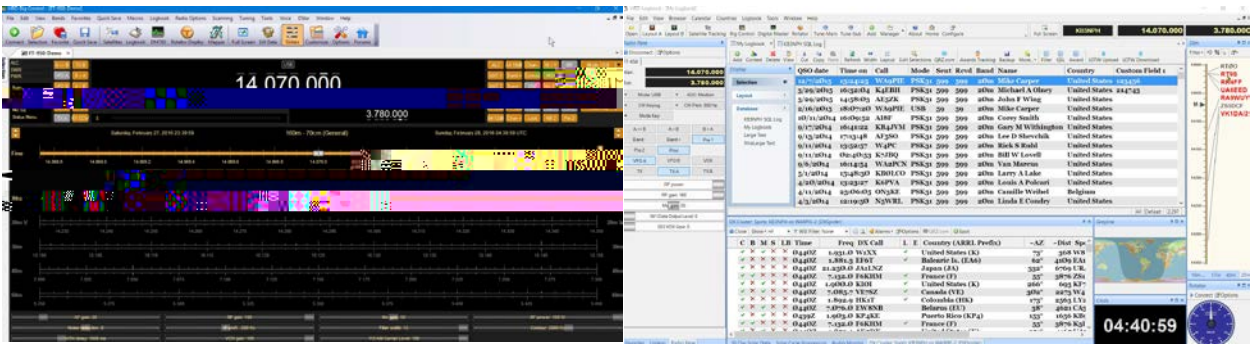


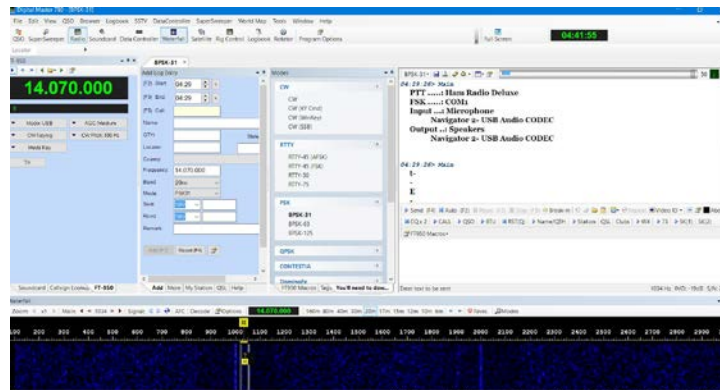
# HRD V6.3

## Quick Start Guide



**Rig Control**

**Logbook**



**Digital Master - 780**

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# Introduction

## Overview

**All developers of software, have a very important saying prior to starting to install and use the software. "RTFM".....which stands for Read The Fine Manual!!**

Reading your manuals and following the instructions can not only get your software up and running more quickly, it can also help prevent "pre-mature baldness" from all the hair pulling you might do while trying to get things all put together and operating without any guidance at all.

Experience has proven that hams WILL NOT take the time to read a manual of any type. In some cases this is fine. With HRD it's almost a MANDATORY task because of the complexity of the software and all the different configuration differences.

The purpose of this guide is to provide documentation on topics required to get HRD installed and running as painlessly as possible. This is certainly NOT a complete guide and does NOT cover all the functionality of our software however it will help you install the software, connect it to your radio and get you started using the basic functions of the software.

We are in the process of updating the full HRD manual. This abbreviated, or Quick Start manual, is provided with documentation for areas that MUST be configured properly to allow the individual modules included in the Ham Radio Deluxe software package to communicate with each other and interface with your radio. Instructions are included for the Activation and configuration of the main Rig Control Module. Also included are main options that MUST be configured in the Logbook, and Digital Master to allow the use of the Logbook to log contacts and allow you to start working digital modes with the Digital Master 780 module.

## What You Need To Know

### Your Computer

Ham Radio Deluxe is a complex software package which has a somewhat steep learning curve. Before tackling the HRD software it is important that you have, at the very least, a basic understanding of your computer and it's operating system. Each computer and operating system, along with other software you have running on your computer, can present obstacles which can affect the proper operation of the HRD software. If you happen to need support from our technical staff, you may be asked questions about your computer, operating system and/or other software running on your computer. Your

knowledge of these things can save hours in troubleshooting and assisting you in getting your HRD software working properly.

### **Your Radio**

Having a full understanding of the operation of your particular radio is a **MUST**. You must understand and know how to operate the functions from the front panel of the radio. If your radio has an internal menu system, you need to know how to access these menus and change the settings, if necessary.

Your radio's manual will also tell you exactly what is needed in order to connect your radio to the computer for CAT control. It will indicate what cables you need. It will tell you whether you need additional software drivers installed in order to access the CAT functions or possibly internal audio capabilities for Digital modes.

In summary, your radio's manual is a **VERY IMPORTANT** tool when you are installing HRD and setting it up for your particular radio. If you don't have a manual for your radio, you can normally download a PDF copy of the user's manual from the radio manufacturer's website.

### **Your Hardware Interfaces**

If you are using a hardware interface, such as the Yaesu SCU-17, Signalink USB, Rig Blaster, Rig Expert, or any one of many hardware interfaces that allow you to connect your radio to the computer, you need to be sure you have **ALL** of the proper cables, plugs, adapters, drivers and above all documentation for the interface. You need to read the documentation and understand how to install the device and in some cases, know the limitations of the device you have.

## **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!!**

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 with using the "Self-Help" systems we have 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 and the HRD Channel on YouTube.

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.

**DO NOT E-MAIL THE SALES DEPARTMENT WITH SUPPORT ISSUES. OUR SALES STAFF CANNOT PROVIDE HELP WITH TECHNICAL ISSUES.**

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](http://www.hrdsoftwarellc.com) or [www.ham-radio-deluxe.com](http://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>

**Support Hours: Monday - Friday 6am to 5pm EST.**

**Phone USA: 813-434-4650**

**UK/Europe: +44-1924-601057**

**This document is by no means a substitute for the HRD Software manual. Even the older, outdated manuals contain basic information about operation and functionality within the HRD software, so, be sure to download and keep a copy of the HRD Software manual handy for reference.**

## Activation

### 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. The "My Station" page will be discussed in the Logbook manual.

#### **Trial Activation**

HRD Software LLC insists you take full advantage of this 30-day trial. During the trial period, you receive FULL support from our Technical Support staff in the event you run into any problems with the software. Support can be received by contacting us by phone or by entering a support ticket. (See HRD Help Links in the Introduction chapter of this manual)

In order to activate the full 30-day trial version you need an active internet connection. **If you do not have an active internet connection, the trial version is limited to only 7 days.**

#### **Full Activation**

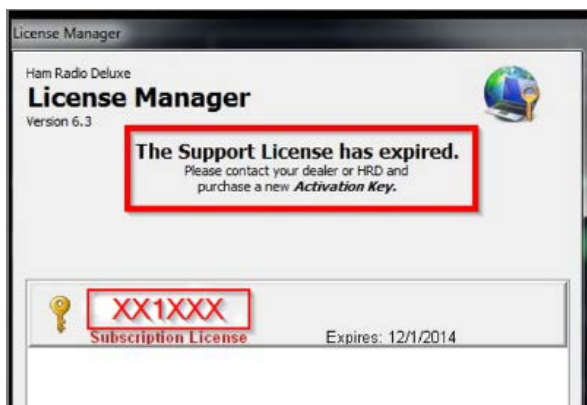
Full activation of the HRD software requires you to purchase an activation key on-line by going to our website at [www.hrdsoftwarellc.com](http://www.hrdsoftwarellc.com) and selecting "Purchases" from the top menu or by going to the following link: <http://www.hrdsoftwarellc.com/cgi-bin/store/commerce.cgi?pid=1>

This activation key, when installed in the Trial version of HRD, removes the 30-day limitation and the License Manager "Nag Screen" that pops up when each module of the Trial version is loaded. It also gives you 1 full year of PAID technical support from our support staff and access to all new features included in the HRD software versions

released during that year.

The activation key actually has TWO purposes. The first is removing the 30-day limitation from the Trial version of HRD. Once activated, the HRD software will run "FOREVER" or as long as you want to use it. The software NEVER expires, however, as mentioned above, when you first activate HRD, you receive ONE FULL YEAR of PAID technical support and any NEW FEATURES added to HRD during that year will be UNLOCKED.

After the first year, this is where the SECOND purpose of the activation key comes into play. This is our way of tracking your PAID Support and Software Maintenance Agreement.



**<=-License Manager**

Clicking on "Help" and selecting "HRD License Manager" in any one of the HRD program modules will display the HRD License Manager similar to the one on the left.

At the end of your first year, your License Manager will display similar to the image on the left. Notice the License Key (XX1XXX) appears in "RED" and the text inside the red box states "The Support License has expired".

This does NOT mean the software is going to stop working. It means that you no longer have access to the HRD Paid support and from the expiration date forward, when you download a new release of HRD, any new features added to the software AFTER the expiration date will be LOCKED. You will still have full access to all features of your software up to the expiration date and it will run normally for you, but, installing any releases AFTER the expiration date, you will only receive the benefit of any BUG FIXES done in the software.

So, what does this mean?

HRD Software LLC provides a **non-mandatory Software Support and Maintenance Agreement**. This is provided through an annual renewal fee of 1/2 (50%) of the retail cost of the HRD software. When purchased on an annual basis, this provides you with another year of PAID technical support from our staff along with ensuring you not only receive all the up-to-date bug fixes, but also unlocks any and all new features added to the Ham Radio Deluxe software.

The nice thing about this option is the fact it is non-mandatory, and, if you choose, you

don't even have to renew every year. If your software is running fine and doing all the things you want it to do at the end of your first year, you may choose not to renew. You can still download each and every release to receive any bug fixes.

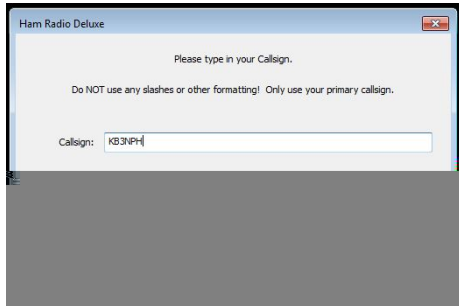
Now, let's say a couple years have passed and we are adding a new feature that "YOU JUST CAN'T LIVE WITHOUT...". At that time, you can just renew your Support and Maintenance Agreement for 1/2 (50%) of the retail cost of the software and receive another full year of PAID support along with unlocking the new features of HRD.

Upon starting HRD you will see the following screens.



<-- **Welcome Screen**

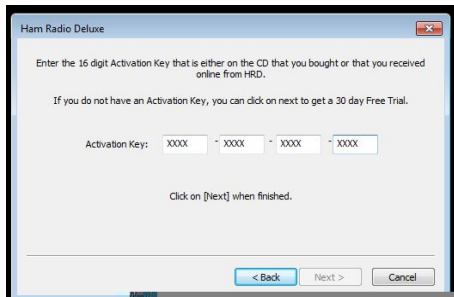
If you are installing HRD's trial version, you will first see left. Click on the [Next] button to continue.



<-- **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**

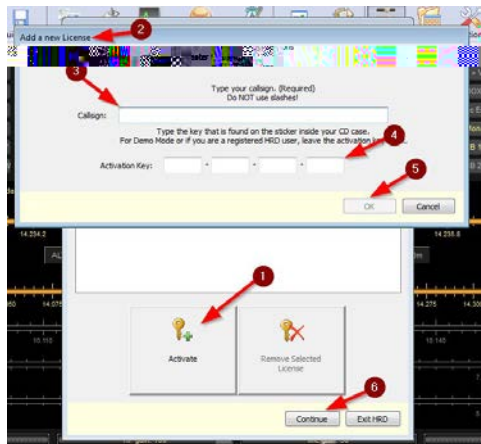
Since we are activating the Trial version of HRD, you will NOT have an Activation Key, so, do not enter anything in this screen. **Just click the [Next] button to continue with the activation of the Trial version.**

### Entering Your Activation Key



When you make your purchase of your HRD Activation Key, you will immediately receive the key on a page at the end of the purchase process. If you don't see your key, don't panic. Just complete your purchase and once completed, please send an e-mail to our sales department ([sales@hrdsoftwarellc.com](mailto:sales@hrdsoftwarellc.com)) and they will be more than happy to e-mail your key to you.

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



<-- License Manager

1. Click "Activate"
2. The "Add New License" window will open
3. Enter your Callsign
4. Type or copy and paste your Activation Key
5. Click "OK" to return to the License Manager
6. Click "Continue"

Once you click the "Continue" you will be presented with the Rig Connect Configuration screen.

If you have any issues entering your Activation Key, please see the Troubleshooting suggestions at the end of this chapter.

## Entering Additional Keys

Many hams, for whatever reason, have more than one callsign. HRD Software LLC has provisions for this situation.

An additional activation key is required for EACH callsign you wish to use in HRD. These keys are provided at NO COST.

To receive an additional key, you need to send an e-mail to our sales department at [sales@hrdsoftwarellc.com](mailto:sales@hrdsoftwarellc.com). In the e-mail, include your HRD Registered callsign along with any additional calls you need keys for. Once our staff has verified the callsign belongs to you, a key will be sent via return e-mail.

If you are requesting a key for a Club callsign for a license already owned by that club, we must be able to verify that you are a trustee for the club. Club members, alone, can not be provided with keys for their club callsigns.

To enter any additional keys into the HRD software, follow the same procedure as

outlined in the section for Full Activation.

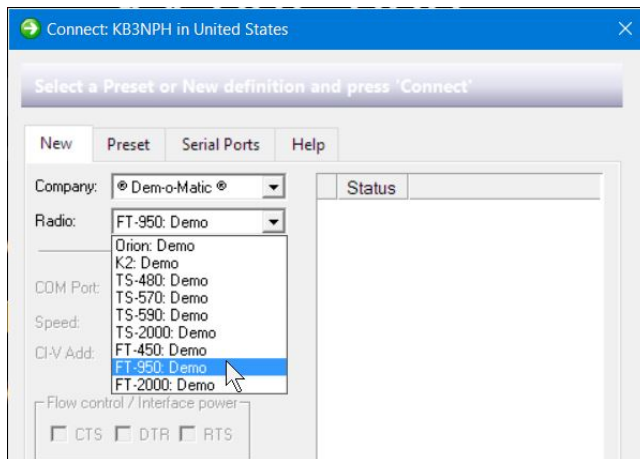
## Connecting Your Equipment

### 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.

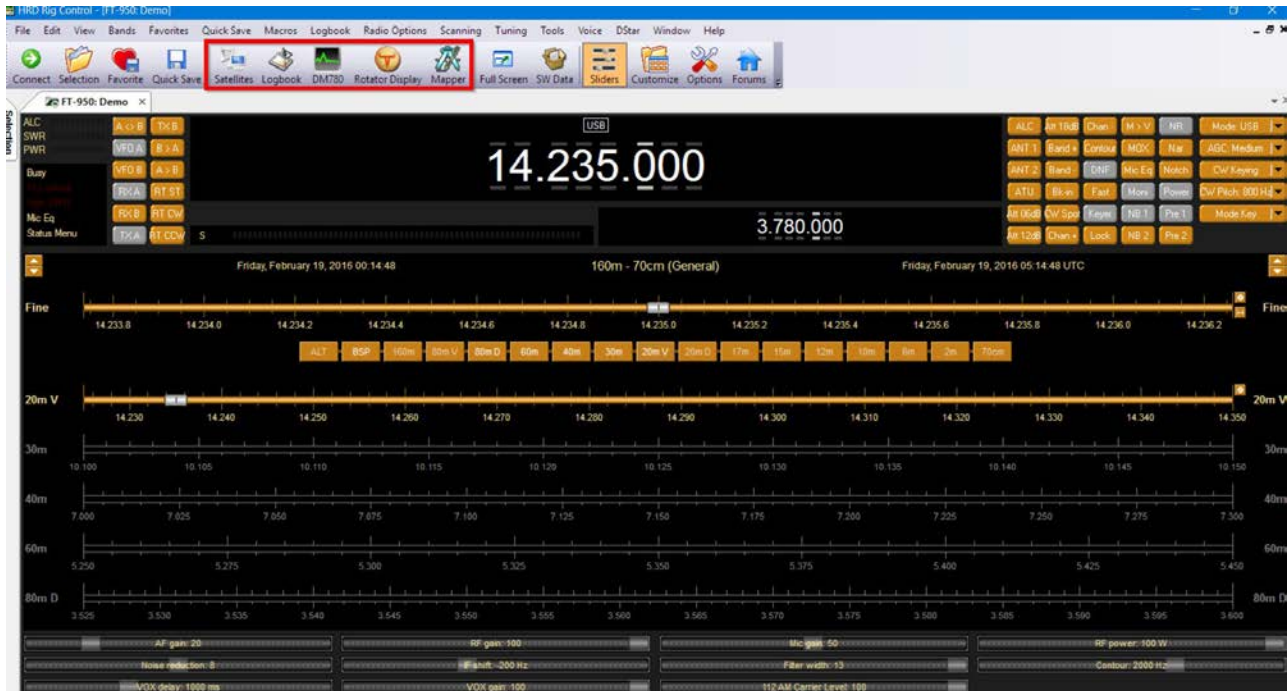
Run the Ham Radio Deluxe software by double-left clicking on the HRD Desktop icon. Once the splash screen has closed you see the Connect window. If you do not have the correct connection cable for your particular radio, select one of the **Dem-o-matic** radios so that you can open Ham Radio Deluxe.



<--**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.

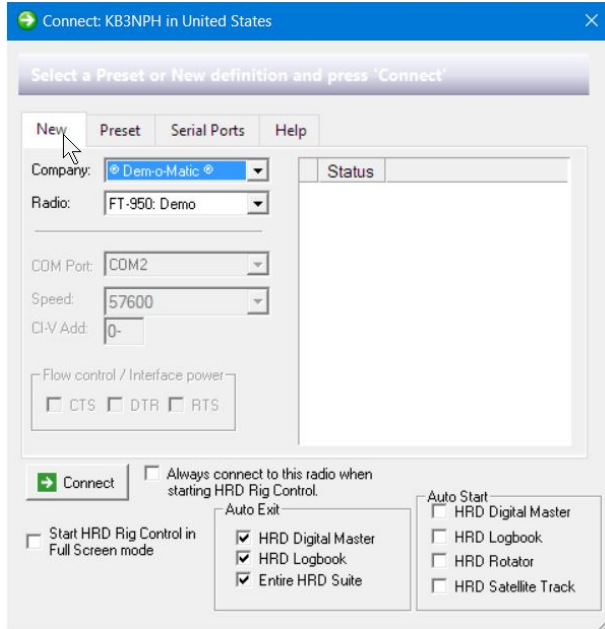
The Dem-o-matic radio feature in HRD can also be valuable as a diagnostic tool. If you are having issues with HRD, you can run one of the Dem-o-matic radios to check if the issue you are having is related directly to the software or if it is between the interface and your own radio. If you run in the 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.

We'll begin this section with an explanation of the Rig Connect screen.

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



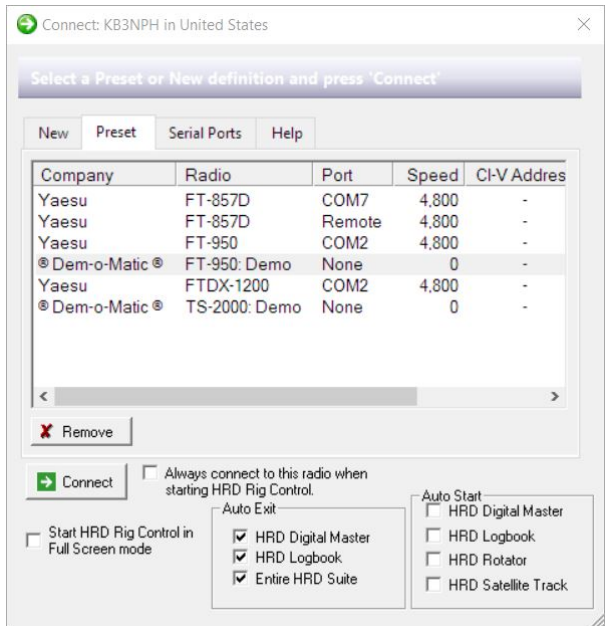
**<--The New Tab**

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.

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.



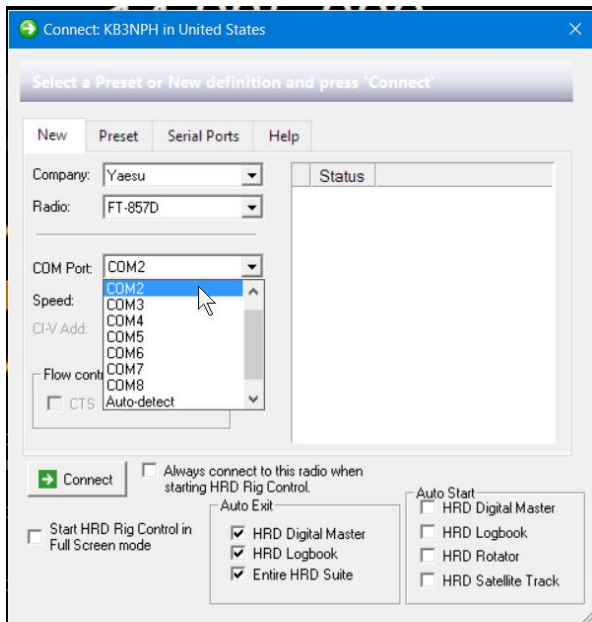
**<--The Preset Tab**

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**

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.

## Connecting Your Hardware

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

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](http://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 manufacturers 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.

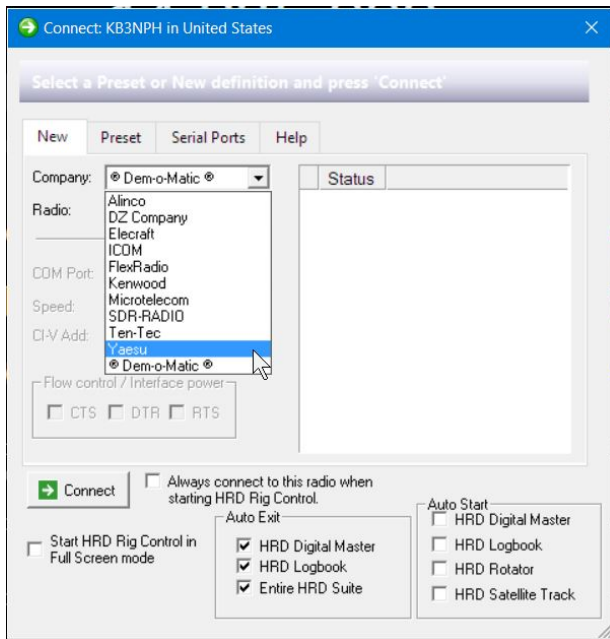
### Lets Get Connected

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: ICOM: disable the CI-V Transceive option for best performance.**

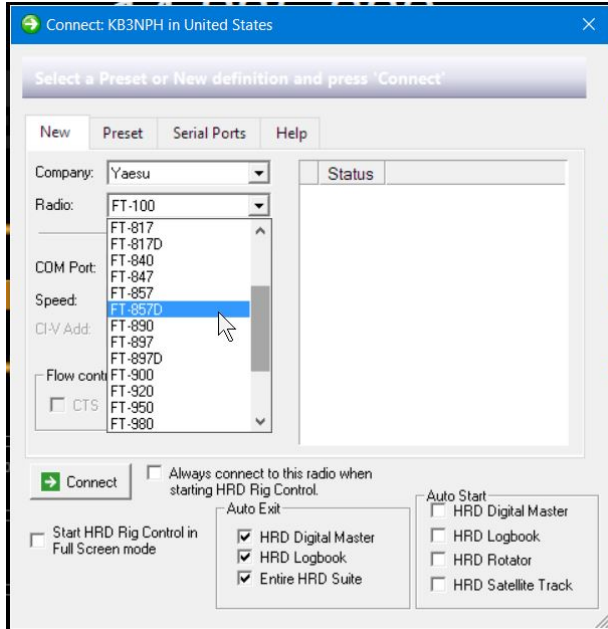
**Kenwood: make sure Packet communication mode is switched OFF (if supported). Most Kenwood radios require CTS and RTS to be ON for flow control.**

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.



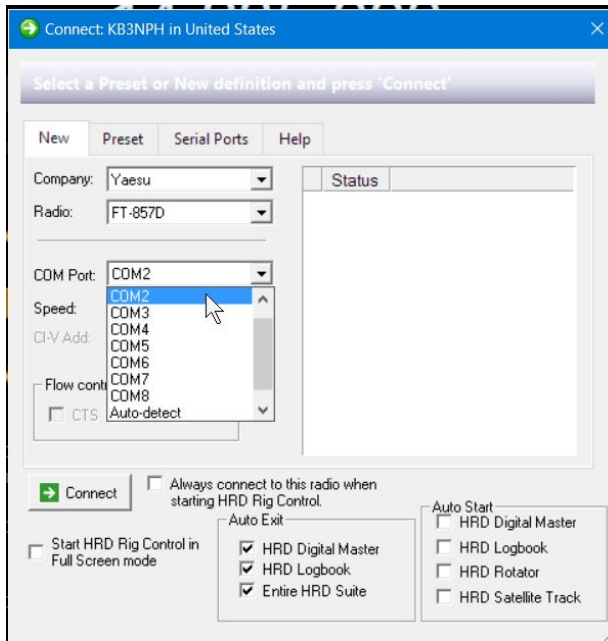
<--Company

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**

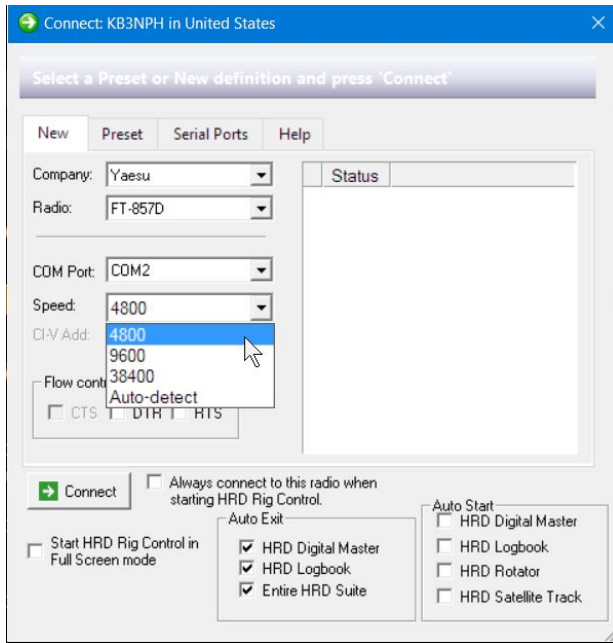
Here we select the Model of the radio we're connecting. This selection also selects the CAT command set used in HRD to control the radio you select.



**<--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.



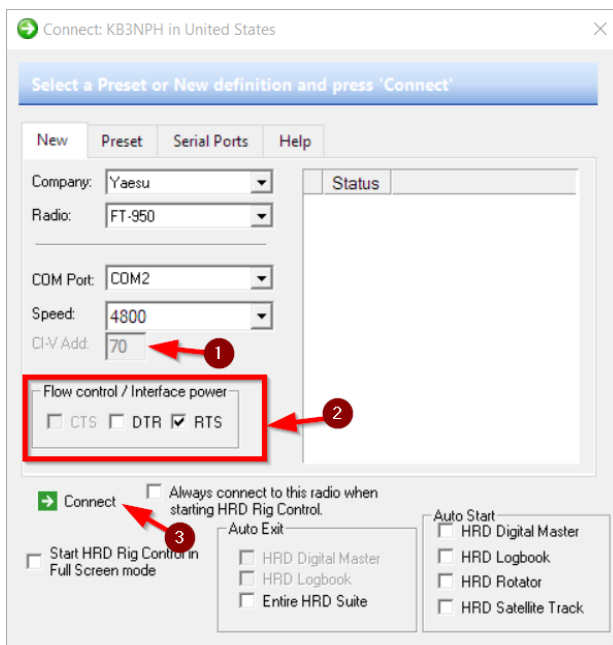


**<--Speed**

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**

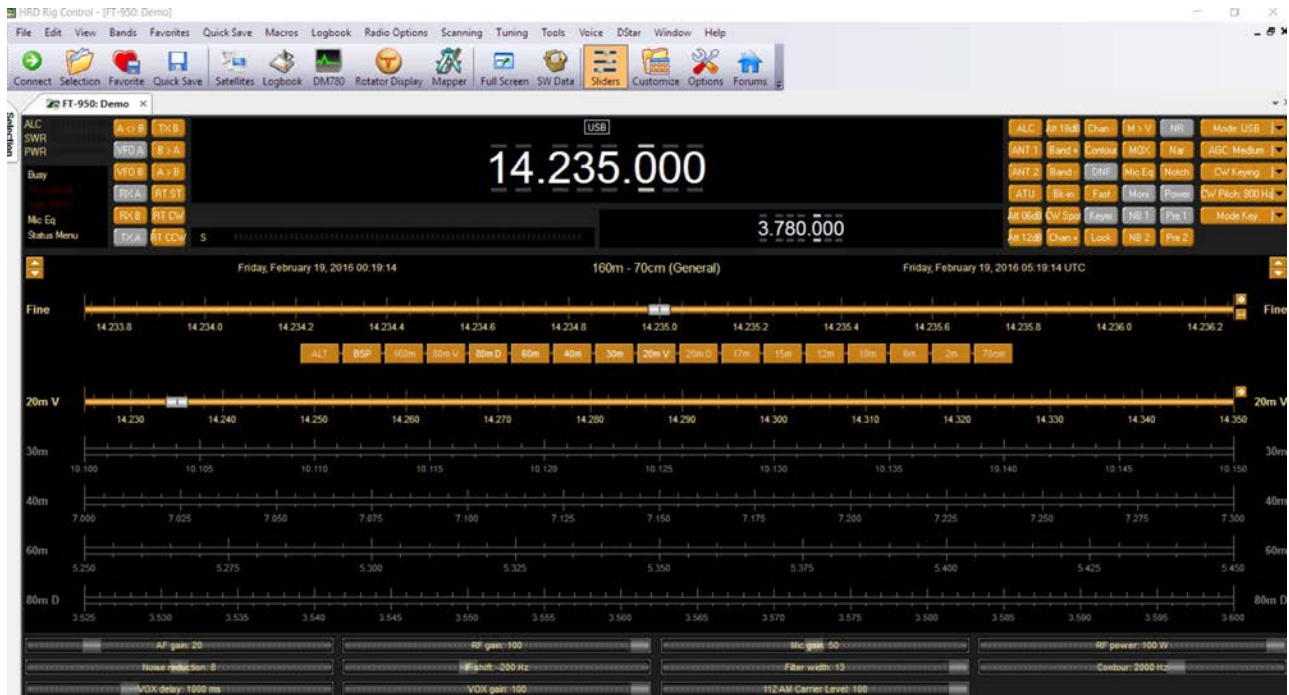
Enables the DTR line when the COM Port is opened and leaves it on, usually to provide power for an interface cable. For Yaesu CT-62 and ICOM CT-17 interfaces this can be left unchecked (off).

**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 interfaces 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.

Once you have all the settings in the Rig Connection screen selected, click on the "Connect" (3) button. If all is configured properly the next screen to appear will be the HRD Rig Control screen.



The Rig Control screen is fully customizable with many color and layout options pre-programmed into the HRD software to choose from. You can also design your own custom layout and color screens with the built-in editor. For more information on how to customize the screen layout, please refer to the HRD V6.3 Users Manual.

## **Rig Control**

### **Rig Control**

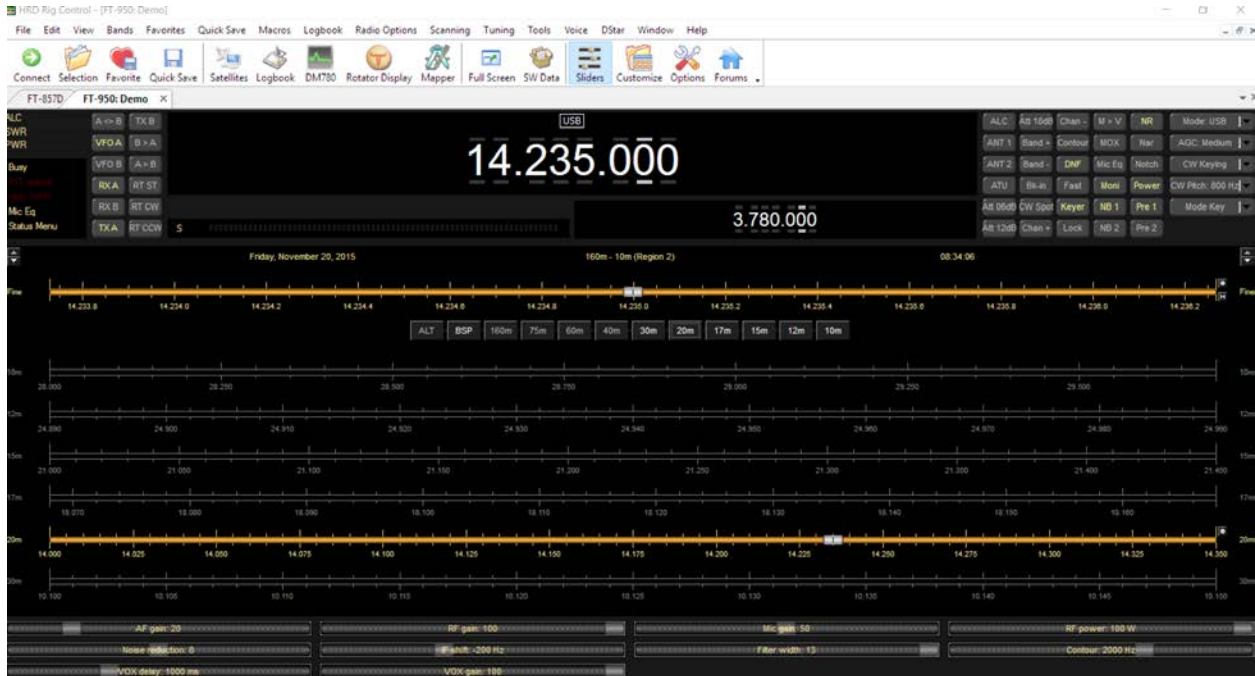
For the purpose of our Quick Start Guide, we are not going into any great detail of all the features available. We will just be showing the major setup features needed for proper operation of the radio. For complete details of all features and functions available, please download and read the HRD V6.x User's manual. It can be downloaded in PDF format from the Downloads page of our website or by clicking on the following URL link: HRD V6.X Manual: <http://www.hrdsoftwarellc.com/manual.pdf>

From within the Rig Control Module, you can directly control all major features of your radio, connect multiple radios to your computer, access other HRD suite modules and much more.

Again, we remind you that this document is only going to cover a few of the main features of HRD in order to just get you up and running. For details on other options and features, you need to see the full HRD User's Manual.

### **The Rig Control Screen**

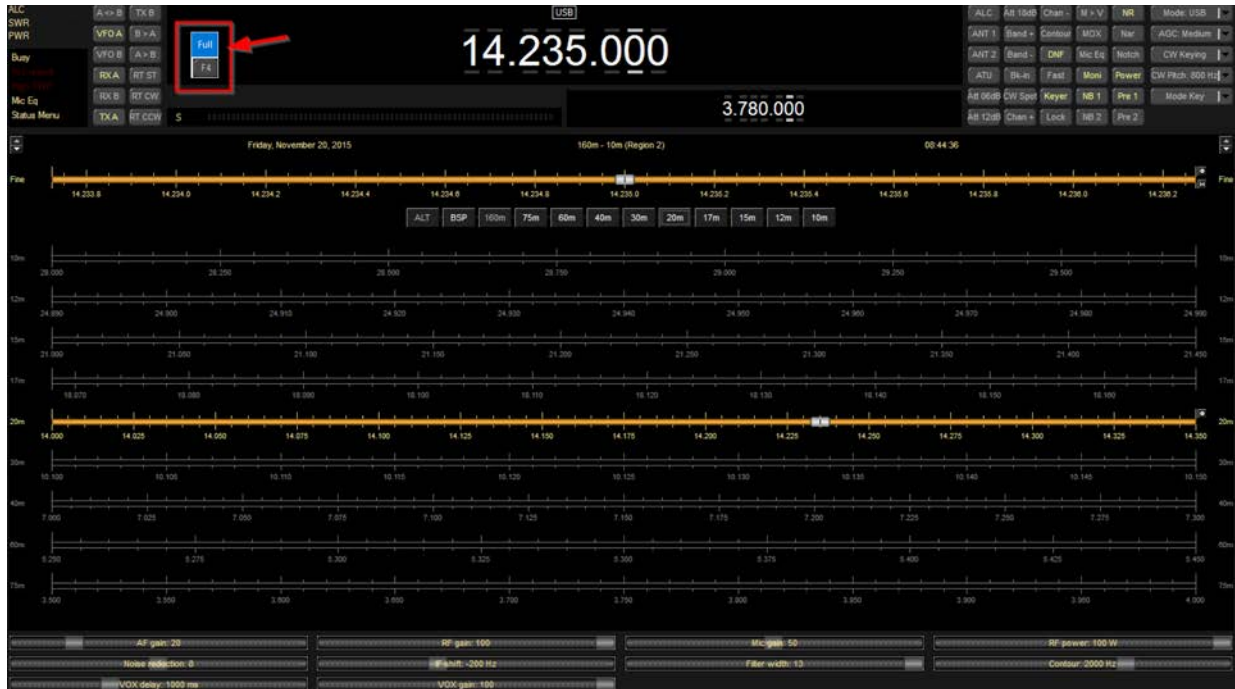
Once you have successfully connected to your radio, the first screen that will appear is the Rig Control Screen. This is a generic screen and is basically the same for all radios regardless of the manufacturer or model. The only difference between radios are the functions displayed on the screen. The 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.



## **Caution: Choose Proper Region**

The first and most important setting you need to make in the Rig Control screen is the ITU Regional Band Map for your particular region. The three IARU Regions are organized to broadly mirror the structure of the ITU and its related regional telecommunications organizations. These regions are as follows:

**IARU Region 1: Europe, Africa, Middle East and Northern Asia**

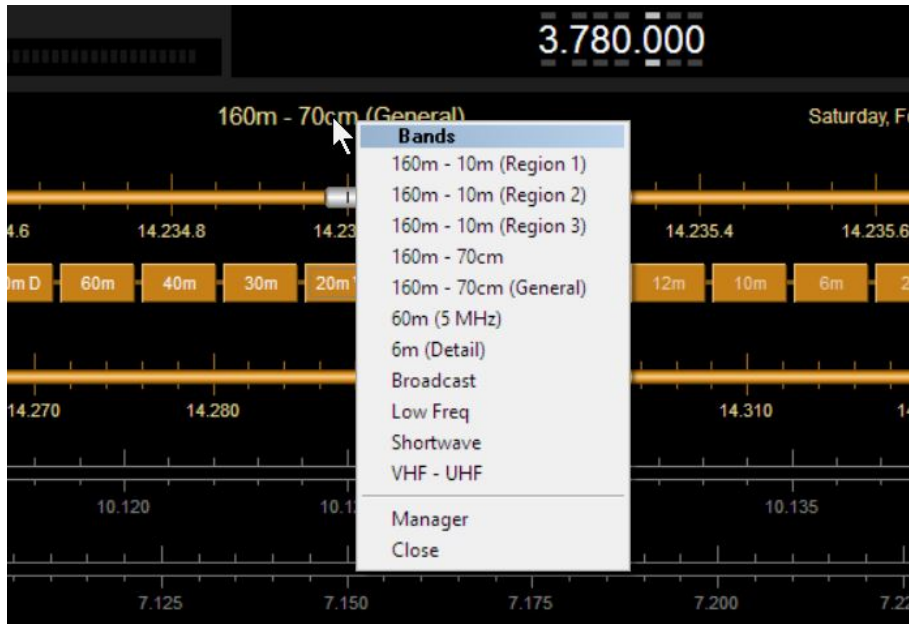
**IARU Region 2: The Americas and Canada**

**IARU Region 3: Asia - Pacific**

These Regions usually have different frequency allocations for each amateur radio band, so, selecting the WRONG region frequency bandmap when setting up HRD could result in the possibility of you operating on a restricted or out of band frequency. Please be sure you select the proper bandmap for your region before continuing to use HRD.

## **Selecting The IRAU Region**

HRD comes pre-configured with several bandmaps installed. These contain default settings and frequency ranges to be used to help you design custom bandmaps should you choose to do so. The regional bandmaps contain the frequency ranges allocated for the Amateur Radio HF bands from 160 to 10 meters for that particular region. Be sure to select the region that you live in so as not to create problems for yourself later on.



In the center of the Rig Control screen, below the frequency displays you see the bandmap which is selected. Right-click on the display to show the bandmaps available. Select the bandplan that pertains to your region. This bandplan will be loaded and you will be set to operate using the allocated frequencies for your region.

You notice there are several selections in this menu. These selections show you how to create custom bandplans of your own. There are more details on creating custom bandmaps in the HRD User's manual.

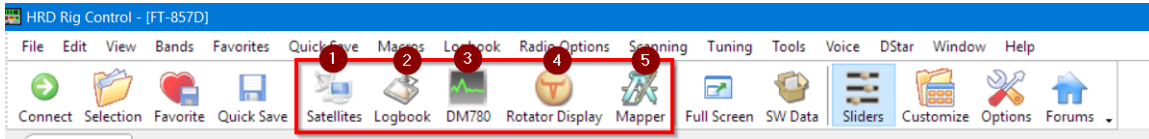
## Accessing Other HRD Modules

There are two ways of accessing the other modules in the HRD suite. You can open them manually by clicking on their icons on the Rig Control Toolbar, or, you can have them automatically start when you run the software. As recommended earlier in this documentation, you should have ONLY the Rig Control Module loaded at this time. Again, this recommendation was made just to ensure the software connected properly to your radio and help speed up troubleshooting should you have an issue without having to wait till the other modules automatically load, then close them to start over if necessary.

### The Toolbar

With the Rig Control display set to show the Main Menu and Toolbar, you will see Icons which allow you to manually start any or all of the other modules contained in the HRD suite. We would like to remind you that the more modules and options you have open, more MEMORY is used not only to run the module in but also to store data collected and displayed by the particular module. We recommend you open ONLY the modules you are using during each session. For example, if you do not have an antenna rotator, and you just plan to make and log only VOICE contacts during a session, you will only need the Rig Control and the Logbook modules open. If you plan on working Digital Modes during a session, then of course, you will need Rig Control, Logbook and DM-

780 open. Just remember also that DM-780 requires even more resources (Memory) than any other module because of the decoding of the digital signals. Even more is needed if you use the SuperSweeper option in DM-780.



The Icons indicated above, and located on the HRD Rig Control Toolbar, are used to manually activate that particular module in HRD.

1. Activates the Satellite Tracker
2. Activates the Logbook
3. Activates Digital Master 780
4. Activates the Rotator Control Interface
5. Activates "Mapper", which is a special option that allows you to track your Logbook contacts on a World Map.

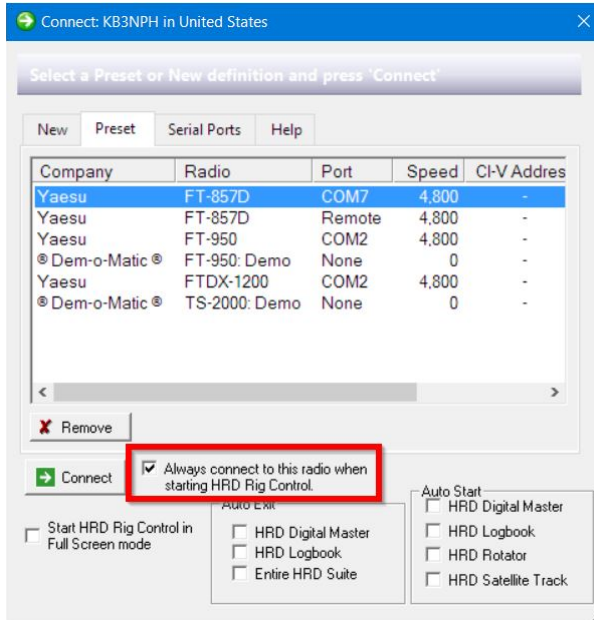
### **Auto-Start - Auto Exit**

If you use one radio as a default, and/or if you consistently use certain modules every session, you can have them Auto-Start when you activate HRD from your desktop Icon. To do this, click on the "Connect" Icon which is the green circle with the white arrow located on the left end of the Toolbar.



This icon opens the "Rig Connection" screen where you can configure which modules you would like to have Auto-Start when you start the HRD software. You could also bring up the Rig Connection screen by clicking on "FILE" then select "CONNECT".

## Select Default Radio

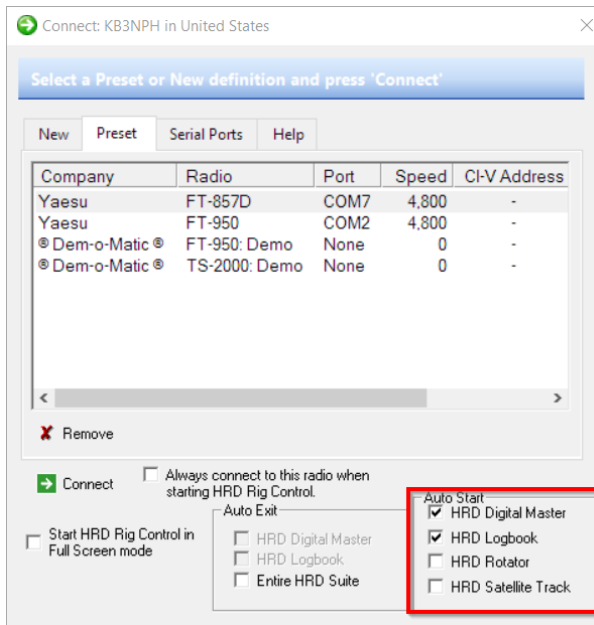


After the first time connection to your radio, an entry will be automatically created in the "Preset" tab indicating the connection parameters for that particular radio. After the initial connection, you can select any of the radios connected to HRD as the "Default" radio to use when starting the HRD software.

Left-click on the radio you would like to have as default to highlight its entry. Place a check mark in the box indicating "Always connect to this radio when starting HRD Rig Control".

When you click the HRD Desktop icon, HRD will now automatically start with this radio connected.

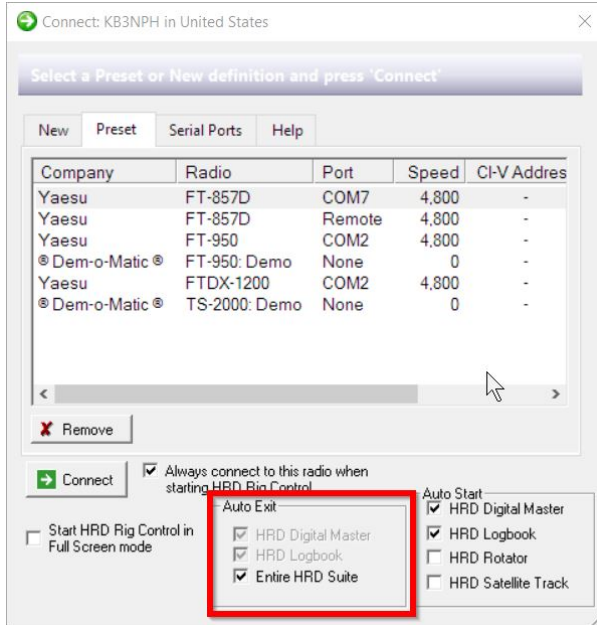
## Auto-Start HRD Modules



Placing check marks in the boxes indicated within the "RED" square in the image to the left will cause that module to automatically start along with the Rig Control screen when you start HRD from your desktop icon. The only module you can not auto-start is the "Mapper", which is normally only used occasionally and is normally not used during an actual operating session.



## Auto-Exit HRD Software



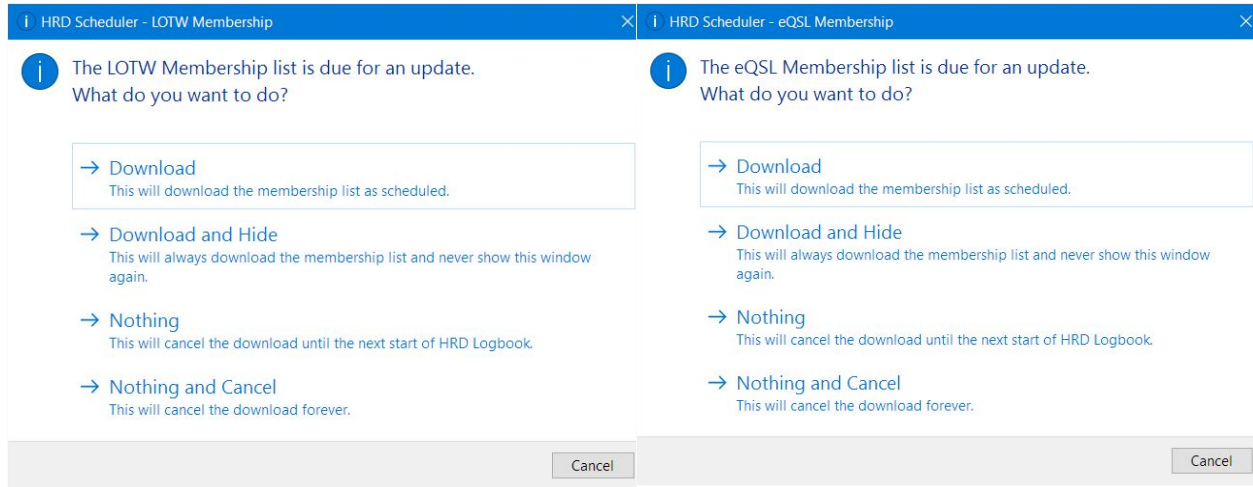
A new feature to the HRD software is the Auto-Exit feature. Checking the Auto-Exit boxes as indicated on the left, allows you to click on the [X] in the upper right corner of the Rig Control screen and all open modules will close automatically. This eliminates the need to close each module separately.

There is ONE drawback to using this feature. You should ALWAYS do a manual backup of your Logbook prior to using this method of shutting down HRD. This method uses the Windows "Kill Process" function which bypasses the normal shutdown procedures and the Logbook module will NOT create a backup if you have that selected as one of the automatic backup methods in the Logbook module.

# Logbook

## LoTW and eQSL Membership List

When starting HRD and the Logbook each day, you will see the following screens when the Logbook starts.



These screens are for downloading a text file which contains a list of members of LoTW and eQSL. This option is associated directly with the DX Cluster feature in HRD. There are columns in the DX cluster marked "L" and "E".

When a spot appears in the list, HRD checks these listings and places a check mark in the appropriate column if the spotted contact is a member of LoTW or eQSL. This will indicate to you, at a glance, how to QSL this contact.

The option can be controlled from the Options menu on the DX Cluster toolbar. You can set this option to be performed in the background where you will not be notified when it is done, or, you can have it not do the download at all.

## My Station Data

There is one area in the Logbook that **MUST** be configured in order for other modules in HRD to function properly. This is the "My Station" configuration. The data in this dialog is stored in the Windows Registry file and is used in the Logbook, DX Cluster, DM-780, Rotator and Satellite Tracking modules of HRD.

It is also used to locate your station on the Goggle Map, if used along with the HRD software.

Open the Logbook module. On the Main Menu, click on "Tools > Configure > My Station". This opens the "My Station" dialog as shown below.

You will see in the dialog, there are TWO tabs automatically created. One tab contains your callsign. This tab is created and reflects the "HOME" location for the registered owner's callsign. The "GUEST" tab is a profile which can be created for temporary use. The data for this tab is NOT saved between sessions and must be re-entered each time HRD is re-started.

All items indicated in the image above should be filled in. The most important items are inside the "red" box. These items are your Grid Locator and the Latitude and Longitude. These items are used for placing your HOME location on the Google Earth map, if being used, and for the home location in the Rotator and Satellite Tracking software.

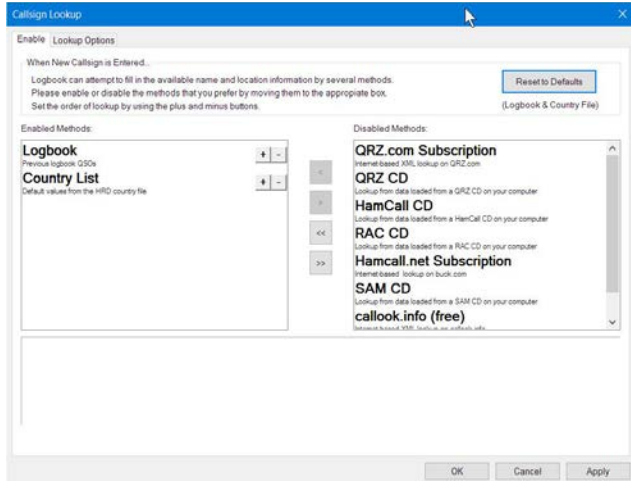
Your Grid Square must be filled in, and if you don't know it, you can obtain it by looking up your call in the QRZ Callsign lookup database. Once you have inserted your Grid Locator, clicking on the downward pointing arrow (indicated by the red arrow above) will automatically fill in your Latitude and Longitude fields.

Once all information is completed in this dialog box, clicking on the [ X ] in the upper right corner will save the data and exit the page.

## **Callsign Lookups**

The Callsign Lookup feature in HRD is extremely useful, however it is very and is structured to work in a specific way. HRD provides for many sources for callsign lookups, including web based lookups, CDs and local Databases, Country Listings and Unique Callsign Databases. In order for the Lookup feature to function properly, these sources must be configured in a specific way within the HRD Lookup structure.

When first installing HRD, if you open your Logbook screen and on the top menu click on "TOOLS" then "Configure" then select "Callsign Lookup", you will see the lookup options as shown below.



The options listed in the window on the left are the "ENABLED" lookup methods, and those listed in the window on the right are "DISABLED" lookup methods. The current view in the image on the left is the default settings for the callsign lookups. Only the Logbook and the Country List are used when these options are set.

With the default setting above, when a callsign is added to the "ALE" (Add Log Entry) screen, and you click the "TAB" key your keyboard, HRD will first look in the current Logbook Database and all configured logbook databases, to see if it can find where you had previously worked that callsign. If found in any of your configured databases, the information from the "LAST QSO" with that station will populate the fields in the ALE. When saved, this data will be saved in the current contact record for that call.

**Be Aware: Contact and location information can change from time to time for a given call, especially for DX and Special Event Calls.**

Again, with the default settings shown above, if a call IS NOT found in any of your logbook databases, HRD then looks to the Country List and the Unique Call Sign Database and populates the ALE with ONLY the country associated with that call.

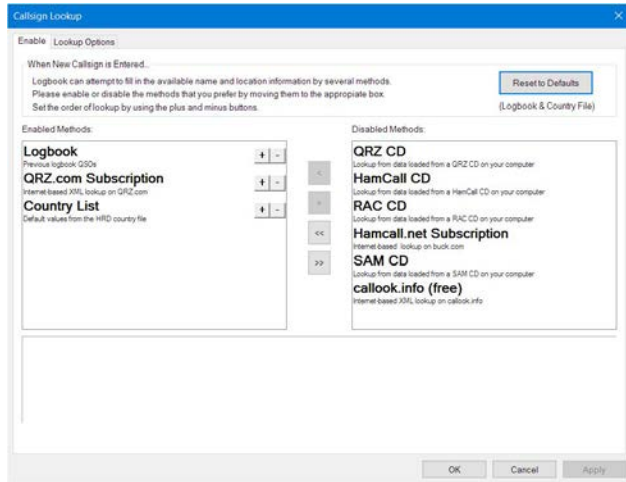
HRD provides direct access to 6 different Callsign Lookup sources. The QRZ.com Subscription is, by far, the best source since it is always up to date, as is the the HamCall.net Subscription. Both are on-line services, requiring an internet connection and are updated with new callsigns almost daily, however, both require an annual fee, or subscription charge, to access their lookup service.

Next would be the CDs, however, these options really do become outdated very quickly and do not contain the most recent callsigns. CD Lookup sources can be used when you are operating where you do not have an internet connection to access the on-line sources.

Callook.info is a FREE online service, however, it has one drawback. It contains ONLY United States callsigns, same as the SAM CD. If you're interested in automatic logging of only U.S. callsigns, these are a good choice.

To add functionality to the HRD Callsign Lookup, we can add any one or more of the additional lookup sources from the DISABLED methods to the ENABLED methods. This is simply done by highlighting the method in the right window by left-clicking on it, then clicking on the [ < ] button located between the two windows. This moves the

method from the disabled window to the enabled window as shown below.



Notice we have moved the QRZ.com Subscription to the enabled methods. Notice also we have arranged the lookup order so that the QRZ.com lookup is SECOND in the lookup sequence.

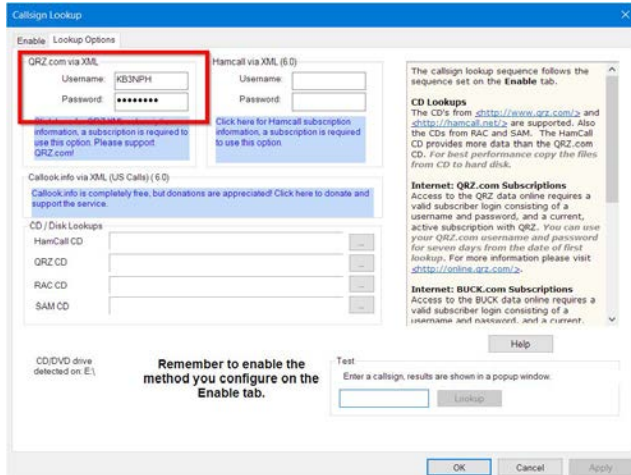
The position of a particular lookup option in the enabled side of the above screen can be easily adjusted by using the [ + ] and [ - ] buttons to the right of the option. Clicking the [ + ] moves the option up in the list while clicking the [ - ] moves the option down.

The position of the enabled lookup options is very important, and can be most commonly related to the ability to show the "Worked Status" of contacts in DM-780 when you hover over their callsign in the Receive Pane. In this instance, having the Logbook as the first option gives us the ability to see if we have worked this station previously, and accurately, since the Logbook is the FIRST place HRD checks for the callsign lookup information.

If, for example, the QRZ.com Subscription is listed FIRST in the callsign lookup sequence, and the callsign is located in the QRZ database, the DM-780 ALE will be populated with the QRZ information and the fact that the station had been worked previously and is in the Logbook, may be bypassed. This would then give the impression that we had NOT worked that station at some point in the past.

The QRZ.com Subscription lookup feature is often referred to as the "QRZ XML " lookup feature. An annual subscription fee is required to use this option. The subscription is purchased directly from QRZ.com. There are many advantages to having the QRZ XML subscription, but the main advantage is the database is NEVER out of date and it contains both foreign and domestic callsigns. Options like the CDs can become out dated also options like "Callook.info" and "SAM CD" only support the domestic USA callsigns.

With the added QRZ XML Lookup, HRD will now first check the logbook databases to see if it can locate where you may have previously worked the entered call. If it does NOT find the call in the Logbook databases, it will connect to QRZ.com, via the internet, and locate the callsign in their on-line database. An XML file will be created and downloaded with the information and the ALE will be populated with this information.



Once you have the additional Callsign Lookup method selected in the enabled side of the configuration window, don't forget to click on the "Lookup Options" tab at the top of the window and make sure you have the correct configuration setup in there. In our example for the QRZ.com Subscription, you need to fill in the information as indicated in the image on the left.

Once you have his completed, click "APPLY" and OK and your setup is complete.

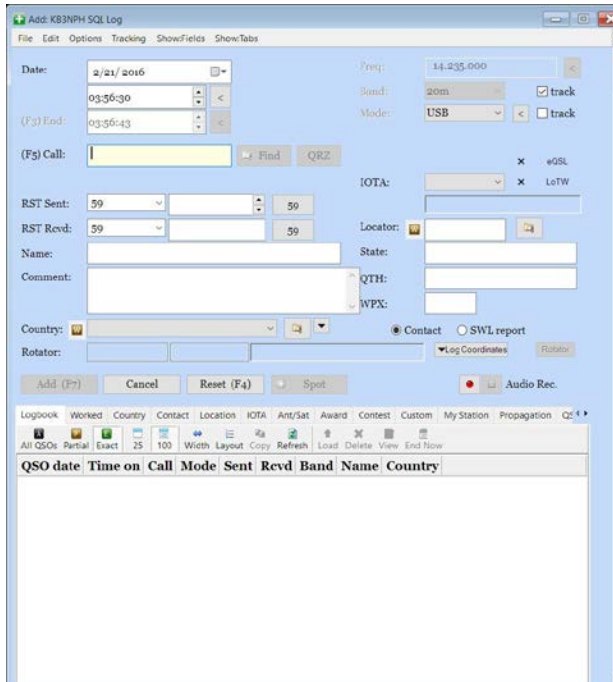
**NOTE: If by some chance all the information is not populated in the ALE, there is a very good reason. The majority of the information QRZ has on file for each callsign is "user supplied". If a user does NOT provide his grid locator on his QRZ page, it will NOT be populated in the ALE. HRD can ONLY download the information that is provided by the USER so we can't guarantee the accuracy of the imported data.**

## The ALE (Add Log Entry)

Clicking on the "ADD" icon



on the Logbook toolbar opens the Add Log Entry panel. This is where we enter data about our contacts into the Logbook.



The ALE (Add Log Entry) panel is the interface between you and your logbook. Data in the ALE can be entered either manually or automatically if you have a callsign lookup option configured.

There are two major areas to the ALE. The upper half of the display is where the current information is gathered and input about the contact you are working. This information can be entered manually from the keyboard or, if you have one of the callsign lookup options configured, can be entered automatically when you enter the callsign.

The lower portion of the ALE contains tabs where you can view a large amount of information about your contact. It will show each time you have previously worked the contact in your logbook, his location and even his mailing address, if available through the callsign lookup option you have selected. It also has tabs to indicate how to QSL the contact and how you have QSLed in the past.

The ALE alone can provide a multitude of information about your contact when used with other available options in the logbook. You can find more information about the ALE in the HRD User's Manual.

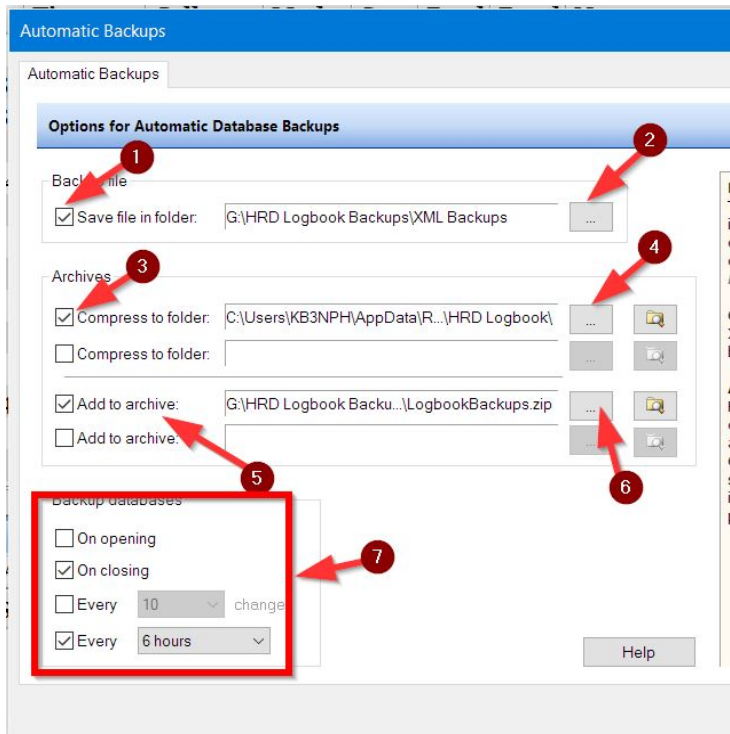
## Database Backup - Restore

The HRD logbook has your best interest in mind with it's built-in multiple backup utility. Several backups can be made at one time either automatically or manually with just a couple mouse clicks. The default location for these backups are in the C:\Users\\AppData\Roaming\HRDLLC\HRD Logbook\ folder. These locations can be changed according to the user's preference. Backups can be saved on the local hard drive, on an external drive or flash drive and even in the cloud such as in OneDrive or Dropbox, the last two being the safest and most accessible should a problem occur where you need to restore your database from a backup.

HRD creates an XML file for the full database backup. There are 3 ways you can store your backups available in the Backup Options.

1. Single file backup in XML format
2. Single file back in XML format that is compressed into a ZIP file to conserve hard drive space.
3. Multiple XML backup files added to a single ZIP file to further conserve hard drive space.

To access the HRD Backup options from the Main Menu, click on "Logbook > File > Backups > Options" or you could also right-click anywhere on the Logbook Grid (area showing contacts) and follow the above paths in the context menu.



In the backup options panel, you can configure WHERE you want each backup type made as well as setting up WHEN you want an automatic backup made.

1. A check mark in this box activates the single file XML backup.
2. Clicking on this box allows you to navigate to the location for the XML backup.
3. Activates the Single ZIP file backup
4. Allows navigation to where you would like these ZIP files stored.
5. Activates the Multiple XML Zip option.
6. Allows navigation to where you want this ZIP file stored.



7. The options in this box allows you to configure WHEN you would like the automatic backups to occur. In the example shown, a backup is created each time the Logbook is closed and after every 6 hours of continuous operation.

The automatic backup at closing will be made ONLY if there has been changes to the database. For example, if you have added a contact to the logbook or edited a current contact already logged.

Once these options have been set, you can also do a manual backup at any time you choose. Just right-click on the Logbook grid and select "File > Backups > Backup" and the backups configured will be created.

## **Restoring A Backup**

Restoring your logbook from a backup can only be performed to an EMPTY database. That means you can only restore a backup copy of your logbook to a database that has NO contacts listed.

The restore function will only restore a backup that has been properly done into an XML file. If you are using any of the ZIP storage options, you will need to unzip the file and copy the most current XML file to a location, such as your desktop, prior to attempting a restore.

<p><b>Restore</b> Loads the contents of the selected file (XML data) to the current database, this file is created using the <i>Backup</i> option.</p> <p><b>Error messages</b> Any errors are shown in the logfile, selected from the main View menu.</p> <p><b>File Format</b> The file contains XML data, the attribute names are the same as the column names in the database table. The format is for internal use by this program, it is not designed for use with other software.</p> <p>Backup File G:\HRD Logbook Backups\XML...\KB3NPH SQL Log backup 2016-01-30 0439.xml</p> <p>Restore Cancel</p>	<p>To restore your backup to the database, just click "Logbook &gt; File &gt; Backups &gt; Restore" from the main menu or use the context menu by right-clicking anywhere on the EMPTY logbook grid and follow the menu to the Restore function as above.</p> <ol style="list-style-type: none"> <li>1. Navigate to the location where the backup is stored and select a recent backup.</li> <li>2. Click the "Restore" button and follow the instructions to restore your backup.</li> </ol> <p>Once the restore is completed, click the "Finish" button to return to the logbook screen.</p>
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Please visit our YouTube channel and view the video at the link below. The video demonstrates what we have covered in this section.

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

# Digital Master-780

## DM-780 Overview

DM-780 is a very sophisticated, feature packed, program that allows you to send and receive many of the popular amateur radio digital modes, including SSTV, using a computer soundcard. It supports AFSK modes as well as FSK RTTY.

The program integrates with the HRD rig control program to control band and frequency changes without exiting the program. It's also integrates with the HRD Logbook to allow easy callsign look-ups and logging of your digital contacts through its built-in Add Log Entry (ALE) screen.

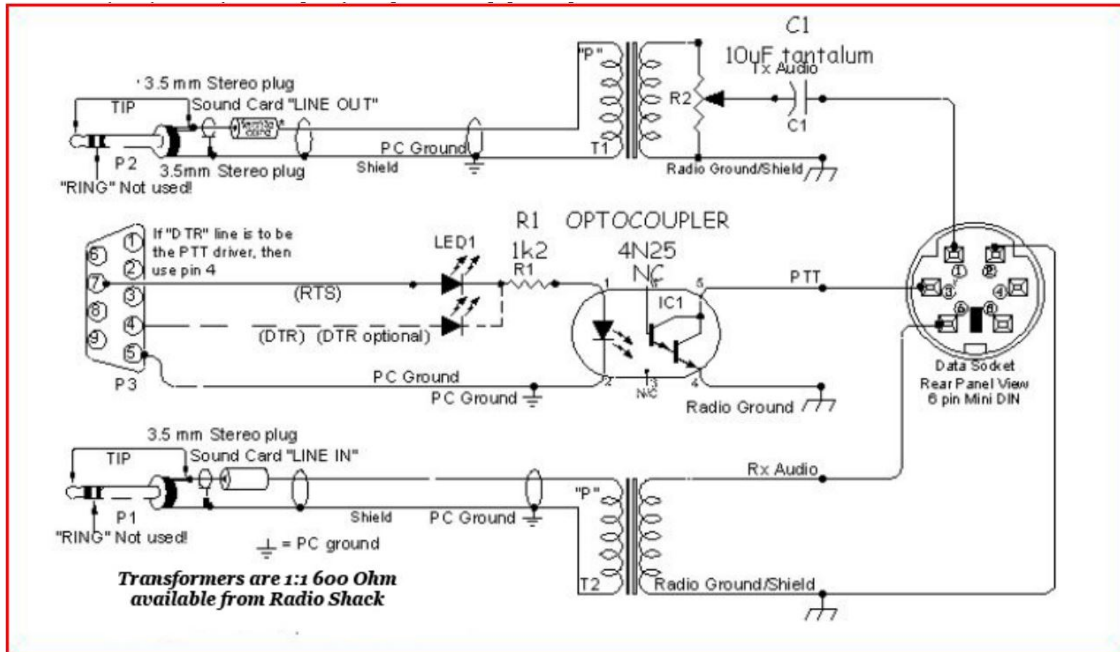
DM-780 has features not found in any other program on the market today. The SuperSweeper gives you the ability to view and decode multiple signals using CW, BPSK and RTTY in single window. You can also enable the SuperSweeper History file to keep track of and display information about callsigns you have heard from your location.

The SSTV module has a built-in editor for creating templates for your outgoing messages on background pictures from your own photo collections. It can also place an incoming picture within one of your outgoing pictures so your contact can see just exactly how his transmission looked when you received it. These are just a few of the many great features of DM-780.

## Audio Interfacing

DM-780 requires the use of an interface of some type to connect the soundcard to the radio. Although the computers built-in soundcard can be used it is recommended you install a second soundcard. The second soundcard can be either internal or external. The advantage of having the second soundcard it can be used for your digital communications while eliminating the possibility of transmitting unwanted computer sounds. You would also be able to listen to music on your computer while still operating in the digital modes.

Next we need to interface the soundcard to the radio. Interfacing can be done in so many ways that it would take days to plough through all the available information. You can do a Google search and find hundreds of articles on the subject. It is possible to connect your radio directly to your soundcard without any form of isolation but it is not recommended. We'll assume that you want to do things properly, so here is a homebrew circuit that has proved its worth many times. It will work with any Icom or Yaesu rig that has a 6-pin mini-DIN connector for external audio. It will work on just about any other rig but you will have to modify the connections to your radio. If you plan to use the circuit below, please check the actual connections to the mini-DIN – **HRD Software LLC does not accept responsibility for damage to your rig should things go wrong.**



**A proven audio interface: cheap and easy to build**

You should always use the rig's high-impedance audio output if there is one available: this supplies a constant signal level to the soundcard. Most rigs also have a TX audio connector independent to the microphone input: you are advised to use this input. Some commercial interfaces don't allow this: It is recommended that you avoid any interface requiring use of the microphone connector and speaker output unless there is no other option for getting the audio signals to and from the radio.

There are also some very nice commercial solutions available for interfacing the radio's audio to the computer. Tigertronics provides two such interfaces. One has a built-in soundcard and one does not. The advantage of having an interface with a built-in soundcard is it frees up the computer's internal soundcard for computer audio, such as listening to CDs, while using the external soundcard for the digital modes.



**SignalLink Model SL-1+**

The SL-1+ connects to your computer's sound card and to your radio's Mic, Data or Accy Port. It is designed to work with ALL computer sound cards, and with ALL radios. The SignalLink SL-1+ is compact, low powered and fully isolated for optimum performance. It supports ALL sound card Digital and Voice modes, and does NOT use a serial or USB port!



### Signalink USB

The Signalink™ USB combines the legendary performance of the Signalink SL-1+ with a state of the art "built-in" low-noise soundcard. The Signalink USB has only one USB connection to the computer, and in most cases, only one connection to the radio. Convenient front panel controls make setup and operation very easy. The Signalink USB is fully isolated and is compatible with ALL radio Mic, Data, and Accessory Ports, and supports virtually ALL sound card Digital and Voice modes. Both of the above interfaces are available from on the Tigertronics website at <http://www.tigertronics.com>

Another commercial solution to interfacing the radio's audio to the computer is the Navigator.



### The Navigator

The Navigator interface is available on the web from U.S. Interface Products. The website is at [http://www.navigator-interface.com/naviusa\\_004.htm](http://www.navigator-interface.com/naviusa_004.htm) The Navigator is a high quality interface between the rig and the computer, for use in running the digital modes such as PSK31, Olivia, MFSK, Hellschreiber, MT-63, etc. It also works fine for SSTV..

The Navigator interfaces to the rig using a USB port, thus it does not require a serial port on the computer. The Navigator has a built-in soundcard for audio from the radio to the computer. It also

provides CAT control to the rig via a serial connection from the Navigator to the rig. The Navigator is completely configured and defined in software, and future updates are expected to be flash-ROM updates that can be installed by the user.

The Navigator is also directly supported by DM-780 by clicking on Program Options and then selecting Navigator from the list of options on the left side of the window.



### micro Keyer II

micro KEYER II™ is the most powerful single radio All-In-One USB interface and the only USB interface to fully support voice operation including microphone switching. With a single USB port, micro KEYER II™ works with any Windows-based logging or control program for CW, voice, FSK and digital (RTTY, PSK31, SSTV, OLIVIA, MFSK, WSJT, etc.) operation. micro KEYER II™ includes a radio control interface that supports all standards (RS-232, CI-V, Kenwood and Yaesu TTL), a powerful CW memory keyer using K1EL's WinKey, a Digital Voice Keyer, two channel audio for transceivers with dual receivers, automatic microphone selection, and a buffer/sequencer for amplifier or LNA control. micro Keyer II is available from the MicroHam website at <http://www.microham.com>

**Other companies who provide audio interfacing solutions that work well with HRD are:**

**TimeWave:** <http://www.timewave.com>

**ZLP Electronics:** <http://www.g4zlp.co.uk>

**West Mountain Radio (RigBlaster):** <http://www.westmountainradio.com>

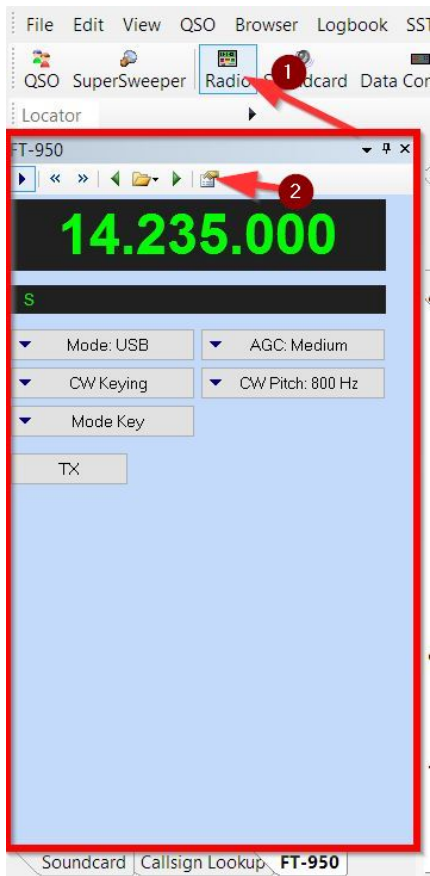
**Rig Expert:** <http://www.rigexpert.com/index?s=standard>

**BuxComm (Rascal):**

[http://www.packetradio.com/catalog/index.php?main\\_page=index&cPath=2](http://www.packetradio.com/catalog/index.php?main_page=index&cPath=2)

If you choose to use one of the commercial audio interfaces, make certain you follow the manufacturer's instructions carefully for installation and set up.

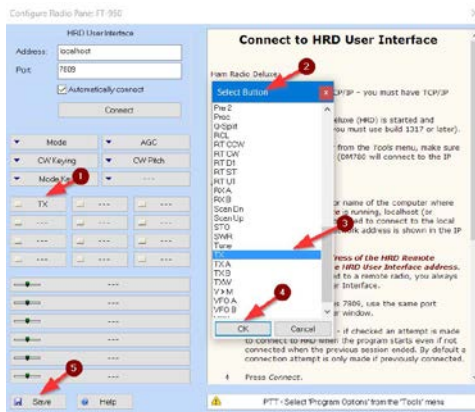
## Configuring DM Radio Pane



An important step in setting up DM780 is the configuration of the Radio Pane. On the DM780 top menu click on VIEW > then click on RADIO or click on the "RADIO" icon as indicated #1 in the image on the left. The following Radio Pane will appear on your display on the left of the Digital Master main screen.

Here is where you can configure various function buttons and sliders to control your radio directly from the Digital Master screen.

Right now, we're interested only in configuring your "TX" button for your radio. To do this, click on the "Configure" icon, indicated by the #2 in our illustration. This will open the Configuration screen.



In the image on the left you will first see the HRD User interface information. Be certain it shows an "Address" of "localhost" and a port of "7809". Be certain there is a check mark in the box to automatically connect, then click on the "Connect" button.

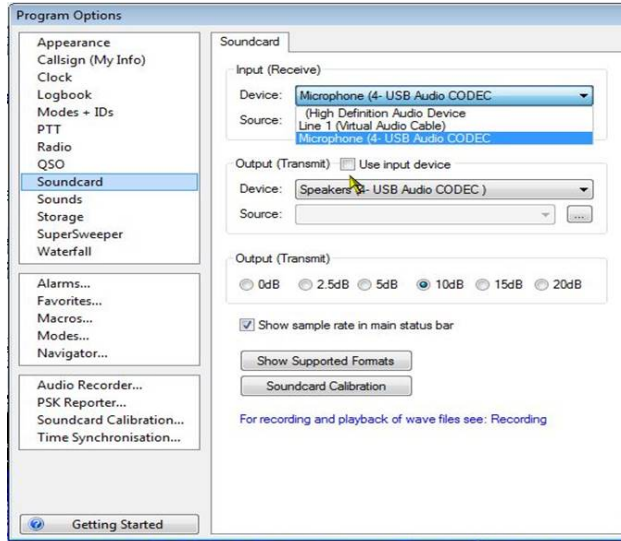
There MUST be at least a "TX" button configured in order for DM780 to key your radio from within the digital modes.

1. Left click on the button indicated
2. The Select Button screen opens
3. Locate and left click on the "TX" command
4. Click the "OK" button
5. Click "Save"

The TX button is now configured.

## Soundcard Configuration

From the menu bar select **TOOLS** then from the drop-down box select **Program Options**. From the left side of the Program Options select **Soundcard**. The soundcard configuration screen will open. If yours does not look exactly like the one pictured below, don't worry, the difference is covered in our HRD Users Manual. Just be sure you follow the instructions to select the proper soundcard.



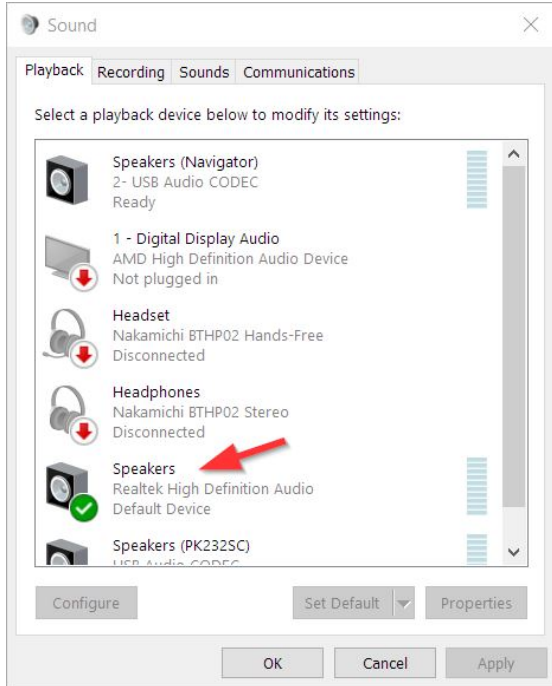
You can see the **Input (Receive)** device at the top of the options. There is a drop-down box where you select the input device on the soundcard that receives the audio from the radio. In this illustration we are using the Microphone input from our USB Audio CODEC, which is our Signalink external soundcard.

For the **Output (Transmit)** device, another drop-down box where you select to send the audio from the soundcard to the radio. In this case, the Speakers of our USB Audio CODEC is selected.

If your audio interface uses the computer's internal soundcard, you would select that in the configuration windows.

If we are using an external soundcard, such as the Signalink, we need to make certain our computer doesn't use it as the default device for normal computer sounds. To do this, you will need to open your Control Panel, and select the "Sound" utility.

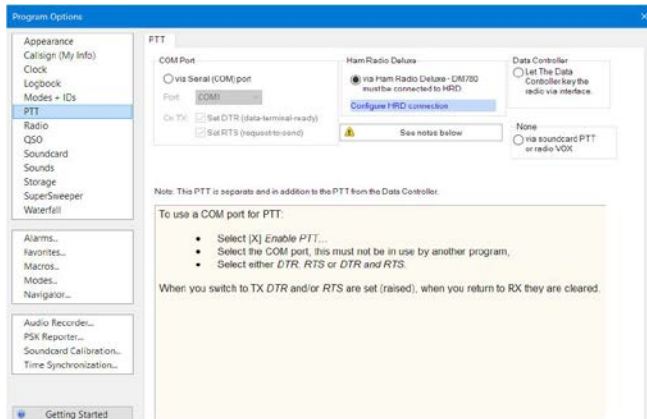




On the "Playback" tab of the Windows soundcard utility, if you are using an external soundcard, make certain you select the normal internal sound device as the default device for the computer sounds. If you select your external device as default any time the computer makes any type of sound, that sound could be transmitted over the air along with your digital signals.

## PTT Configuration

The final item for configuration of the soundcard is setting the PTT option.



Select Program Options by either clicking on the toolbar icon or click on "Tools > Program Options". Once this window opens, you can configure the PTT option. This option will differ in different setups depending on the soundcard used or the hardware interface you are using.

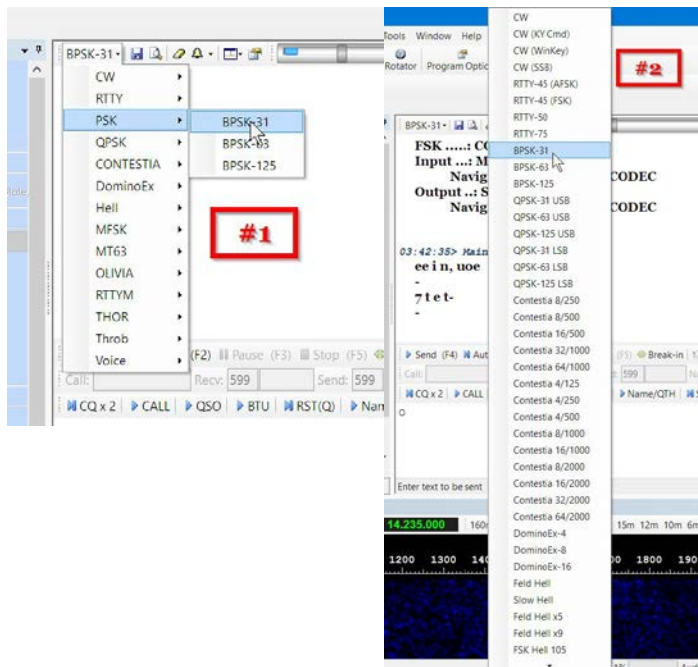
Normally, if you are using a Signalink interface, the PTT should be set to "**None - via soundcard PTT or radio vox**".

In general, when using other hardware interfaces you can select "Ham Radio Deluxe - via Ham Radio Deluxe - DM-780 must be connected to HRD". What this means is you must have the HRD Rig Control module running in order to key the transmitter.

Other hardware interfaces have a designated com port for keying the PTT line. Documentation for the interface you are using should tell you how to configure the PTT.

It's very important that you read your interface manual and your radio's owner's manual. Both will tell you exactly what has to be done with the equipment and how to set up the PTT, soundcard, etc. As we say "RTFM", "Read The FINE Manual". In 99% of the cases, "**Common Sense**", your "**Radio User's Manual**" and the "**HRD User's Manual**" will tell you everything you need to know to setup HRD to operate with your radio. As mentioned earlier in this document, even though the HRD V6.2 manual may be a little outdated the basic functionality has NOT changed from HRD Version 5.x to the current version. We may have added a few new features but the BASICS are still the same.

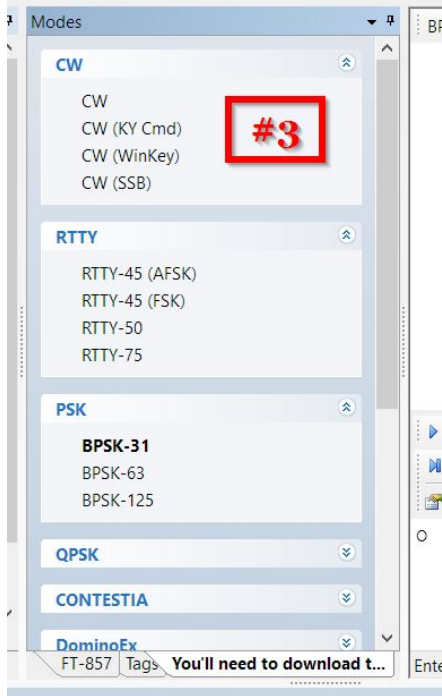
## Select A Mode



In DM780 there are several ways to select the digital operating mode. The images on the left show two of the available ways to select the mode.

#1. There is a tab on the Receive Pane toolbar which indicates the current mode selected in DM-780. Left clicking on this tab opens a dropdown menu showing the MAIN modes. When you select one of the "Main" modes of operation, a second dropdown will open allowing you to select the variation of the Main mode you would like to use. The example shows the PSK mode selected, and the sub menu shows the actual variation of the mode you want to use.

#2. The second option available to select the mode is by **left-clicking** anywhere in the "**waterfall**" area and a scrollable menu will open allowing you to select the mode.



#3. The third option available to select the mode is from a TAB which is visible on the main DM-780 display. This "Modes" pane has the modes divided into collapsible/expandable blocks for each Main mode. When expanded the block contains all the variations of the Main mode from which to choose.

## The Waterfall

The Waterfall in the DM-780 main display is the way we tune our signals for receiving and transmitting.

### Why are there two frequency scales available on the waterfall?

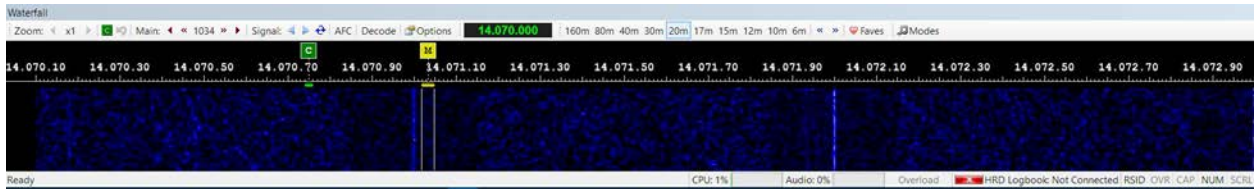
We are not going into any details for the reason there are two scales available on the waterfall in this document. There is more detail in the HRD DM-780 User's Manual, however, if you would like to find more information on the internet, the PODXS 070 Digital Radio Club has a great website which has many helpful files about operating in the digital modes. You can also click on, or copy and paste the following link into your favorite Web Browser to access the HRD Knowledge Base information on this topic.

<http://tickets.hrdsoftwarellc.com/kb/faq.php?id=44>

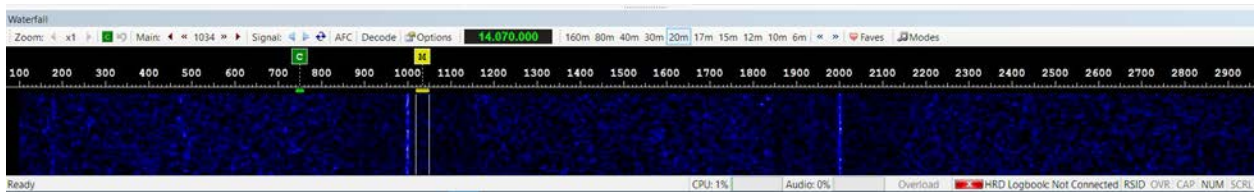
Below are the options used to display the two different frequency scales on the Waterfall.



On the Waterfall toolbar, clicking on "Options" opens the Program Options for the Waterfall. Selecting the "Frequency, Mode, Speed" tab and looking near the bottom of that pane you will see the setting for displaying either the **"RF Frequency"** scale on the waterfall or the **"Audio"** frequency scale. Placing a check mark in the box as shown in the illustration on the left selects the RF Frequency scale.

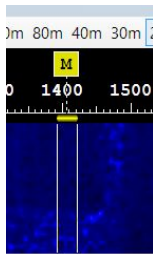


**RF Plus Audio Offset Frequency Scale**

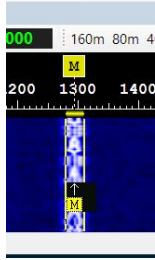


**Audio Offset Frequency Scale**

### Main Tuning Marker



The image on the left is the "Main Tuning Marker" located on the DM-780 Waterfall. This marker is your "Cursor" and is used for tuning the individual traces for the signals you see in the waterfall's passband. The letter "M" in the gold square above the frequency indicates "Main". There is a "dotted" line extending downward from that "M" to the center of the horizontal gold bar, just below the frequency scale. This horizontal gold bar, indicates the bandwidth of the signal, in the case of the one shown here, a PSK signal that is 31.5 Hz wide. The width of this horizontal gold bar varies depending on the bandwidth mode's signal you have selected. The two thin lines extending downward from each end of the bandwidth indicator aid in centering the tuning marker on the received signal, as you will see in the next illustration.



To properly tune a digital signal, move your cursor along the waterfall until the "M" marker is positioned on the CENTER of the a signal as shown in the image on the left. This properly adjusts the "audio" frequency of in HRD to properly decode the received signal and to encode the transmitted signal using the proper audio frequencies. With your cursor and Main Marker set this way on the waterfall, you should now see text being decoded and displayed in the Receive Pane of DM-780.

## Transmitting In Digital Modes

Now that you are receiving digital signals, transmission is very simple. Again, use the "M" marker (cursor) to select the "audio" frequency on the waterfall where you want to transmit. Once that is positioned, click on one of the CQ macros or type your CQ into the Transmit Pane of DM-780 and click the "Send (F4)" or the "Auto (F2) button to transmit the text.

At this point check to make sure you have RF out on your watt meter. If your radio keys but you don't have any RF output, you need to check your soundcard settings to make sure they are correct according to your interface manual. If everything appears correct there, you need to check your radio's menus to make certain things are set correctly there.

Some radio's need to be manually set to "DATA", "DATA - U" or "DATA - L" in order to accept the input audio from the computer. In other radios, you need to look for menu options like "Data On Mod", "Data Off Mod", and any settings that pertain to the way you have your radio interfaced to the computer. This is important especially if you have one of the newer radios that have two or more ways of interfacing, like some of the Icom radios use a CI-V port, which is usually just a 3.5mm phone jack connection to the computer. If this is how you are interfaced, you will need some sort of audio interface along with the rig control connection. If the radio uses the USB for Rig Control and the audio interface, there are settings in the radio's menus which need to be set to indicate the USB port is used for the Digital Signals.

Other radios, using just the USB require menu settings which route the audio and rig control through the USB port on the back of the radio rather than from the CI-V port or RS-232 port. Knowing your radio is important here, and reading your radio's manual is a must if you want to get things up and running.

You can always check our Knowledge Base for help. We have PDF files in the Knowledge Base with full instructions for setting up some of the more popular radios. If you can't find help there, your always welcome to contact the support team for assistance.

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