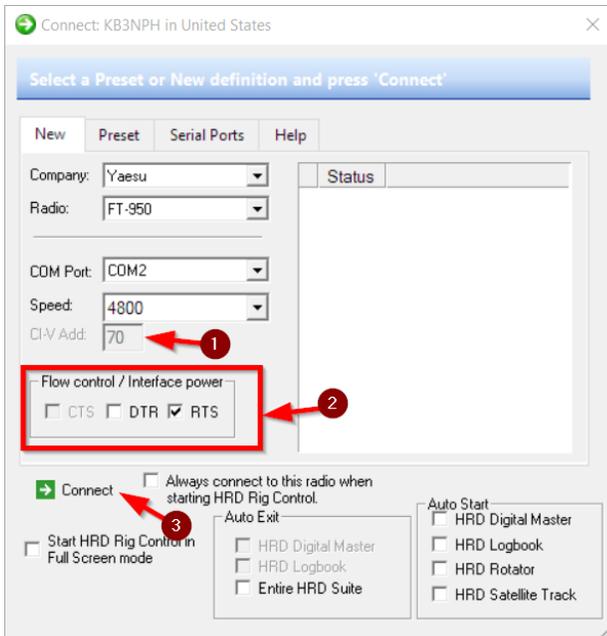
<--Speed



The Com port "Speed" is selected based on a setting in the radio's menu system. Usually checking the radio's manual will provide a list of baud rates available for use on the Com port. The speed set in the HRD Connect dialog MUST MATCH the speed set for the Com port baud rate in the radio's internal menu.

Most radios provide a DEFAULT setting, for Yaesu it is normally 4800. You should always try the connection using the default speed first. If you have difficulties maintaining a connection then try different speeds.

If you DON'T know the default speed, here again, there is an "Auto-Detect" option which can be used. HRD will check each port at each speed the radio is capable of handling until it finds the correct one for connection.



<--**Other Settings**

CI-V Address

ICOM only: the address assigned to the radio, consult the radio's documentation for the default address. This can also be configured via the radio's configuration menu.

CTS

Enables the CTS flow control, required for Kenwood radios.

DTR

Enables the DTR line when the COM Port is opened and leaves it on, usually to provide power for an interface cable. For Yaesu CT-62 and ICOM CT-17 interfaces this can be left unchecked (off).

RTS

Enables the RTS line when the COM Port is opened and leaves it on, usually to provide power for an interface cable. For Yaesu CT-62 and ICOM CT-17 inter- faces this can be left unchecked (off). Next, put a check in the boxes for DTR and RTS. Some radios don't require both of these settings checked so they can be unchecked if there is a failure to connect to the radio.

Caution: If you have entered a connection "speed" or selected "Auto-Detect" in the speed field and then check or uncheck one of the CTS, DTR or RTS boxes, the "speed" will revert to the fastest speed available, so, you want to double check this prior to hitting the "connect" button to make sure the entry in the "speed" field is correct.

Once you have all the settings in the Rig Connection screen selected, click on the "Connect" (3) button.

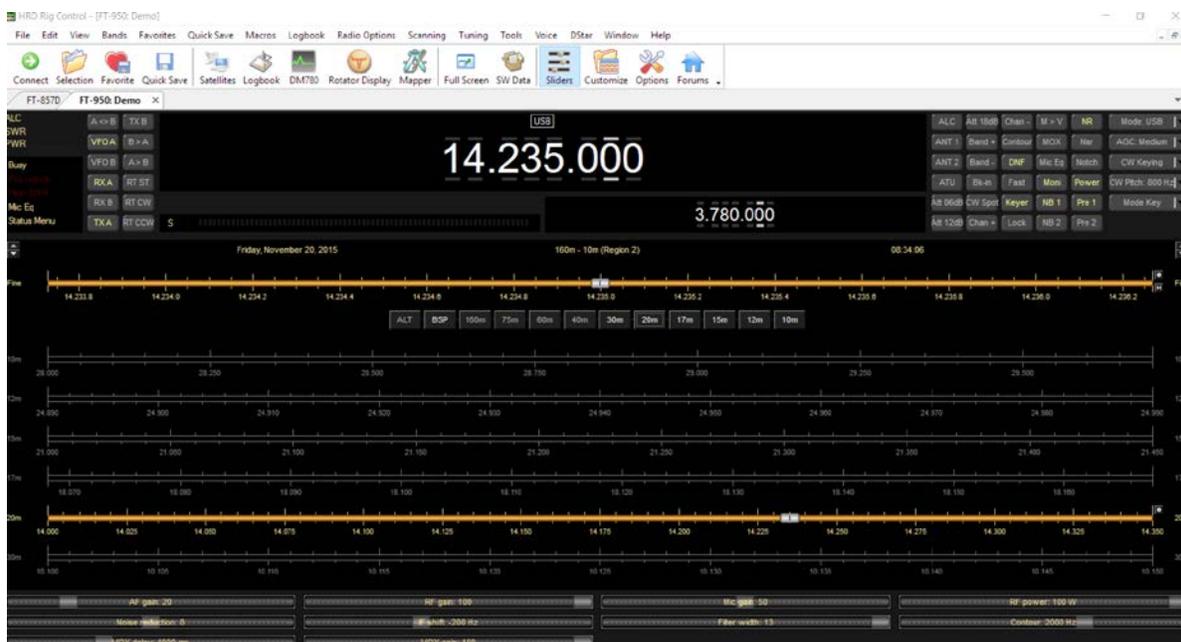
If, during the setup of the Rig Connect screen, you were not sure of the COM Port or Speed settings, the "Auto-Detect" option in those Dropdowns could have been selected. If this was done, when you click the "connect" button, you will see activity going on in the "Status" window. HRD is checking each COM Port at each speed. Once it finds a COM Port and speed that matches that of your radio, it will immediately connect and the Rig Control Screen will open.

If you know the correct COM port and port Speed, and have entered them correctly in the fields, the HRD Rig Control screen will appear almost immediately when you click the "connect" button.

Chapter 5

The Rig Control Screen

Once you have successfully connected to your radio, the first screen that will appear is the Rig Control Screen. This is a generic screen and is basically the same for all radios regardless of the manufacturer or model. The only difference between radios are the functions displayed on the screen. The buttons and functions on the screen are dependent on the CAT firmware in each model radio. Different radios will display different functions in the Rig Control screen. The screen used in this section is that seen when connected to an Yaesu FT-950. This display is typical of what most radios display, although some show more control buttons and sliders and some show less, but the main layout is the same.

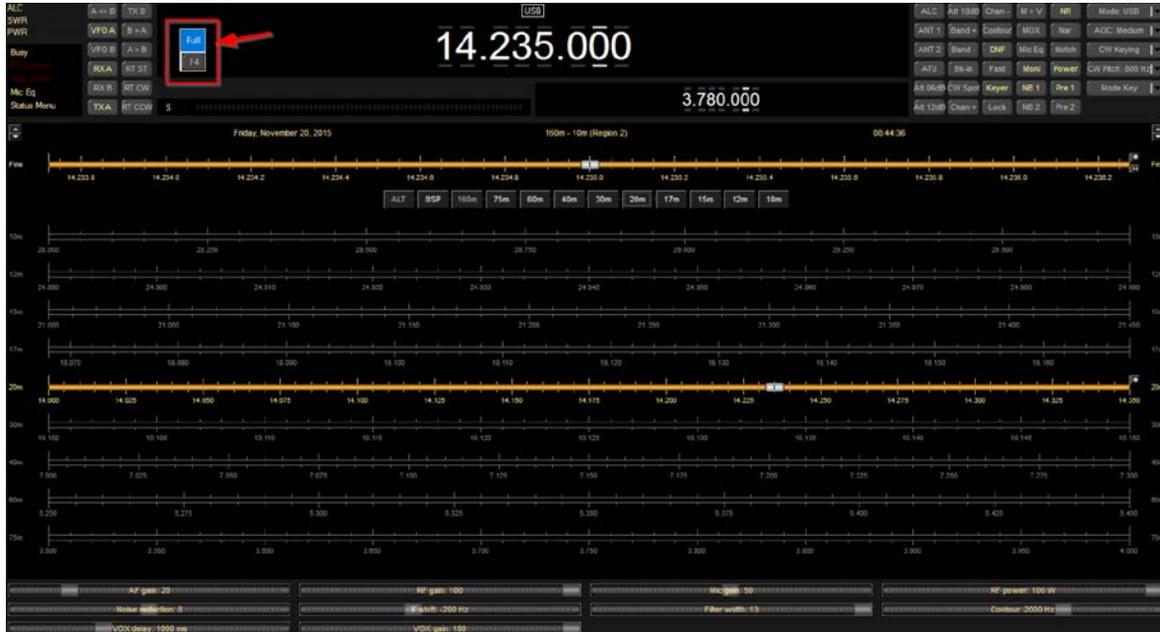


There are actually TWO views available for the Rig Control screen. The first view being as it appears above showing the Main Menu options and the Toolbar Icons. The alternate view is shown in the next image and is considered the "**FULL SCREEN**" view.

By pressing the "F4" key, on your keyboard, you can toggle between the Normal and the Full Screen view.

In the Full Screen view below, the Main Menu and the Icon Toolbar are not visible. You will notice the icon indicated by the red box and arrow on the screen indicates you are in Full Screen mode and reminds you to press the "F4" key to return to the alternate view. This icon, if it appears on top of any major controls or buttons, can be moved out of the way by left-clicking on the icon, holding the mouse button down while sliding the icon to a location on the

screen where it no longer is covering any controls or buttons.



If you have inadvertently checked the "Start HRD in the Full screen mode" in the Rig Connect screen, you can change that from here very simply press the "F4" key on your keyboard to switch to the normal mode. Once in the normal mode, click the Connect icon on the left of the main toolbar (green icon with white arrow in it) to open the Rig Connect screen, and uncheck the "Start HRD in Full Screen Mode" check box and close that screen. Next time HRD starts it will start in the normal view.

Rig Control Main Menu

The Rig Control Main Menu is the "TEXT" menu located at the very top of the NORMAL RC Display. Below are a list of the options for each of the menu headings. We will discuss these options as we go through the manual.

| File | Edit | View | Bands | Favorites |
|----------------|-----------|-------------|--------------|-------------|
| Connect Ctrl+B | Undo | Main | Manager | Add Ctrl+A |
| Disconnect | Ctrl+Z | Edit | Ctrl+B | Manage |
| Print Setup | Redo | Program | Band Up Page | Ctrl+O |
| Reset | Ctrl+Y | Various | Up | Show |
| Restart | Copy Freq | Main Tabs | Band Down | Markers |
| Exit | Ctrl+F | Toolbar | Page Dn | Marker Size |
| | Copy Mode | Text | Out Of Band | Display |
| | Ctrl+M | Status Bar | Warning | |
| | | Full Screen | Display | |
| | | F4 | Bandspread: | |
| | | Advanced | 25kHz | |
| | | Customize | Bandspread: | |
| | | > | 50kHz | |
| | | Color | Bandspread: | |
| | | Schemes | 100kHz | |
| | | Layout Size | Bandspread: | |

| | | | | |
|--|---|---|----------------------|--|
| | | > Advanced Options F3 Next Slider Layout F5 Selection Window F10 Slider Controls F6 | 250kHz | |
| Quick Save | Macros | Logbook | Radio Options | Scanning |
| Add Ctrl+Q Erase Erase All Next Ctrl+F5 Previous Ctrl+F6 Show Markers Marker Size > Display | Macro Manager Snapshot F9 Display CAT Command Manager Display | Display | Options | --> > <-- > <<-> > Scan Range Scan This Band Scan Frequencies |
| Tuning | Tools | Voice | DStar | Windows |
| Enter Freq <ENTER> Tuning Hints Fixed Steps Auto-Center Mouse Wheel Show Fine II Synchronisation Fine I-1.0 KHz Fine I-2.5 KHz Fine I-5 KHz Fine I-10 KHz Fine I-25 KHz Fine I-50 KHz Fine I-100 KHz Fine I-200 KHz Fine I-1.0 KHz Fine I-2.5 KHz Fine I-5 KHz Fine I-10 KHz Fine I-25 KHz Fine I-50 KHz Fine I-100 KHz Fine I-200 KHz | Archive Add Desktop Icon Audio Browser Audio Grabber Bandscope (ICOM) Bandscope Browsers > Calendar Command Tester DDE Monitor LDG Elect. ATUs Lock Program Shortwave Database Transverter Tune-Up Programs > Hardware > IP Server Web Page Updates Extended Menus > Memory Management > HRD License Manager Customize Layout | Frequency Shift+F9 Freq + Mode Shift+F10 Mode Shift+F11 SMeter Shift+F12 Speak Tooltips Enable Ctrl+Alt+V | DStar Chat | Cascade Tile Arrange Icons |

| | | | | |
|--|--|--|--|--|
| | Ctrl+F8 HRD Global Settings Program Options F8 | | | |
|--|--|--|--|--|

There is ONE option not shown above. That is the "**HELP**" menu which contains the help options available from the Rig Control screen.

Rig Control Toolbar

Other HRD applications can easily be started from the Rig Control Screen. The selected applications can be manually started from the Normal view of the RC Screen toolbar by clicking on the respective icon. Although each of the HRD modules can be automatically by selecting them from the check box list in the Rig Connect screen, the manual method is usually recommended since the choice of what we start can change from session to session. The HRD applications these icons open are pretty much self-explanatory.



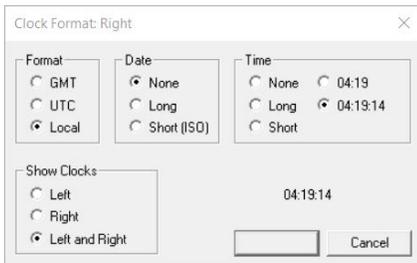
Other icons on the Rig Control Toolbar include:

| | |
|--|--|
| | The "Connect" icon opens the "Rig Connect" screen. This was the first screen that appears when HRD is set up allowing you to configure your radio, port, port speed and other options used on HRD startup. |
| | The "Selection" option opens several other HRD feature options for configuring the way HRD operates. These options will be covered in a separate section of the manual. |
| | The "Favorites" are like the Memory channels in your radio. Here you can store and recall, with just the click of the mouse, your favorite frequencies and label them under bands or names, such as a net name or repeater name. |
| | If your listening to an interesting net on a certain frequency and want to temporarily store the frequency for later recall, you can save it with the Quick Save function. |
| | Toggles full screen mode of the Rig Control Screen |
| | If you have the SWL Database installed in HRD, this option opens the SWL function in Rig Control to allow you to select frequencies from the database and automatically tune your radio to that frequency and mode. |
| | If your radio has sliders that can be configured, this option toggles the display of the sliders on the bottom of the HRD Rig Control Screen. |
| | This option opens the "Customizing" options menu. This utility allows for customizing the HRD Rig Control display screen to your personal liking. |

| | |
|--|--|
|  <p>Options</p> | <p>The "Options" dialog allows configuration of specific options and functions in Rig Control.</p> |
|  <p>Forums</p> | <p>Clicking on this icon opens your default web browser to the HRD Support Forums at www.forums.hrdsoftwarellc.com. Here is where you can receive peer-to-peer support for your HRD software if you opt to not renew your Support and Software Maintenance Agreement after your first year.</p> |

Configuring Time & Date

The time and date can be displayed in two locations on the HRD Rig Control screen. The image below shows the locations. To configure how the date and time is displayed is done by clicking on the text shown in the red boxes and using the check boxes in the pop-up screen.



Clicking on one of the date/time displays indicated in the red boxes in the image above opens the pop-up on the left. If you look at the top of the popup, you will see "**Clock Format: Right**", which indicates I have clicked on the time display on the right on the RC screen. Notice you have the option to display clocks on the Left, Right or Both sides of the display, as we have done above.

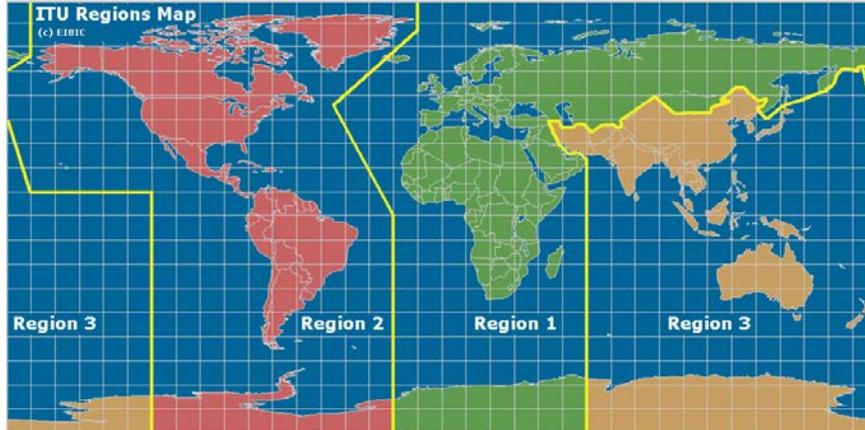
In this configuration I have chosen to show "Local" time only, and have selected to show the time in the HH:MM:SS format. I have chosen NOT to show any date on this side. When I clicked on the date/time display on the left, I chose to display just the date in the "Long" format which is the "Day of the week Month, dd, yyyy."

Setting Proper ITU Zone

The first setting you need to make in the Rig Control screen is to select the proper ITU Region you are located in. Not having the proper region selected could have serious consequences if you have a region selected that allows you to operate on a frequency in a band that is prohibited in your particular region.

The International Amateur Radio Union (IARU) is an organization consisting of over 160 national amateur radio societies around the world.

Created in Paris, France, the International Amateur Radio Union has been the watchdog and spokesman for the world Amateur Radio community since 1925. , last amended in 1989, organizes the Union into **three Regional Organizations that correspond to the three radio regions of the (ITU).**

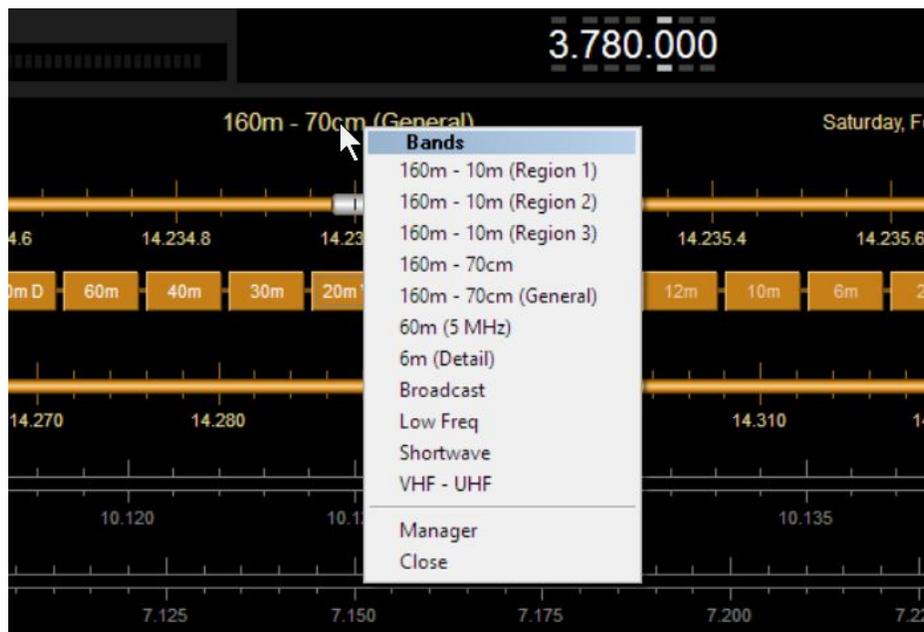


The 3 world ITU regions are shown on the map above.

In each of these regions, the ITU has designated certain frequency ranges and restrictions for each amateur radio band. HRD has pre-configured the frequencies for the HF bands from 10 to 160 meters for each of the 3 ITU Regions. If the wrong region is selected you could possibly be operating on an out of band frequency for your region, or, you may not be able to tune the full range of frequencies available for your region on a particular band.

In the HRD Rig Control screen, on the toolbar, click on "Selections" then select the "BANDS" menu. Make sure you have the proper region selected for where you live.

Another way of selecting the proper region bandplan is by left-clicking on the bandplan indicator on the Rig Control screen and selecting the proper operating region from there.



Connecting Multiple Radios

HRD has the capabilities of connecting to multiple radios at the same time. The number of radios you can connect to are limited by the power of your computer and the number of available ports.

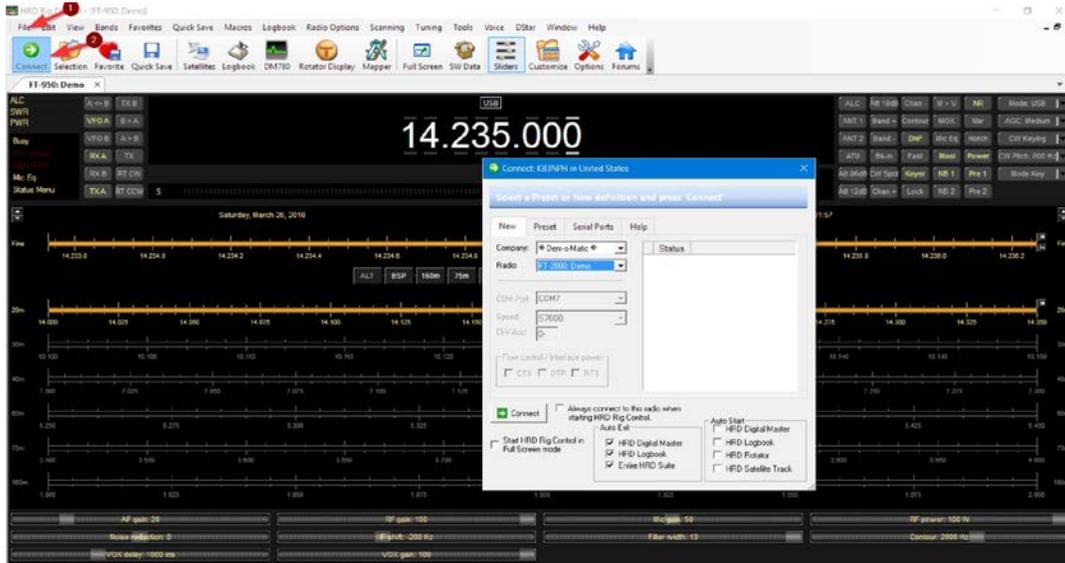
Normally, a laptop has very limited current available on the USB ports, so connecting more than one or maybe two radios to a laptop is about the limit. One way around this, though, is by using a powered USB hub. These hubs have their own external power supply and do not depend on power from the computer's USB buss to operate. You can usually connect three or maybe 4 radios to one of these hubs and operate them successfully using the HRD software.

Connecting multiple radios to HRD is quite simple. Connect your first radio in the normal manor and get it up and running in the Rig Control window as described in the Getting Started chapter of this manual. Once you have your first radio connected and being controlled by HRD, your ready to connect the second radio.

Make sure your second radio is interfaced to the computer, just as you did for the first, using the proper cabling and interfacing method just as you did for your first radio. Once it is connected to the computer, verify the Com Port it is connected to in the Device Manager or you can use the "Auto-Detect" options as explained in the Getting Started chapter.

Now, have the HRD Rig Control screen up and running with the first radio connected and

operating. On the Main Menu, click on "File (#1) and Connect" from the dropdown menu or click the "Connect" icon (#2) on the Toolbar. This opens the Rig Connection screen just like we saw in the Getting Started section.



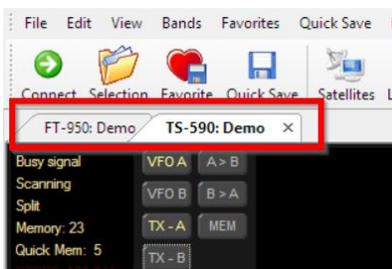
In the image above, we are using the Demomatic radios just for illustration, but the principal of the setup is the same.

Make sure you select the Radio Manufacturer, the Radio Model, select the Com Port, if known or select "Auto-Detect", select the port speed, if known or "Auto-Detect", make sure the proper CI-V address is selected, in the case of Icom radios and make sure the proper Flow Control options are checked (CTS, DTR or RTS) as required for your specific radio.

In the lower part of the Rig Connect screen, make sure you DO NOT have any of the other options selected. You may have the "Auto-Exit" options selected, but **DO NOT HAVE CHECK MARKS IN ANY OTHER OPTIONS IN THE LOWER SECTION OF THE RIG CONNECT WINDOW WHEN PLANNING TO CONNECT MULTIPLE RADIOS!**

Now, click the "Connect" button to connect the second radio to the HRD operating system.

When the second radio connects, you will see both radios as "TABS" on the RC screen as shown below.



Clicking on the respective radio tab will bring that radio into focus in Rig Control and allow you to control all of it's functions. Only ONE radio can be active at any one time from the Rig Control Screen, however, you can switch back and forth between any number of radios you have connected to the HRD system.

Selecting the "WINDOWS" option from the Main Menu will allow you to display multiple radios in different ways on your screen. Selecting the "Tiles" will allow you to display the two radios, each in a split window on your display. Clicking on the header bar for the particular radio will make that radio the one that is ACTIVE in the system. Experimenting with other ways of displaying multiple radios on the screen can produce some interesting results. Don't be afraid to experiment with arranging the tiles in different ways.

Rig Control Tour

The Ham Radio Deluxe program has many, many features. This section attempts to describe the essentials you need to know to get started. Ham Radio Deluxe is designed to be intuitive; Nevertheless even the most experienced user has problems remembering all the available options!

Tuning the Radio

OK! We know you want to find if this software works. Take a few minutes to search the bands to see if you can hear anyone. Please come back and we will help you get more comfortable with the many features and benefits of Ham Radio Deluxe.

Frequency Selection

You can adjust or select a frequency in several different ways. The currently active digit has a bar above and below the digit. Our example above has the active digit, which is 3, for the main band and for the MHz "5" on the sub band. You can change the active digit by either clicking on it or using the left or right arrow keys.

Mouse Wheel

When you rotate the mouse wheel in the frequency display the currently active digit is incremented / decremented depending on the scroll direction. If you rotate while the cursor is over an inactive digit then the digit is activated.

Up/Down Arrows

The up-arrow, down-arrow, - and + keys increment / decrement the active digit.

Mouse-click

Select a digital by clicking over the digit. To increment / decrement click above/below the center of the digit and keep the mouse button pressed.

Direct Entry

You have two ways to do direct entry of a frequency.

Choice A

To enter values just press a numeric key (0-9). The active digital is updated and the next digit to the right is made active.

Choice B

With your cursor placed anywhere with the rig control window press **Enter** to display the Enter Frequency window. Enter the new frequency, and then press **Apply**. If you check Auto-apply then the new frequency is applied every time you make a change. If you check Track this window is updated with changes made to the frequency display – for example when you tune the radio manually.

Fine Tuning

There are two fine tuning ranges – Fine I and Fine II. In the Tuning menu select Show Fine II to show the second range. (If you are only showing the default Fine I, then the title is Fine.) Set the range from the Tuning menu or by clicking the button. To change the mouse wheel step, click the button (also set with the Mouse Wheel pane of Program Options). This allows you to easily make small adjustments in the frequency. To change the frequency either: Drag the marker with the mouse (and keep on dragging – the bar will scroll to the left or right), Rotate the mouse wheel (press Shift to increase the mouse wheel step by a factor of 2, press Ctrl to increase by a factor of 5), Click in the tuning bar or on frequency text such as 14.235.0.

Main Tuning

The differences between a main tuning bar and a fine tuning bar is that the main tuning bar shows the whole band range as defined by the band layout.

Band Selection

The Band Section buttons are shown between the Fine and Main layouts. The buttons currently displayed are: ALT, BSP, Band buttons – 160m, 80,... and 10m.



ALT – only displayed if you have two VFO's displayed (for example Kenwood TS-2000), switches between the main and alternate (second) VFO. When high- lighted you are tuning the second VFO with the tuning dial.

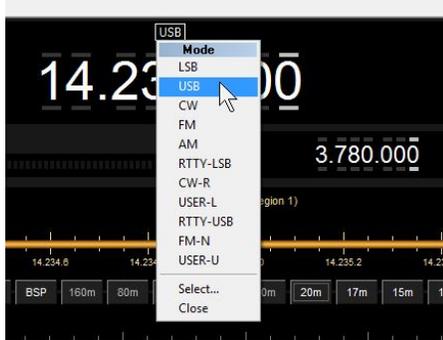
BSP (bandspread) – when you press BSP a new layout is dynamically created. The current band is split into multiple segments, for example the 20m band (14 MHz – 14.350 MHz) can be split into 7 segments,

each of 50 kHz. To restore the previous layout press BSP and select Off. The band buttons select the corresponding band; the last used frequency and mode for the band are restored. They also show which bands are currently displayed. The displayed bands have the text in white while the hidden bands text is displayed in grey.

Display Scroll

If there is not enough room to display all the frequency ranges defined in the current band layout use this button to scroll the frequency ranges (bands) up or down.

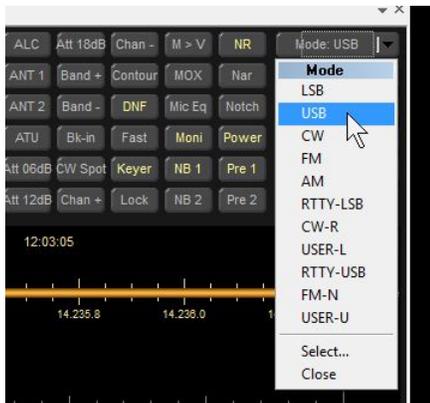
Mode Selection



As you would now expect, there are several ways to select your operating mode. The most obvious method to click on the small mode display above your displayed frequency. A small button just above the frequency display shows the current mode. To select or change the mode click on this button. A drop-down menu will come up where you can choose which operating mode you want to use.



Another method of selecting an operating mode is to press the **Selection** button in the toolbar. Locate and open the **Mode** menu and select your operating mode from this menu.

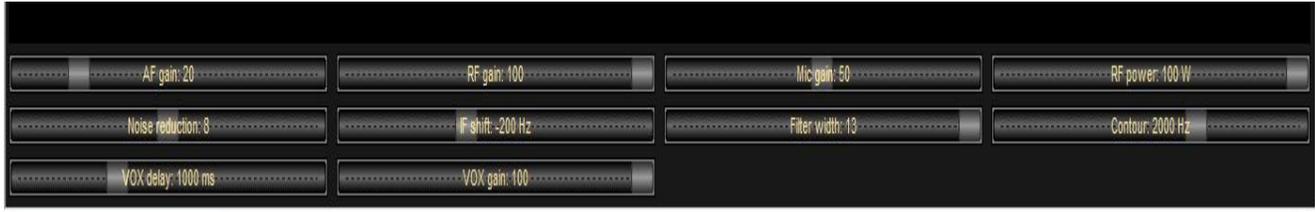


In many rig configurations, there may be a button pre-configured which contains a list of modes. This button is usually located in the upper right corner of the button display at the top of the screen. Press the selection arrow and make your choice.

Radio Sliders



On the toolbar, you will see the "Sliders" icon. Clicking on this icon, and depending on the radio connected to HRD, you will have a group of sliders appearing on the bottom portion of the Rig Control screen. These sliders control a number of normally adjustable functions associated with the radio connected.



Moving HRD To A New Computer

Many users have requested instructions on moving HRD from one computer to another. In the past, we have recommended using the "ARCHIVE" feature in HRD Rig Control to move HRD from one computer to another. In most cases, moving from one computer to another is still going to require some re-configuration of the HRD software. Drivers for the radio interface will have to be re-installed on the new computer, ports will more than likely be different, other settings may change as well.

This section of the documentation will explain, what we consider, is the easiest and most reliable way to move your HRD installation from one computer to another.

The first step is to prepare the new computer. If these steps are followed, moving from one computer to the other should be painless.

Preparing The New Computer

1. Download and read the HRD Quick Start guide from the following link: <http://www.hrdsoftwarellc.com/HRD%20Quick%20Start%20Guide.pdf>
2. Disable all firewalls and Anti-virus on the new computer
3. Download the most recent version of the HRD software to the new computer. Click on the following link to immediately begin the download: <http://www.hrdsoftwarellc.com/setup.exe>
4. Download any drivers required for your radio or interface.

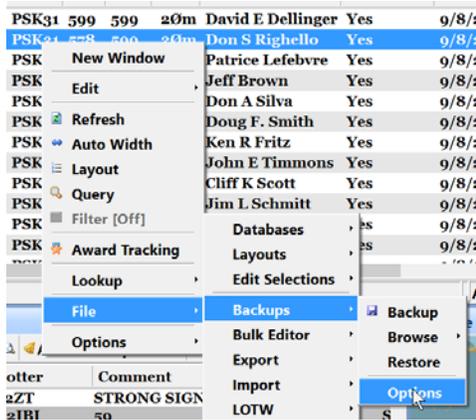
Once you have done the above, install the radio or interface drivers, connect the radio to the computer and install the HRD software.

Follow the instructions either in the HRD manual or in the HRD Quick Start guide to activate the HRD software on your new computer by using your current Activation key. Once you have the HRD software activated, proceed to setup HRD in the normal manner. You should have this new copy of HRD up and running with an empty logbook, and other default settings prior to transferring anything else from the old computer.

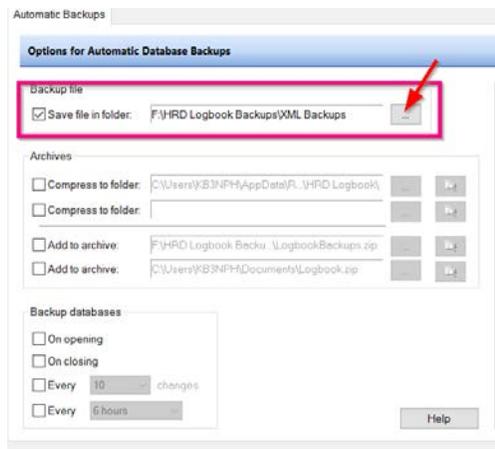
Now, move to the old computer and put an empty flash drive into one of the USB slots.

Start HRD running on the old computer and bring up your logbook and DM-780.

In the Logbook, right-click anywhere on the logbook grid to bring up the "context menu".



In the context menu, select "Backups > Options" as shown in the image to the left.



Uncheck ALL of the options except the "Save File in Folder" option.

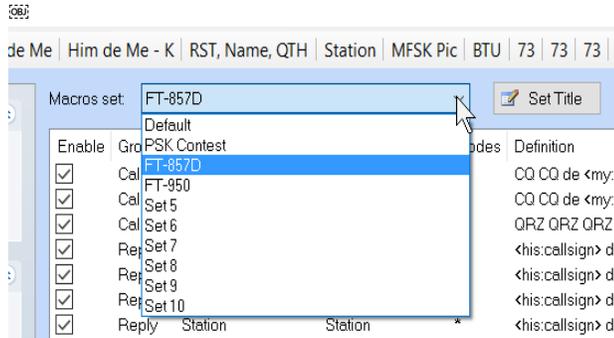
Click on the navigation box (Red arrow) and navigate to the flash drive you inserted into the computer earlier. Click on the Flash Drive drive letter and click on "OK" to select.

Once you have the Flash Drive option selected, close this window and again, right-click on the logbook grid to open the context menu. Select "files > backups>" and click on "Backup" to do a full backup of your logbook.

When the backup is completed, check your flash drive to make sure an XML backup was created. If it was, your now ready to open DM-780 and prepare any custom macros you want moved to the new computer.

Saving Custom Macros

If you have custom Macros configured in DM-780, you will probably want to save these macros so they can be restored to the new installation. At this point, you will want to RUN your HRD software and open Digital Master 780. In DM-780 select "**Program Options**" and then select "**Macros..**" from the menu on the left. This will open your "**Macro Manager**"



In the Macro Manager, click on the "Macro set" dropdown and highlight one of your custom macro sets as shown on the left. Next, on the Macro Manager toolbar, click on the "Save As" button and navigate to a to the flash drive where you saved your Logbook backup.

The default name will be "DMMacroDefns", which you will need to change to some other unique name to indicate what the macros are used for. Do this same process for EACH of your custom macro sets. Each file will be saved as a .XML file in the location you have chosen.

You need to follow this same procedure with EACH custom macro set you have created.

Other DM-780 Settings

Again, in the DM-780 Program Options, select the Soundcard, PTT and Modes + IDs options and either take screenshots or write down the settings so you will have them and can in most cases restore them on the new computer.

You're now ready to move the flash drive to the NEW computer and proceed restoring your Logbook and Macros to the new system using the tools provided in HRD.

Use the Restore function in the Logbook Backup menu to navigate to and restore your logbook. Use the "Load" function in the Digital Master Macro Manager to restore your saved macros back into Digital Master.

Following these procedures is also a good way of keeping current backups of all your important configurations in HRD.

Chapter 6

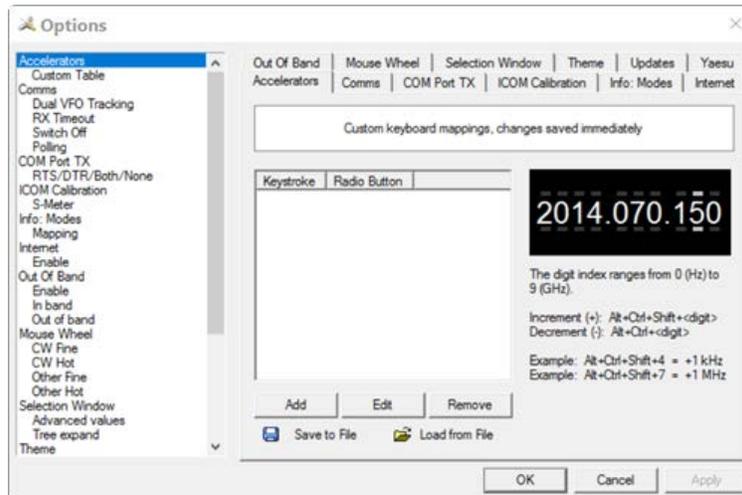
Introduction

Used to define various Ham Radio Deluxe features, Program Options can be selected in three different ways:

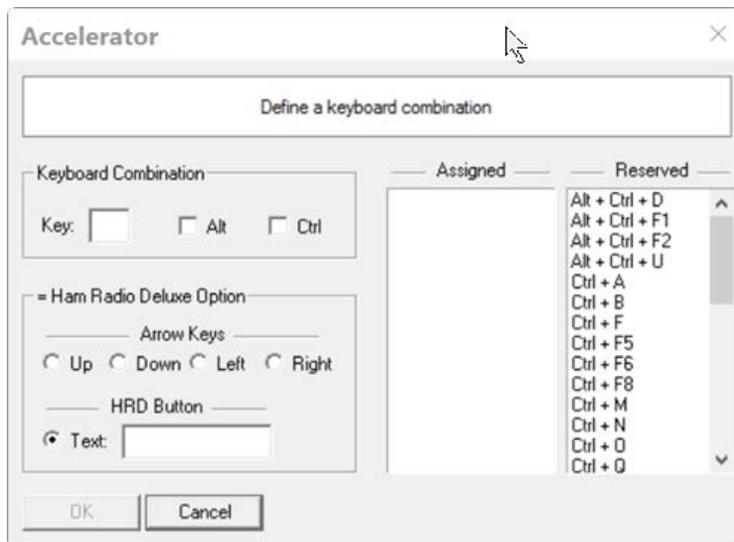
- From the menu bar, select Tools > Program Options at the bottom of the list.
- Press F8
- Press the Options icon on the toolbar.

Most users will find that they can live with the defaults that can be modified in this dialog.

Keyboard Accelerators



Define accelerators for use with the Keyboard or with programmable interfaces such as the Griffin Powermate. When you press Add the definition window is displayed.

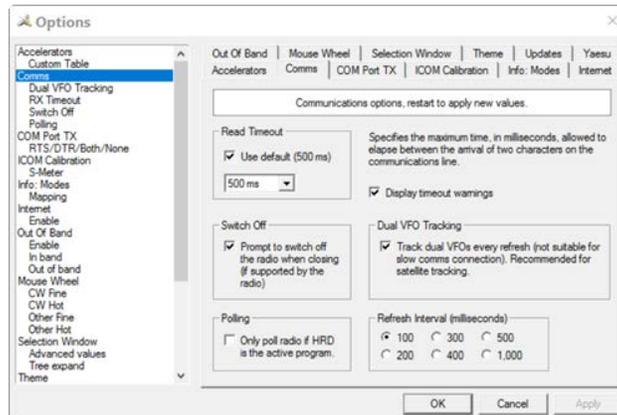


Keyboard combinations are assigned to display buttons and arrow keys. As an example, we will assume that we want to assign the key combination Ctrl+Alt+W to the Tune button. To do this we would do the following steps:

1. In the Key field we would enter the letter W.
2. Place a check mark in the boxes preceding Alt and Ctrl.
3. In the text box below HRD Button enter the word Tune.
4. Press OK to save your new accelerator.

You will now see your new accelerator listed.

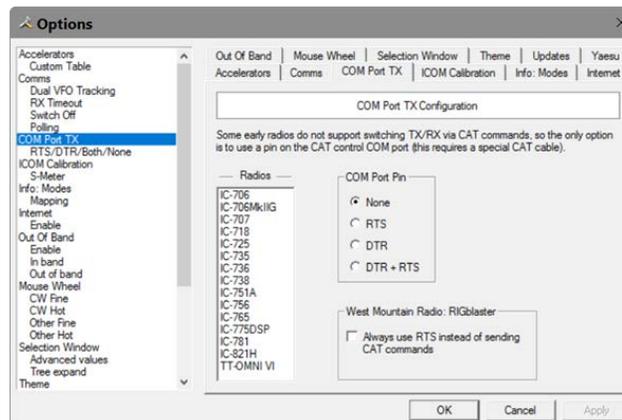
Comms



Normally you will not have to change the default settings.

- Read timeout – serial port timeout.
- Switch off – some radios such as the FT-817 or the Kenwood TS-2000 can be powered down using a CAT command. If this option is selected you are prompted to switch off the radio.
- Polling – to reduce CPU load for slower systems.
- Dual VFO tracking – if selected both VFO's are tracked on every refresh. Only of use with Satellite Tracking.
- Refresh interval – the interval between consecutive refreshes of the display.

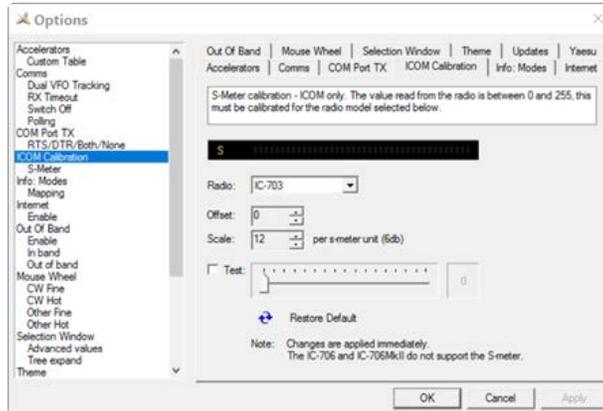
COM Port TX



Some early ICOM radios do not support switching between TX and RX using CAT commands. The only way to enable computer controlled TX/RX this is by toggling a COM port pin.

You require a special CAT cable if you select this option.

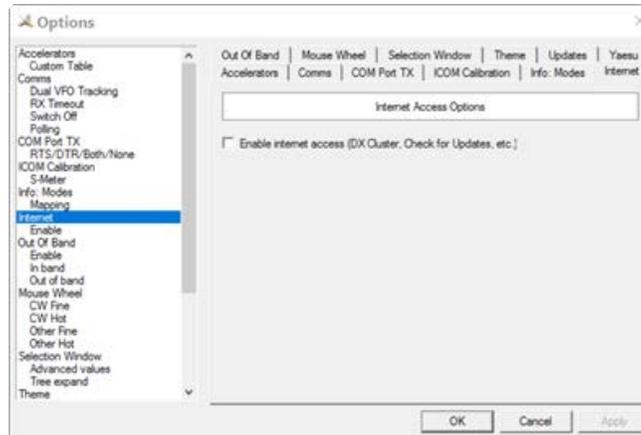
ICOM Calibration



ICOM radios return a S Meter value between 0 and 255, normally 0 is S0, 12 is S1 and so on. As a S Meter unit is 6 dB the algorithm applied is to divide the returned value by two to get dB, then divide dB by 6 to get S units.

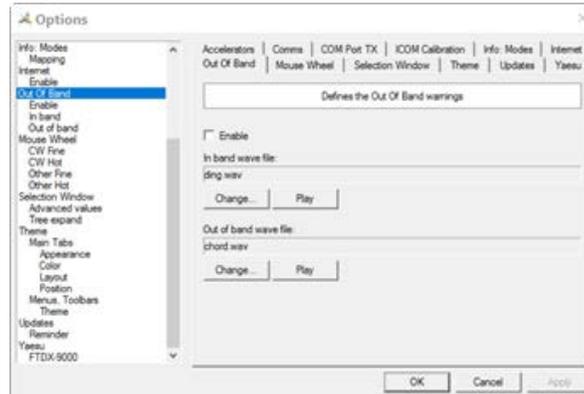
Some radios such as the IC-706 have a different logic – use the Offset and Scale values to adjust the returned values so that the S Meter in Ham Radio Deluxe corresponds to the S Meter on your radio.

Internet



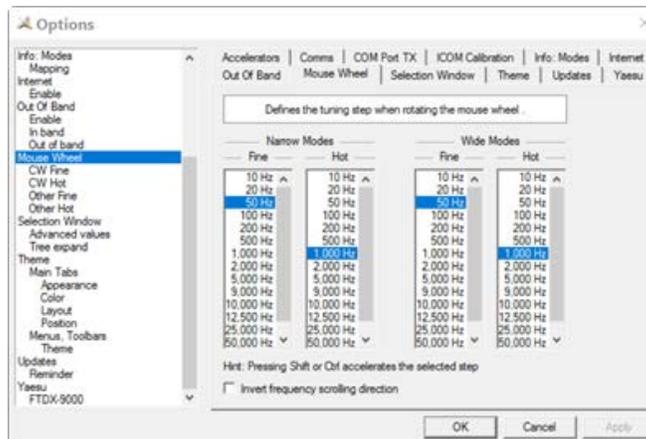
Ham Radio Deluxe is able to detect whether you have an Internet connection with Internet GetConnectedState(). Uncheck this option if you do not want Internet access.

Out Of Band



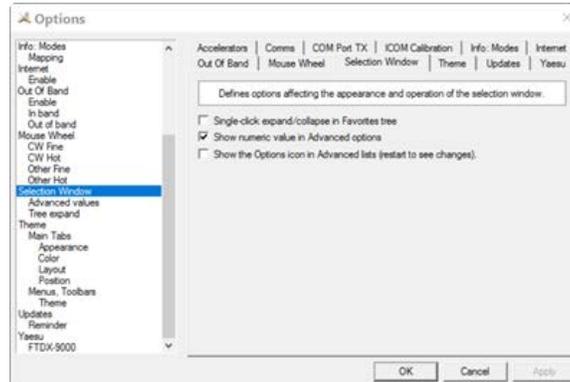
If you like to know where your band limits are when you are scrolling through a band and not watching the frequency window you can enable the optional sound files played when you tune in / out of band. You also have the ability to use a sound file of your choosing.

Mouse Wheel



You can define the tuning step when rotating the mouse wheel over the active tuning bar here.

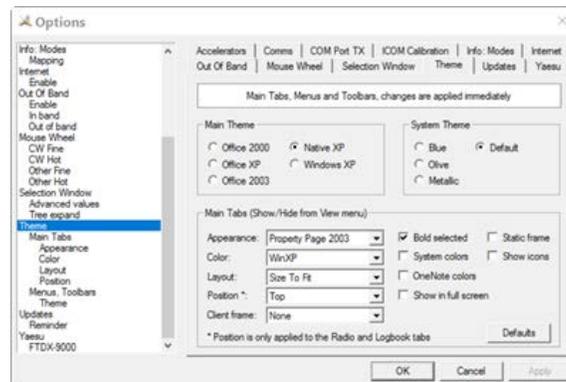
Selection Window



Defines options affecting the appearance and operation of the selection window.

- Single-click – normally the Favorites tree folders are opened / closed with a double-click. Check this option to enable single-click operation.
- Show numeric value – the Select Windows Advanced slider values are optionally superimposed on the slider.
- Show the Options icon – historical support for the version 2 Advanced slider look and feel.

Themes



Docking panes are used for optional windows such as: Bandscope, Calendar, DX Cluster, Logbook, Selection, Shortwave Database and WinKey.

Main Theme

Select whichever visual theme you want – Office 2003 is an acceptable default.

System Theme

When you select Office 2003 or Windows XP for Menus and Toolbars you can select an optional System theme.

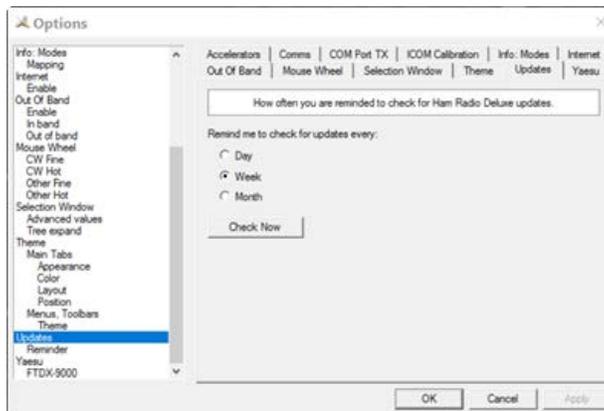
Main Tabs

If you have more than one main window open – for example Radio and Logbook – then the main tabs are a useful way of switching between windows.



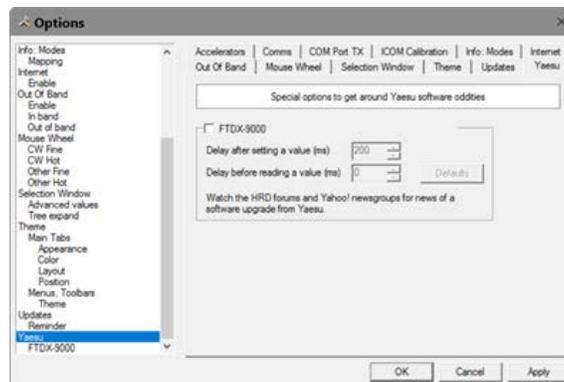
Main tabs can be toggled On / Off by selecting from the Menu Bar View> Main Tabs.

Updates



Select how frequently Ham Radio Deluxe reminds you to check for new updates.

Yaesu



Special options for Yaesu radios. Due to firmware "features" in the FTDX-9000 it is necessary to wait up to 250ms after writing a command to the radio. With any luck Yaesu will fix this at some date in the future.

Chapter 7

Introduction

This chapter provides information on the Tools Menu. There are many different options in this menu to test, configure and increase the functionality of HRD in your shack.

HRD Archive Utility

This option is very helpful if you are wanting to keep backups of your ALL the HRD data files. It's also helpful for moving data from one computer to the other. This operation will also work if you are upgrading from V5.x to V6.x. The only difference when you use the Archive utility, it will automatically pick the proper FROM folder when creating the archive.

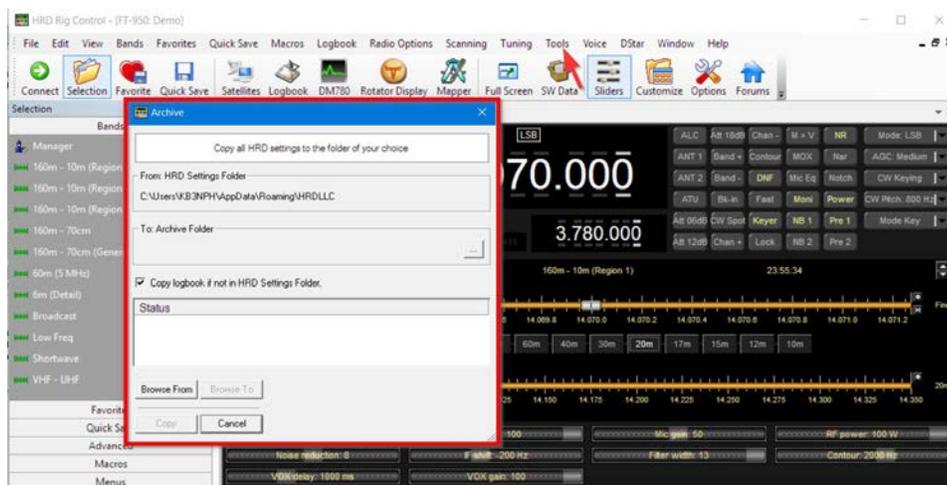
NOTE: If you plan to use the following methods to move HRD from one computer to another, BEFORE moving the file folders to the new machine.

Note: We also recommend you make an XML backup of your logbook to a flash drive or other storage device. make sure you make backups of EACH logbook before starting.

If you are not familiar with creating the XML backup files, please see our tutorial video on

HRD Logbook Backup - Recovery: <https://www.youtube.com/watch?v=Py4vvj1bRZk>

On the Rig control menu bar, click on Tools and select Archive from the drop-down menu.

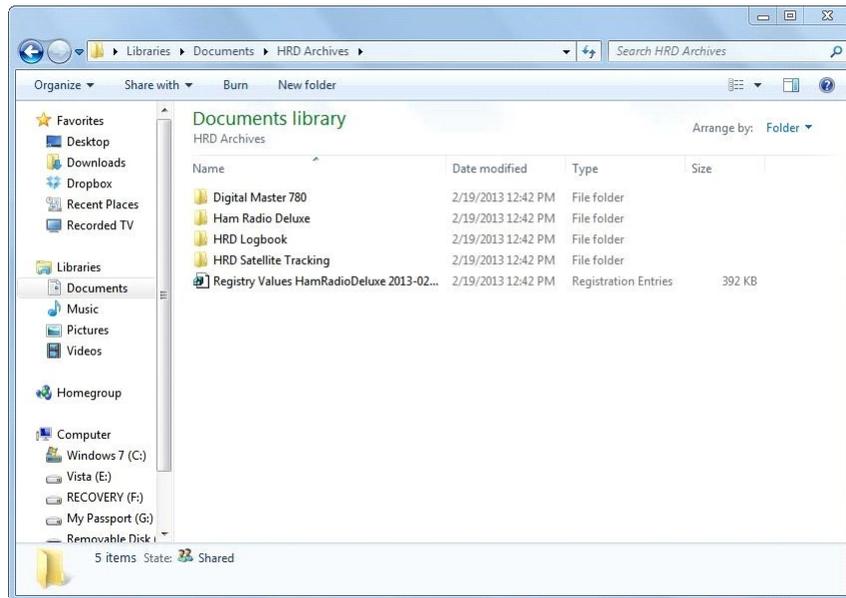


This dialog box allows you to create a full archive of your HRD data folders and also creates a backup of all the Registry Keys used by Ham Radio Deluxe. This option comes in handy in the event you have a hard drive crash and have to re-install your software.

The **From HRD Settings Folder**: folder is automatically selected in the utility window. Since the "Migration" button is selected, the path is **C:\users\\AppData\Roaming\HRDLLC**

The **To Archive Folder**: folder is user selectable. It's recommended you choose a location not on your main drive, such as a flash drive or external hard drive. The flash drive is recommended if you are transferring your settings to a new installation on a different computer.

Once these items are selected, click the **Copy** button at the bottom of the window and your archive will automatically be created. Once the copy is complete, check to make sure you have got **ALL** the folders and settings transferred to your destination by opening the destination folder and check to see if the location looks similar to the one in the image below.



HRD Archive Directory

Once the archive has been created in the location you specified, you can go to that location to see you now have the HRD Data folders, which contain all your HRD data and settings, including your logbook database and default backups, and a Registration file.

If you have created this archive on media you can move from computer to computer, you can now transfer your **DATA** folders from one computer to another.

On the second computer, just do a default installation of Ham Radio Deluxe, so that it installs all the registry entries and creates all the data folders required. Once that is done you can take this archive to the second computer and **OVERWRITE** the default data folders.

WARNING: Do not copy the registry file from one operating system to another. You could cause damage to your system to where it will no longer bootup and

operate properly. These files should be deleted from your archive.

If you are setting HRD up on a second computer having Windows 7, Windows 8, or Windows 8.1 or Windows 10, the HRD default data folders are located in the following location. This is where you would copy the folders from your archive.

C:\users\\AppData\Roaming\HRDLLC

NOTE: This folder is usually a "HIDDEN" folder, by default, in the Windows operating system. To unhide this folder, open your Control Panel and select Folder Options. When Folder Options opens, click on the VIEW tab at the top of the dialog. Find the option that says "show/hide files and folders" and click the radio button that allows your system to "show hidden files, folders and drives". Click OK and close out to your desktop.

Now, you can copy and past the folders from your archive media to the HRDLLC folder. Once this is done, run the HRD software. You may have to re-connect to your radio but when everything else starts, you should have your customized layouts, logbook and macros restored just as they were on the old computer.

If you have any problems with this procedure, don't hesitate to contact the HRD support team for assistance.

Add Desktop Icon

This option is self-explanatory. It adds the HRD Icon to your desktop. This can be used in the Event the installation does not create the correct icon on your desktop.

Audio Grabber

The audio grabber stores incoming audio in MP3 files using the MP3 tags to store information about the radio settings (or any other information you feel to be important).

An alternative to MP3 would be Windows Media format (WMA) but the programming of WMA files is rather complex.

To display the audio grabber select Audio Grabber from the Tools menu.

By default the Audio Grabber is docked at the bottom of your Ham Radio Deluxe Screen. By grabbing the top bar o the Audio Grabber you can undock it and make it a separate window. To dock the double-left-click the "header" of the of the Audio Grabber and it will pop into place in the Logbook screen.

Recording



Here you have the standard recording buttons. From left to right:

- Record,
- Stop,
- Reset current recording,
- Restart (close current file first),
- Browse for MP3 files.

You also set a file limit – a downside of MP3 is that the tags are written at the end of the file when it is closed, so to avoid losing information in the event of an unexpected event it is best to use more, smaller files.

We will now explain the different "TABS" across the top of the Audio Grabber screen.



<-- Folder

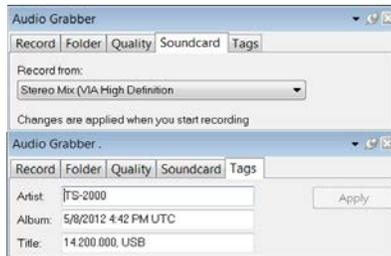
Here you select the folder where the MP3 files are stored.

<-- Quality

Here you select the bandwidth and quality. Modern computers have more than enough CPU power to support a very high quality. A bandwidth of 4.5 kHz is usually acceptable unless you are recording a WFM broadcast.

<-- Soundcard

Select the soundcard that you are recording from.

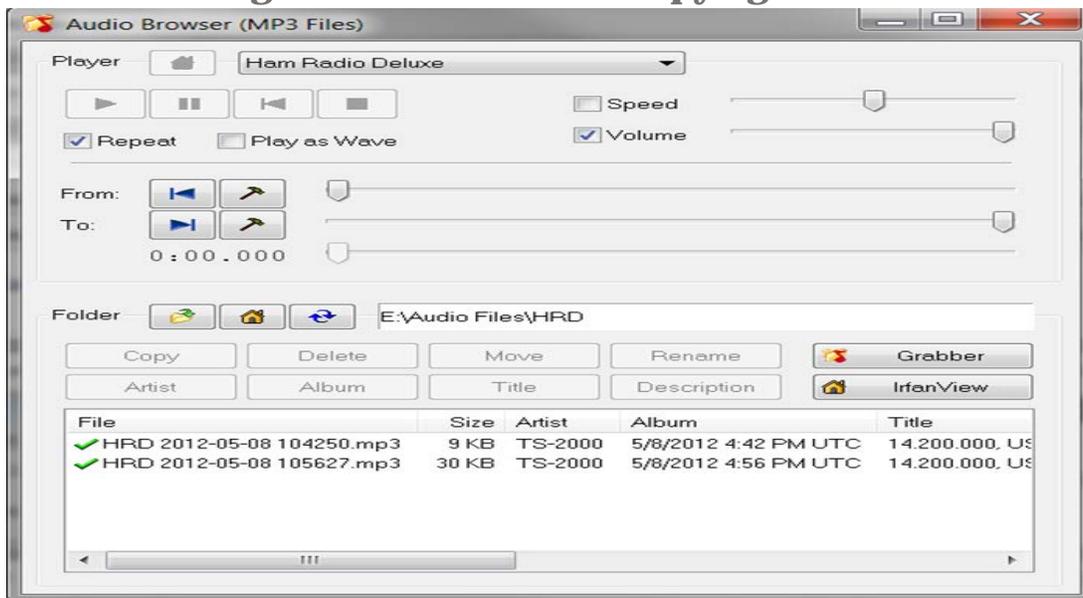


<-- Tags

Here you see the values stored in the MP3 tags. To change the values just add the new text and then press Apply.

Audio Browser

Use the audio browser to playback MP3 files. To open the Audio Browser, select Audio Browser from the Audio Grabber.



MP3 Player Options

Select MP3 player – a basic MP3 player is built into Ham Radio Deluxe, by clicking the "Pl

Folder

-  Select the folder to
-  browse Select default
-  Refresh current folder

Audio File

Select a file to play from the list at the bottom of the window.

-  Play currently selected
-  file Pause
-  Start again
-  Stop

From

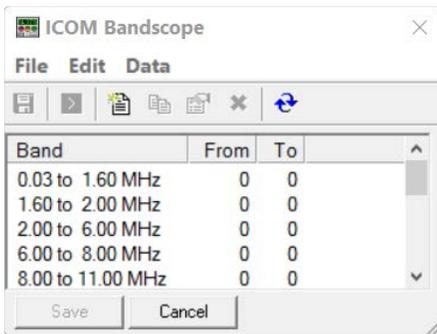
- Start at beginning of file
- Set **From** at the current position

To

- To end of file
- Set **To** at the current position

Use the From and To slider positions to select the part of the file to repeated over and over and over again. This is useful for determining exactly what the station was sending.

Bandscope (Icom)



This tool allows you to set the Bandscope edges for the IC-7800 transceiver. This is for control of the Bandscope within the radio itself and does NOT display a Bandscope on the computer GUI.

Bandscope

Bandscope - Scans a defined frequency range in selectable steps and displays a graph of S Meter values (vertical axis) against frequency (horizontal axis).



The current frequency range is displayed in the horizontal axis legend across the bottom of the graph. S Meter values are shown in the vertical axis legend at each end of the graph detail. The step size and user-selectable buttons are displayed at the left.

A vertical frequency marker will move across the bandscope display as the scan progresses. Frequency and band position displays in the main program window will also update in real time.

Two colours are used in the display. Past scans are displayed in sample-and-hold fashion in the background colour - blue in this case. The current scan is superimposed over the top - green in this case.

A fresh scan adds the most recent scan to the background detail building up a total activity display over time.

A left mouse click anywhere within the bandscope window will tune the radio to the frequency of the position clicked.

It is essential to use a fast AGC characteristic when using the bandscope. If the AGC is too slow, there will be a distorted signal display. As the data is based on S Meter values, slow attack times will have a delayed response and long hang times will show a gradually diminishing signal over a far wider frequency span.

ATUs that may respond to frequency changes should also be disabled.

Control Buttons:



- commences a scan in the Up direction.



- commences a scan in the Down direction.



- stops the current scan.



- clears the current values from the bandscope display window.



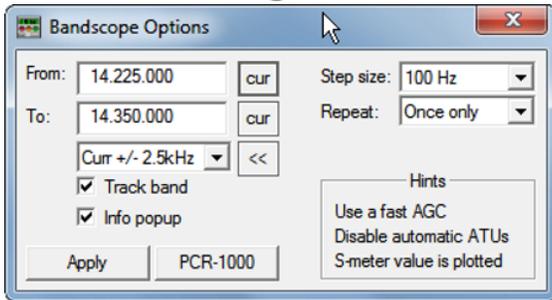
- applies the band limits of the currently selected band to the bandscope scan range.



- opens the **Bandscope Options** window.



- saves the current bandscope image to a bitmap file.



The **Options** window is for manually customising the bandscope scan.

From: - Enter the upper or lower limit of the required scan. The



button will drop the frequency from the main program display into the input box.

To: - Enter the remaining limit of the required scan. The



button will drop the frequency from the main program display into the input box.

The



button will drop upper and lower frequency limits into the From and To boxes, based on the current bandwidth selection in its drop down listbox. The frequencies will be rounded. The entries in this example will be 2.5kHz either side of the current tuned frequency. Selections from +/-2.5kHz to +/-250kHz are available.

Track band - If this option is checked, a single click on a frequency band bar on the main program display will cause that band to be included in the scan.

Info popup - If this option is checked, and the mouse cursor is placed inside the bandscope window, information relative to the frequency immediately below the cursor will be displayed at the top of the window.

Step size - This drop down listbox provides a scan step size selection from 100Hz to 25,000Hz.

Repeat - This drop down listbox provides the selection of either a continuous scan or once only.

- This button needs to be pressed in order to apply any changed parameters to the scan.

- If your radio can return data without actually scanning, you can use this feature. You will be advised if the function is not supported.

Browsers

This option is self explanatory. It allows you to open as many as 6 Internet Explorer browser windows. There is also one browser that can be configured to automatically go to the QRZ.com website to lookup call signs.

Calendar



Clicking on "Tools > Calendar" opens the HRD Event anything you would like to keep a reminder handy fo

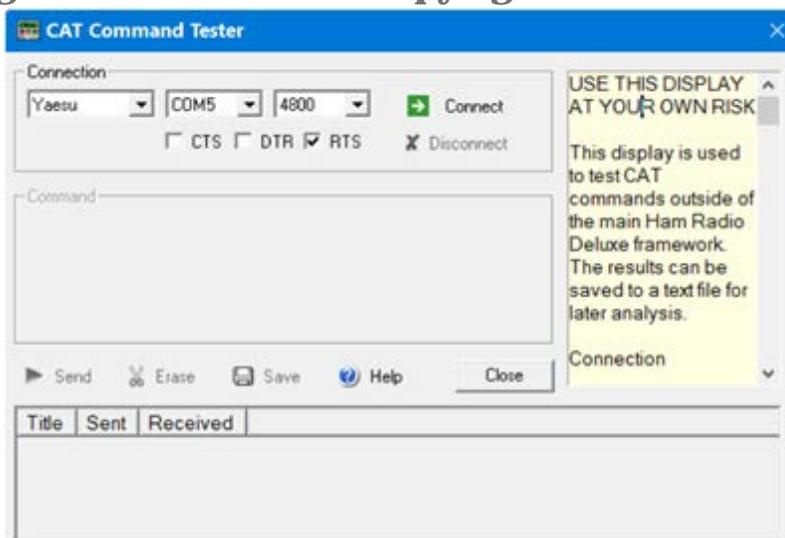
Along the top of the calendar display is a small toolba

This is quite a useful utility for those who schedule a l

Command Tester

USE THIS DISPLAY AT YOUR OWN RISK

This display is used to test CAT commands outside of the main Ham Radio Deluxe framework. The results can be saved to a text file for later analysis.



Connection

Select the type of command to be sent, Elecraft, ICOM CI-V, Kenwood, Ten Tec or Yaesu.

The logic and fields are the same as those in the main HRD Connect window.

Command

Title

Enter a title for the test - for example 'Read Frequency'.

Codes

Enter the codes for the command, then press 'Send'. Refer to your handbook for CAT command descriptions.

Example: ICOM CI-V - Read Frequency

From .: E0 (The PC has address E0)
 To ...: The CI-V address of your radio, for example the IC-703 is 68.
 Cmd ...: 03

Example: ICOM CI-V - Set Mode to USB

From .: E0 (The PC has address E0)
 To ...: The CI-V address of your radio, for example the IC-703 is 68.

Cmd ..: 06

Sub ..: 01

Example: Yaesu - Read Frequency and Mode

P1: 00

P2: 00

P3: 00

P4: 00

Opcode .: 03

Example: Yaesu - Set Frequency 14.234.560 MHz

P1: 01

P2: 42

P3: 34

P4: 56

Opcode .: 01

Example: Kenwood TS-2000 Read VFO A Frequency

Cmd: FA;

+: none

Wait for ..: ;

Send

Sends the command to the radio.

Erase

Clears the display

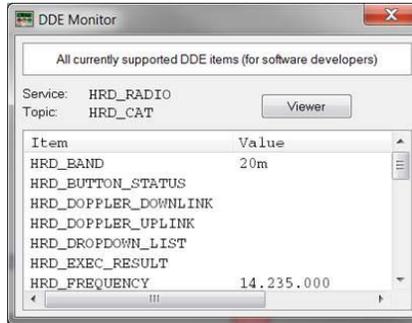
Save

Saves the display to a text file.

DDE Monitor

Ham Radio Deluxe uses dynamic data exchange (DDE) for inter-process communication. DDE allows two or more applications running simultaneously to exchange data and commands.

Select DDE Monitor from the Tools menu to display the supported DDE items.



Commands

The commands below are supported by Ham Radio Deluxe.

Add ADIF Record

ADIF <data>

Adds a record to the logbook; the record is supplied in ADIF format. Used by PSK31 Deluxe.

Refresh

REFR button status

Refreshes all buttons.

REFR dropdown list

Refreshes all dropdown.

Set Button

BUTN button title=value

Sets a button state. For normal buttons the value is either on or off.

If title starts with @ then it's a dropdown, the value must be a dropdown value.

Set Dropdown

DROP button title=value

Selects a dropdown value.

Set Frequency

FREQ <hertz>

Sets the frequency to the value supplied in Hertz.

Set Mode

MODE <mode>

Sets the mode to the supplied value.

Top Window

TOPW

Makes the Ham Radio Deluxe the top-most window in the Z-order, in other words brings Ham Radio Deluxe to the front of your monitor.

LDG Electronic ATUs

Lock Program



Clicking on the "Lock Program" option actually LOCKS the display screen. To unlock, click the "Unlock" button on the "Locked" display.

Shortwave Database

Wikipedia defines **Shortwave listening**, or **SWLing**, as the hobby of listening to shortwave radio broadcasts located on frequencies between 1700 kHz and 30 MHz. Listeners range from casual users seeking international news and entertainment programming, to hobbyists immersed in the technical aspects of radio reception and collecting official confirmations (QSL cards) that document their reception of distant broadcasts (DXing). In some developing countries, shortwave listening enables remote communities to obtain regional programming traditionally provided by local medium wave AM broadcasters. One estimate placed the number of shortwave listeners worldwide in the hundreds of millions.

HRD has the ability to add a database of shortwave stations from all over the world. When you select the "SW DATA" icon from the HRD Rig Control menu, the SW Database is displayed on the lower portion of the Rig Control screen.

| Station | Frequency | Trans | SFC | Language | Location | Country | Target | Status | Remark |
|-------------------------|-----------|-----------|-----|---------------------|----------------------|-----------------|--------|--------|--------|
| WNC USCG Port Beers | 13089.0 | 2120-2105 | | English | United States of Am | United States o | PACASA | | |
| WNC USCG Chesapeake | 13089.0 | 2120-2105 | | English | United States of Am | United States o | PACASA | | |
| WNC USCG Chesapeake | 13089.0 | 2121-2150 | | English | United States of Am | United States o | PACASA | | |
| WNC USCG Chesapeake | 13089.0 | 2120-2105 | | English | United States of Am | United States o | PACASA | | |
| WNC USCG Chesapeake | 13089.0 | 2121-2150 | | English | United States of Am | United States o | PACASA | | |
| WNC USCG Chesapeake | 13089.0 | 2120-2105 | | English | United States of Am | United States o | PACASA | | |
| WNC USCG Chesapeake | 13089.0 | 2121-2150 | | English | United States of Am | United States o | PACASA | | |
| WNC USCG Chesapeake | 13089.0 | 2120-2105 | | English | United States of Am | United States o | PACASA | | |
| WNC USCG Chesapeake | 13089.0 | 2121-2150 | | English | United States of Am | United States o | PACASA | | |
| JAC Radio Monaco | 13144.0 | 1200-1203 | | French | Monaco | Monaco | | | |
| APFTS | 13342.0 | 2300-2900 | | English | United States of Am | United States o | APFA | | |
| Various Progs (Feeders) | 13562.0 | 2000-2400 | | Spanish | Argentina | Argentina | | | |
| Fire Drake | 13600.0 | 2000-2400 | | Mandarin (Standard) | China (People's Repu | China (People's | | | |
| Sound of Hope | 13600.0 | 2000-2400 | | Mandarin (Standard) | Taiwan | Taiwan | | | |
| 1310 Taiwan | 13670.0 | 2000-2400 | | Telex | Taiwan | Taiwan | | | |
| #1300 Intl Lim. PA | 13570.0 | 2000-2400 | | English | United States of Am | United States o | PACASA | | |

Clicking on an entry in the SW Database will automatically tune your radio to the selected frequency so you can receive the broadcast.

HRD Software LLC does not supply the SWL database though. The database used is a subscription type purchase with several options available and can be obtained from <http://www.ilgradio.com/>. The price of the database is between \$10 and \$15, depending on which subscription option you select. Once you make your purchase, you will be sent a link to

where you can download the database file to install in the HRD SW Data system.

On the left side of the SW Database screen, clicking on the  icon will take you directly to the International Listening Guide website where you can register for which ever database option you wish. Once you have registered and selected a database option, you will be sent an e-mail with a link to download the database file. Once you have the database file, just save it into any folder on your computer.



To install the database into HRD, click on the  icon on the left side of the SW Database screen. The configuration window will open where you can navigate to where you saved the file by clicking on the button indicated by the red arrow, and select it to be displayed. Make sure you have a check in the "Enable" box so the DB will display properly.



Clicking on the  icon opens the search filter window. You can enter options in the filter to display specific records in the SW Database window.

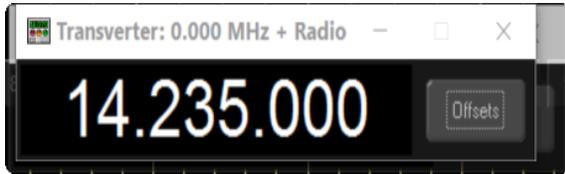
The  icon allows you to increase (+) or decrease (-) the text size displayed in the SW Database window.

Transverter

According to Wikipedia - Transverters are used in [amateur radio](#) to convert radio transceivers designed for use on the [HF](#) or [VHF](#) bands to operate on even higher frequency (microwave) bands. A transceiver used in this fashion is referred to as an **IF radio**, indicating its role as the "intermediate frequency" stage in the chain of radio electronics. Common transceiver/transverter combinations include transverters for [50 MHz](#), [70 MHz](#), [144 MHz](#), [222 MHz](#), and [432 MHz](#) designed for use with 28 MHz IF radios, and transverters for 50 MHz, [902 MHz](#), [1296 MHz](#), [2304 MHz](#), [3456 MHz](#), [5706 MHz](#), and [10368 MHz](#) designed for use with 144 MHz IF radios. Some transverter units include transmit/receive switching built into the design, whereas other units require external switching. The use of external switching is popular in applications where [preamps](#) and [amplifiers](#) are included. Many transverters are built into waterproof enclosures for installation on a [radio tower](#) or other antenna support structure to get the device as close as possible to the [antenna](#) so as to reduce signal loss in the [transmission line](#).

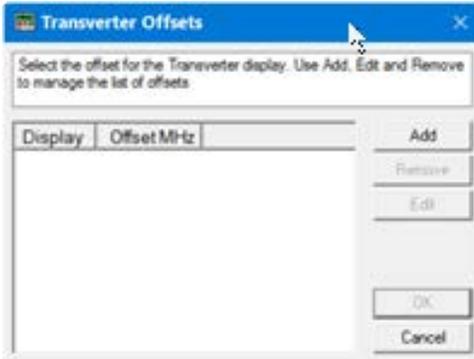
The [High Speed Multimedia Radio](#) article discusses the radio transceivers that use 802.11 (WiFi) with the transverters to achieve Wireless Broadband communication in the frequency bands reserved for Amateur radio operators.

HRD Transverter - Provides management of offset frequencies for transverter use. The Offsets button provides for the entering of any offset frequencies for transverter use as well as the algorithm for computing the frequency and the display at left will indicate the calculated transmit frequency.



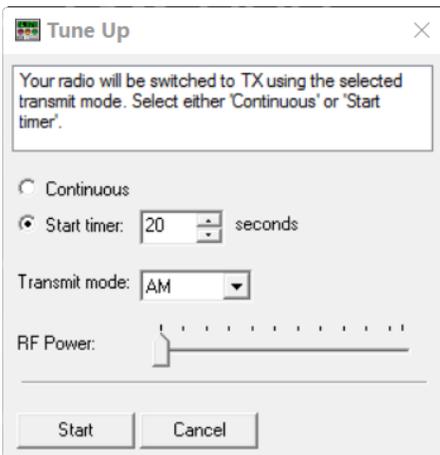
HRD Transverter - Provides management of offset frequencies for transverter use. The Offsets button provides for the entering of any offset frequencies for transverter use as well as the algorithm for computing the frequency and the display at left will indicate the calculated transmit frequency.

Clicking on the [Offsets] bottom on the Transverter display opens the Offsets window where you can select, add, edit or remove your offsets.



Tune-Up

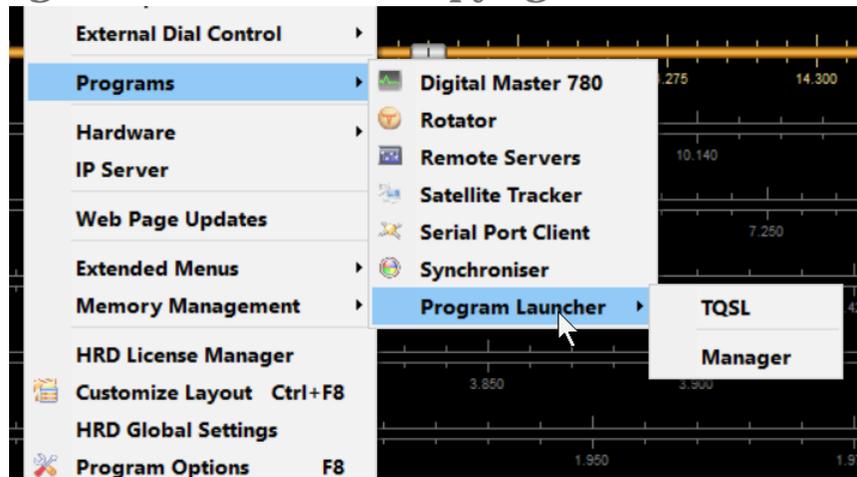
The "Tune-Up" utility allows those who do not have an automatic tuner the ability to tune their antenna using their external antenna tuner.



Two modes of operation are offered, you can use the Continuous or timer when the tune-up is activated. A mode selection drop box is also provided to select a mode you wish to use when you tune your antenna. In most cases, the "AM" mode is selected, since this automatically reduces the RF output of your transmitter to 25 watts. If you use CW or other mode to adjust your antenna tuning, an RF Power slider is provided to adjust the power to a lower output for the tuning process. Once configured, click the [Start] button and your transmitter will key to allow you to adjust your tuner. You can set the timer to keep the radio keyed for a specific time, or, if set to the "continuous" mode, you just click the [Stop] button once you have your adjustments made.

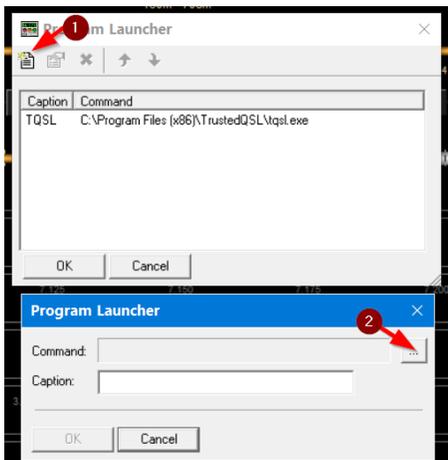
External Dial Control

Programs



The "Programs" tool gives you options to run the other HRD modules and includes a configurable 3rd party Program Launcher, which allows you to configure 3rd party software, which you can run concurrently with HRD, to be launched from within the HRD Rig Control Screen. The Program Launcher can be quite useful for those who run 3rd party software in conjunction with HRD. Using this utility makes it easy to launch those programs without having to minimize the HRD screen and go looking for the icon to click. Just click on the program launcher, select the program you want to run, and off you go.

Adding software to the Program Launcher is quite simple.



Click on the icon indicated by the arrow (#1) in the top image on the left. This will open a second window shown below on the left. Click on the Navigation button (#2) and navigate to the location of and select the ".exe" file you wish to launch. Then enter a brief title in the "Caption" field for the file and click the "OK" button.

This will add the caption to the Program Launcher dialog and a single click on that title will launch the program.

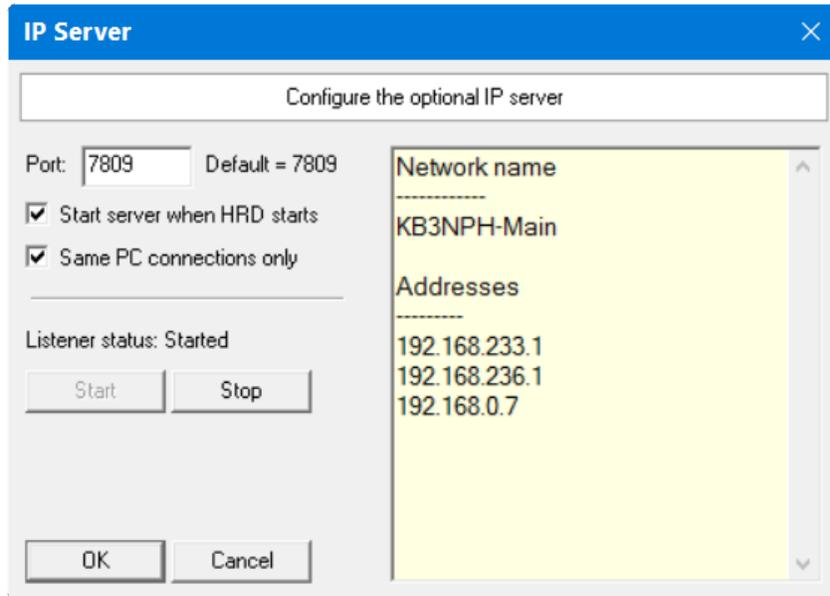
Hardware

IP Server

This IP Server is HRD's internal server used to allow all the modules within the suite to communicate with each other on the "local" computer. The configured port used is Port 7809

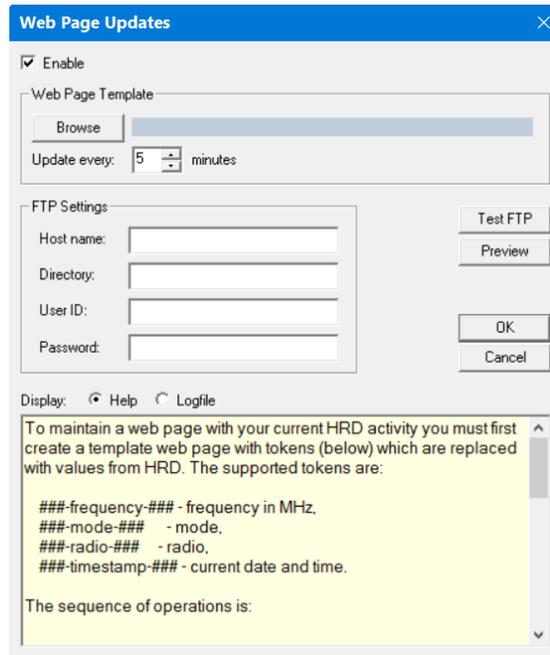
and should NOT be changed unless you are familiar with the HRD system.

If you find the modules within HRD are not communicating with each other, you need to check this server option to make sure it has started and is running. This server starts automatically when opening the HRD software.



Webpage Updates

This little utility is for those of you who have a website and would like to keep your users informed of your ham radio activity. This allows you to schedule real-time uploads via FTP, to a page on your website that shows the Frequency in MHz, Mode, what Radio your operating from and the current date and time for your current ham activity. This allows visitors to your website to see where you are operating and will allow them to try to contact you via radio.



To maintain a web page with your current HRD activity you must first create a template web page with tokens (below) which are replaced with values from HRD. The supported tokens are:

###-frequency-### - frequency in MHz,
 ###-mode-### - mode,
 ###-radio-### - radio,
 ###-timestamp-### - current date and time.

The sequence of operations is:

- 1: A copy of the template web page is made,
- 2: The tokens are replaced with the HRD values,
- 3: The copy is then uploaded.

The uploaded file has the same name as the template page.
 The upload uses FTP or, if you specify the Host name as local, the file is copied into the directory.

To use FTP you must specify your remote FTP directory access information (username and password).

- Host name - the FTP host name,
- Directory - the optional remote directory,
- User ID - the user id for accessing the site,
- Password - the password for accessing the site.

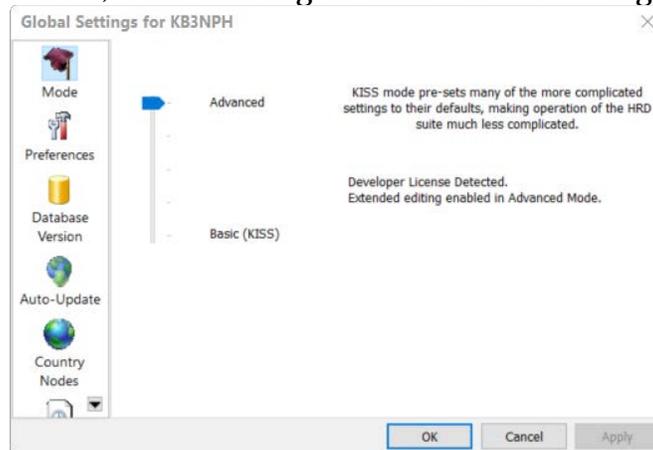
Select the update interval with the auto-update options.
 Press 'Test FTP' to test the FTP definition and upload a new webpage.
 Press 'Preview' to display the new webpage without uploading it.

Extended Menus

Memory Management

HRD Global Settings

The HRD Global Settings is accessed by clicking on "TOOLS" on the main menu of each of the 5 main HRD software modules, then selecting the HRD Global Settings option.



Clicking on the icons on the left side of the Global Settings dialog allows you to set options and perform some tasks related to the operation of HRD. Below are a list of the various tasks and options available in the Global Settings. These settings are pretty much self-explanatory as far as what they are used for and how to use them. We will just give a brief description of each of the setting categories.

- **Mode:** This option allows changing the global settings within HRD from displaying BASIC settings to displaying more advanced options in the menu systems. Most users prefer to use the "advanced" setting on the slider since this setting allows you to view and adjust some settings that are otherwise not visible in some of the menus when set to the basic setting.
- **Preferences:** This option allows you to select your preferences for how distances are displayed in miles or kilometers and sets temperature readings either to Celsius or Fahrenheit.

- **Database Version:** Displays what logbook database versions you have installed on your computer. There is also a utility to transfer the database from one HRD version into the current version.
- **Auto-Update:** This option allows you to update the Country List and Unique Callsign Database within HRD automatically or manually. NOTE: Due to the fact the Country List and UCSDB requires someone to monitor and update the database as changes are made, this feature expires along with your Support and Software Maintenance Agreement. In order to keep this feature up to date, after your first year, you must renew your Support Agreement on an annual basis.
- **Country Nodes:**
- **Version:** This dialog is primarily for the support staff use. It shows the main Dynamic Link Libraries associated with the HRD software, the released version, date and time the release was compiled and performs the validation for the HRD installation.

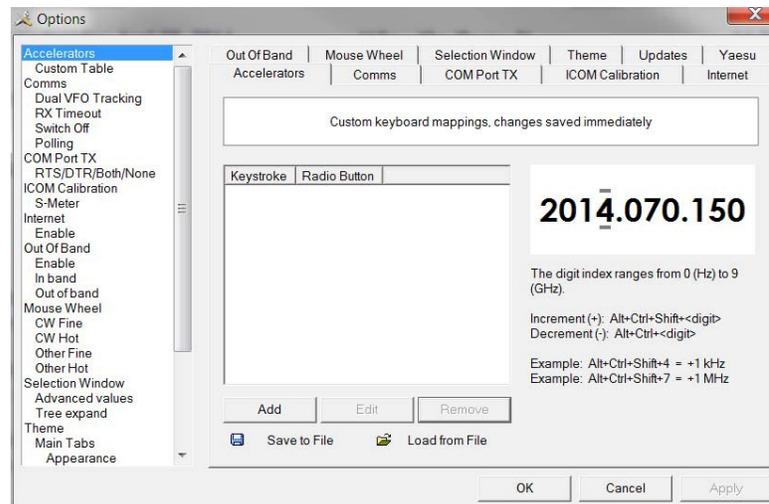
Program Options

Used to define various Ham Radio Deluxe features, Program Options can be selected in three different ways:

- From the menu bar, select **Tools > Program Options** at the bottom of the list.
- Press **F8**
- Press the  **Options** icon on the toolbar.

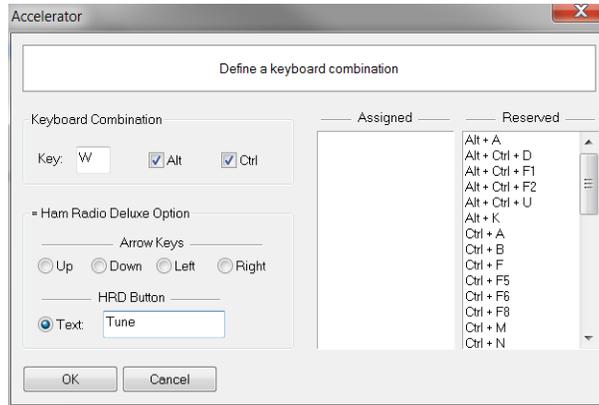
Most users will find that they can live with the defaults that can be modified in this dialog.

Keyboard Accelerators



Define accelerators for use with the Keyboard or with programmable interfaces such as the Griffin Powermate.

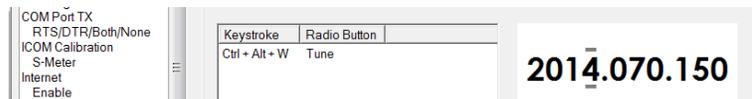
When you press Add the definition window is displayed.



Keyboard combinations are assigned to display buttons and arrow keys. As an example, we will assume that we want to assign the key combination **Ctrl+Alt+W** to the Tune button. To do this we would do the following steps:

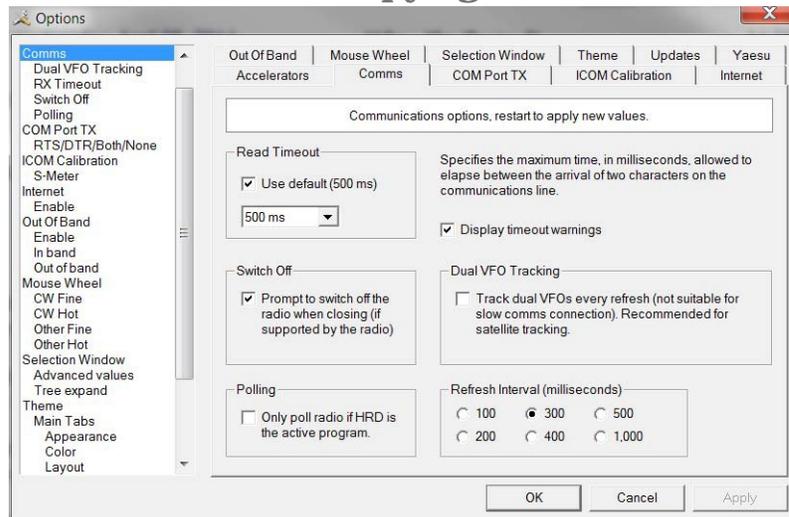
- 1 In the Key field we would enter the letter **W**.
- 2 Place a check mark in the boxes preceding Alt and Ctrl.
- 3 In the text box below HRD Button enter the word **Tune**.
- 4 Press **OK** to save your new accelerator.

You will now see your new accelerator listed.



Comms

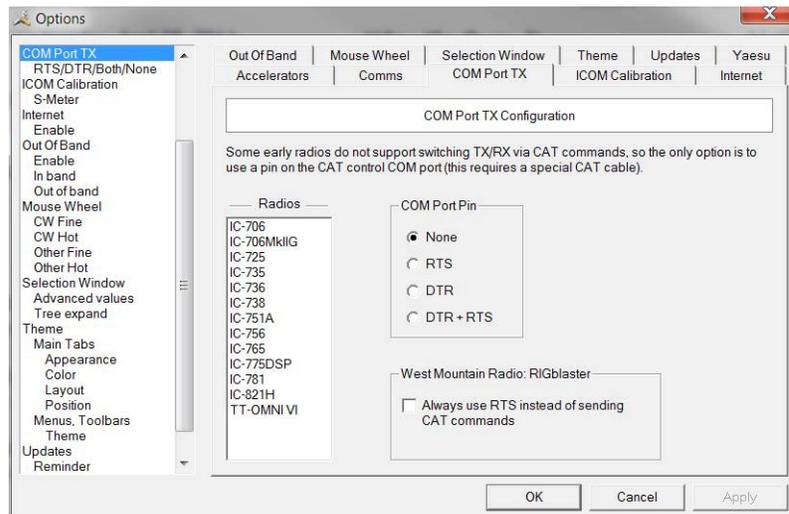
The Ham Radio Deluxe menu has pre-assigned accelerators; these cannot be redefined. These are listed in the Reserved window.



Normally you will not have to change the default settings.

- Read timeout – serial port timeout.
- Switch off – some radios such as the FT-817 or the Kenwood TS-2000 can be powered down using a CAT command. If this option is selected you are prompted to switch off the radio.
- Polling – to reduce CPU load for slower systems.
- Dual VFO tracking – if selected both VFO's are tracked on every refresh. Only of use with Satellite Tracking ([Satellite Tracking on page 209](#)).
- Refresh interval – the interval between consecutive refreshes of the display.

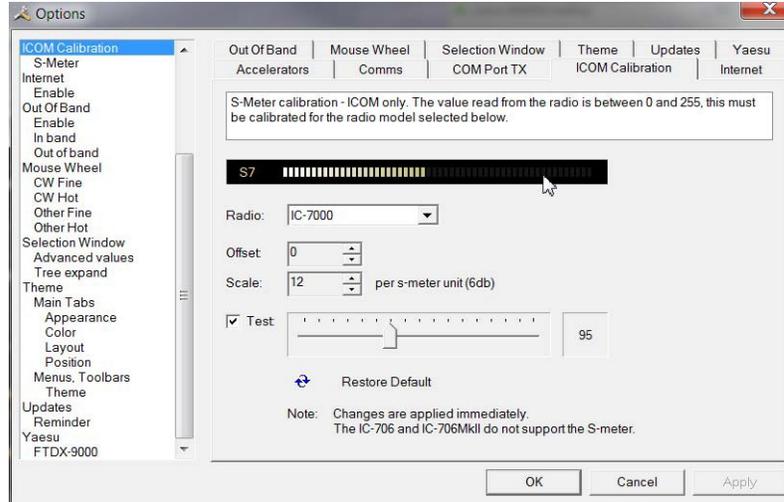
COM Port TX



ICOM Calibration

Some early ICOM radios do not support switching between TX and RX using CAT commands. The only way to enable computer controlled TX/RX this is by toggling a COM port pin.

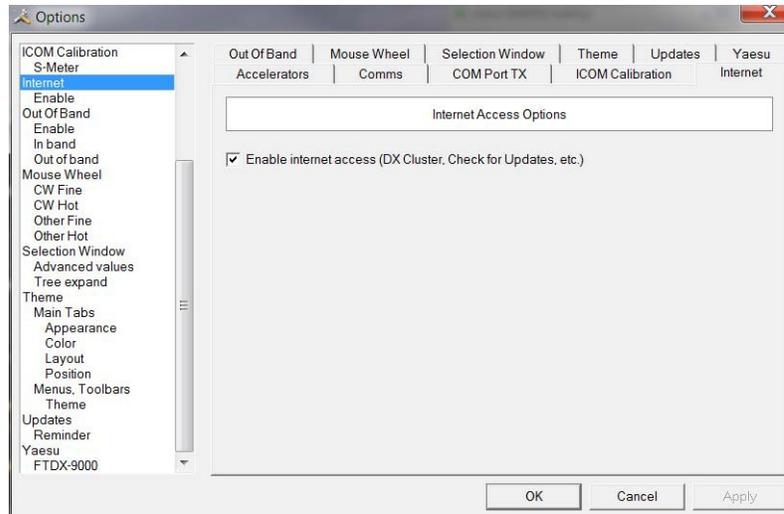
You require a special CAT cable if you select this option.



ICOM radios return a S Meter value between 0 and 255, normally 0 is S0, 12 is S1 and so on. As a S Meter unit is 6 dB the algorithm applied is to divide the returned value by two to get dB, then divide dB by 6 to get S units.

Some radios such as the IC-706 have a different logic – use the Offset and Scale values to adjust the returned values so that the S Meter in Ham Radio Deluxe cor- responds to the S Meter on your radio.

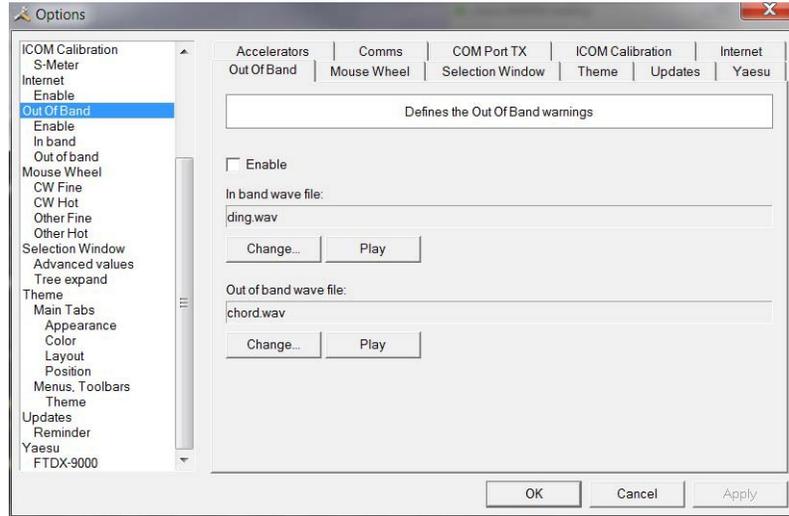
Internet



Ham Radio Deluxe is able to detect whether you have an Internet connection with Internet

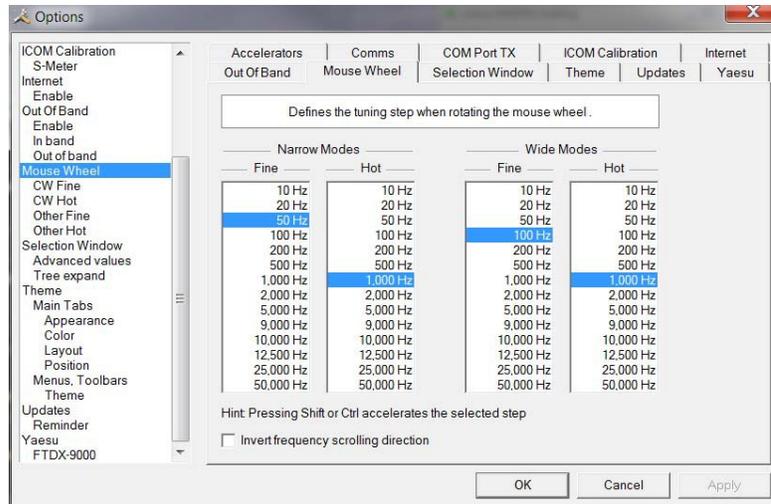
GetConnectedState(). Uncheck this option if you do not want Internet access.

Out Of Band



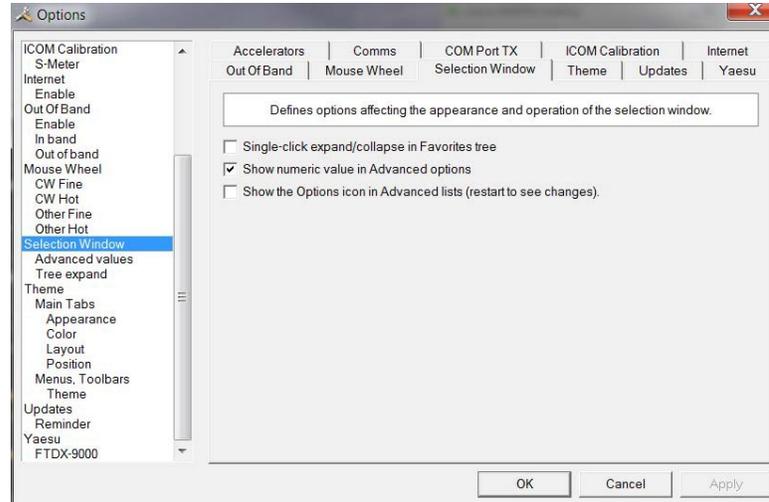
If you like to know where your band limits are when you are scrolling through a band and not watching the frequency window you can enable the optional sound files played when you tune in / out of band. You also have the ability to use a sound file of your choosing.

Mouse Wheel



You can define the tuning step when rotating the mouse wheel over the active tuning bar here.

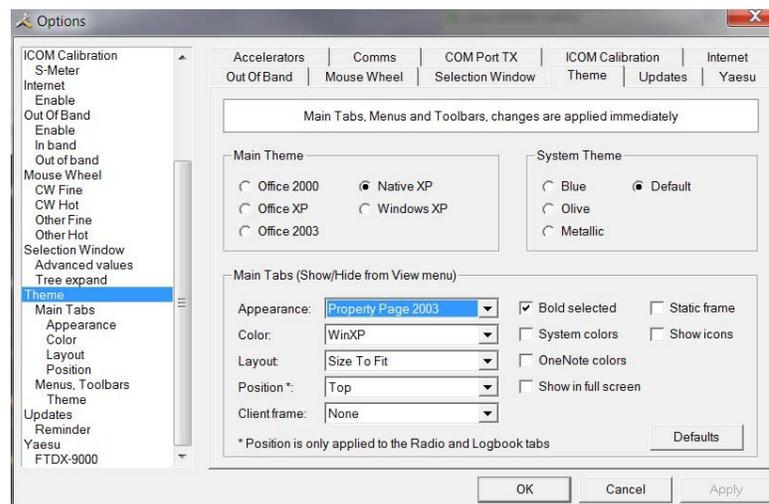
Selection Window



Defines options affecting the appearance and operation of the selection window.

- **Single-click** – normally the Favorites tree folders are opened / closed with a double-click. Check this option to enable single-click operation.
- **Show numeric value** – the Select Windows's Advanced slider values are optionally superimposed on the slider.
- **Show the Options icon** – historical support for the version 2 Advanced slider look and feel.

Themes



Docking panes are used for optional windows such as: Bandscope, Calendar, DX Cluster, Logbook, Selection, Shortwave Database and WinKey.

Main Theme

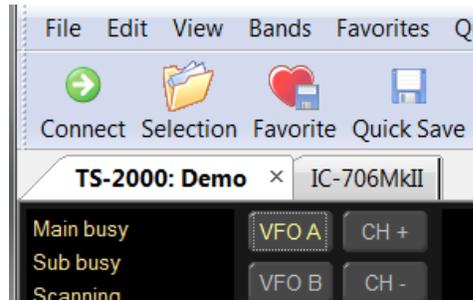
Select whichever visual theme you want – Office 2003 is an acceptable default.

System Theme

When you select Office 2003 or Windows XP for Menus and Toolbars you can select an optional System theme.

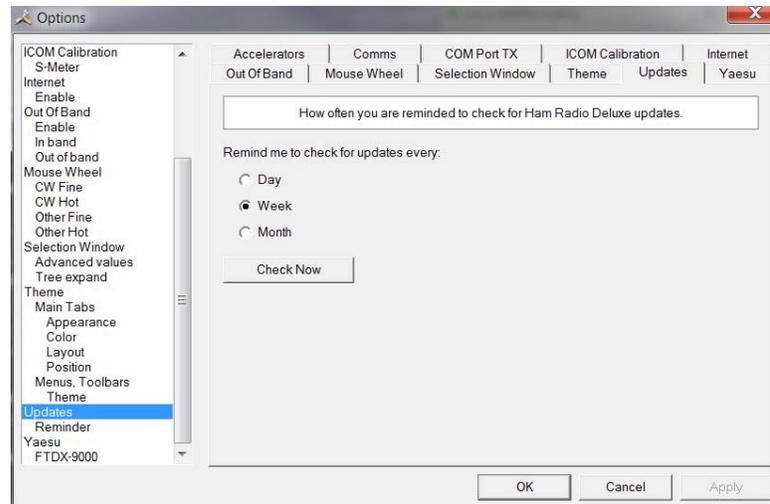
Main Tabs

If you have more than one main window open – for example Radio and Logbook then the main tabs are a useful way of switching between windows.



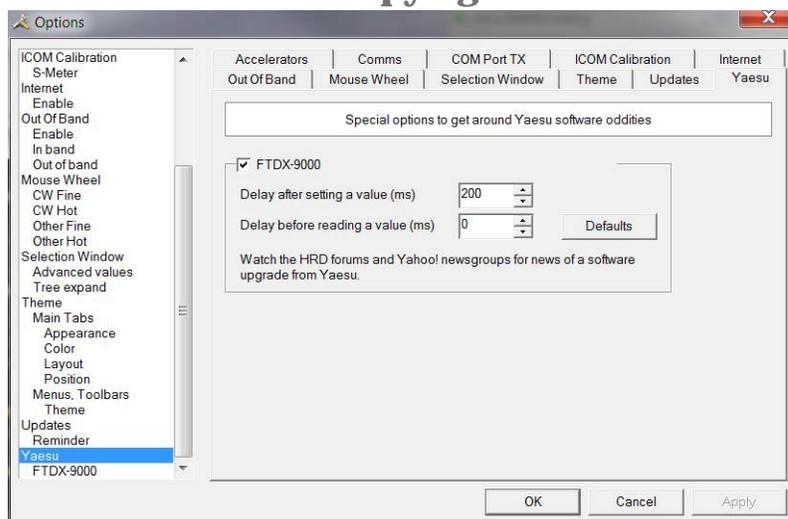
Main tabs can be toggled On / Off by selecting from the Menu Bar **View > Main Tabs**.

Updates



Yaesu

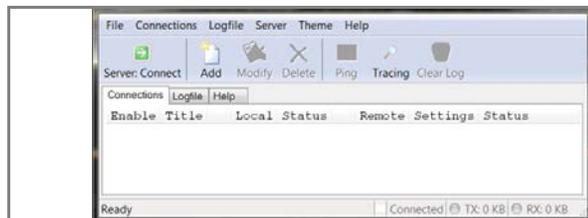
Select how frequently Ham Radio Deluxe reminds you to check for new updates.



Special options for Yaesu radios. Due to firmware "features" in the FTDX-9000 it is necessary to wait up to 250ms after writing a command to the radio. With any luck Yaesu will fix this at some date in the future.

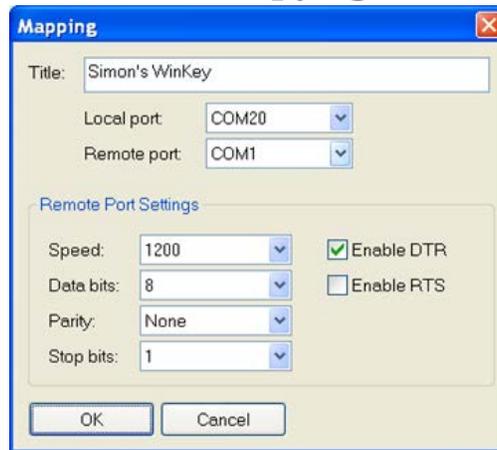
Serial Port Client

Select Port Client from the Tools> Programs menu.



You must define the serial port mappings before you connect to the serial port server running on the remote computer.

Press **Add** to define a new mapping.



Each mapping consists of:

- Title – whatever makes sense to you. In this case we're mapping to a K1EL WinKey on Simon's remote station in the south pacific.
- The local port – one of the virtual null modem ports. Here the two ports are COM20 and COM21.
- The remote port – Simon has connected the WinKey to COM1 on the remote computer.
- Remote port settings – WinKey uses 1200,8,none,1.
- [X] Enable DTR and [] Enable RTS – usually checked to provide power to a special powered cable or device. For Winkey you must check DTR to provide power to WinKey!

Remote Port Settings

Some useful remote port settings are:

- WinKey – 1200,8,none,1 and [X] Enable DTR.
- AlfaSpid RAS rotator – 600,8,none,1.
- AlfaSpid RAS rotator – 1200,8,none,1.
- Idiom Press rotator – 4800,8,none,1.

Press Connect to connect to the serial port server on the remote computer.

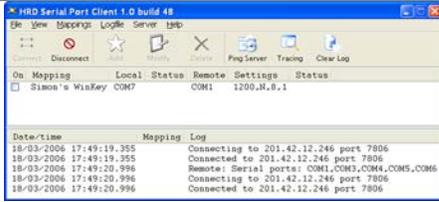
In the Connect to field enter the remote address, for example 201.42.12.246. If you are not using the default port (7806) then append a colon and the port number, for example 201.42.12.246:7808 to connect to port 7808 on 201.42.12.246.

In the Username and Password fields enter the username and password you have been given; these must also be entered in the configuration file.



When you have finished just press Connect.

Assuming everything works correctly the client will display log information similar to that below:

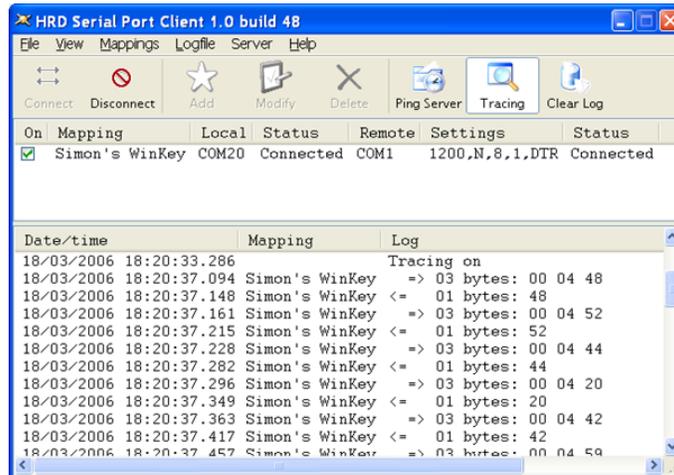
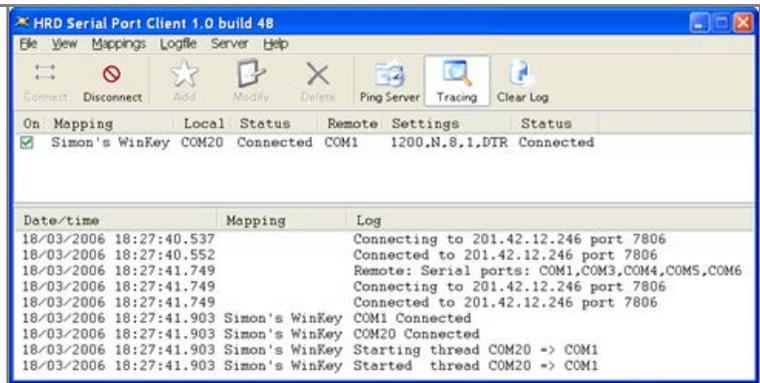


The client makes two connections; one to send data, the other to receive data. The remote server returns a list of known serial ports after the first connection is established, in this case COM1, COM3, COM4, COM5 and COM6.

Now check the Simon's WinKey mapping and you see logfile messages as the local (COM20) and remote (COM1) serial ports are opened.

Now you can connect to the remote WinKey using COM21 (the other half of the COM20 <-> COM21 virtual cable).

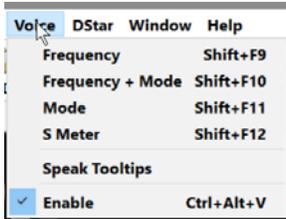
If you enable Tracing you see the data sent and received as the WinKey code runs through the initialization and performs an echoback test.



Congratulations – you can now use your remote WinKey.

Voice Functions

This feature is quite useful for those who are visually impaired. Clicking "Voice" on the main menu allows the HRD Rig Control to announce various functions on the display. When you Voice, a dropdown menu will appear.

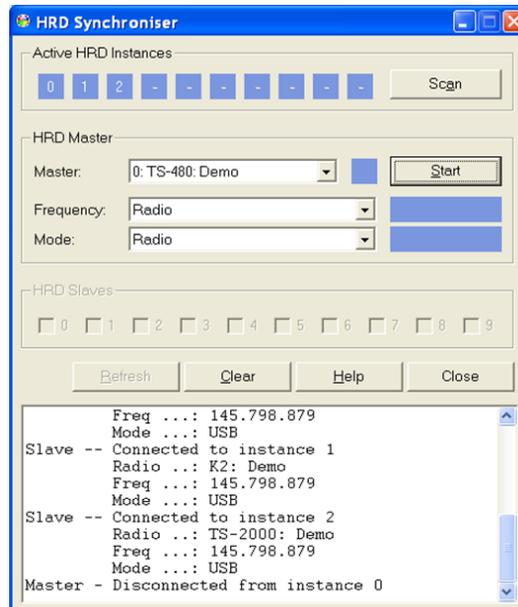


Voice announcements can then be activated or de-activated by checking the "Enable" function or by using the Ctrl+Alt+V keyboard shortcut. Pressing the Shft+Fey combinations indicated will announce the selected item. If you check the "Speak Tool tips" this announces the tool tip pop ups.

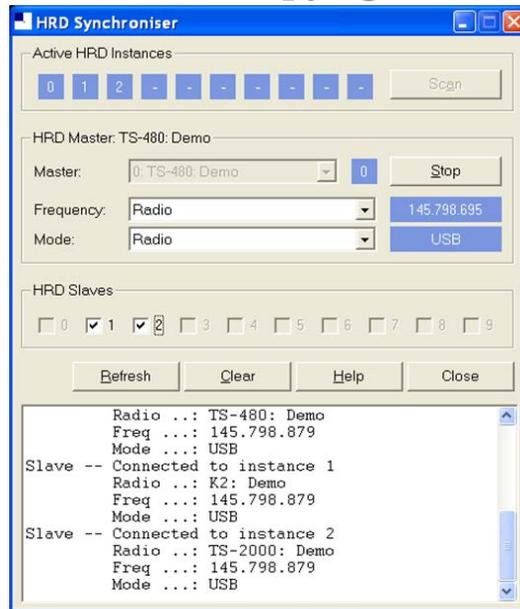
Synchronizer

The synchronizer is used to control two or more radios where a common frequency is shared by using the Dynamic Data Exchange (DDE) mechanism. For each radio you are using you start an instance of Ham Radio Deluxe, one instance is the Master, the rest are the Slaves, the slaves receive frequency and mode information from the master.

Start the Synchroniser from the Tools> Programs menu, then press Scan to find the active Ham Radio Deluxe instances.



Select the master instance (supplied the frequency and mode), and then press Start.



In the Frequency and Mode dropdowns you select the corresponding source from the Ham Radio Deluxe master instance:

- Radio – as seen on the main Ham Radio Deluxe display,
- Transverter – frequency is taken from the Transverter window (selected from the Tools menu).
- Satellite uplink – the uplink frequency and mode (see Ground Control on page 213).
- Satellite downlink – the downlink frequency and mode (see Ground Control on page 213).

In the Ham Radio Deluxe Slaves group box check the instances to be controlled by the Synchroniser.

As soon as you check a slave the slave's frequency and mode are updated with the current values from the master; every time the master frequency and / or mode change they are sent to the slave for so long as the slave option remains checked.

If you are using two radios for satellite tracking (for example two FT-817 or IC-7000):

1. Start an instance of Ham Radio Deluxe for each radio; connect to the radios.
2. Select an instance to use as the master, in this example the radio used for receive.
3. In the master (receive) instance:
 - Start the display.
 - Enter transmit and receive frequency information for the satellite you are tracking.
 - Check the RX VFO, do not check a TX VFO as this instance will not be used for transmit.
4. Start the Synchroniser:
 - Master is the receive instance,
 - Slave is the transmit instance,
 - Select the Satellite uplink option for Frequency and Mode so that the slave receives the frequency and mode used for transmit as computer by the Master instance.

The slave will now be updated with the transmit frequency and mode for transmit every time it changes in the master instance.

Chapter 8

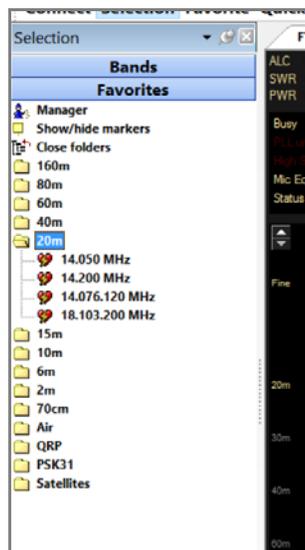
Selection Menu Options

Clicking the "Selection" icon on the Rig Control main menu opens the "Selection" option panel on the right side of your display. This panel contains many configuration options and utilities that are commonly used when controlling your radio.

The main feature options controlled from within the Selection menu are Bands, Favorites, Quick Save, Advanced, Macros and Menus. Most of these selections also contain managers for the options within the feature so you are able to configure the option to your liking.

Other options in the "Selection" pane, allow you to control menu items within the radio's menu system, that are available from the CAT functions but do not appear on the HRD Rig Control GUI.

Favorites



Due to limitations in the CAT system of most radios supported by HRD, the Memory functions are not available. HRD has provided for this by having the "Favorites" option where you can store your favorite frequencies for nets, rag chew and other places where there is activity that interests you.

The frequencies can be stored in a number of ways, by band, my mode by usage, or by just about any method you choose. As you can see on the left, we have frequencies stored in folders which are named according to what frequencies are contained in each folder.

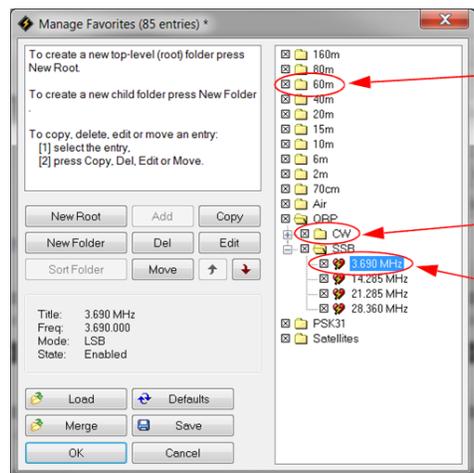
At the very top of the list, you see the "Manager". Clicking on the Manager opens the way for you to create folders and save your favorite frequencies when can then be accessed with the click of your mouse.

Favorites Manager

Start the manager from the Favorites menu or the Favorites pane in the Selection window. It is designed to be easy to use - let's see.

The Favorites Manager, as the name implies, provides a means to manage your favorite frequencies. They can be grouped by Root folders by band, mode, topic or interest. New Root folders are created using the "New Root" button. Root folders can have sub folders to help further group your favorites. These sub folders are created using the "New Folder" button. You add your favorite frequency using the "Add" button.

Root folders and their associated sub folders can be turned on and off by checking or unchecking the box in front of the folders. If for example you do not have an antenna for 160m, you can uncheck the box in front of the folder and 160m will no longer be listed in the Favorites pane of the Selection window. They will still be visible, however, in the band display above the 160m band.



Manager Options

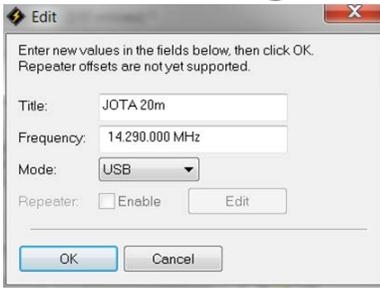
New Root – create a new top-level (root) folder. Folders are not saved if they are empty (no child folders or definitions). An example would be a Root Folder labeled JOTA for Jamboree on the Air.

New Folder – create a new folder as a child of the currently selected folder. An example would be to create a sub folder under JOTA labeled SSB or CW.

Sort Folder – sort the entries in the currently selected folder:

- By title,
- By ascending frequency, or
- By descending frequency.

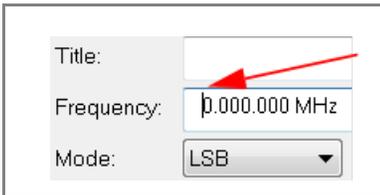
Add – add a new definition. If you have created a new empty folder, you can not add a favorite frequency to it. You need to add the frequency to either a higher level folder or in a folder that has favorites in it. You can then move the new favorite to the new folder that you created earlier.



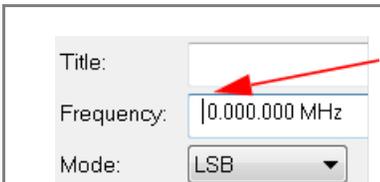
To add a new favorite frequency to an existing folder:

- Click on the folder that you wish to add a favorite to.
- Click on Add.
- Enter a title for your favorite.
- Enter the desired frequency without the decimal point.

If you are adding a frequency that starts with a single digit before the first decimal point, place your cursor immediately adjacent to the left side of the first digit.



If you are adding a frequency that starts with two digits before the first decimal point, place your cursor a bit further to the left so there is a small space between the cursor and the leading zero.



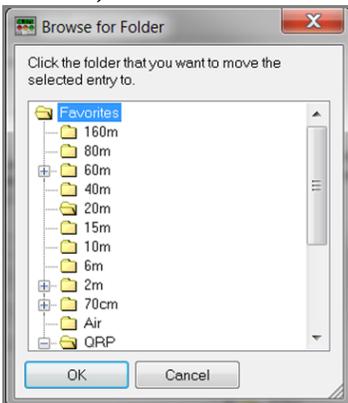
For three digits place your cursor a bit more to the left.

- Select your operating mode.
- Click on **OK** and your new favorite will be saved in the selected folder.

You can also select **Add** from Favorites in the menu bar to add a new definition. You can also use Ctrl+A keystroke combination to access the add function.

Del – delete the current folder or definition (depending on which you have selected).

Move – move an entry to another folder (alternatively drag entries between folders with your mouse).



- 5 Highlight the folder or definition.
- 6 Click on **Move**.
- 7 Select the new folder.
- 8 Click on **OK**.

Copy – make a copy of an existing definition.

Edit – edit the selected folder / definition.

Arrows – rearrange the selected folder / definition.

Load – load a new set of definitions from a file previously created using Ham Radio Deluxe; all current definitions are discarded.

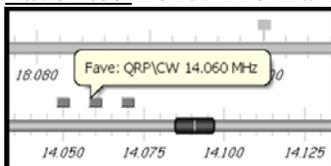
Merge - merge definitions from a file previously created using Ham Radio Deluxe.

Defaults – restore the default list (hard-coded into Ham Radio Deluxe).

Save – save current definitions to a file.

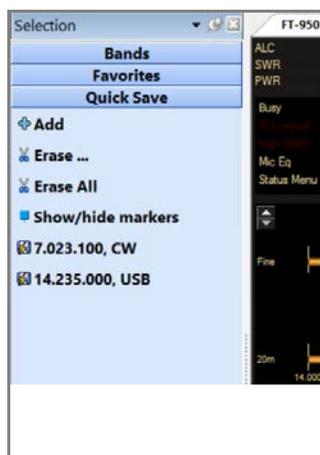
Favorites Markers

To display your favorite markers in the Ham Radio Deluxe display select Show Markers from the Favorites menu. The marker size is selected from the Marker Size option in the Favorites menu.



When you select to "Show Markers" they will be displayed on the tuning bar as shown on the left and a popup text is displayed as you move the mouse pointer over a marker. The text is constructed from the favorite title and frequency.

Quick Save

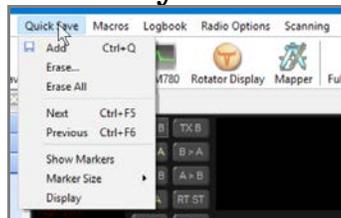


This is a simple way of marking a frequency as being interesting – you are monitoring three QSO's with a single radio and you want to quickly switch between the frequencies – for example during a 6m sporadic-E opening.

Each definition consists of the frequency in Hertz and mode; definitions are saved in the registry.

To switch between Quick Save definitions use the accelerator key combinations for the Quick Save menu options Next (Ctrl+F5) and Previous (Ctrl+F6).

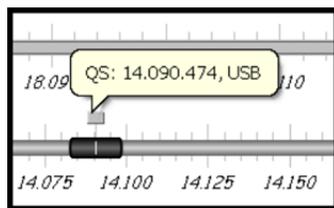
Add Entry



If you are tuning around on your receiver and find a net or maybe a frequency that is very active and you would like to return to this frequency in the future you can quickly add the frequency to your Quick Save list by clicking on the "Quick Save" on the Rig Control toolbar, and click the "Add" option from the dropdown.

In the future, if you want to return to this frequency, just open the Quick Save menu item in the "Selections" panel and click on the frequency that was added. Your radio will automatically be tuned to that frequency.

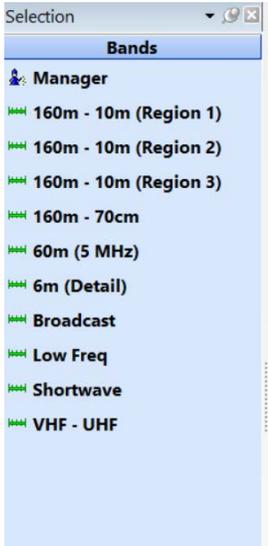
Later, if you decide you want to keep this in your "Favorites" you can add it to your Favorites option in the proper folder and will be able to select it from there and remove it from the Quick Start option.



When a frequency has been added to the Quick Save menu, a marker, similar to the ones for your Favorites, will be created on the tuning bar of the RC screen. When you move your cursor to that marker, it will indicate the "QS": "Frequency", "mode" in a popup as shown on the left. Once you remove the frequency from your Quick Save menu either by deleting it or moving it to your favorites, the Quick Save marker will be removed from the tuning bar.

Bands

The bandmaps in this section actually serve two purposes. They are setup to provide the frequency tuning each band in the Rig Control GUI.



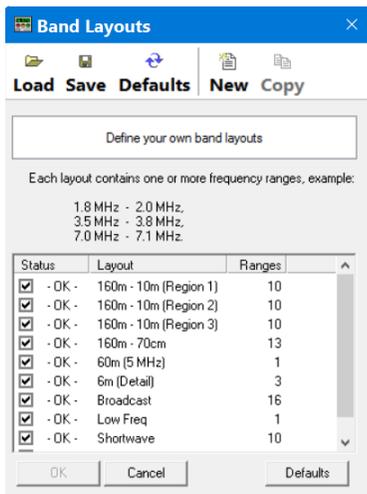
HRD comes preconfigured with several band choices available. Choosing any one of these options does a couple things. First and most important, you will notice there are 3 selections for the 160m - 10m bands. This is due to the fact the world is divided into 3 IARU Regions. These 3 regions are organized to broadly mirror the structure of the ITU and it's related regional telecommunications organizations. Each region has a specific frequency range assigned for each of the amateur radio bands. For example, 40m in Region 1 allows you to operate in the frequency range of 7.000 MHz - 7.200 MHz, while Region 2 allows a frequency range for 40m of 7.000 - 7.300, therefore it's important you select the proper region when setting up HRD with your radio. Below are the Regions.

- Region 1: Europe, Africa, Middle East and Northern Asia
- Region 2: The Americas
- Region 3: Asia-Pacific

At the top of the Bands panel, you see the "Manager". Selecting this will allow you to modify any of the preconfigured "bandmaps" or even create custom bandmaps of your choice.

Band Manager

The band manager can be used to either modify the currently configured bandmaps or you can create totally new bandmaps to suit your operating. To open the band manager, click "Manager" at the top of the Bands panel.



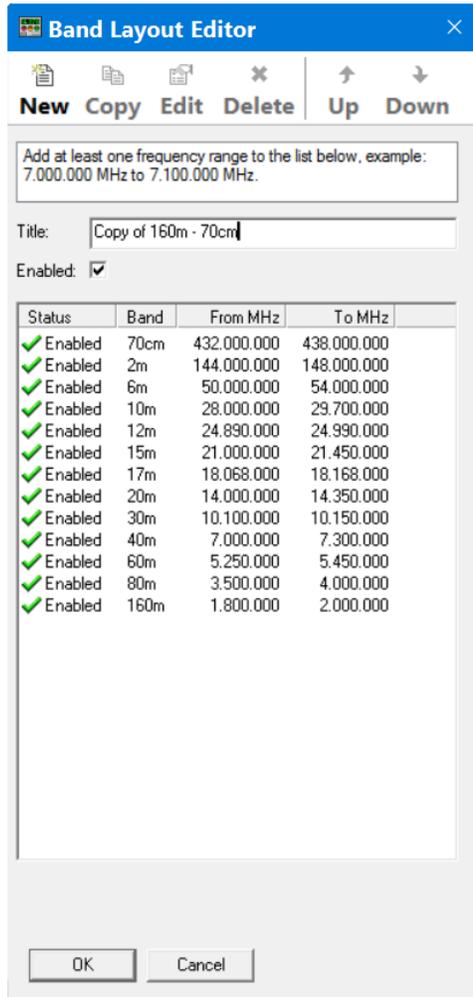
From the Band Layout Manager you can activate or deactivate any of the bandmaps. Upchucking the check on to the left of each bandmap will remove it from the Bands menu options.

From this manager you can also create completely new bandmaps or, if you like, modify any of the default bandmaps to display any band or frequency you like.

Each of the default bandmaps covers the full spectrum of frequencies for each of the amateur bands. Many operators, who have a license which restricts the frequencies they operate on might want to EDIT one of the existing defaults so that if they by accident move out of band, the alarm will warn them.

Modifying A Bandmap

The regional bandmaps are setup for mainly HF operation between 160 and 10 meters. The next one that contains all of those are the 160m to 70cm. Many HF radios have 6m on them, so how do we get a buttons for 160m to 6m? Quite simply, by modifying the 160 - 70cm band map. To do that, click on the 160 to 70cm bandmap to highlight it in the manager. Then click on the "COPY" button at the top of the manager. This opens a copy of that bandmap in the editor.



With this bandmap open in the editor, first, we need to change the "Title" of it, so, change "Copy of 160m - 70cm" to "160m - 6m"

Next, in the lower screen where the different frequency ranges are, click on the 2m frequencies to highlight that line. Next, click the "Delete" button on the editor toolbar. Do the same with the 70cm frequencies, click to highlight, then delete.

Now we have renamed this and want to save it to our Bands menu, so, some of you may find you don't have the [OK] and [Cancel] buttons at the bottom of the screen. You may need to resize the Editor screen slightly by putting your cursor on the very bottom edge of the screen, click and hold the left mouse button, and drag downward just a very small amount and the OK and Cancel buttons will be shown.

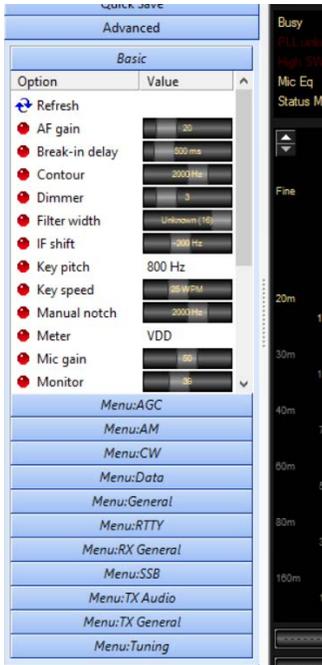
To save your newly modified, just click the [OK] button and the new band will be added to the bottom of the Band Manager. Now, click the [OK] button on the Band Manager and the newly created bandmap will be saved under the bands menu.

Now, just click on the newly created bandmap in the menu and your radio screen will show you now have buttons for 160 to 6 meters. Clicking on each button will now set your radio to that band.

You can easily use the above procedure to edit each band, for example, a General class license holder could modify the 20m band to provide 2 buttons on the radio with frequency ranges that covers ONLY the frequency ranges he is authorized to operate in. One button could be setup to cover the "CW/Digital" portion of the band by creating a new frequency range, name the button "20m D" and entering the frequency range of 14.025 to 14.150, then create a new button "20m V" to cover the voice frequency range allocated to a General class operator, 14.225 to 14.350. Once created within the band plan, delete the normal 20m entry, save this new

bandmap and select it's button and those two new buttons will appear on the Rig Control GUI.

Advanced



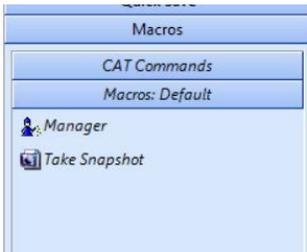
This "Advanced" pane will NOT display on all of the HRD screens when the "Selection" option is opened. This is available for ONLY radios that have full CAT control of the included options in this menu item.

This options allows control and settings to many of the options already displayed on the radio's GUI in addition to many menu items within the radio's menu system that are NOT on the GUI, but still available from the CAT interface.

If available, some menu items within your radio can be changed from here instead of actually opening the menus in the radio itself.

Again, these options may not be available for ALL radios supported by HRD.

Macros



Ham Radio Deluxe supports two types of custom definitions:

- CAT commands
- User defined macros which are a combination of standard Ham Radio Deluxe input fields

Macros are selected from the Macros pane in the Selection window.

Cat Commands

A CAT command macro is a command that you define yourself, containing one CAT commands as describer in your radio's handbook. The commands you enter must be supported by your radio.

Use CAT commands to add support not provided by the Ham Radio Deluxe inter- face.

Manager



To open the CAT Command macro manager do one of the following:

- Press Manager in the Macros> C
Commands selection pane
- Select CAT Command Manager f
the Macros menu

This opens the CAT Command Manager as shown on the left.



1 Press **New** to create a new comm
definition.

In this example a Kenwood command is defined for the TS-2000. The mode is set to USB and the frequency to 50.150 MHz.

2 In the Title field enter [**50.150 M**
USB].

3 In the CAT Command field enter
following commands:

```
# Set mode to
USB. MD2
# Set frequency to 50.150 MHz
FA00050150000
```

4 In the Description field enter
[**Change frequency to 50.150 MHz, mode to USB**].

5 Click on **OK**. The new definition
added to the list in the Manager window.

Protocols Reference

Each brand of radio has a slightly different protocol for their CAT commands. Below is are examples of the differences. For complete information, please refer to the operating manual for your radio.

ELECRAFT AND KENWOOD

Each command consists of two alphabetical characters (lower or upper case) and optional parameters.

The terminating semicolon (;) is not necessary, it is added automatically.

TS-480, TS-2000

Set mode to LSB: MD1

Set mode to USB: MD2

Set AF gain to 0: AG0000

Set AF gain to 100 ..: AG0100

Select VFO-B: FT1

You can define more than one command; to do this start each command on a new line.

Special Commands

Comment: # Some interesting text. Pause of 250 ms ..: @ 250

ICOM

ICOM radios use the CI-V format to communicate with the radio. Please read your operating manual for command information.

Each entry defined here consists of:

- [1] command,
- [2] optional sub-command and
- [3] optional data.

You must add a - between each byte (each byte is two hexadecimal characters).

IC-7800

Set mode to LSB: 06-00

Set mode to USB: 06-01

Set AF to 0: 14-01-00

Select preamp 2: 16-02-02

MOD I/P (data off) MIC ...: 1A-05-00-31-00 MOD I/P (data off) SPDIF ..: 1A-05-00-31-07

You can define more than one command; to do this start each command on a new line.

Special Commands

Comment: # Some interesting text. Pause of 250 ms ..: @ 250

TEN-TEC

In general Ten-Tec commands are two character commands followed by data and a carriage return <cr> or <0x0d>. Do NOT add the carriage return - this is added automatically.

Some data must be sent in binary format, hexadecimal is used to represent binary data. To set Split mode on for the Argonaut the documented command is

*O<0x01><0x0d> which is entered here as *Ox01, that is *O (Split mode) + x (switch to binary) + 01 (Split On). The carriage return <0x0d> is not added.

Please read your operating manual for command information.

When you enter x the format switches to binary mode - two hexadecimal characters per byte. Only enter x once, even if entering more than one byte of data.

Argonaut

Set mode to LSB: *M2

Set mode to USB: *M1
 Set split mode on ...: *Ox01
 Set split mode off ..: *Ox00

Jupiter

Set mode to LSB: *M2
 Set mode to USB: *M1
 Set AF gain to 32 ...: *Ux20
 Set filter to 450Hz .: *Wx1D

You can define more than one command; to do this start each command on a new line.

Special Commands

Comment: # Some interesting text.
 Pause of 250 ms ..: @ 250

YAESU

Starting with the FTDX-9000 Yaesu has changed the CAT protocol to one very similar to that used by Kenwood. So if you are fortunate enough to have the FTDX-9000 please use the Kenwood commands – See "Elecraft and Kenwood".

Each Yaesu command consists of five bytes. The bytes are defined in the order in which they are sent to the radio. You must add a - between each byte.

Each command consists of four bytes of data and an OpCode. The order in which P1-P4 are shown in your operating manual does not matter here - there are difference between Yaesu radios, just remember that the bytes are defined in the order in which they are sent to the radio.

FT-817

Set mode to LSB ..: 00-00-00-00-07
 Set mode to USB ..: 01-00-00-00-07
 Set Split on: 00-00-00-00-02

FT-1000MP

Set mode to LSB ..: 00-00-00-00-0C
 Set mode to USB ..: 00-00-00-01-0C Split on: 00-00-00-01-01

You can define more than one command; to do this start each command on a new line.

Special Commands

Comment: # Some interesting text. Pause of 250 ms ..: @ 250

User Defined Macros

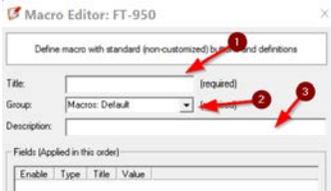
User created macros are combinations of fields on the Ham Radio Deluxe radio display. Users of Microsoft Office will be familiar with the concept supported here. When you start out you will see a Macros: Default sub tab in the Selection window. This name will / can change depending on how

you define your macros. You can also add more sub tabs allowing you to sort your macros in a manner convenient to your operating style. Let's do a couple of examples.

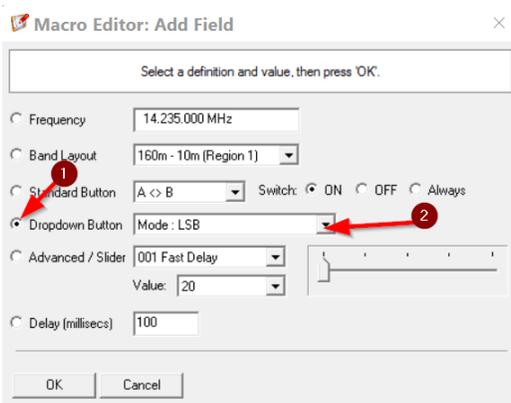
Manager

Select **Manager** from the Macros: Default menu, and then press **New** to create our first new macro. This macro will switch your radio to 50.150 MHz in USB. We will put it in a new sub folder called "Simple".

First we will name the macro and where it will reside. We can then set the mode to USB:



- 1 In the Title field enter **[50.150 MHz USB]**.
- 2 In the Group field enter **[Macros: Simple]**.
- 3 In the Description field enter **[Change frequency to 50.150 MHz, mode to USB]**.
- 4 Click the "Add" button located just below the "Fields" display on the Macro Editor screen.



After clicking "Add" in the previous step, the window on the left will open. In this box:

1. Put a tick in the "Dropdown Button"
2. Click the dropdown box and select the "Mode"

Upon completing these steps, click the "OK" button on the bottom of the window.

At this point, you will be returned to the main Macro Editor screen where you will once again click the "Add" button to allow you to enter the "Frequency". When the "Add" window opens (as shown in the last step) place a tick in the "Frequency" field as you did for the "Dropdown Button" previously, and enter the Frequency (50.150.000) in the field provided.

| Enable | Type | Title | Value |
|-------------------------------------|-----------------|------------|-------|
| <input checked="" type="checkbox"/> | Dropdown Button | Mode : USB | |
| <input checked="" type="checkbox"/> | Frequency | 50.150.000 | |

You have now defined 2 fields as shown on the left. Click the "OK" button at the bottom of the Macro Editor.

Next, press the "Save" button on the Macro Editor Toolbar and close the window. Your Macro will now appear in the Macro: Default pane.

Another Example

Following the above instructions, with the exception of just a few changes, we will create a new Macro inside a new folder.

This macro will switch your radio to 14.070 MHz in USB. We will put it in a new sub folder "PSK"

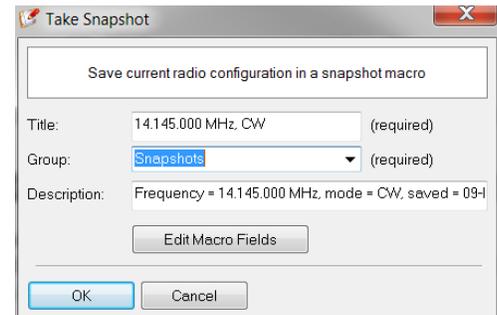
1. Reopen the Macro Manager which now can be found in the Macro: Simple sub-folder.
2. In the Title field enter [20M PSK].
3. In the Group field enter [Macros: PSK].
4. In the Description field enter [Tune radio to 20M PSK].
5. Press Add to open the Macro Editor.
6. Tick the Dropdown Button
7. Select Mode: USB
8. Press OK.

Now we need to set the frequency to 14.070.000:

9. Press Add again to open Macro Editor
10. Tick the Frequency button
11. Enter [14.070.000 MHz].
12. Press OK. Your definition now contains two entries:
13. Press Save, this returns you to the Macros Manager.
14. Press OK and the Macro Editor closes.

You now have two sub-folders of macros displayed in the Selection window. You can create more to match your operating needs.

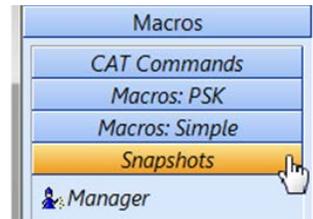
SnapshotsThe snapshot button creates a definition that contains the state of all input fields. This is an easy way of preserving a known state of your radio once you have set it up exactly the way you want. You can add functions as you did previously to further enhance your snapshot.



HRD Rig Control V6.3

Your snapshots will be found in their own sub-folder of macros.

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Mens

Chapter 9

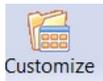
Introduction

In the previous chapters we explored the layout as delivered. We did do some small acts of customization. We will now explore most of the items that can be changed, modified, or even removed. The final layout is up to the user to define. Just because it is delivered as the default view, it may not be what you want or desire. Before you start making wholesale changes, make sure that you have your radio connected and working.

There are, as usual, several ways to navigate to the Customize Layout dialog window which is used to define the appearance of the radio display. Your choices are:

From the menu bar select **Tools**. Near the bottom of the selection box, click on **Customize Layout**.

Press **Ctrl+F8** keys.



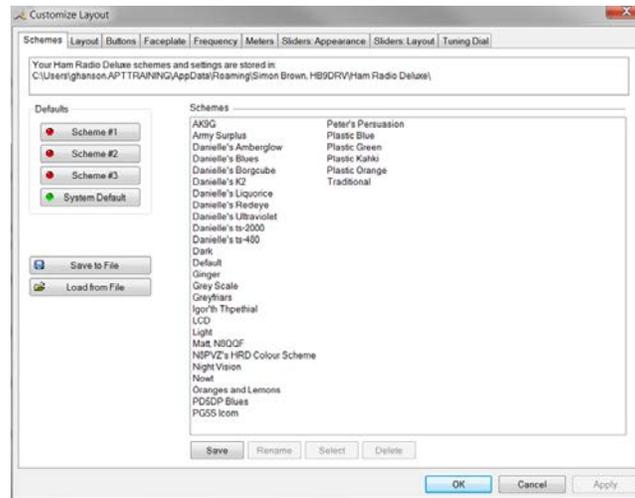
Press the **Customize** button on the tool bar.

Customize Layout

There are, as usual, several ways to navigate to the Customize Layout dialog window which is used to define the appearance of the radio display. Your choices are:

- From the menu bar select Tools. Near the bottom of the selection box, click on Customize Layout.
- Press Ctrl+F8 keys.
- Press the **Customize** button on the tool bar.

Schemes



The first tab on the display is "Schemes". Schemes are predefined customizations created by the Ham Radio Deluxe creative team and other Ham Radio Deluxe users. There are four different schemes shipped with Ham Radio Deluxe. Scheme #1 - #3 and the System Default. You can not change the look of the default schemes.

You can add or modify schemes displayed in the large Schemes list. The Ham Radio Deluxe team and HRD users have already created the schemes that are there. Special thanks to Danielle in Northeastern, UK for his contributions.

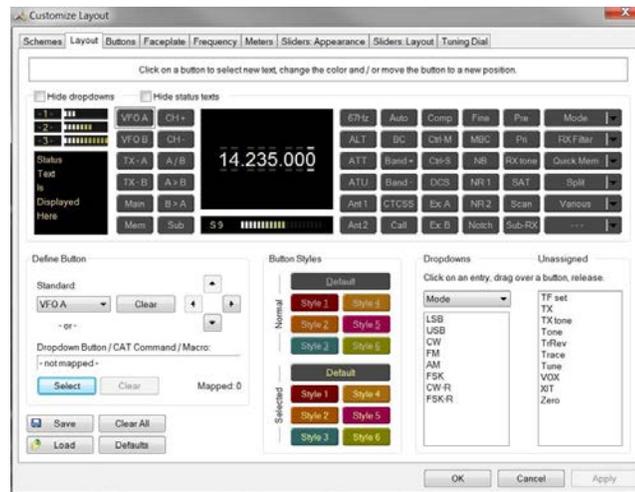
- Select a default scheme by pressing the scheme button (or select an entry and press Select);
- Select one of the other schemes by double-clicking on the entry in the Schemes list.

If you have modified a layout scheme and wish to save it with a new name, press "SAVE" and you will be prompted for a Scheme name. Use "Rename" and "Delete" to organize the available schemes.

If you need to save the file to a location different than the default location, press the "SAVE AS FILE" button. This allows you to save your options file to any location.

If you receive a options file from someone else, you can add it to your copy of Ham Radio Deluxe by pressing the Load from File button and navigating to the options file location and selecting the file.

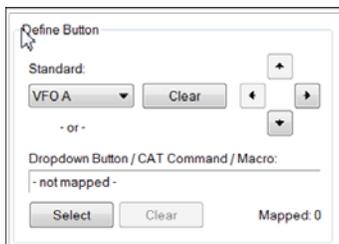
Layout



The next tab is the Layout tab. This is where we can modify the screen layout for our buttons and drop downs. This is one place where personal preference will cause you to pull your hair out because things are not where YOU want them. Re mapping the layout is really quite easy.

Ham Radio Deluxe is a data-driven program. For each radio there is a table of supported commands and associated button / drop down / slider names. The layout order is more-or-less alphabetical. Don't be put off by the amount of information in this window – take it slowly and read the information here.

Note: The layout definition is saved on a per-radio basis in the registry. For your sanity only have a connection open to the radio that you plan to modify the layout. Close any other radio connections.



<-- This small portion of the dialog allows us to do amazing things.

Clear Entry

If we click on a button above the area such as the VFO A button, we can clear the button so we can use the location for some other function. This is done by clicking the **Clear** button. We can also remove an entry by dragging it into the Unassigned list on the right side of the dialog box.

Moving Entries

We can move the selected entry by simply dragging it with the mouse or by using the four arrow-buttons.

Dropdown Button / CAT Command / Macros

You can create new buttons - for example, to create a USB button f

the Mode dropdown:

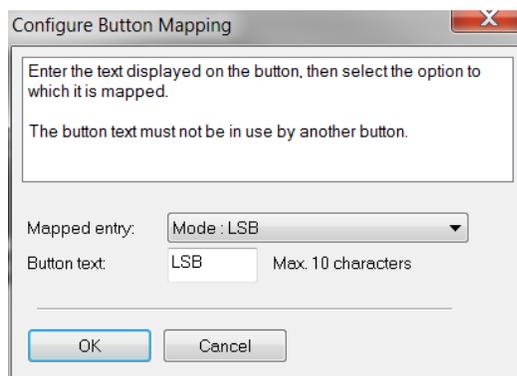
9 Open the Customize Layout dialog and click on the **Layout** tab.

10 Select or create an empty button position – the selected entry will start to blink (you can reposition this button later),

11 In the Define Button area of the dialog press **Select** (above the Save and Load buttons), This will open the Configure Button dialog.

12 In the Configure Button dialog window select **Mode: LSB** and enter the text to appear on the new button.

13 Press **OK**.

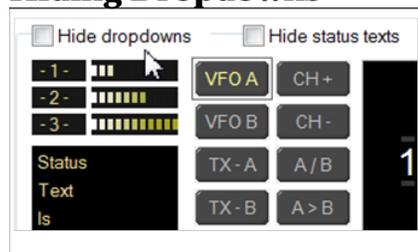


14 Press **Apply** in the lower left corner of the current screen.

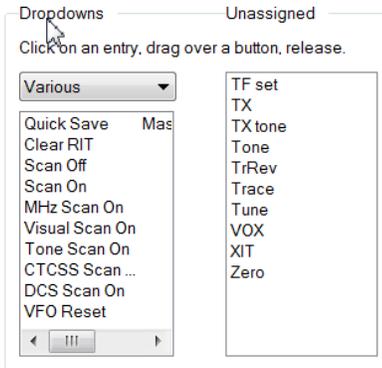
15 The previously empty button position now has a new value – LSB!

16 If you had previously created a macro or created a custom CAT command, you would have had the choice of applying one of them to your button. We will cover macros and CAT commands later in this manual.

Hiding Dropdowns



Dropdowns



Select the dropdown menu, and then simply drag an entry to an unused location in the display.

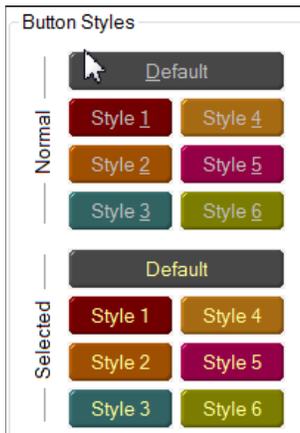
If you drag to a location that already has a definition the current definition is removed, if a standard button it is returned to the unassigned list.

Unassigned

Entries in the Unassigned list are standard buttons that are not currently displayed. Simply drag an entry to an unused location in the display.

If you drag to a location that already has a definition the current definition is removed, if a standard button it is returned to the Unassigned list.

Styles



In the Buttons tab you can define up to seven button styles, shown here in the Button Styles group. The Buttons tab is the next tab we will visit.

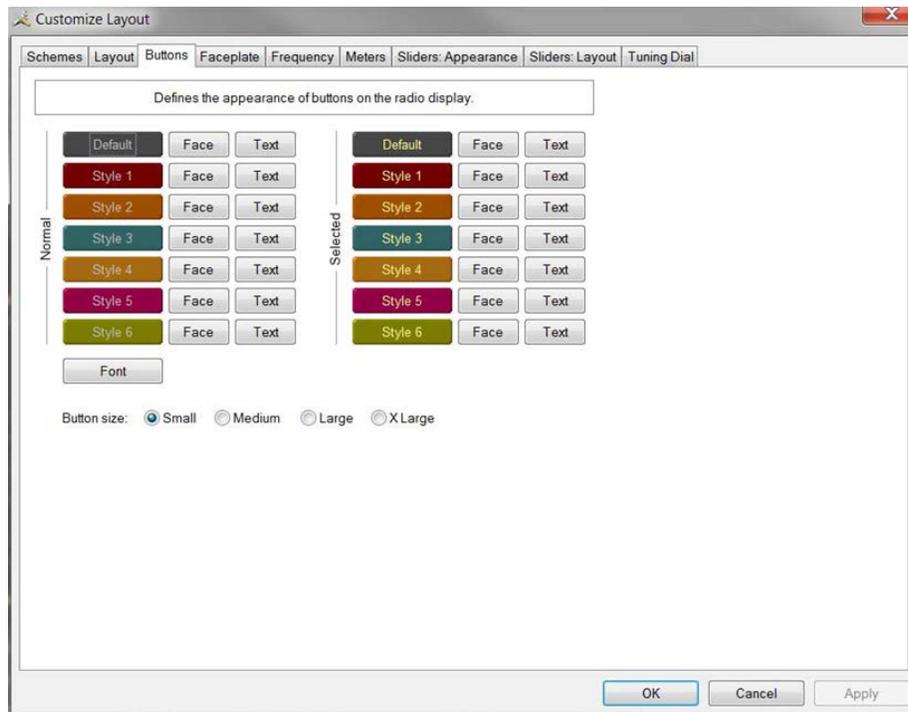
To assign a style to a button either:

- Drag the style over the button, or
- Click a style to apply it to the currently selected (blinking) button.

Save/Load



To distribute your layouts with other users of your radio model the Save and Load buttons. You can also clear the deck and start over fresh or revert back to the default button layout.

Buttons

The above screen allows you to customize the buttons on the display.

Seven button color combinations,

- The font, and
- The button size.

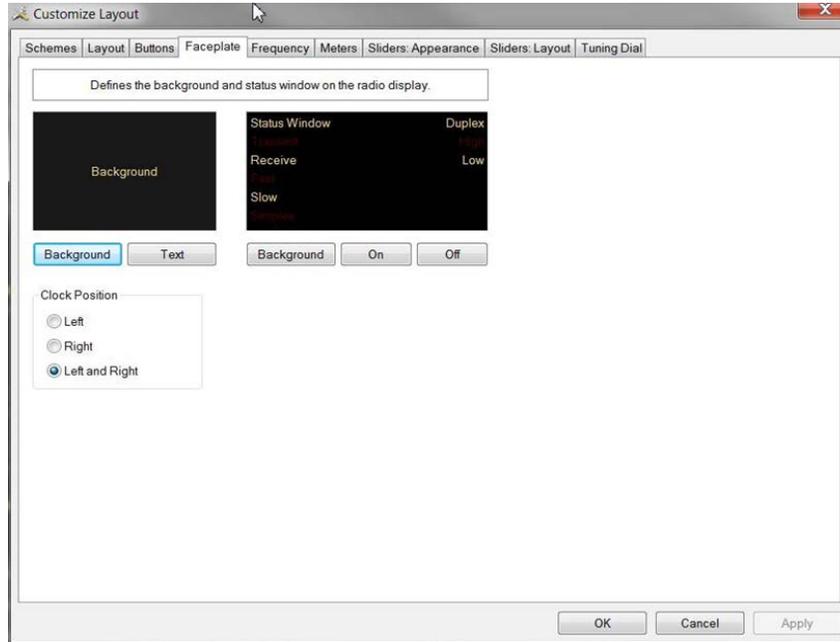
The default button size is small; this is so that users with low resolutions such as 800 x 600 still have a usable configuration. There are no rules when using the button size; select the size which pleases you most.

For the technical readers the button size is tied to the font size of the radio display form (font is

Microsoft Sans Serif, size is 8, 9, 10 or 12 point).

Changing the font size simply changes the font assigned to the form.

The button size can also be changed by selecting **View** on the menu bar and then selecting **Layout Size**. You can also [**right click**] on any button on your display and select **Layout Size**.

Faceplate**Background**

These colors are applied to the background area of the display and to the transmit meters (if any) such as PWR, SWR and ALC.

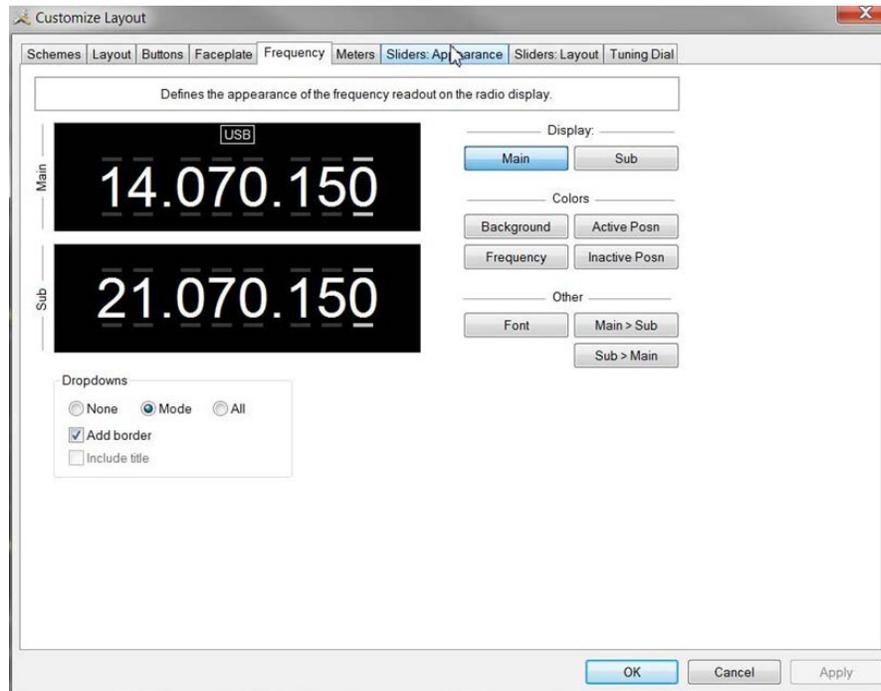
Status Window

The status window displays information which you cannot normally change using buttons or sliders in Ham Radio Deluxe.

Typical examples are Scanning status, Split mode and Memory channels.

Clock Position

The clock is displayed to the left, right or both sides of the band title.



If your radio supports simultaneous access to two VFO's (Kenwood, some Yaesu) then Ham Radio Deluxe will display two VFO's, otherwise just one VFO is displayed.

First select the VFO you are updating – main or sub. The colors you can set are:

- Background,
- Frequency – the digits,
- Active Posn – the bar above and below the current digit,
- Inactive Posn – the bar above and below the other digit. Default is the same as the background color.

The Font can also be set, use the **Main > Sub** and **Sub > Main** buttons to copy settings between VFO's.

Dropdowns

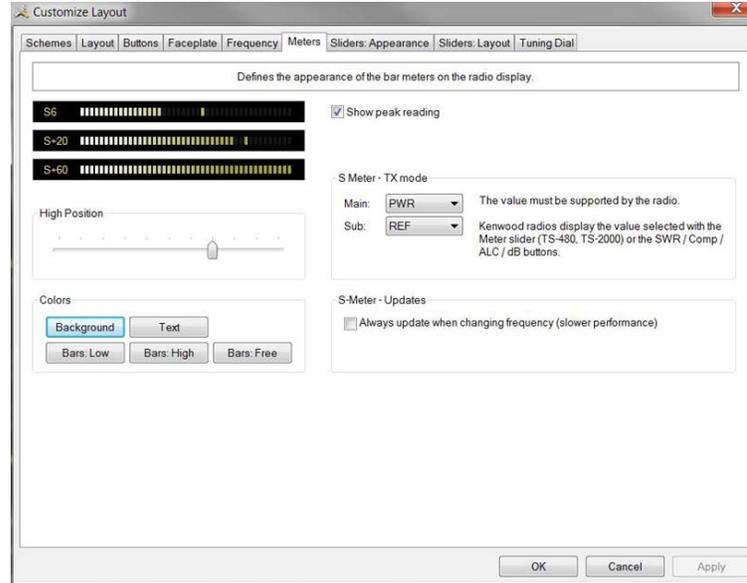
The dropdown buttons (Mode, Filter...) can be displayed at the top of the main frequency display.

Select:

- None (no dropdowns),
- Mode (only the mode dropdown) or
- All (all dropdowns).

If Mode or All is selected you can check **Add Border** to add a border around the text.

If All is selected you can check **Include Title** to add the Dropdown button's title (if there is room).

Customize Meters

The Background and Text colors should be obvious. There are three graduation colors:

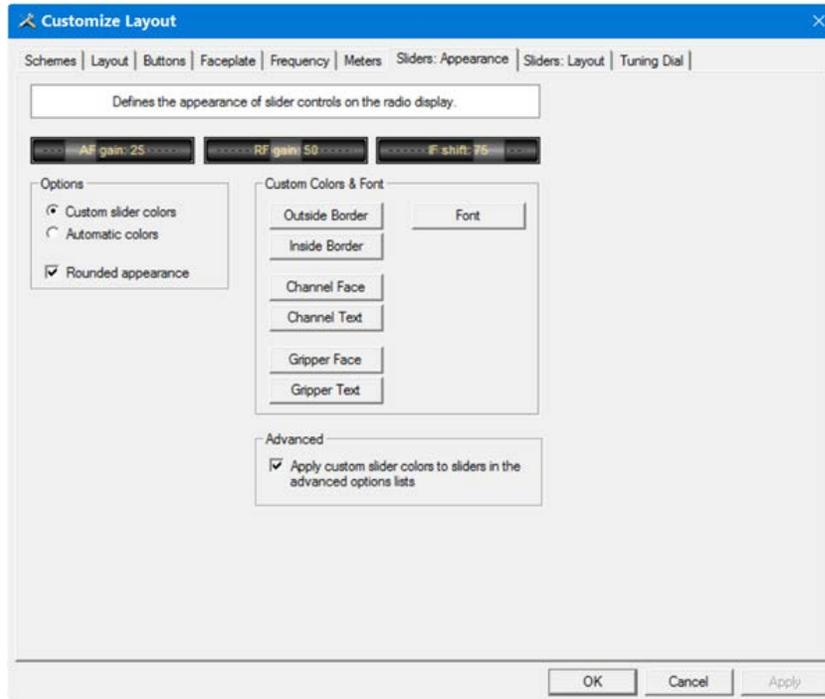
- Bars: Low – the first bar color,
- Bars: High – the color at the position set by the High Position slider, and
- Bars: Free – the color for the free (empty) bars.

If you check Show peak reading the recent peak value is displayed.

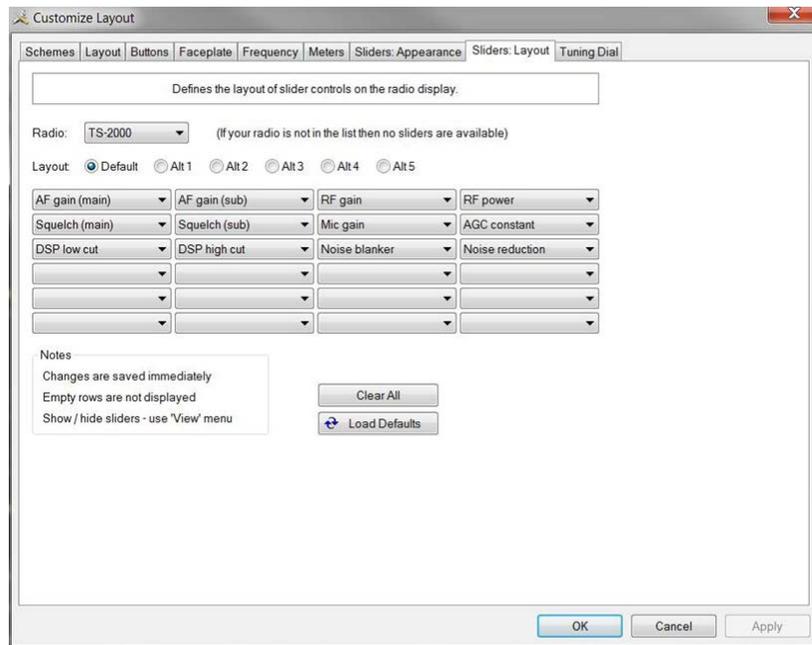
When Ham Radio Deluxe is in TX mode the S Meter value is replaced by the value selected in the Main and Sub dropdowns, the value you select must be displayed by Ham Radio Deluxe in the upper right hand corner of the display. For Kenwood radios the value to be displayed is selected with the meter slider or the individual buttons (SWR / Comp / ALC / dB).

If you check the **Always update...** option then the S Meter is updated when you change frequency – this results in slower performance.

Slider Appearance

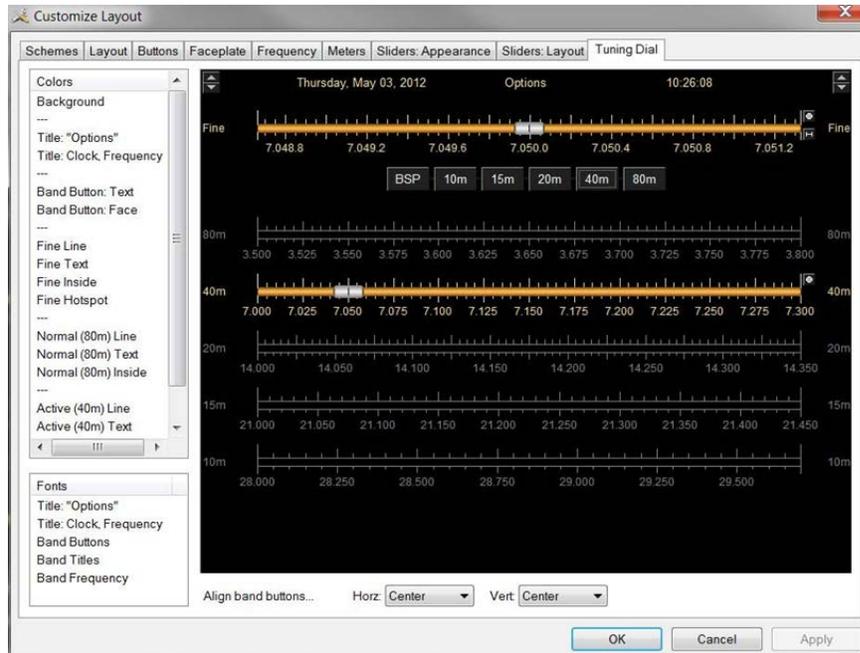


If supported by your radio, sliders are displayed at the bottom of the display. Here you define the appearance of the sliders. These colors are optionally applied to the sliders in the Advanced selection windows (select **Advanced** from the View menu).



Here you select the sliders to be displayed. Define up to six layouts, for example one layout for SSB and another for CW.

Tuning Dial



Here you define the colors, fonts and band button positions.

Chapter 10

Introduction To Remote Servers

A popular feature found in Ham Radio Deluxe that is not found in many other ham radio software packages is the ability to operate your station via HRD's built- in remote server software.

There are places, however, where you may not be able to operate your base system from remote. These places are, for example, your work environment where the computers you use are behind a firewall or router that are not under your direct control. Certain ports need to be available through the firewall and routers in order for you to connect remotely to your base station and these may be blocked in a corporate environment due to various reasons. Ham Radio Deluxe is evolving into a program that supports all the serial port-enabled devices that you control at your remote station.

There are two Remote Servers built into the HRD software. For radio control you use the Ham Radio Deluxe Remote Server. For other devices such as keyers and rotators you use the Ham Radio Deluxe Serial Port server. (See the chapter on HRD Remote Serial Port Server)

This chapter deals only with the Rig Control Server.

Note that the Ham Radio Deluxe Remote Server is highly optimized for use with Ham Radio Deluxe and should be used to control the radio.

Note: The process of setting up these remote servers is not something an inexperienced computer user should attempt. Find a friend who makes his living setting up and maintaining computer networks. Be kind to them and reward them so they will come again and help when something stops working.

HRD Remote Vocabulary

While setting up the HRD Remote server, you may run into many terms used that you have heard but are not exactly familiar with. We'll go over many of these terms and explain what they mean and how they are used in conjunction with the HRD Remote Server. If you ever need to contact HRD support, knowledge of the terms used will help you describe an issue to the technician and will also help you understand the technicians responses.

Below are brief definitions of some of the vocabulary words we'll be working with when discussing the HRD Remote Server installation and operation.

- **Host** - This is the computer that is physically connected to the radio equipment in your ham

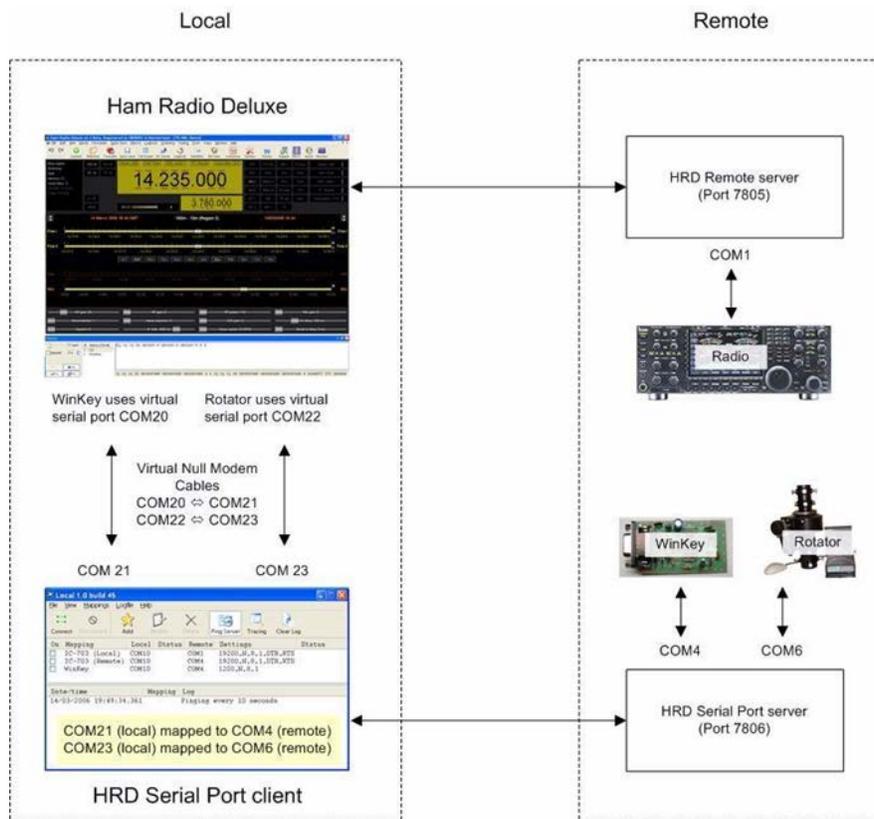
shack. This is also the only computer which runs the HRD Remote Server.

- **Remote** - The laptop or other computer used to connect to the Host system from a remote location. This computer is not physically connected to any equipment in your shack.
- **localhost** - Or IP Address 127.0.0.1 is the loopback Internet protocol (IP) address also referred to as the "localhost." The address is used to establish an IP connection to the same machine or computer being used by the end-user.
- **LAN** - A **local area network (LAN)** is a computer network that interconnects computers within a limited area such as a residence, school, laboratory, university campus or office building and has its network equipment and interconnects locally managed.
- **IP Address** - An **Internet Protocol address** is a numerical label assigned to each device (e.g., computer, printer) participating in a computer network that uses the Internet Protocol for communication. An IP address serves two principal functions: host or network interface identification and location addressing. Its role has been characterized as follows: "A name indicates what we seek. An address indicates where it is. A route indicates how to get there."
- **Port Forwarding** - In computer networking, **port forwarding** or **port mapping** is an application of network address translator (NAT) that redirects a communication request from one address and port number combination to another while the packets are traversing a network gateway, such as a router or firewall. This technique is most commonly used to make services on a host residing on a protected or masqueraded (internal) network available to hosts on the opposite side of the gateway (external network), by remapping the destination IP address and port number of the communication to an internal host.
- **External IP Address** - If you are planning on connecting to your system via the internet from outside your home network you are going to have to know the exact internet IP Address of the computer you are connecting to. This connection must be a full time connection. ISPs assign a Dynamic IP Address to your computer system. For example, your dynamic IP address may be 68.74.165.227. This would be the address you would use to connect from your remote computer to your base system over the internet. The problem comes in when most ISPs change that address from time to time without you knowing it. Some change the IP address at random times, others change your IP address each time you disconnect and reconnect your modem to the internet while others change your IP address each day. There are two solutions to this problem. The first is to contact your ISP and request a STATIC IP address for the system where the remote server is running, (your shack computer). This is usually inexpensive, around \$5.00 or so a month added to your internet bill. The second solution would be to use a service such as NO-IP, DYNDNS or any one of many such services which provide a free solution to the problem of not having a static IP address. These services monitor your IP address and track any changes while providing you with a constant connection through their DNS servers so any change in your IP address will not effect the address you use to connect to your remote system. If you are installing on a remote computer then the computer must have a static (non-changing) public IP address. If you have a public IP address which is not static then visit <http://www.no-ip.com/> and use the free IP redirection option.
- **Internal IP Address** - There is another IP address that also requires attention if you plan to run the HRD Remote server on a computer in your shack. If you have only one computer in your shack and it is connected directly to the internet via a modem there isn't

much problem. A problem arises if you have more than one computer in your house and they each connect to the internet through a router, wireless or hard wired. When connected to the internet via a router, each computer connected to the router has it's own INTERNAL IP Address. Just like with your Internet IP address, this internal IP address can change depending on the sequence the different computers are booted up and access the router. It is advised you set an internal STATIC IP address for the computer running HRD's Remote Server software. You will find instructions to do this in the next section of this documentation.

- **Firewall** - You have probably heard this word and know what it is. You may possibly have more than one on your computer system and not know it. You are probably familiar with your Windows firewall or one within your Anti-Virus software, however, you may also have one in your router or modem. You need to check for both and make sure you open up ports 7805 (Ham Radio Deluxe Remote Server) and 7806 (Ham Radio Deluxe Serial Port server) for incoming TCP traffic.

How Remote Servers Work



In this example the remote station uses serial ports as follows:

- COM1 --> IC-7800,
- COM4 --> WinKey keyer,
- COM6 --> AlfaSpid rotator.

Your VCP software needs to be able to create two virtual null modem "cables".

In this example the "cables" map ports as follows:

- COM20 <-> COM21, and
- COM22 <-> COM23

The local station connects as follows: IC-7800

Remote port selected, TCP/IP connection made with the Ham Radio Deluxe Remote Server running on the remote computer (port 7805). The Ham Radio Deluxe Remote Server connects to the IC-7800 using COM1.

Keyer

The Ham Radio Deluxe Winkey interface connects to the Ham Radio Deluxe Serial Port client on the local computer using the COM20 <-> COM21 virtual cable. The Ham Radio Deluxe Serial Port client connects to the Ham Radio Deluxe Serial Port server on the remote computer using TCP/IP (port 7806).

The Ham Radio Deluxe Serial Port server connects to the K1EL WinKey using COM4.

Rotator

The Ham Radio Deluxe Rotator interface connects to the Ham Radio Deluxe Serial Port client on the local computer using the COM22 <-> COM23 virtual cable. The Ham Radio Deluxe Serial Port client connects to the Ham Radio Deluxe Serial Port server on the remote computer using TCP/IP (port 7806).

The Ham Radio Deluxe Serial Port server connects to the AlfaSpid rotator using COM6.

Setting Up A Local Static IP

It is very important to setup a static ip address for your computer if you are going to use port forwarding. When you have port forwarding setup, your router forwards ports to an IP address that you specify. This will probably work when you initially set it up, but after restarting your computer it may get a different IP address. When this happens the ports will no longer be forwarded to your computer's IP address. So the port forwarding configuration will not work.

What is an IP Address?

IP addresses are four sets of numbers separated by periods that allow computers to identify each other. Every computer has at least one ip address, and two computers should never have the same ip address. If they do, neither of them will be able to connect to the internet.

Dynamic vs Static IPs

Most routers assign dynamic IP addresses by default. They do this because dynamic ip address networks require no configuration. The end user can simply plug their computer in, and their network will work. When IP addresses are assigned dynamically, the router is the one that

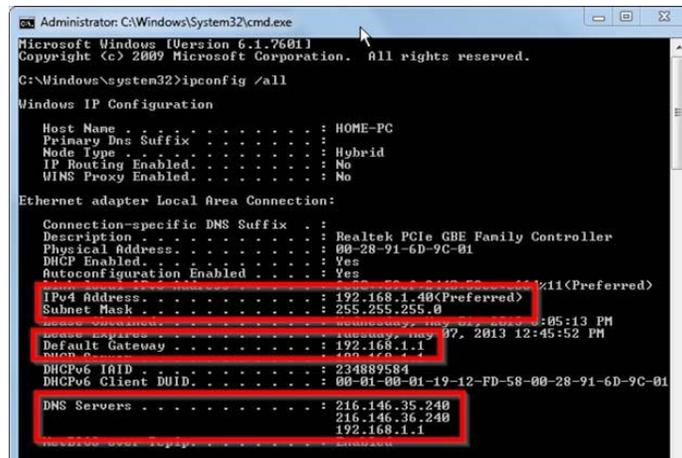
assigns them. Every time a computer reboots it asks the router for an IP address. The router then hands it an IP address that has not already been handed out to another computer. This is important to note. When you set your computer to a static IP address, the router does not know that a computer is using that ip address. So the very same IP address may be handed to another computer later, and that will prevent both computers from connecting to the internet. So when you assign a static IP addresses, it's important to assign an IP address that will not be handed out to other computers by the dynamic IP address server. The dynamic IP address server is generally referred to as the DHCP server.

All Windows versions, Vista to Windows 10, are very similar when it comes to these steps. If you can, print out these pages of instructions as you will have difficulty viewing them on-line while you preform the configuration tasks.

1. Open up the start menu, and look for the Search programs and files box.
2. Type **CMD** in the Search programs and files box, and press Enter on your keyboard. This will bring up a black command prompt window.

There are alternate ways of getting to the "CMD" prompt window, depending on your Windows version. You can click the "Windows Key +R" to open the "Run" dialog and type "CMD" in the run box, or in Windows 10, you can right-click on the "Start" button and select "Command Prompt" or "Command Prompt (Admin)" from the menu option.

3. The command prompt may look different on your screen, but it doesn't really matter. Type **ipconfig/all** at the prompt in the command window, and then press the enter key. This will display a lot of information. If it scrolls off the top you may need to enlarge the window.



4. Record the following information:

IP Address: _____.

IP address Subnet Mask: _____.

Default Gateway: _____

DNS Servers: _____

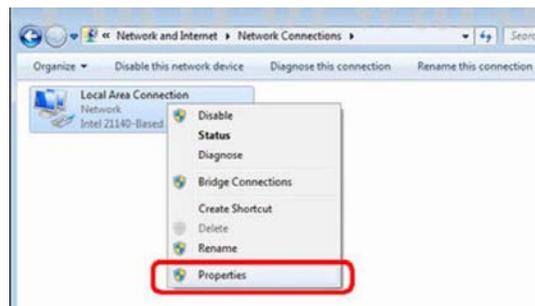
You may not have three DNS Servers. Just leave the unused blank. We are only concerned with IPv4 entries, you can ignore the IPv6 stuff.

The name server entries are a bit complicated. Name Server is just another name for DNS (domain name server). Some router's act as a proxy between the actual name servers and your computer. You will know when this is the case, because the Default Gateway will list the same ip address as the Name Servers entry.

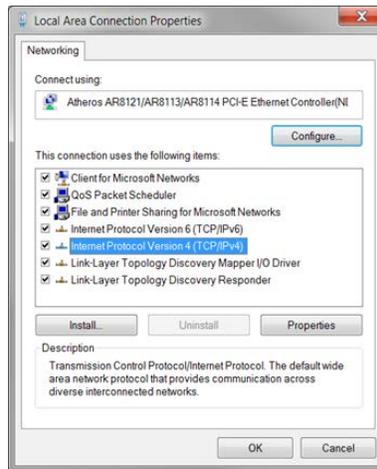
We need to have the correct Name Server IP addresses. If we do not, you will not be able to browse the web. There are a couple ways to get these. The first way is to log into your router's web interface, and look at your router's status page. On that page you should see an entry for DNS Servers, or Name Servers. Write down the ip addresses of your Name Servers.

Another way to get the correct Name Servers to use, is to give your ISP a call. They should know the IP addresses of your Name Servers right off. If they ask you why you need them, you can tell them you are trying to setup a static IP address on your computer.

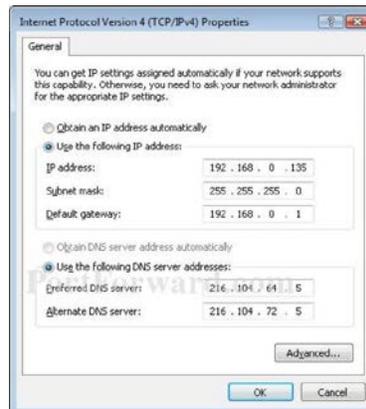
5. Type exit in this window, then press the enter key to close it.
6. Once again open the start menu. This time click Control Panel.
7. Click on Network and Sharing Center.
8. Single click Change adapter settings on the left side of your screen.
9. You might have more than one Internet connection listed here. You will need to determine which adapter is your connection to the Internet if this is the case. If you have a choice of a wired or wireless connection, choose the wired connection.
10. You can either right click or double click on your network adapter and choose properties to open up the properties window of this internet connection.



11. Click on Internet Protocol Version 4(TCP/IPv4) and then the Properties button.



12. You will see the following screen:



13. Before you make any changes, write down the settings that you see on this page. If something goes wrong you can always change the settings back to what they were! You should see a dot in the Obtain an IP address automatically box. If you do not, your connection is already setup for a static IP. Just close all these windows and you are done.

Pick an IP address and enter it into the IP Address box. The IP address you choose should be very similar to the router's IP address. Only the last number of the ip address should be different. If the router's IP address is 192.168.1.1, I might choose 192.168.1.10. The IP address you choose should end with a number between 1 and 254, and should not be the same as the router's IP address. Every device that connects to your network needs to have it's own IP address.

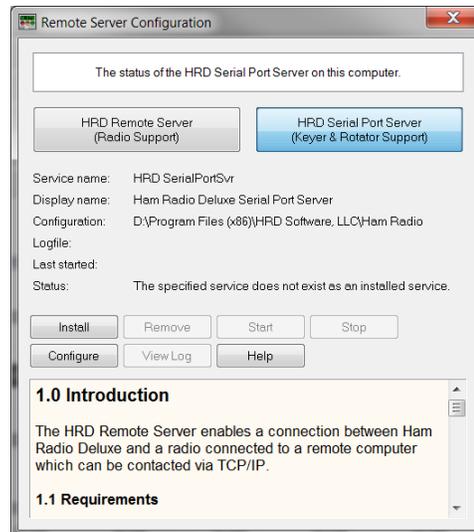
Put the subnet mask we previously found in the subnet mask section. The default gateway should go into the Default gateway box. Enter the DNS Servers we previously found into the

two DNS Server boxes. Click okay all the way out of this menu.

If you find that you can not pull up web pages, the problem is most likely the DNS numbers you entered. Give your ISP a call, and they will be able to tell you which DNS servers to use. That's it you should be done! If you can't connect to the internet go back and change your configuration back to what it originally was.

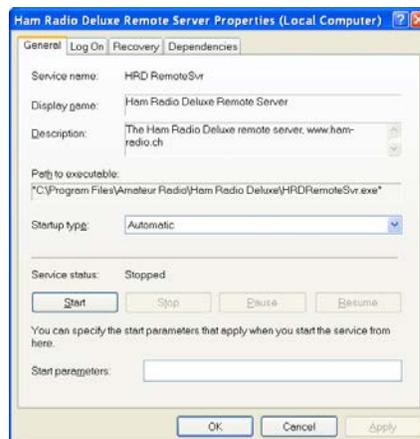
Installing The Servers

To install the service select Remote Service from the Tools> Programs menu.



- Press **Ham Radio Deluxe Remote Server** to select this server.
- Press **Install** to install the service, and then press Start to start the service.

You can start the Windows Services applet (Start > Settings > Control Panel > Administrative Tools > Services) to modify the properties of the service, for example disabling automatic startup.



NOTE: You need to make certain you open your FIREWALL and put in a rule to allow incoming connections on Port 7805. If this is not done, it's likely when you attempt to connect to from remote, the connection will fail.

Configuring The Remote Server

We are now ready to configure the Remote Server. Press the "Configure" button on the Remote Server panel. The configuration file will open in a Notepad window. The items needing configuration are highlighted in the configuration file below.

Each user who accesses the system must have a username and password.

A pound sigh (#) as the first character of a line indicates the line is a comment and the # must be removed from the line before it is recognized by the software.

```
#
# Ham Radio Deluxe Remote Access Server
# -----
# Copright (c) 2011-2013 HRD Software LLC
#
# Note: Remote Server Runs on Windows XP/SP3, Windows7 and Windows 8
#
# This file defines the configuration of the Remote Access Server.
# The format of each entry is TOKEN = VALUE.
#
#
# Supported tokens
# -----
# COM
# PORT
# USER1 to USER20
# WELCOME
#
#
# A comma-separated list of COM ports that are returned. If not defined then
# the server returns a list of all COM ports available on the computer.
#
#COM = COM1,COM2,COM3,COM4
#COM = COM3
#
# The TCP/IP port on which the server listens for connections. If not defined
# then the default value of 7805 is used. Select any port number you want which
# is not in use by other programs.
#
```

PORT = 7805

```
#
# Username/passwords, these are case-insensitive. Spaces are removed
# from the beginning and end of the username and password.
#
# The format is USERx = username,password
#
USER1 = Simon,SnowTime,restart
USER2 = Peter,Uberwald
USER20 = Donald,California

#
# Welcome text, displayed on the remote user's computer. Note that
# \n is replaced with a newline. Enter up to 511 characters on a single line.
# This message may be changed to anything you want, as long as you keep
# the current format with the "\n" used to indicate a new line.
#
WELCOME = Welcome to the HRD Remote Access Server.\n\nPlease don't break
anything!
```

The contents of this file should be obvious. After changing the configuration, save the changes and you should restart the service.

Restricting TX

One special note – to restrict a user's ability to switch the radio to transmit there are now optional tokens added with the username and password to disable access to the TX and any Tune buttons. Add **no_tx** after the password.

In addition you will want to disable macros as a knowledgeable user can define a CAT command to enable TX. Add **no_macros** after the password.

Enable Restart

The RESTART token enables the Restart button on the connection window. Restarting the service will close all COM ports opened by the service and drop all connections by Ham Radio Deluxe users. This should only be allocated to yourself and your friends!

Connecting to the Remote Server

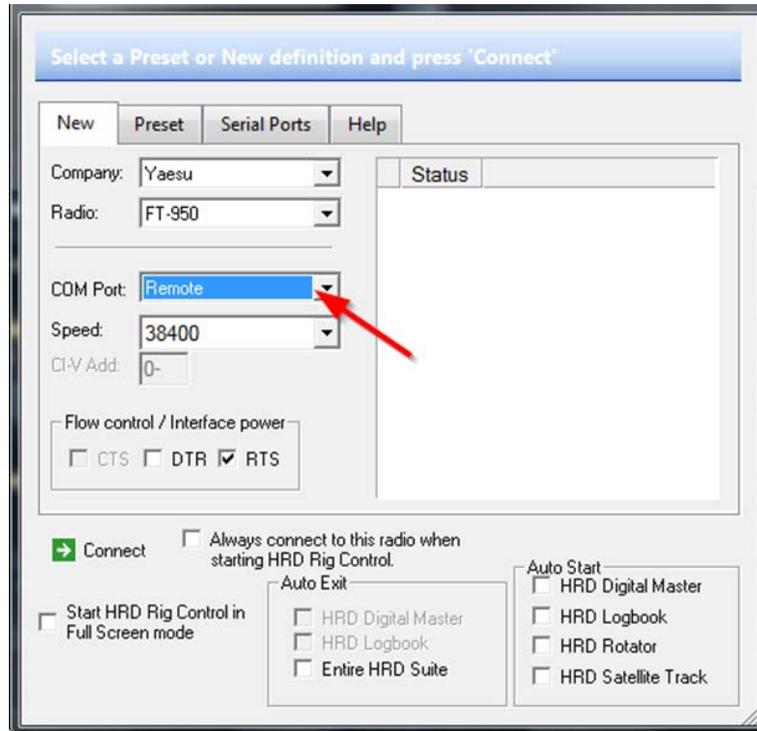
Connecting to the host computer from remote is almost like connecting to the radio while on the base computer system.

If you don't already have it done, you will need to

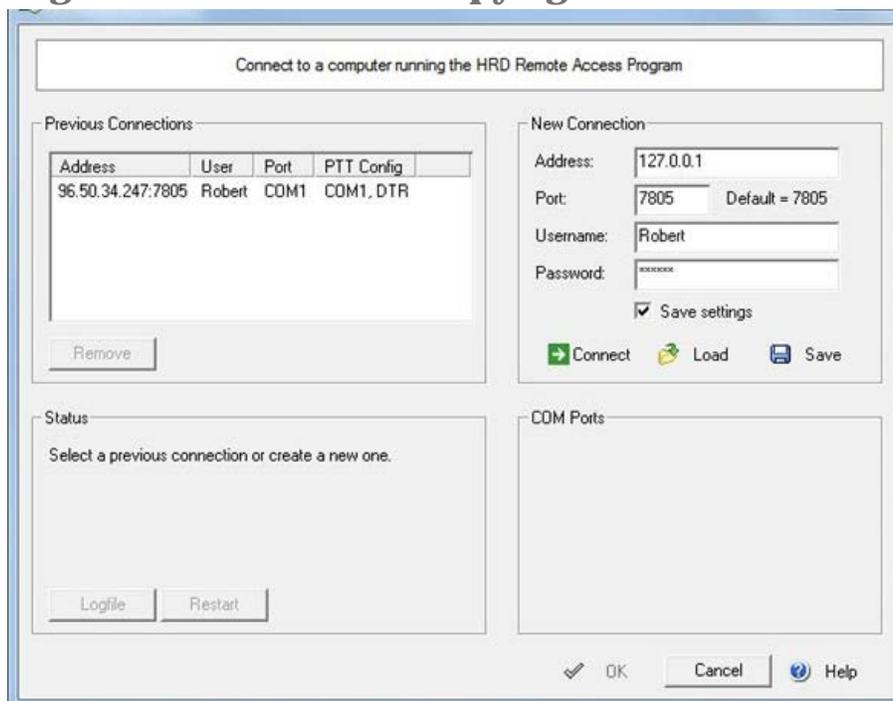
1. Install Ham Radio Deluxe, if you have not done so, on the computer you plan to use for the remote connection.

2. Once installed, run Ham Radio Deluxe.

3. When the Rig Connection screen appears, you will need to set this up EXACTLY as it appears on your HOST system, with ONE exception. Instead of entering a comport number you select REMOTE from the drop down box as indicated by the red arrow in the image below.



4. Press Connect and the Remote Connection window will display.



5. In the New Connection area of this window enter the internet IP address or the domain name of the HOST computer. If you are working from inside your home through a router, enter the internal IP address of computer physically connected to the to the radio equipment. This address will look something like **192.168.x.x**. The port is the default port of 7805.
 6. Now you enter a valid user name and password that was configured in the Rig Control Configuration file. You can check the Save Settings box so next time you connect you just select the connection from the list on the left side of the display. The user name and password are not case sensitive.
 7. To save these values make sure the Save settings option is checked [X].
 8. Press the Connect button. The display will change showing the Com Ports in the lower right half of the screen.
 9. Select the com port from the drop down box that connects to the radio at the HOST location. You can also uncheck the box for the optional PTT com port.
 10. Press the OK button at the bottom of the window and the next screen you see should be the rig display from the remote server.
- At this point if you have problems connecting to the host machine, you need to double check all your settings. Check to make sure the firewall or router are not blocking the ports required. If you are still having problems and can't find the answer, feel free to contact HRD Customer support for help.



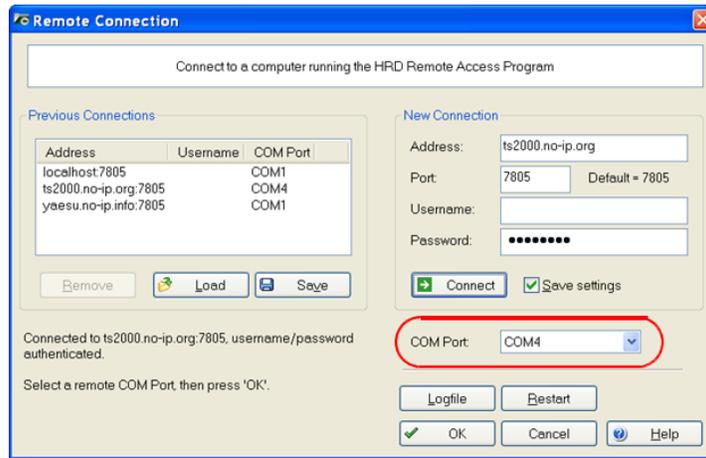
Load connection information from a file.

Save connection information to a file.

Press Connect.

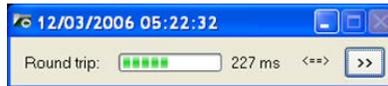
If the connection is successful you will see the confirmation window and the text Username /

password authenticated. Select a remote COM port, then press 'OK' is displayed below the Connect button.

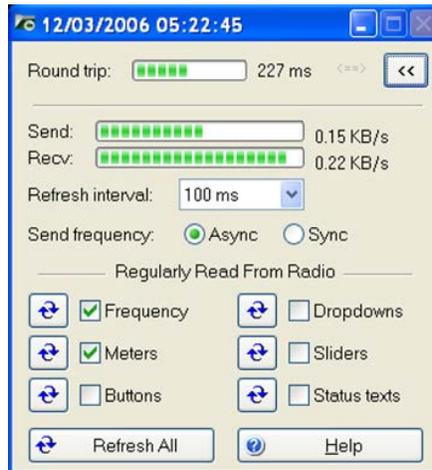


Now select the COM port, and then press OK to connect to the remote COM port and start the Ham Radio Deluxe radio display.

When the connection with the radio has been confirmed a Remote Connection display window shows you the data throughput and average round-trip time.



Remote Connection



Use the Remote Connection window to show the status of the remote connection.

- Round-trip time: the time required to send a message from Ham Radio Deluxe to the remote server and get a response. This will be very similar to the value shown when you use Ping to interrogate a remote host. Typically values of 50 milliseconds or less are very usable.

- Refresh interval: the interval between refreshes of the selected Regularly Read options.
- Send frequency: when the frequency is updated over a link with a high round trip time (> 100ms) the performance will be less than optimal with Sync selected so if the round trip is high select Async, otherwise just select Sync. The disadvantage of using Async is an 'elastic band' effect while tuning by dragging Ham Radio Deluxe's small tuning marker.
- Regularly Read: the options that are regularly updated. If you are using a fast link - for example to a local station with a low round- trip time then you can safely select all options. The disadvantage of selecting options such as Buttons, Dropdowns, Sliders and Status Texts is that it may take a second or two before Ham Radio Deluxe detects that you are changing the frequency by dragging the tuning marker and the current refresh operation cannot be interrupted.

Slow Link

If you have a slow link - a round-trip time > 100 ms - then select only Meters. As this is a remote station it is unlikely that anyone else will be adjusting the radio's controls so you will not need to refresh buttons and dropdowns as you would with a locally connected radio.

The disadvantage of not selecting Buttons and Dropdowns is that inter-button dependencies will not be shown - for example you may have 4 AGC buttons Off, Fast, Medium and Slow, only one of which will be active at any one time. If Buttons is not enabled for regular refreshes then pressing Fast will not update the other AGC buttons. In this case you must press the small refresh button to the right of the Buttons check box.

To refresh all display options click Refresh All.

Problem Solving

The following steps are recommended to solve problems using the remote server.

1. Run Ham Radio Deluxe on the remote computer to check that you can actually connect to your radio.
2. When you connect to the remote server make sure you have closed Ham Radio Deluxe on the remote computer. If you get the error "Access is Denied" then the COM port is held open by another program.

Remote Audio

One thing to keep in mind when using Remote Audio. You are using VOIP (Voice Over IP) and sometimes the quality is not as good and there is usually some delay between the remote computer and the host.

After the completing of the rig control portion of a remote station you will need to setup the ability to pass audio to and from the remote station. If you are only working the digital modes like PSK31 you will not need to worry about this. CW has been discussed previously in this chapter.

Skype has been a traditional method of passing audio in both directions. This requires having TWO Skype accounts, one for the Host and one for the Remote. On the Host machine, Skype is configured to pull the audio from the radio and send it over the internet. On the Remote computer, Skype is configured to receive the audio from the internet and play it through the computer's soundcard and speakers.

Another option for remote audio is a small remote audio Server and Client called RemAud. RemAud is a FREEWARE Voice over IP (VOIP) application primarily designed for two-way amateur radio remote control over the Internet. RemAud uses streaming-audio technology in a client-server architecture. It features high radio sound quality, low latency, low bandwidth and very low CPU usage. RemAud uses the TCP protocol for an easy installation behind routers and firewalls. You can get more information and download the software from:
<http://df3cb.com/remaud/>

A new option was added to Digital Master 780 in Ham Radio Deluxe Version 6.2. This option brings us one step closer to being able to provide fully integrated audio within the Ham Radio Deluxe suite of programs for remote operation, without having to rely on 3rd party software such as Skype. This option allows the user to operate voice communications using a standard, inexpensive computer headset. The "HRD Headset Monitor" is discussed in the DM-780 manual. The drawback to using this option is the fact that due to the many different ways of keying the transmitters, and the way audio is handled, this does not work on all radios. If you are using an interface such as the Signalink USB, on the Host computer, this option will probably work.

Chapter 11

Introduction To Serial Port Server

The Ham Radio Deluxe Serial Port Server enables a connection between Ham Radio Deluxe and serial port-enabled devices (keyers, rotators) connected to a remote computer that can be contacted via TCP/IP.

IMPORTANT: If you plan on using the HRD Serial Port Server you are going to need some additional software in the way of a program that creates Virtual Com/Serial ports (VCP software) or Virtual Null Modem Cables. HRD use to supply the N8VP software, however that is no longer available. That software only worked with Windows XP and to our knowledge has never been developed any further. There are some freeware offerings available and many commercial offerings. The choice is up to each operator.

Note: The process of setting up these remote servers is not something an inexperienced computer user should attempt. Find a friend who makes his living setting up and maintaining computer networks. Be kind to them and reward them so they will come again and help when something stops working.

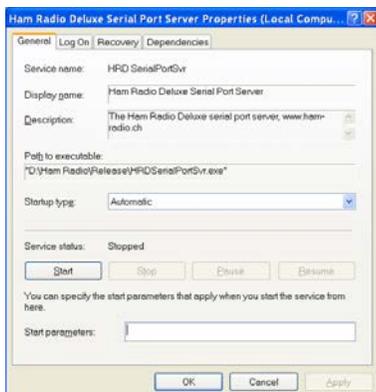
The Ham Radio Deluxe Serial Port files are:

- Ham Radio DeluxeSerialPortSvr.exe – the executable, and
- Ham Radio DeluxeSerialPortSvr.cfg – configuration file.

To install the service select Remote Service from the Tools> Programs menu.



1. Press Ham Radio Deluxe Serial Port Server to select this server.
2. Press Install to install the service.
3. Press Start to start the service.



You can start the Windows Services applet (Start > Settings > Control Panel > Administrative Tools > Services) to modify the properties of the service, for example disabling automatic startup.

Configuring The Serial Port Server

Prior to configuring the server you must open the firewall and add an exception to allow communications through Port 7806. Once the port is opened through the firewall, Press "Configure" to edit Ham Radio DeluxeSerialPortSvr.cfg that contains the service configuration.

Configuration File

To configure the Serial Port Server, you need to edit the highlighted options in the configuration file to refer to ports and logins for your own system. Remember, the pound sign (#) at the beginning of a line indicates that line is just a comment. It MUST be deleted from lines for the COM Ports you assign.

```
#
# Ham Radio Deluxe Serial Port Server
# -----
#
# Copyright (c) 2006 by HRD Software LLC
#
# Note: this only runs on Windows Vista/8/8.1/10. It does not run
# on Windows 95/98/ME/SE/XP.
#
# This file defines the configuration of the Remote Access Server.
# The format of each entry is TOKEN = VALUE.
#
# Supported tokens
# -----
# COM
# PORT
```

```
# USER1 to USER20
# WELCOME
#
#
# A comma-separated list of COM ports that are returned. If not defined then
# the server returns a list of all COM ports available on the computer.
#
#COM = COM1,COM2,COM3,COM4
#COM = COM1
#
# The TCP/IP port on which the server listens for connections. If not defined
# then the default value of 7806 is used. Select any port number you want which
# is not in use by other programs.
#
PORT = 7806
#
# Username/passwords, these are case-insensitive. Spaces are removed
# from the beginning and end of the username and password.
#
# The format is USERx = username,password,options where options is a
# list of case-insensitive tokens separated by spaces (not commas).
#
# The supported options are:
#   RESTART
#
# RESTART allows the user to restart the service, usually reserve this for only
# for yourself and friends you trust!
#
USER1 = Simon,SnowTime,restart
USER2 = Peter,Uberwald
USER20 = Donald,California
#
# Optional welcome text, displayed on the remote user's computer. Note that
# \n is replaced with a newline. Enter up to 511 characters on a single line.
#
# Remove this line if you do not want a welcome message.
#
WELCOME = Welcome to the HRD Serial Port Server.\n\nPlease don't break anything!
```

Once you have the configuration file edited for the settings in your system, save the file and you start the Remote Serial Server. You can now load and configure the Serial Port Client (see Serial Port Client in Chapter 6) on your Remote computer.

<<<<>>>>