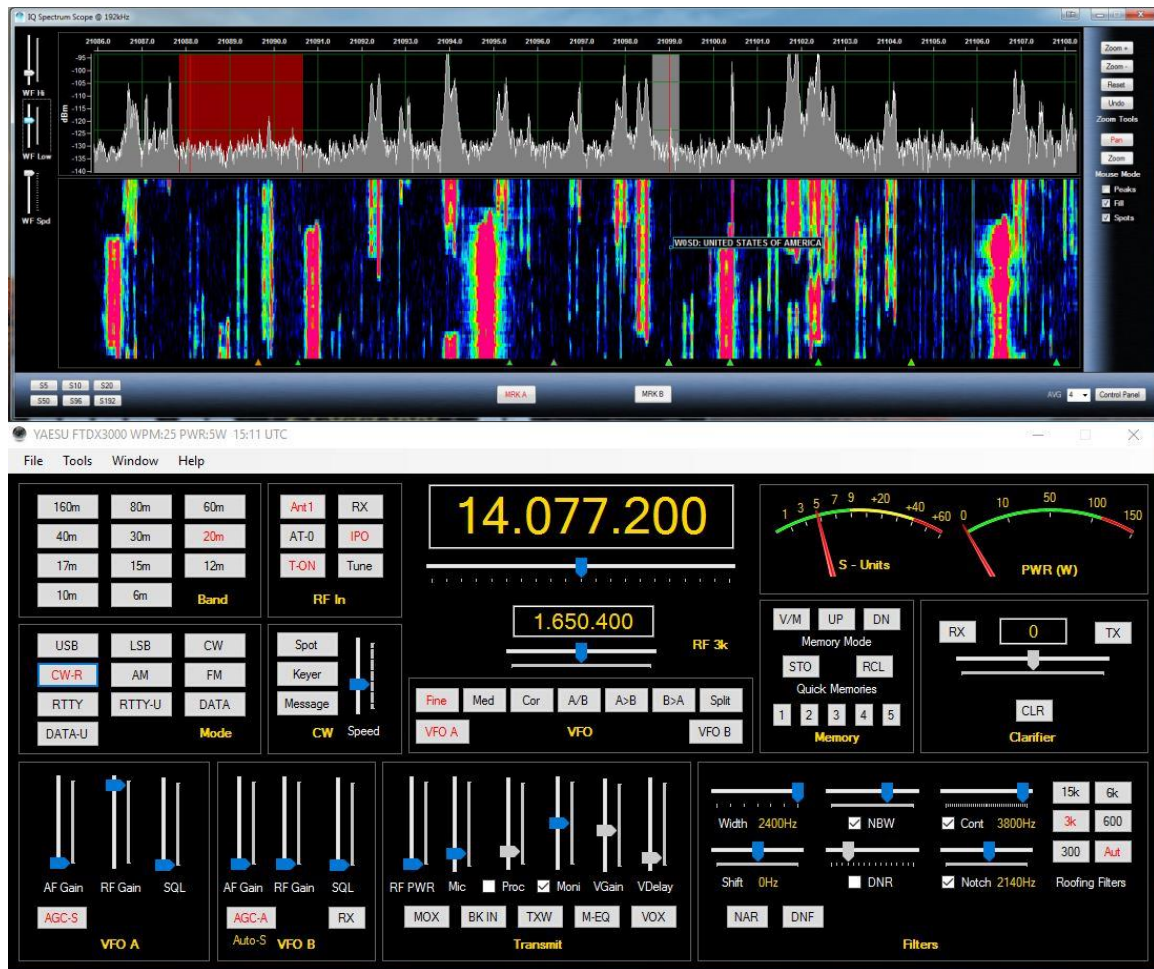


Win4Yaesu Suite Documentation V1.350

(April 2021)

Thank you for buying Win4Yaesu Suite. The Suite supports the Yaesu FT-991 / A, FTDX-1200, FTDX-3000, FTDX-5000, FTDX-9000, FTDX101D/MP, the FTDX10 and external logging programs and third party hardware. It also provides a software based Spectrum Scope for the radios. Both the LPPAN and SDRPlay panadapters are supported.



Support is just an email away at support@va2fsq.com. Release notes at available at <http://yaesu.va2fsq.com/documentation/>

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Part 1: Installation and Configuration

Preparation of the Yaesu Radios

There are two ways to connect to the Yaesu radios; via a serial port connection or via a USB connection on the newer radios. The USB connection offers the convenience of also having a built in sound device that can be used with digital software programs such as WSJT-X and FLDigi. **Only the USB connection is supported for the FTDX101D/MP and the FTDX10 due to changes Yaesu made in the CAT programming of these radios.**

Whichever method you choose, both will actually use a serial port connection with an assigned port number (comport). Using a USB connection only requires a cable, while using a serial port connection you will need a USB to serial device or a real serial port. About the only guideline is that FTDI devices such as the KeySpan have the best compatibility with MS Windows versions.

Using the Yaesu USB connection:

- 1) Download and install the SCU-17 USB driver (Virtual COM port driver) from the Yaesu website for your radio. Be sure to follow the directions for installation of the drivers. Do not connect a cable to your radio until the drivers are installed and you have rebooted your computer. (not always mentioned!). Do NOT directly download Silicon Labs drivers. **Use only the ones at Yaesu's site.**
- 2) Make note of the comport number as shown on page 5 of the manual or if you are using a USB to serial port or physical serial port open the Windows Device manager and expand and look at the Ports section. You can find out the comport number by plugging the USB device in and out and looking at the Port section.

Preparing the radio:

Starting in version 1.036, Win4Yaesu will support multiple firmware versions starting with the following main firmware versions:

Yaesu FT-991	02-21
Yaesu FT-991A	01-09
Yaesu FTDX-1200	01-14
Yaesu FTDX-3000	01-23
Yaesu FTDX-5000	01-29
Yaesu FTDX-101D/MP	01-04
Yaesu FTDX-10	01-04

If you have an older version, the Radio Menu items and Parametric equalizer will not be available but all other functions should work.

Before using the software please go into the menu system of your radio and set the following:

- 1) Go to the menu and find the entry for CAT SELECT. Set this to USB for the built in USB interface or RS232 for other serial devices.
- 2) Go to the menu entry CAT RATE and set this to 38400bps.
- 3) For the FT-991 make sure that GPS/RS232 is set to RS232.

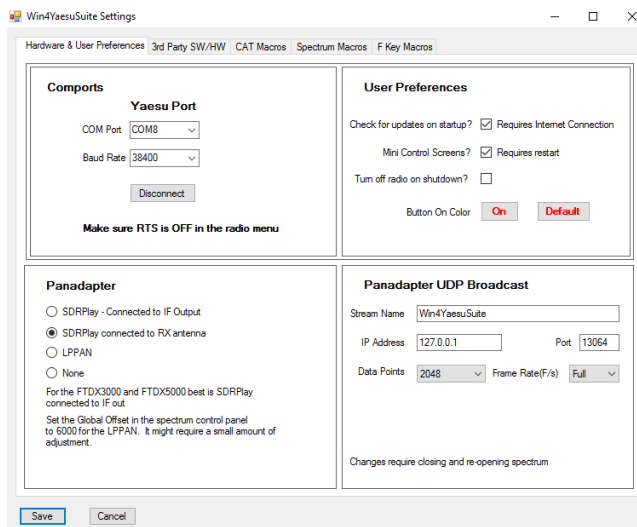
This completes the preparation of the radio.

Installation of the Software

You may download the software from yaesu.va2fsq.com. Be sure to turn off any antivirus software before the installation. The software provides a fully functional 30 day free trial after which you can purchase the software if it meets your needs.

Initial Configuration of Win4Yaesu Suite

The first time you launch Win4Yaesu Suite, you will be taken to the setup menu automatically. You must connect to the radio in order to use the software. You will see the following menu:



Select the COM port from the drop down list and click on Connect. If you have followed the setup above, the button will change to “Disconnect”. You can then choose a Panadapter such as the LPPAN, SDRPlay or None. Finally click on Save and the program will start.

This menu has several tabs which will be covered later in the manual as necessary.

Since you have now connected to the radio take some time and look over the interface. There are several controls such as the Split button, CW Keyer, 60m button that have multiple purposes which can be selected with a mouse right click on the button. In addition, a double click in the VFO displays will open a keypad and a double click on the power meter will toggle through selections of several meters.

One of the neat features of Win4Yaesu Suite is the built in Panadapter. The following sections will look at configuring this part of the software.

Important Additional Steps

Preventing RFI

The Silicon Labs USB devices are extremely susceptible to RFI when you transmit. The usual ferrite beads on the cables are not very effective in preventing malfunctions in the port. When you have RFI, the serial port will often just close down and you will be given a warning from Win4Yaesu. Don't dismiss this by thinking “I do not have RFI”. It takes only mw's and in all cases adding the right ferrite resolves this.

You should have a FT240-31 ferrite such as this installed on the cable:



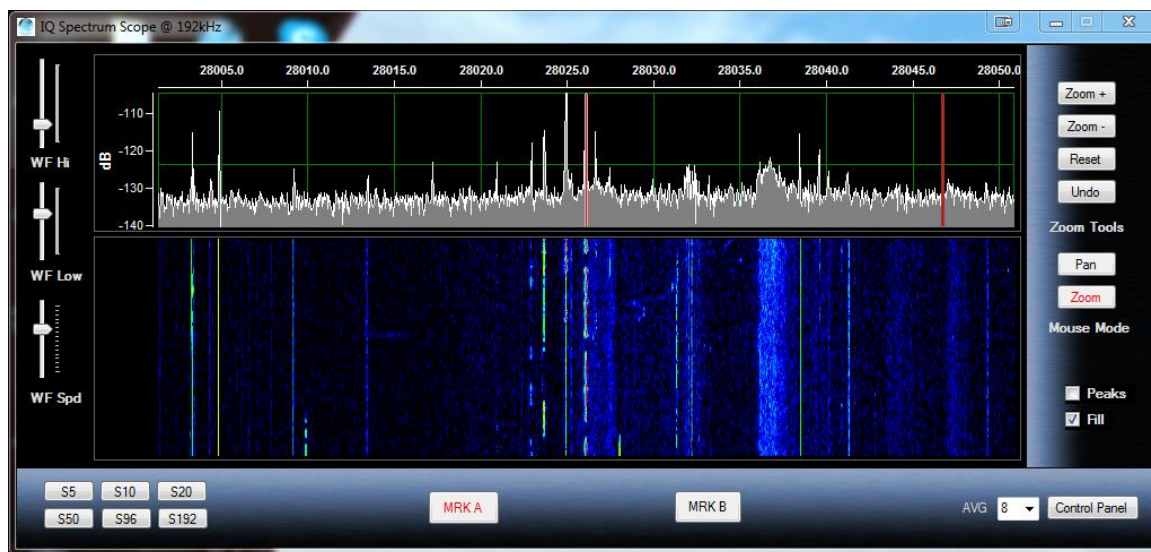
I can't emphasize this enough!

Turn off USB Sleep Function in Windows

After a period of inactivity, the USB ports by default in Windows will go into a low power state and stop functioning. It is important that you turn this off in two places. Open the Windows control panel and under Power Options, click on the Change Plan Settings, then Advanced. Select the USB Settings and disable USB Selective Suspend.

The other place where the Power Management should be turned off is in the Device Manager. Open the Ports section, find the Silicon Labs Drivers, right click on them and then select Properties. Next select the Power Management tab and uncheck the option to allow the computer to save power.

Setup of the Spectrum Scope with LPPAN



Installation Steps

LPPAN provides a high performance Panadapter for the Yaesu FTDX3000 and 5000 with the available IF out connector on the rear of the radio. For the FTDX1200 and FTDX9000 you will need to use the SDRPlay device since the radio does not have an IF out unless you have an internal IF output modification. For the FT-991 / A both a RX antenna is supported with a TR switch and an IF out with a radio modification. Please see the instructions in the next section.

The first step is to enable the IF out in the FTDX5000, Menu Number 109. The FTDX3000 has this enabled by default.

The output from LP-Pan requires a **stereo** audio adapter to be installed on your system. Many laptops do not have a stereo input. If you attempt to use the spectrum scope with a non-stereo input, then you will not get correct results. Most motherboard based audio devices and outboard USB audio devices do have stereo inputs. Unfortunately, Windows does not always tell you if the audio device is stereo in a straight forward manner.

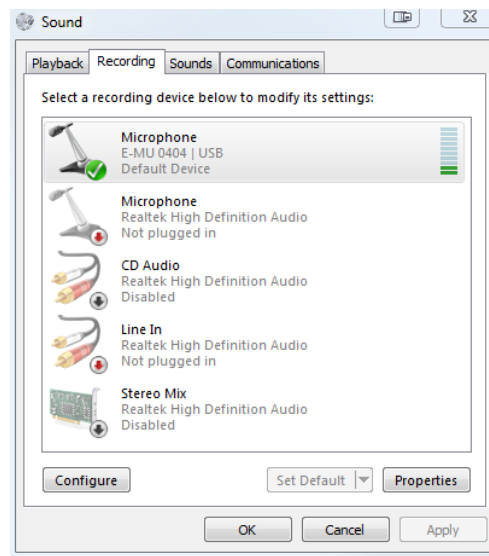
A good sound device for use in Panadapter applications is the ASUS Xonar U7.

The **first step** before trying to install the spectrum scope is to check which devices are installed on your system and make sure they are configured correctly.

Vista, Windows 7, 8 and 10 Sound Device Setup

Step 1: Open the Control Panel and select "Sound"

Step 2: Select the "Recording" tab as shown in the following figure:

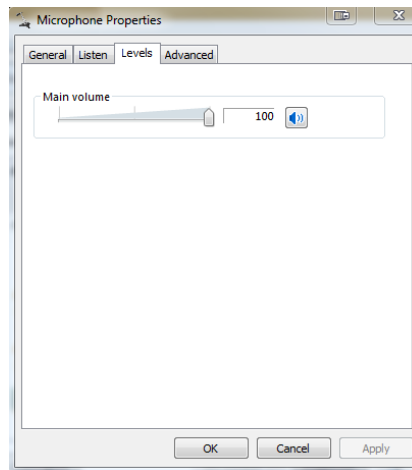


In this figure you can see that there are a number of devices shown. In this example, the Microphone Input for the E-MU 0404 device is the one that will be selected. Please note that Windows enumerates this as a Microphone which it is NOT. It actually is a stereo input. Please also note that there is a motherboard Line In connection available. However, you cannot select this device since there is no cable plugged in. Many devices will only become active when a cable is

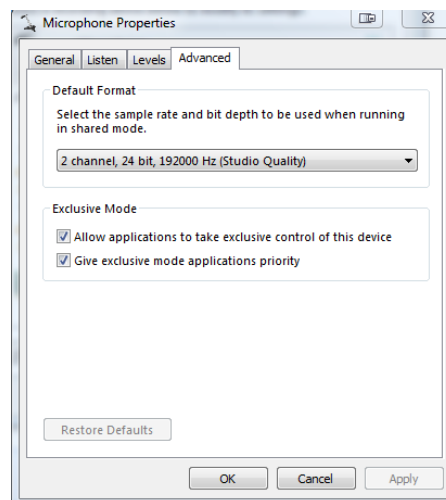
actually plugged in. The same thing will happen with the ASUS Xonar U7. In this case, ASUS provides a utility program which allows the input to be set to Line In.

Step 3: Select the device you wish to use and click the "Properties" button.

Step 4: Click on the Levels Tab and increase the volume to maximum. In some cases you will also see a balance button. Set both channels to maximum. You can adjust this later if the levels seem to be too high. A good level on a quiet band (6m for example) would be around -120 to -130 dBm as seen on the scope.



Step 5: Click on the "Advanced" tab:

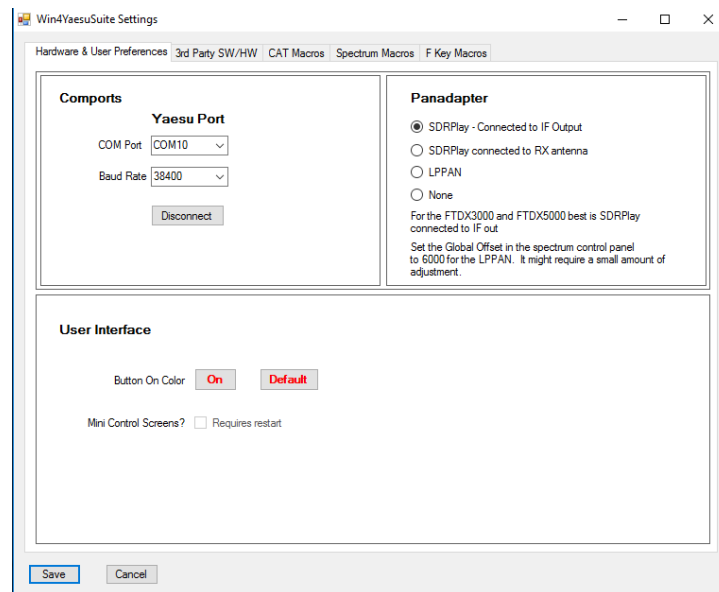


Here you will see a list of formats that your device supports. However in some cases the list will be incorrect and Windows will actually try and up sample the data stream which is not appropriate. When in doubt, refer to the manufacturer

of your sound card and use that setting in Win4Yaesu Suite. **You must set this to your planned maximum sample rate usage.**

Configuring Win4Yaesu Suite for the Spectral Display

Make sure you have installed and configured your sound card before starting Win4Yaesu Suite. Once this is done, start up the software. In the Tools - Settings menu in the Win4Yaesu Suite Control Center window, there is a section called Panadapter. Here you have a choice of LP-PAN or the SDRPlay connected to the IF out or RX out.

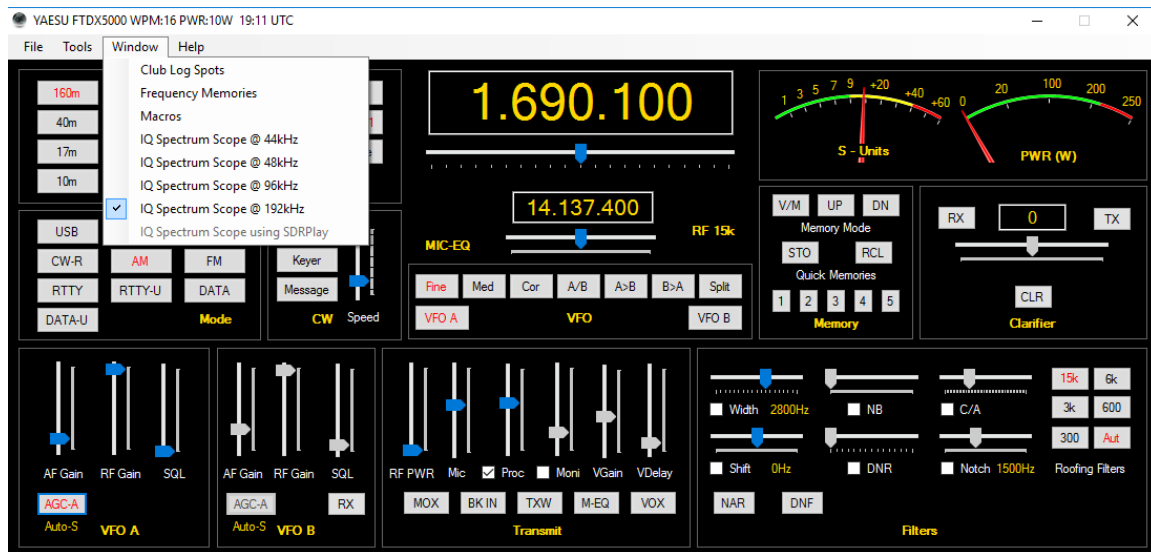


For the FTDX3000 and FTDX5000, the preferred connection is to the IF Out and for the FTDX1200 and 9000 the only choice is the RX out. The FT-991 / A will also use an RX antenna. However, it is important that you use a TR switch for the 991 and 1200.

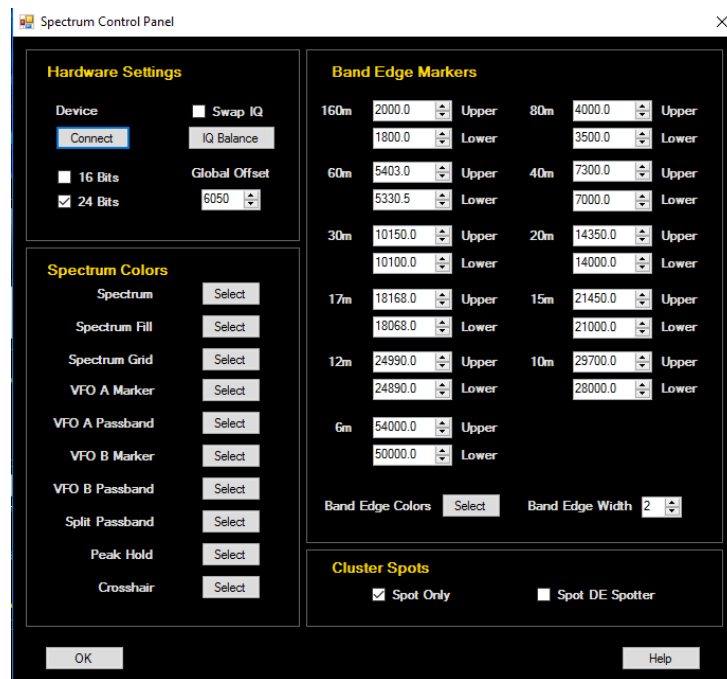
You can see a video about this here:

<https://youtu.be/0wvJ3xqOiTo>

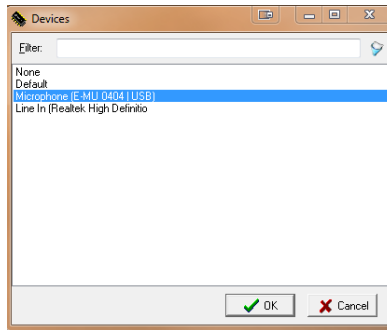
Once you have setup Win4Yaesu Suite to connect to the panadapter device, click on the Window menu and select the appropriate display.



In the case of LPPAN, you will need to select a sound device. Press the Control Panel button in the lower right hand corner of the spectrum scope window. This will open the control panel as follows:



Click on **Connect** and you will see the following device selection dialog:



Here you will need to select an appropriate driver. Once that is done the spectrum should display. (An example of this is the Microphone (E-MU-0404 | USB)

Additional Spectrum Setup for LPPAN

Software based spectrum scopes take the quadrature signal (IQ out) from a software defined radio or Panadapter device and processes the two signals (I = In phase, and Q = Quadrature phase) by digitizing the signal using an audio capture device. From here, the two signals are fed into a fast Fourier transform which translates the signal from the time domain to the frequency domain which is then plotted.

There are a few things that must be done to set up the spectrum scope appropriately. One, is to make sure that the signals are connected to the right channels of your sound card. The other is to make sure that the two signals are equal in amplitude and at 90 degrees out of phase with each other. This is referred to as IQ Balance.

Checking for correct connections:

To do this, first set up your sound card as above and then tune your radio to signals in the AM broadcast band (nice solid signals here). Zoom in a bit (see usage below).

Once you have some signals displayed, turn the VFO A dial **clockwise**. If you see the strongest signals on the spectrum scope display moving to the left, the signals are fed into the sound card correctly. If you see the strongest signals moving to the right, you will need to click on the "Swap IQ" in the control panel of the spectrum display.

The settings will be saved. If you change sound cards in the future, you may have to change this again.

Checking IQ Balance:

If you see many images in the spectrum you will need to set the balance of the IQ channels. Click the IQ Balance button.

Setting the IQ balance can be done for each band separately. If you do not set this for a particular band, it will use the settings that were used for the last calibration. In general, for the FTDX IF output, this needs to be done only once on one band.

The best way is to use a signal generator such as the XG3 from Elecraft. Another method is to use another transceiver into a dummy load, or have a fellow ham nearby that can generate a constant carrier for you. Lacking these, you can use strong signals such as WWV, or find a LID who is placing a carrier on a DX :).

Turn the VFO dial around a bit and you will notice that the image of the main signal moves towards or away from the main signal as you tune. If the signal moves in the same direction it is a signal not an image.

To adjust the balance, move the IQ Gain control until the image peak is minimized. The value should be close to 1.0 +/- 0.1. As you get close, it is better to use the up and down arrows on the keyboard. Next adjust the Phase control, using the keyboard when you get close. Alternate back and forth until the image is completely in the noise and press OK. You can now do this for another band, by changing bands on the radio and repeating the procedure.

Changing sound cards will require a rebalance.

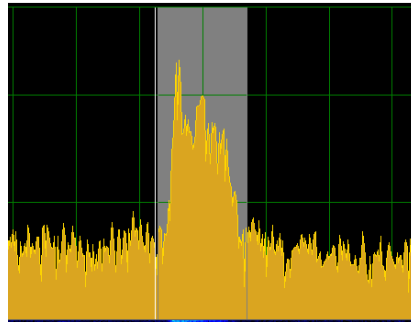
One thing you may notice is lots of artifacts in the signal. Peaks at the center frequency, spikes at various points on the display. What you are seeing is noise pickup on the IQ wires. Adding ferrites can help.

Global Offset: Due to variances in electronics, the spectrum scope may not precisely display the signal at the exact point it should be. There can be small differences between devices. The Global Offset allows the spectrum display to be tuned so that the frequency peaks line up with the cursors as they should.

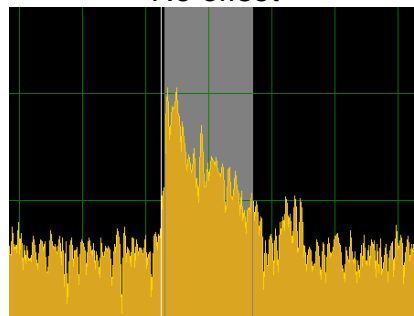
The following is an example of an USB signal first at **0 Hz offset** and then at **-300 Hz offset**. With the LPPAN2, the usual observed offset is about 6000. Other versions of the LPPAN can have other values. Please check with the vendor of the LPPAN to determine what the offset should be.

You will need to experiment a bit with this until you find the correct offset. It is easiest to adjust this on a signal such as WWV or a strong AM signal.

Once this is set it will be correct for all modes.



No offset



Offset with LPPAN

If you are using an LPPan with the FTDX3000 or 5000 with the IF out the global offset will be around +6000. If you are using a RX Antenna input, the global offset will be at or around 0.

Setup of the Spectrum Scope with SDRPlay

The SDRPlay is a software defined radio that can tune from 100 KHz to 2.1 GHz with a maximum bandwidth of 8 MHz. It can be used with the FTDX1200 and FTDX9000 using the RX Antenna output and with the FTDX3000 and 5000 using the IF Out.

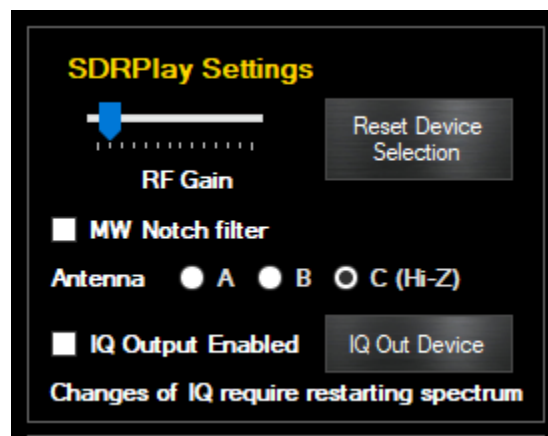
There is no need for a sound card nor is balancing of the IQ signals necessary. It is pretty well plug and play.

You will need to install the drivers from SDRPlay and the best way is to just install SDRUno which is the software included with SDRPlay devices. If you do not install SDRUno, then you will need to download and install the API Version 3 drivers from the SDRPlay website.

The first thing you will need to do is to select Tools, Settings from the main control window and then click on the appropriate SDRPlay check box. Restart Win4Yaesu.

To start the spectrum, select Windows, IQ Spectrum Scope. If all is well, then you will see the spectrum appear in a New window. For the very first time of use, you may need to press the reset button at the upper right.

By default, the SDRPlay gain is set for a middle value. This can be adjusted by opening the spectrum Control Panel in the lower right of the spectrum display. You will see the following:



The gain control allows you to set the baseline gain for the SDRPlay. If set too low, then signals will be missed. If set too high, you will see spurious peaks appearing in the spectrum.

Adjust this to provide adequate gain with minimal artifacts. Please see the Advanced topics for more information.

If you are using the RX antenna for the SDRPlay connection then you should set this by band. For IF out implementations, setting it once is adequate.

If you receive an error “Unable to attach to API” when starting the spectrum scope, the SDRPlay service may not be running on your computer. Open the Windows Start Menu, find the SDRPlay entry and select “Restart API Service”. This normally should start automatically. If not, please look at the SDRPlay documentation.

Please watch the video on how to use the spectrum scope here:
<https://yaesu.va2fsq.com/video-tutorials/>

For the remainder of the settings please take a look at Advanced Topics.

Use of Third Party Panadapter Software

Win4Yaesu Suite also supports third party panadapter software such as HDSDR. To use these products, they will need to be connected to the AUX / CAT ports as described in the "Integration of Third Party Hardware and Software"

This completes the basic setup of the Yaesu radios.

Integration of Third Party Software and Hardware

Win4Yaesu Suite supports most third party products that can connect to a Yaesu FTDX radio through a standard serial port. This includes almost all software packages such as DXLabs, Log4OM, Logger32, N1MM Contest logger and anything that works with OmniRig. In addition it can interface to stand alone hardware packages that have a serial port connection to a computer. Unlike comport sharing programs, each connected device or software has its own dedicated channel to the radio avoiding any contention between them. You can watch a video on this here: <https://yaesu.va2fsq.com/video-tutorials/>

Concept

Imagine for the moment that Win4Yaesu Suite is a black box existing outside of the computer. This black box has 4 FTDX Radios imbedded in it. Each of these radios has a serial port that you can connect to, just like the real radio. To connect to one of these radios you just connect one of these ports to the computer via a cable and then configure your software to connect to the radio as you always have. Here's the idea:



You can have FLDigi, DX Lbs Commander, N1MM Contest Logging software, or NAP3 Panadapter software connected, each with its own channel to its own radio.

But Win4Yaesu Suite is not a physical device like in the picture, but rather a virtual device **in** the computer. So then how does one connect Win4Yaesu up to all of the software?

The answer is using a **Virtual Comport Pair**. A virtual pair is very much like a NULL Modem cable. It allows connecting two devices together so that the transmit and receive wires are crossed.

When you create a Virtual Comport Pair using various software packages it creates essentially a null modem cable that has one comport defined at one end, and another comport defined at the other end. You connect one end to the software you want to use, telling it it is connected to an FTDX radio, and then you connect the other end to Win4Yaesu using one of 4 specialized "AUX / CAT " ports in the settings of Win4Yaesu. From this point on, the software thinks it is connected to its own FTDX radio.

Win4Yaesu Suite supports connecting 4 third party products. These products can read information from the radio. Performance is maintained since the responses to commands have been saved in memory by Win4Yaesu during its latest round of polling the radio. Thus, high polling rates from software such as N1MM do not directly access the radio but rather the memory. Commands to switch frequencies or modes or any other write commands are executed immediately.

Connecting to Third Party Applications

(For HRD please see the next section)

The first thing you are going to need to do is download a third party Virtual Comport program. There are a number of these out there but Win4Yaesu has been tested extensively over several years with COM0COM. There are others such as Eltima Virtual Comports and VSPE. Most of these cost money but COM0COM is free. If you are using a MicroHam router, you can create a Virtual Cable included in their router to accomplish the same thing.

COM0COM which is open source is available at:

<http://sourceforge.net/projects/com0com/files/com0com/2.2.2.0/>

Be sure to use the version for your operating system. There is one for 32 bit and another "Signed" for 64 bit.

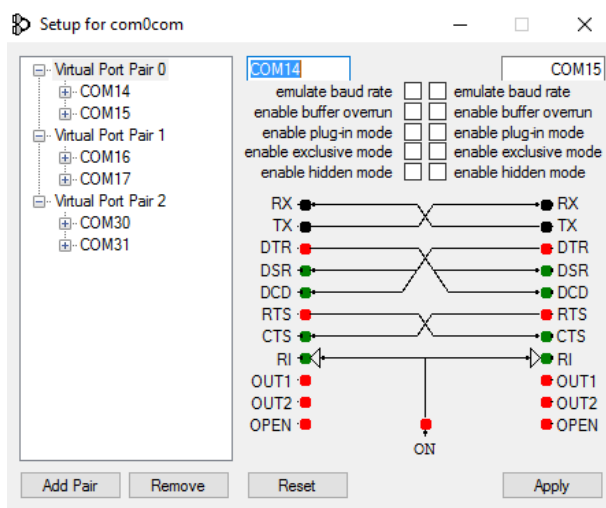
Only the version at this link is signed.

**The 64 bit signed version has the filename
com0com-2.2.2.0-x64-fre-signed.zip**

**and the 32 bit version is
com0com-2.2.2.0-i386-fre.zip**

It is **HIGHLY** recommended to use the above virtual ports since they are more compatible and stable than any of the others including VSPE manager.

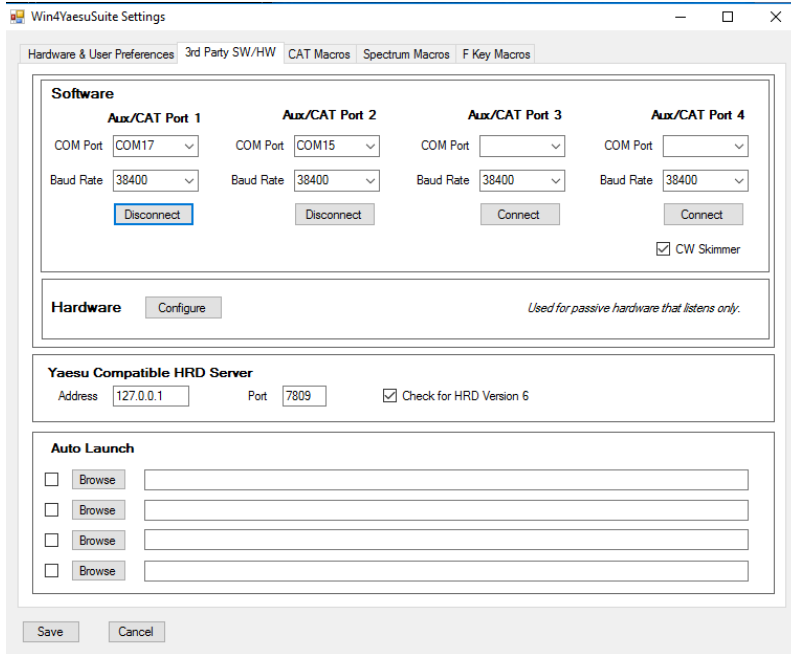
After you install this, open the Windows start menu and in the com0com folder and run "Setup." (Don't run Setup Command line).



There will be, by default, one pair already defined with weird letter names. You can just click on the names and change the names of the comports to a comport name that does not exist on your system. In the above I chose COM14 and COM15 for one pair, COM16 and COM17 for another and COM30 and COM31 for another.

Once the comport pair is created, start up Win4Yaesu Suite and select Tools, Settings, and the 3rd Party SW/HW tab. You will see the following screen:

In this screen there are 4 AUX/CAT ports:

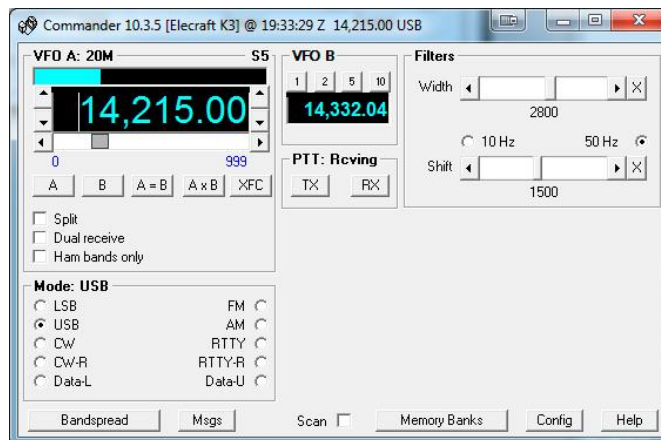


Each one can connect to a comport of a virtual comport pair. In this example, AUX/CAT Port 1 is connected to comport 17 of the 16-17 pair and AUX/CAT Port 2 is connected to COM15 of the COM14-COM15 pair.. The others are currently not connected to other virtual port pairs.

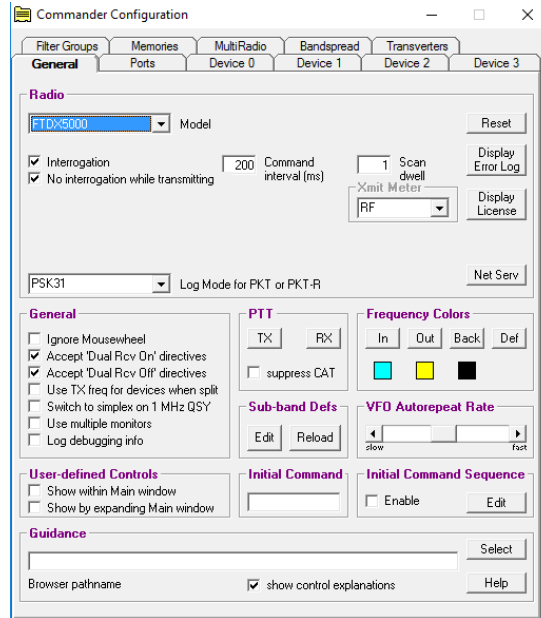
All you need to do now is save the settings and then configure your third party product to connect to the other comports in the pairs telling it you have an FTDX radio connected.

Example: DXCommander from DXLab Suite

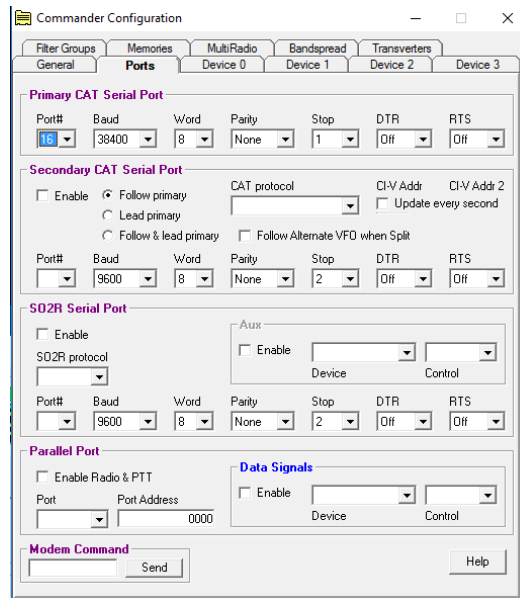
Select **Config** from the main DX Commander screen:



You will then see the following screen. Select the appropriate FTDX radio.



Next click on the Ports tab and enter Port# 16 corresponding to the serial port of the virtual comport pair you created above. (Pair COM16 and COM17)



Make sure that DTR and RTS are set to OFF. Win4Yaesu Suite does not support hardware hand shaking.

Exit out and you should be connected to DXCommander. From the point of view of DXCommander, all it sees is a FTDX radio connected to its comport. Therefore everything that is supported in DXLabs Suite also works.

You can use the same principle for any other third party software such as N1MM, DX4Win and so on.

Some packages such as FLDigi and LOG4OM use OmniRig. You apply exactly the same principle as above.

For up to date tutorials please visit

<http://yaesu.va2fsq.com/third-party-integration/>

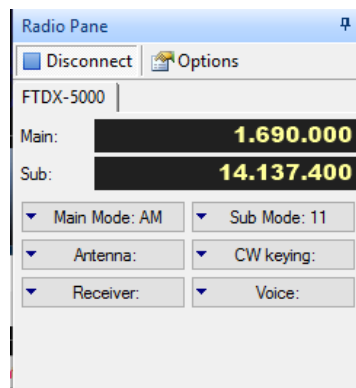
and

<https://www.youtube.com/watch?v=1jh6IS0S1dE>

Connecting to Ham Radio Deluxe Logbook and DM780

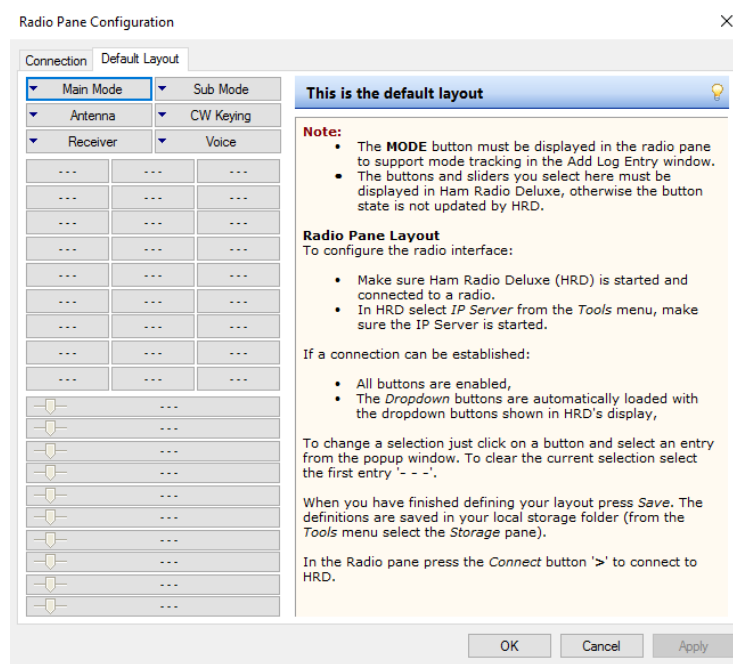
Win4Yaesu Suite has a Ham Radio Deluxe compatible TCP server that can connect with the log book and DM780. In order to use this and track the radio modes you must first connect the **HRD Radio Control program to your radio** and run the HRD logbook. You must do this for the all FTDX radios that you own

Once you are connected, open the radio pane in HRD Logbook (View Radio Pane). You will see something like this:



There may be other buttons displayed but Win4Yaesu Suite only supports these default buttons and drop downs at this time. If you have other drop downs defined you **MUST** remove them from the radio pane.

To change the drop downs, click on the Options Tab in the Radio Pane. At that point you will see the following.



If there are any other buttons than this you must remove them. If any are missing, you must add them. The result MUST be exactly as shown.

Click OK and if all is well you will see Mode A and B showing the mode of the radio. If you cannot get the Radio Pane to show just the fore mentioned buttons then you will not be able to connect with Win4Yaesu Suite. If you cannot change the buttons as happens in some cases please contact support@va2fsq.com. This is solvable just a little more work is involved.

Once you are successful, close HRD Control and HRD Logbook. Start Win4Yaesu Suite and start HRDLogbook.exe (In the HRD software directory).

To make things simple you will want to create a shortcut on your desktop from the executable in the HRD folder or make an entry in Settings, Third Party HW/SW Auto Launch. This way the logbook will start immediately when you start Win4Yaesu Suite.

Integration with CW Skimmer

CW Skimmer is an extremely useful tool for decoding CW transmissions over a wide range of frequencies. It is especially useful for working DX pileups, where you can see where the DX last worked a QSO.

By default CW Skimmer will QSY to a spot using VFO A. However, when you are working DX you are usually in SPLIT mode. So if you click on a spot with

CW Skimmer, you will lose the DX transmitting frequency. Win4Yaesu provides a way to translate all QSY's from VFO A to VFO B. To enable this function, connect CW Skimmer to AUX/CAT port 4 and click the CW Skimmer check box. This will inform Win4Yaesu that CW Skimmer is connected and it will enable the VFO A to VFO B QSY's. By default, it will use VFO A but in the Tools menu of the radio control screens there is a toggle called "CWskimmer QSY – VFOB" If you select this you can use it will translate all VFO A QSY's to VFO B.

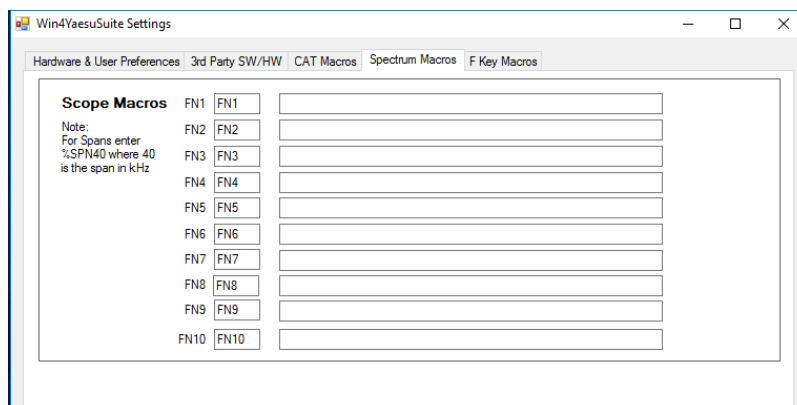
Please note that at the current time, CW Skimmer integration only works with the LPPAN panadapter.

Settings Menu in Depth

Spectrum Macros and Function Key Macros

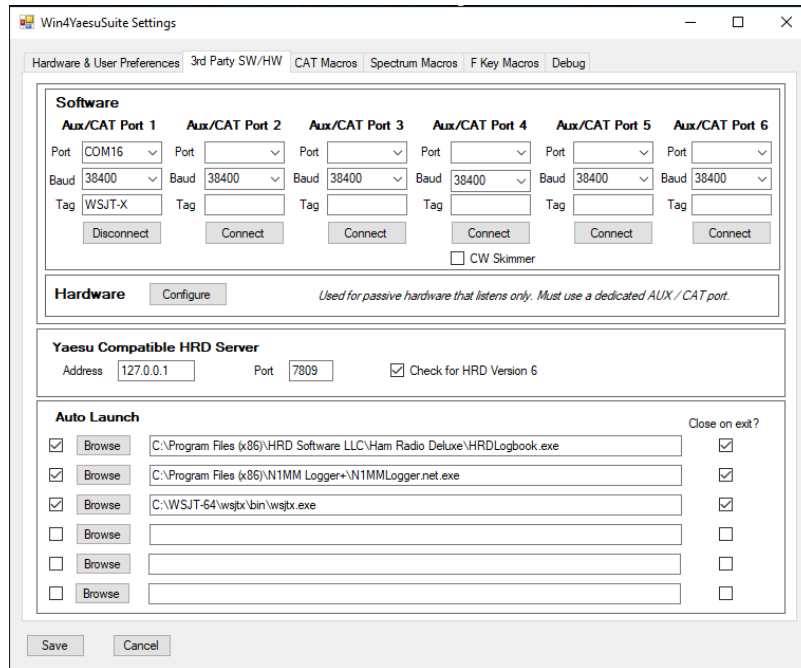
Here you can specify macros for the the spectrum scope window such as Span etc. You can change the labels as well. These will appear on the spectrum scope windows window in the lower left. You can use any macros you wish.

Please see the section on Programmable Macros for more details.



Third Party SW / HW Tab

In this section you can specify the settings for the AUX / CAT ports as described in Connecting to Third Party Applications.

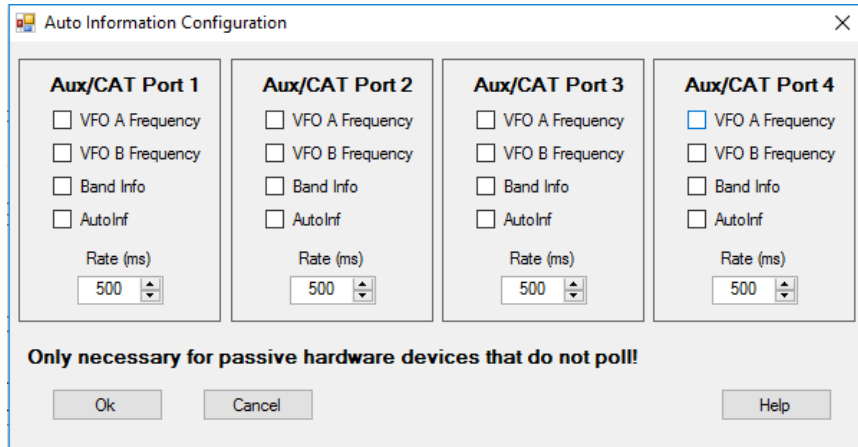


The Win4Yaesu Suite Compatible HRD Server provides the address and port of the HRD Logbook server. If you are using an old version of HRD, uncheck the check box shown.

Auto Launch: This provides a facility to automatically launch up to 6 third party programs when you start Win4Yaesu. You can check or uncheck the check boxes to enable a particular Launch as you deem necessary. The close on Exit will close most applications gracefully. However, it will not close programs started with batch files.

The Hardware section is useful for devices such as a SteppIR controller or an AMP that listens to frequency information over a serial port. Normally, you would connect such a device directly to the serial port on your radio and it would change bands etc as needed. Another thing that is frequently done is that a “Y-Cable” is placed here so that the radio can be shared with software and the device. In Win4Yaesu Suite this is not necessary and you can use this section to configure this as follows:

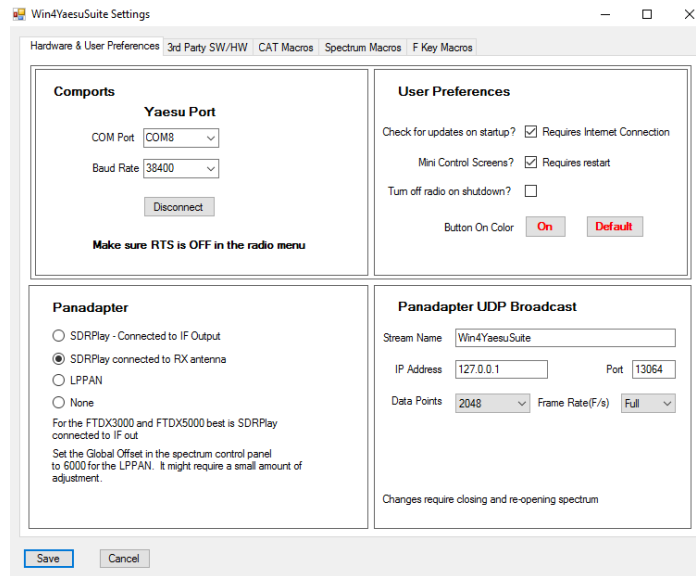
Press the Configure button and you will see this:



Each of the AUX / CAT ports can automatically send one or more of the types of information shown above. To use this, please refer to the documentation of your hardware for the type of information needed. Once you have set this, you will need to plug your device into a serial port on your computer. You then enter the comport number of the plugged in device into the corresponding AUX / CAT port. There is no need for a virtual cable. **Make sure that you use this ONLY for hardware. Do not enabled any of these options for software.**

User Preferences:

This section allows you to select Mini Control screens as well as the color of the buttons that appear in Win4Yaesu Suite.



It also allows checking for program updates on start up and will automatically turn off your radio when you exit.

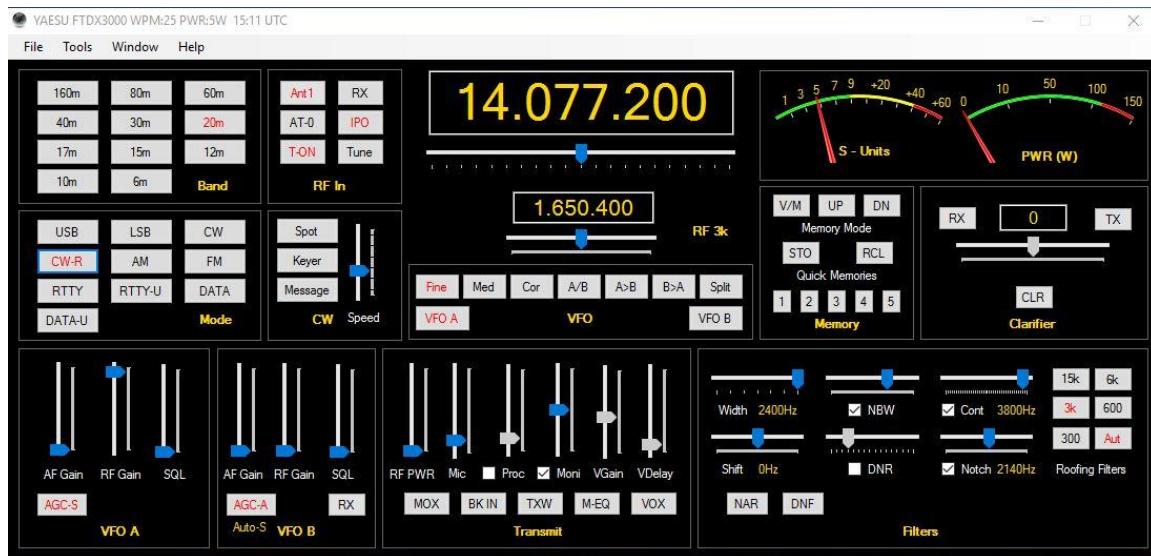
Part 2: User Interface and Functionality

Radio Control Screens

Win4Yaesu Suite provides an easy to use interface to the Yaesu, exposing almost all functionality. There are two possible radio control screens: the full

sized interface and the Mini-Screen. Switching between them is accomplished by going into Tools Settings User Preferences and checking or un-checking the "Use Mini Control Screens box. A restart is required. (Available soon after initial release).

Most of the buttons are self-explanatory but there are a few sets of controls that can use further explanation.



Mini-Screen Controls for the K3

VFO A and VFO B Tuning

The radio may be tuned by sliding the slider to the left or right and then releasing the mouse. Tuning rate is governed by the buttons of Fine, Med, or Coarse. If you use the mouse wheel after selecting the slider, the wheel can be continuously turned to change the frequency.

By default **Fine** tuning changes the frequency by one Hz if you use the keyboard to slide the slider. If you use the mouse wheel each "tick" will increase the value by three times the slider increment.

Medium tuning will change the frequency in 10 Hz increments and **Coarse** by 100 Hz increments. In all cases the mouse wheel will increase this by three times.

Double Clicking the VFO windows will pop up a direct frequency keypad as shown here:



You can use the keyboard or the mouse to enter a frequency. Note that the frequency is in **kHz**.

You may also click in the VFO A or B frequency digits directly and use the arrow keys or mouse wheel to individually change the values of the digits. Note, click slightly to the left of a digit.

Right Clicking in the VFO B frequency display allows you to select various "Up" and "Down" split frequencies automatically.

Hidden Controls Accessed with a Right Click of the Mouse or Double Clicking

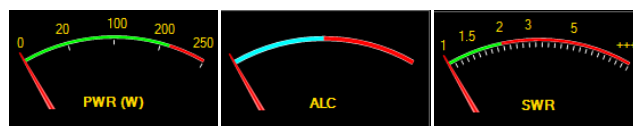
There are several controls in Win4Yaesu that can have a dual function. For example, the Keyer Speed in the CW section can be toggled between Pitch and Speed.

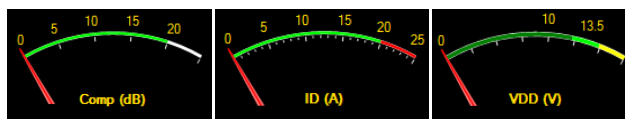
Another example is Right Clicking 60m button section band section. The Split button allows selection of several split values that will also automatically put the transmit frequency to that of VFO B.

VFO A and VFO B Buttons

Pressing these buttons will allow changing values such as band, filters, antennas etc for the appropriate VFO and on the FTDX5000 and 9000 the second receiver.

Radio Meters





Right clicking on the meters will provide the ability to select one of 6 meters whose values will be shown during transmit. You may also double click on the meter and it will cycle between them automatically.

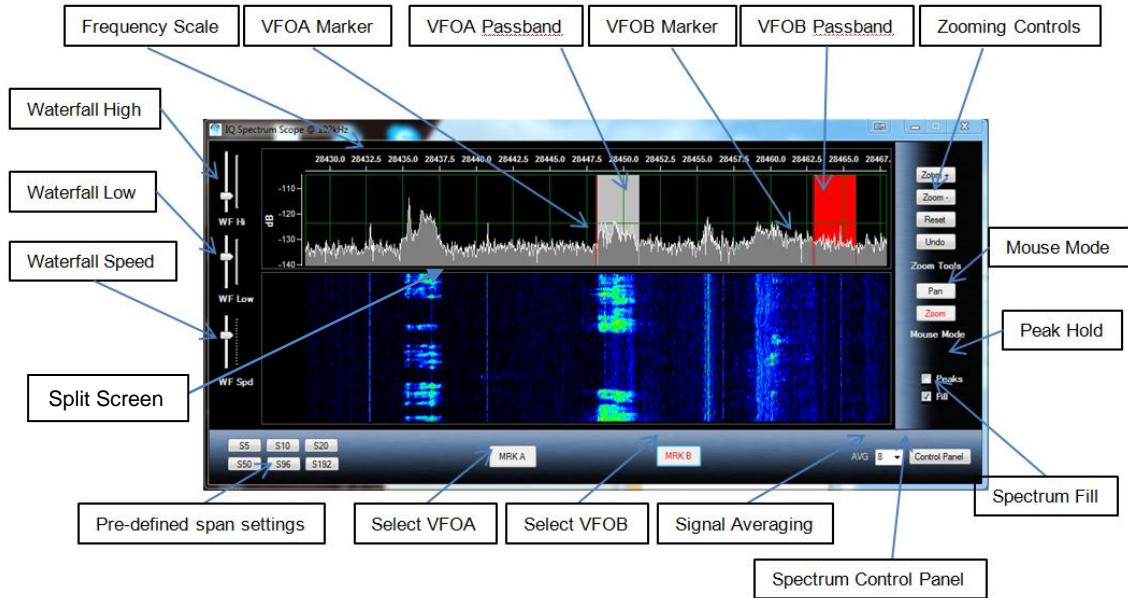
MiniScreen

Starting in version 1.022 there is a more compact control screen that you can use if you wish. To select this screen, open Tools, Settings and then in the User Preferences section there is a checkbox for "Miniscreens". You will need to restart Win4Yaesu after changing this.

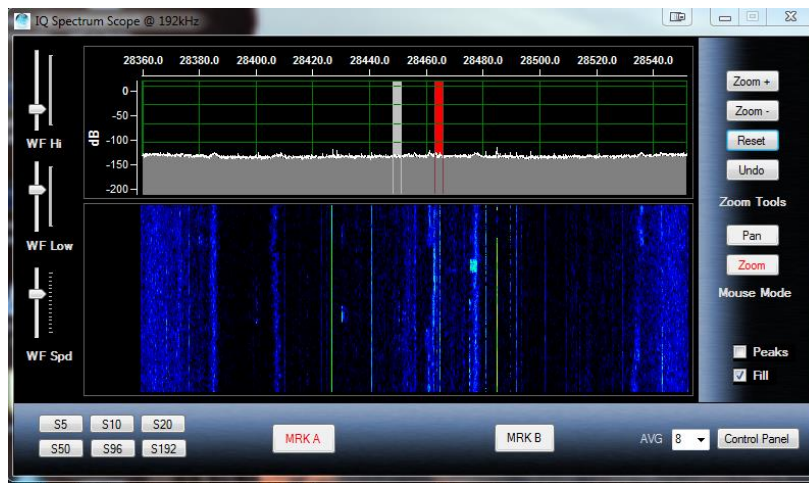
The Win4Yaesu Suite Spectrum Scope

The Win4Yaesu Suite spectrum scope offers an easy to use spectrum scope with no need to worry about many of the technical aspects of Digital Signal Processing. The display for the SDRPlay and LPPAN automatically takes into account all offsets for the various modes.

Control Layout



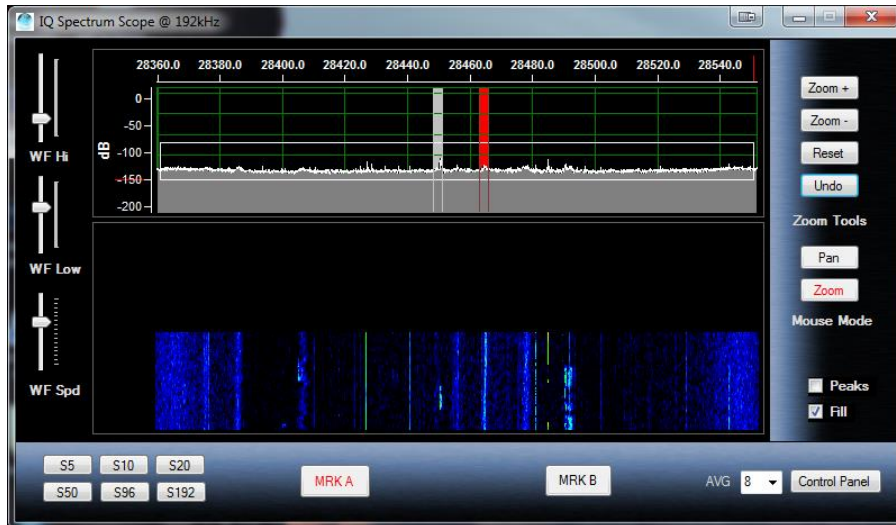
When you first start the spectrum scope you may see something like the following picture. If not press the "Reset" button.



Zooming and Panning

The spectrum scope has two modes for the mouse: Zoom and Pan. The Zoom button will allow you to zoom into parts of the spectrum using the mouse. The Pan button allows you to move the whole spectrum up and down by grabbing it with the mouse. You may find these two modes under "Mouse Mode"

For example you can use the mouse to draw a box around the area you wish to look at as shown below:



To zoom in:

Make sure you are in “Zoom” mode by clicking the “Zoom” button in “Mouse Mode”.

Draw a box around the peaks of interest using the mouse.

It is useful to make a selection across the whole spectrum so that peaks are closer to full scale as has been done in the above picture. You can also select a small section to really zoom into the signals.

You can use the mouse in this fashion at any time as long as the Mouse Mode Zoom button is active. If you make a mistake, you can press the "Undo" button which will revert back to the previous zoom ratio.

Clicking Zoom + and Zoom -, will zoom in the X Axis, increasing or decreasing the span of the display.

Panning the Spectrum

There are two ways to pan the spectrum:

Panning in Pan Mode:

This allows you to move the spectrum up and down by clicking and holding the mouse button in the spectrum display.

Panning while Zoom Mode is Active:

You can use the mouse to grab the Frequency scale at the top of the spectrum and move it left to right to pan the spectrum over the whole frequency range.

QSY to Signal

Double clicking in the spectrum window will QSY to the signal of interest. This is possible for both VFO A and B by selecting either the MRK A or MRK B buttons. The VFO Passbands reflect the actual bandwidth and shift settings on the radio.

Right clicking on the spectrum allows you to set a tuning rate for the radio using the mouse wheel and also allows you to "Jump Up" or "Jump Down" to even 500 Hz settings. You can also set a "Snap" which will always QSY to even 100 Hz boundaries.

Waterfall Settings

The WF Hi setting adjusts the colors for the signal peaks, while the WF Low adjusts the colors for the background. The WF Spd adjusts the waterfall scrolling speed. All settings are saved by band.

Signal Averaging

The AVG box allows setting the averaging rate for the spectrum from 1 to 16. The higher the value the slower the spectrum becomes but the noise is reduced in the process. A good value is either 4 or 8. A value of 16 can be used to dig out very weak signals using the waterfall. In this case adjust the waterfall Low setting to just bring up the background until the noise starts to show.

Other Controls

The Split Screen control allows you to resize the relative sizes of the spectrum and waterfall.

Peaks will display the highest signal level in the display and hold them until it is turned off.

Fill fills the spectrum for a more pleasing display.

Spectrum Control Panel

Most of the control in this screen are self-explanatory.

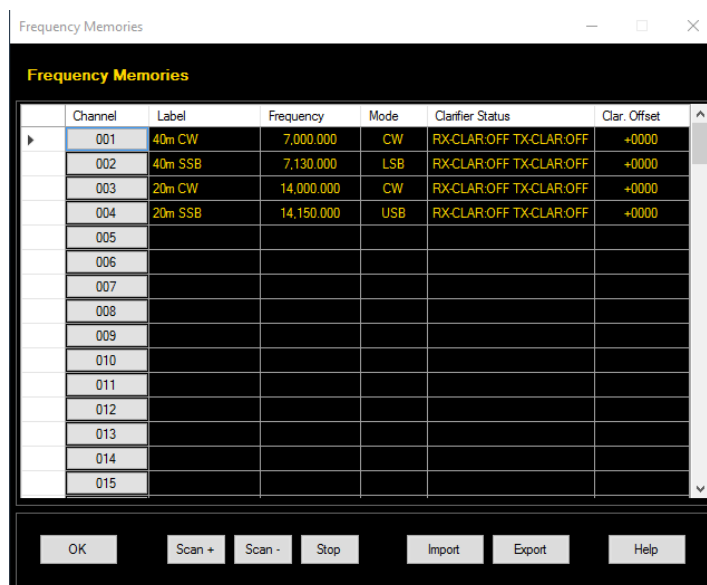


Spectrum Spots

Spots from the ClubLog screen now appear as triangles beneath the waterfall. Hovering the mouse above the triangle will display the call sign or call sign DE Spotter depending on the setting in the spectrum control panel. Clicking on the triangle (64 bit version) will QSY to the spot. In the 32 bit version double click above the spot in the waterfall.

Frequency Memories

Win4Yaesu Suite supports the basic Yaesu frequency memories. Selecting “Window – Frequency Memories” will bring up the following display:



Selecting a Channel:

Pressing one of the buttons in the Channel column will recall the frequency from the memory location on the radio. The label that appears however is not from the radio. Yaesu does not provide an API call that will retrieve that information or allow you to enter it. The label that does appear is entered in this window and stored on exit in a file on your PC. To add a label, just click into the label field and write your label.

Adding or Replacing a Memory:

To add a row or replace an existing memory, tune your radio to the frequency, select a mode, and if required a clarifier offset. Next click on a cell in the row, and then right click to replace the contents of that channel with the new frequency.

Deleting a Frequency:

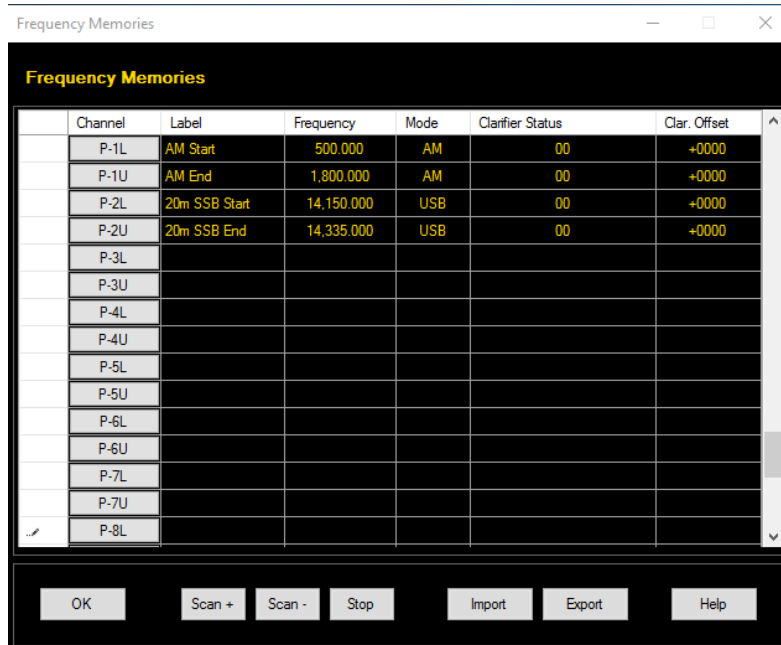
Please do this on the radio when Win4Yaesu Suite is closed.

Import and Export:

Win4Yaesu Suite offers the ability to export all your frequencies to a file and then import them at a later time. This is useful for firmware upgrades where the procedure erases all stored memories.

Scanning:

Yaesu offers 9 frequency channel pairs designated as P-1L and P-2U for a lower and upper scanning frequency:



First set the Squelch which will set a point for scanning stop, then click the start or end Channel and press the appropriate scan button.

Warning: Appearance of Bugs in Yaesu Memories

Occasionally, for no apparent reason, pressing or selecting memories will not change the frequency or any parameters. This can occur in Win4Yaesu Suite OR **directly** on the radio without Win4Yaesu running. The reason for this is that the radio has entered **Memory Check Mode**. The mode is not very useful when operating the radio via the computer however can make it seem that the radio and software has locked up. If the program becomes unresponsive during use of memories, just click on the V/M button again, and control will return. That will put the radio back in MCH mode.

ClubLog Spotting Window

I'm a big fan of Club Log. It's easy to use, you don't have to mess with complicated filters and it just works. What was missing though, is a way to just point and click on the spots and have your radio tune to the DX. Thus when Michael Well announced that he was making available a means to obtain your DXCC Matrix of worked and new spots via a programming interface, I know I needed this. So CLSpotter was born. Full QSY capabilities are integrated into Win4Yaesu Suite as well.

Call	Spotter	Comment	Freq	Band	Dxcc	Date	Status	LOTW
W1AW/1	#	15 dB 22 WPM...	-11.7	2	UNITED STATES OF...	08:12:2014: 23:19:56	New	LOTW
W1AW/1	#	15 dB 21 WPM...	-11.7	2	UNITED STATES OF...	08:12:2014: 23:20:14	New	LOTW
K1AY	#	15 dB 19 WPM...	9.2	2	UNITED STATES OF...	08:12:2014: 23:20:26	New	
W5AT	#	10 dB 36 WPM...	-8.7	2	UNITED STATES OF...	08:12:2014: 23:20:29	New	
ZLIRS	/N5BEK	hrd cq dx 539 in ...	50103.0	6	NEW ZEALAND	08:12:2014: 23:19:32	New	
LU1YT	DD3SP	cq nice sig ...	10122.5	30	ARGENTINA	08:12:2014: 23:19:31	New	LOTW
5P8VW	DJ8VW	simplex EU125 O...	3780.0	80	DENMARK	08:12:2014: 23:20:19	New	
9M2AX	F2DX	CQ ...	3501.5	80	WEST MALAYSIA	08:12:2014: 23:19:31	New	
JH1MDJ	HI75BR	trvx qso 73 ...	24939.0	12	JAPAN	08:12:2014: 23:19:32	Verified	LOTW
W1AW/1	JF2IWL	...	21335.0	15	UNITED STATES OF...	08:12:2014: 23:19:34	Verified	LOTW
W1AW/9	JG1ULT	cq ...	21305.0	15	UNITED STATES OF...	08:12:2014: 23:19:34	Verified	LOTW

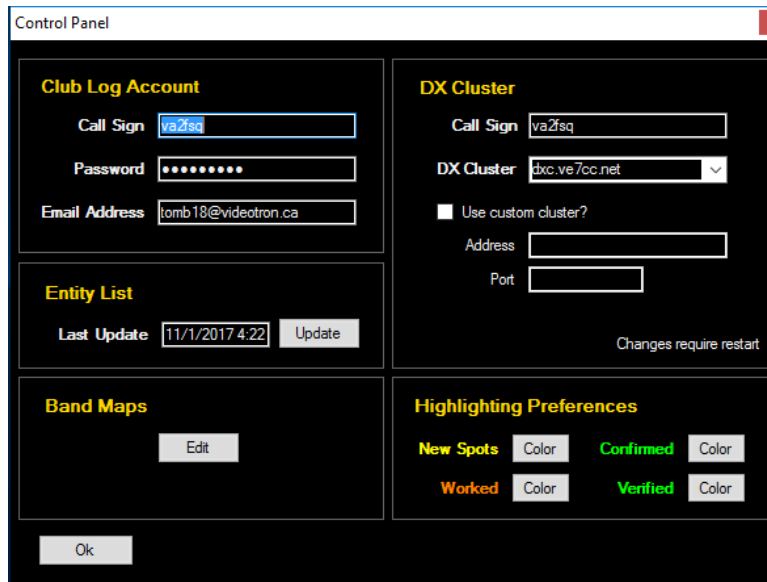
How it Works

CLSpotter works by downloading your DXCC matrix from Club Log using your user id, password and email address. Once this is downloaded, it connects to a DX Cluster and then does a lookup in your matrix to see if an incoming spot is new, worked, confirmed or verified. According to some simple filters, it will display these spots in a table.

Clicking any spot in the table will immediately do a QSY to the frequency of the spot. In addition if you are using the spectrum scope, then moving the mouse slowly over the waterfall will show any spots that are in the frequency range of the panadapter.

Setup

The first time you use Club Log Spots (found in the Windows menu from any control screen), it will bring you directly into the Control Panel. There are 4 main sections to the control panel.



Club Log Account: This is where you must put your Club Log credentials that you are currently using. If this is not correct, then there will be no spots available. It is important that you do not use your email address as the User ID. Use your call sign even though the ClubLog website allows both. Also make sure that your password does not include any special characters like @ or /.

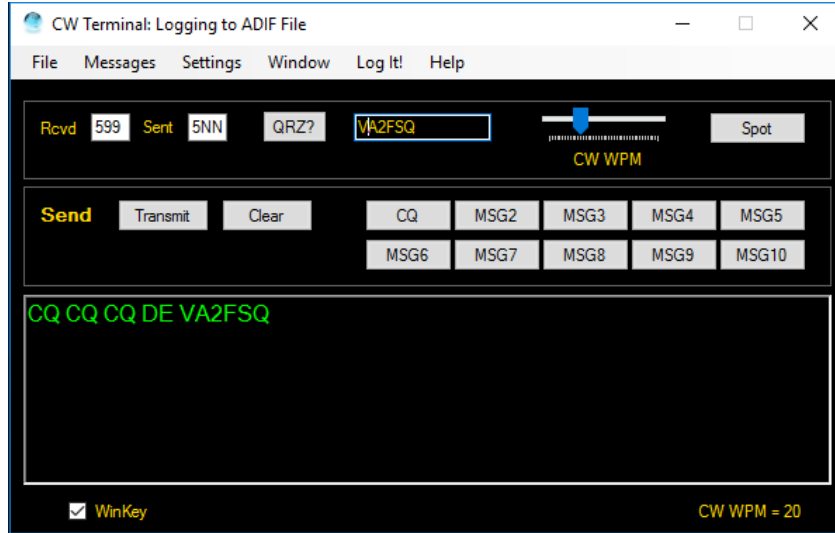
DX Cluster: Here you must provide your call sign and pick one of the DX Clusters. In addition to the pre-defined clusters, you can add your own cluster by specifying the ip address and port of the cluster. If you use software such as CC-User or WinTelnetX, you can put the address of their included telnet server into the custom cluster section.

Entity List: The entity list is a list of DXCC's. This is used to provide the name of the country in the spot window. This table is automatically updated once a month and the first time you run the program. If you wish to update this sooner, press the Update button.

Highlighting Preferences: Here you can select the colors you would like to use for the different spots.

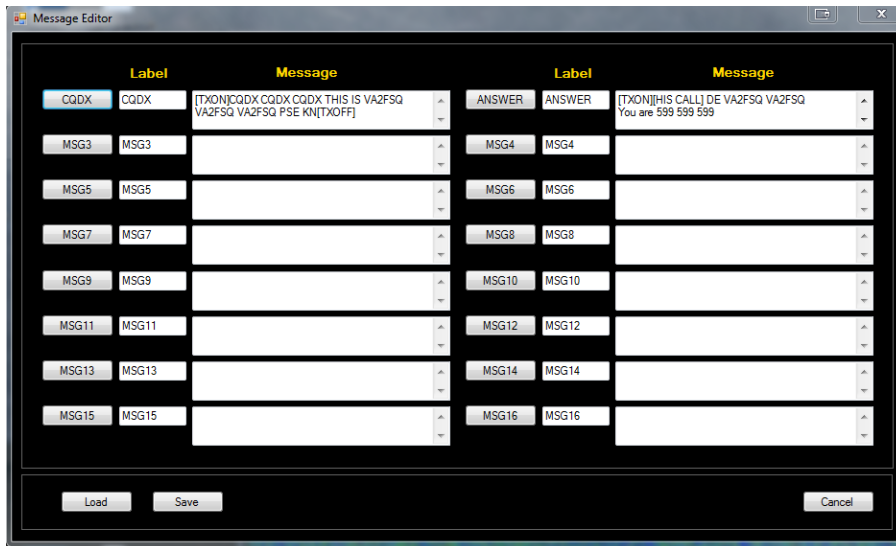
CW Terminal

Win4Yaesu Suite provides a CW terminal that is usable with K1EL's WinKey. Select Window, CW Terminal and you will see the following:



Messages

Win4Yaesu Suite allows you to set up to 10 messages per file. Clicking on Load will load an existing message file into Win4Yaesu. Clicking on Edit will provide this screen:



You may enter a Label for the button and a message you want transmitted when the button is pressed. There are a number of special tags that you can use which will perform specific functions.

[HIS CALL] This tag will be replaced by the call sign that appears next to the QRZ button.

[TXON] will start transmitting.

[TXOFF] will stop transmitting.

All carriage returns in the message will be sent using the appropriate translation depending on mode.

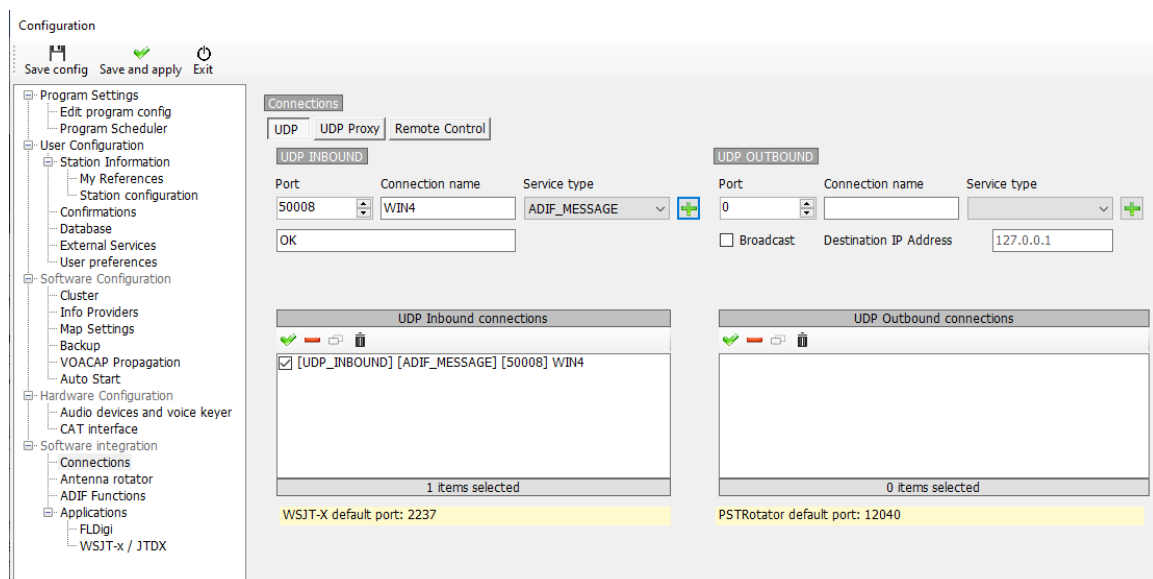
Logging from the Terminal Screen

It is possible to log QSO's directly from the terminal screen to an ADIF file, or DXKeeper, N3FJP, Log4OM Version 2 or HRD Logbook. To configure this, select Settings, Logging from the terminal screen. There are three options:

ADIF Logging: If you select this, the QSO is logged to an ADIF file that can be imported into most logging programs.

DXKeeper Logging: If you select this, the QSO is logged to DXKeeper. Please note that DXKeeper must be open for this to work.

Log4OM: If you select this, the QSO is logged to Log4OM. Please note that Log4OM version 2 must be open for this to work. Please look at the Log4OM documentation on how to enable this in Log4OM. Here is a screen shot of what the configuration should look like:



HRD Logbook Logging: Here you must install the Microsoft Access Database Engine 2010 available here:

<https://www.microsoft.com/en-ca/download/details.aspx?id=13255>

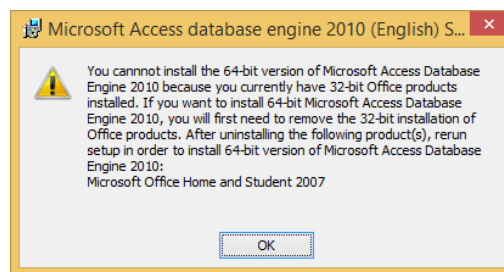
However there are some details that are necessary to resolve depending if you have Microsoft Office on your computer and whether you are using the 32 bit or 64 bit of Win4Yaesu.

HRD Logging without Microsoft Office on your computer: Click on the button in the link. You will be asked if you wish to download the 32 bit version, AccessDatabaseEngine.exe or the 64 bit version, AccessDatabaseEngine_x64.exe. Select the version you need, download and install. Nothing further needs to be done.

HRD Logging with Microsoft Access on your computer: Here it gets a little more complicated. There are a few scenarios depending on whether you have Microsoft Office installed on your computer and whether it is the 32 bit version of Office or the 64 bit version of Office. Home and Student Office is always 32 bit. The other editions of Office may be 32 bit or 64 bit. You can try and determine which version is installed by opening it and selecting Help and in the search field type "Help About" and it will tell you how to perform this action. If you can't find it, it doesn't matter. Just pick one of the following scenarios:

HRD Logging with 32 bit Win4Yaesu Suite and 32 bit Microsoft Office: Click on the button in the link. You will be asked if you wish to download the 32 bit version, AccessDatabaseEngine.exe or the 64 bit version, AccessDatabaseEngine_x64.exe. Select the 32 bit version, download and install. Nothing further needs to be done.

HRD Logging with 64 bit Windows and 32 bit Office: Most of the time this will be the situation when you try to install the Access drivers. Download the 64 bit version of the MS Access Database Engine and try to install it. If you have 32 bit office you will get an error. This is the error:

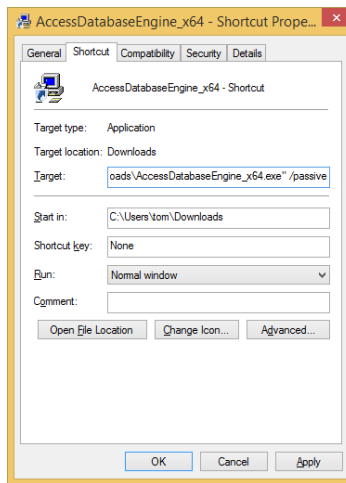


If you don't get an error then you have 64 bit office installed and all is well. However, the usual situation is that Office is 32 bit.

Microsoft made a blunder when they wrote the driver installation software here and the install will not allow you to install 64 bit Access drivers on a system with

32 bit Office. However it can be done by adding a command line parameter: /passive to the installation program as follows:

- 1) Download the 64 bit version of MS Access Database Engine.
- 2) Open the folder where you downloaded the file.
- 3) Right Click on the file and select "**Copy**"
- 4) Next Right Click in the folder and select "**Paste Shortcut**"
- 5) Next Right click on the shortcut you just created and select **Properties**. You will see the following:



6) In the Target field, you will need to first put double quotes around the existing "Target" entry. For example if it was

c:\Downloads\AccessDatabaseEngine_x64.exe

change it to "c:\Downloads\AccessDatabaseEngine_x64.exe"

Next add the /passive parameter to the end. What you will end up with is

"c:\Downloads\AccessDatabaseEngine_x64.exe" /passive

Click Apply then OK.

7) Double click the shortcut and the install will run minimized. When you open the Icon in the task bar it will show that it has successfully completed.

Start Win4Yaesu and you will now have access to HRD Logbook logging.

For all HRD Logging scenarios, open HRDLogbook.exe and then in Tools, Configure, Sharing, click the checkbox to allow automatic refresh on new records. Without this, HRD Logbook will accept the entries from Win4Yaesu but will not display them until you do a Refresh in HRDLogbook.

K1EL WinKey Support

Starting in Win4Yaesu Suite version 1.022, support for K1EL's WinKey is built in to the terminal.

The first thing you will need to do to use the WinKey support is to go into the terminal settings and select "Settings - WinKeyer". You will then see this screen:



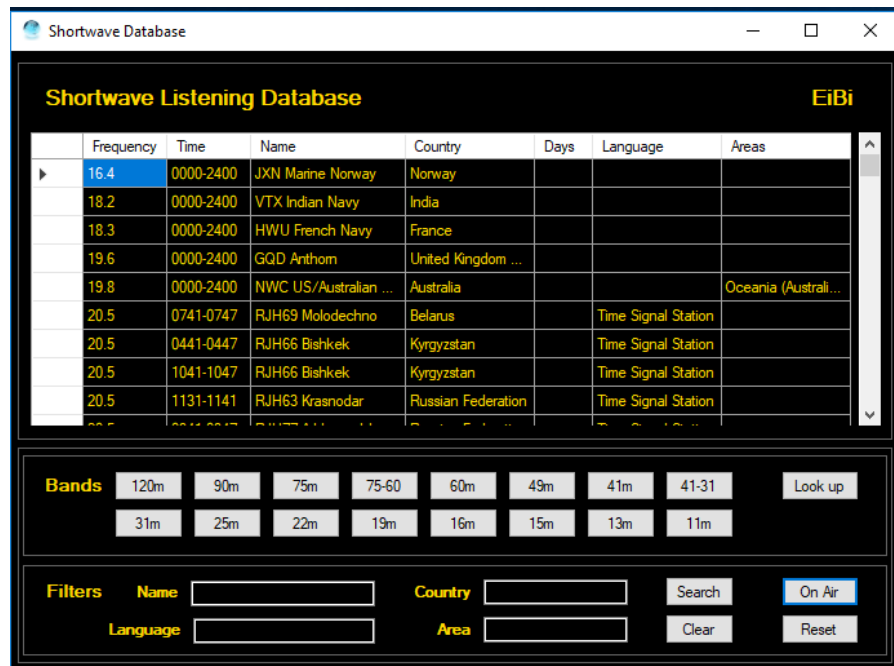
You can then select a comport and then click on connect. From this point on, WinKey will be used for CW. Please note that Win4Yaesu Suite will provide all of the settings for the WinKey so any existing settings will be replaced when the interface is started.

It is beyond the scope of this manual to discuss all of the features of WinKey. Please see the K1EL website for in-depth information. However, the most important item is the words per minute settings. There are two possibilities: One is using the Speed pot on the WinKey itself. Make sure that this option is selected ion the settings if you wish to use this. The other is to use the speed settings in Win4Yaesu Suite itself. You can de-select the "Use WinKey speed pot" if this is your desire.

Shortwave Listening Database

The SWL DB uses the free SWL database from <http://eibispace.de/> . Please donate to his cause to keep this quality DB!

The database can be opened from the Windows menu in the control screen. When the database is opened you will see the following:



There are two main sections to master. The **Bands** section will filter the database by band. The **Filters** section has 4 fields where you can enter text to do a search.

The **On Air** button will filter all the results based on the current UTC time. In order for Spots to show up on the spectrum a Band must be selected, the On Air button must be active and you need to click on an entry in the database to tune there.. This is due to the vast number of stations that are included in the database. You also need to be tuned to a frequency within the band to actually see the spots on the spectrum.

Search Filters: You can enter a Name of a station, the Language, the Country as well as the Area that the transmission is targeted at. The text is not case sensitive and you can enter partial text such as “eng” for English. Once you have entered any text, click on the **Search** Button. The clear button will delete all search filters.

Look up: The look up button will do a search in the database for the currently tuned station. It will also take into consideration if the On Air button is active. Pressing it again will remove the lookup. Note that the lookup needs to be precisely on the frequency for it to return results. Therefore since most shortwave stations appear to be on 1 kHz boundaries, it is best to select QSY Snap to nearest 100kHz in the right click menu of the spectrum. If the station is at x.5kHz a few turns of the mouse wheel will get it on frequency.

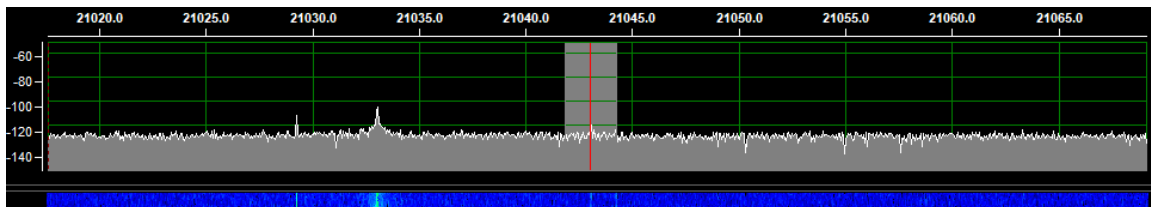
Spotting on the spectrum: If the spectrum “Spot” checkbox is selected then spots will appear on the spectrum if a band filter and “On Air” are enabled. This has priority over the ClubLog spots and they will not appear.

Part 3: Advanced Topics

SDRPlay API 3 Information

In the release 1.204, Win4Yaesu now supports the SDRPlay API 3. Therefore, the new RSPDx is now supported.

There are a few items that deserve mentioning here. API 3 seems to have more difficulty managing the DC offset spike at a sampling rate of 192kHz. Therefore in the spectrum using the IF output of the radio, this is moved down by 10kHz. It will appear as follows:

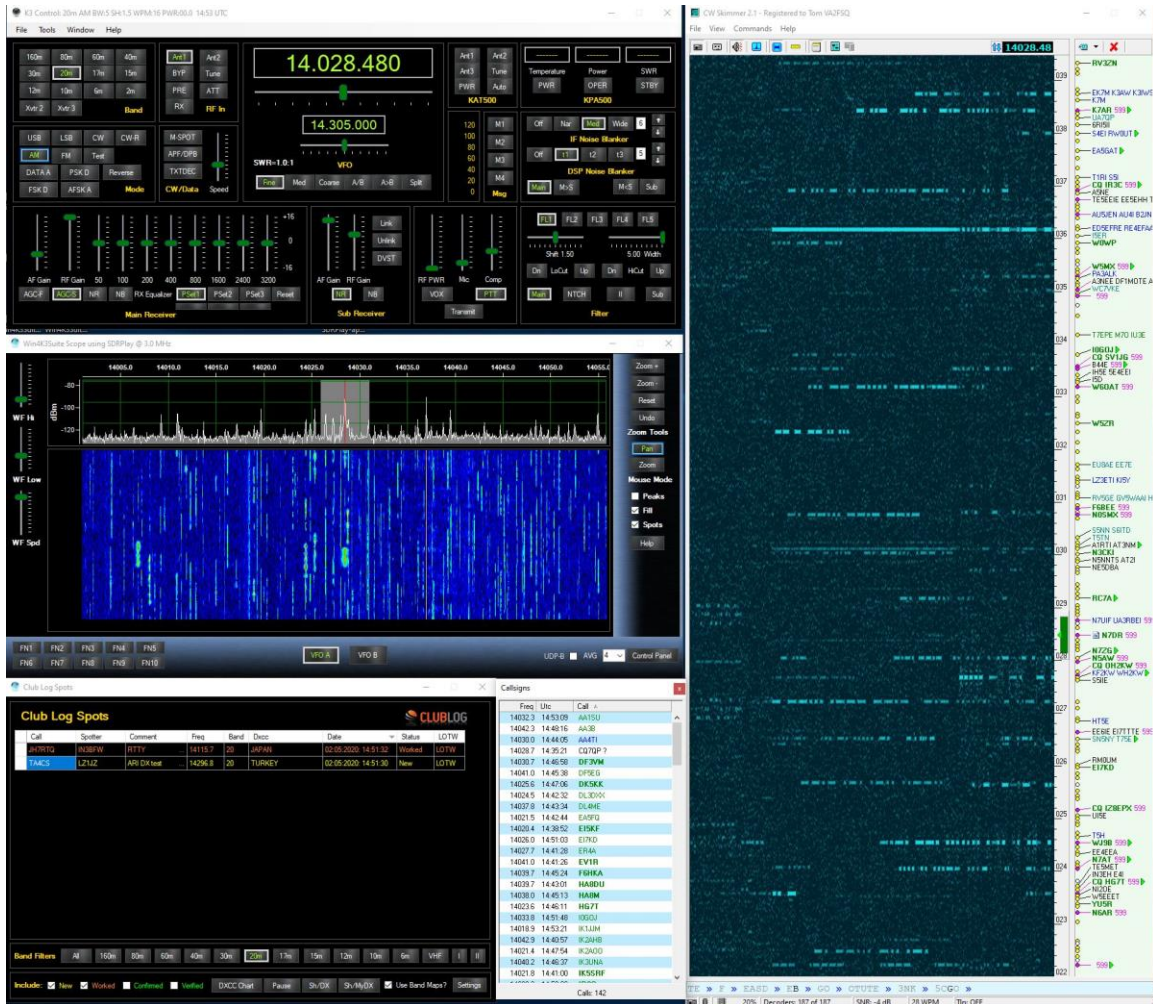


The effect can be minimized by adjusting the gain appropriately.

CWSkimmer Usage with the SDRPlay

CWSkimmer is a software product that will analyze a section of the CW band and produce a graphic display of all the CW signals with their decoded callsigns.

New in version 1.204 is the ability to output an IQ signal from Win4Yaesu which can be input into CWSkimmer allowing it to decode any signals within its passband. See the following picture:

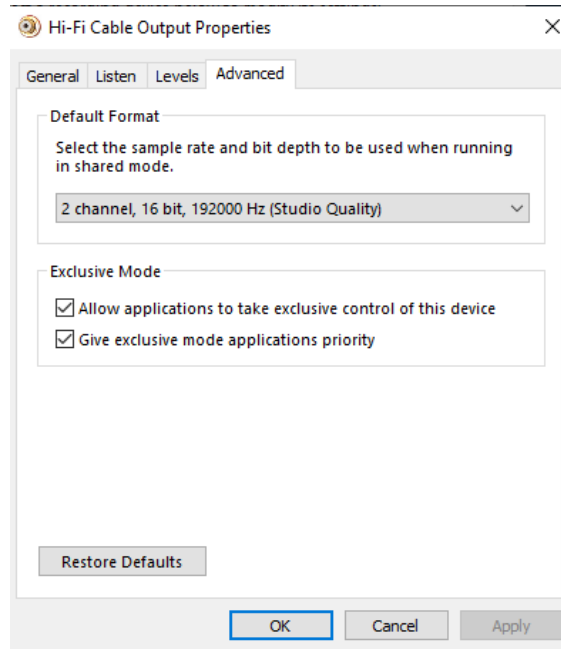


This is very useful when CW Skimmer is integrated with Win4Yaesu running Split and selecting Tools CW Skimmer QSY B. This allows you to click on callsigns in CW Skimmer and then do a QSY using VFO B to pounce on the frequency last used by the DX.

There are a few steps that are necessary to get this functionality going. The first is you will need a Virtual Audio Cable.

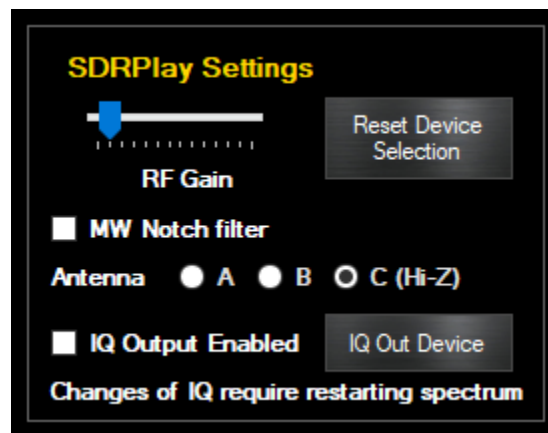
A good choice is the free cable here: <https://www.vb-audio.com/Cable/> Select the "VB Audio Hi Fi Cable" down the page and install it.

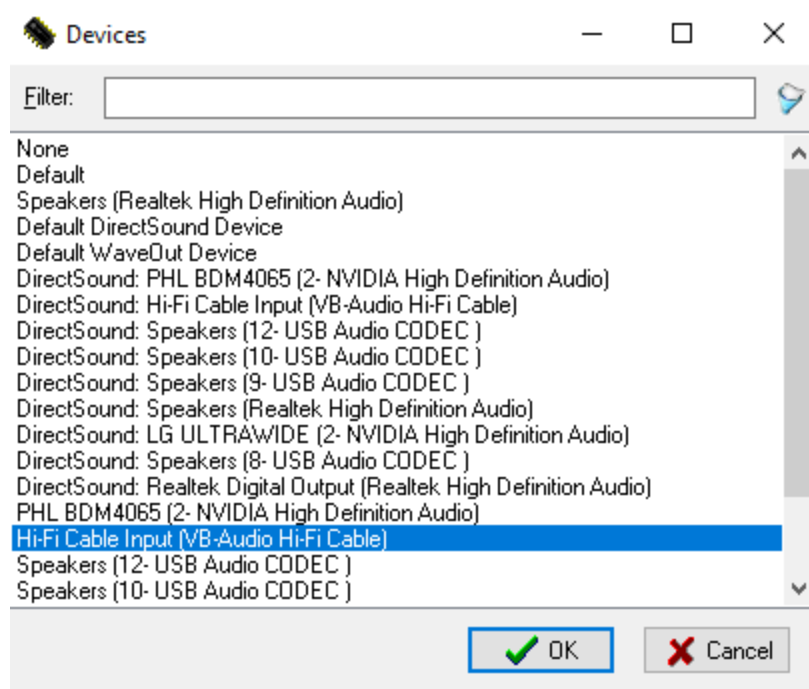
When you have this installed, open the Windows control panel and select Sound and click on the Recording tab. Find the Hi Fi cable output entry and double click on it. Next select the Advanced Tab. In there you will want to select the 2 channel, 16 bit 192000 entry as follows:



You will also want to do this in the Playback tab of the Sound Control Panel.

The input of this “cable” is then connected to in Win4Yaesu in the spectrum Control Panel by pressing the IQ Out Device button:





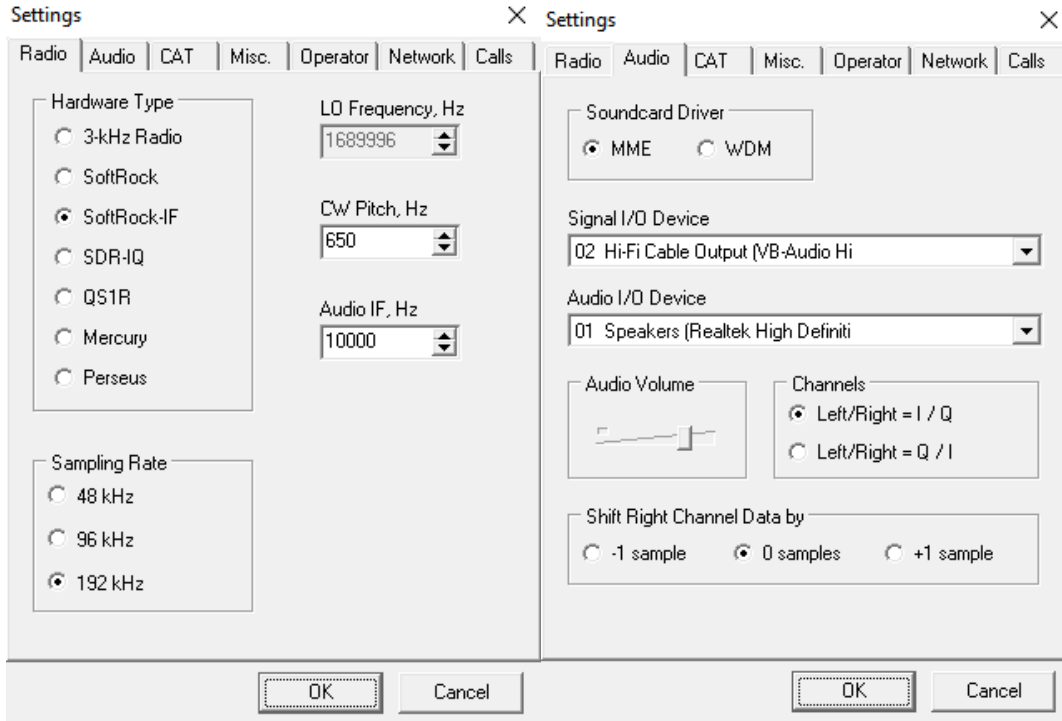
(Little note here...For the life of me I can never understand why people have their sound devices messed up when a new Windows update comes along....Never happened to me, and my computer is a little more packed than most!).

You will also need to enable the IQ out device checkbox. Next close the control panel and spectrum and re-open it.

This completes the setup in Win4Yaesu. The actual output to the IQ out will now occur anytime you select a span less than 192kHz.

Configuring CWSkimmer

If you are using a radio that provides an IF out then you will need to set up CWSkimmer as follows:

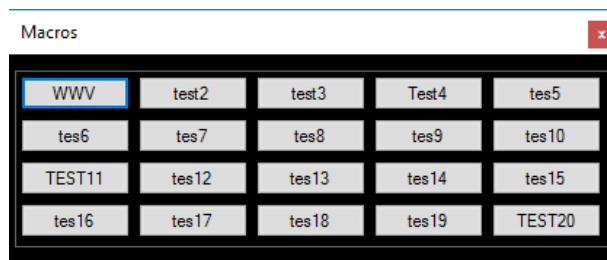


In the case of an RX antenna connection, then you will need to have the Audio Channels set to Left/Right = Q/I.

One thing about CW Skimmer. The audio output may occasionally sound distorted when you are listening to a very strong signal. Discussions with the author have not revealed the cause yet. However, it is a simple matter to just stop CW skimmer and then restart. In most cases this will get rid of the distortion.

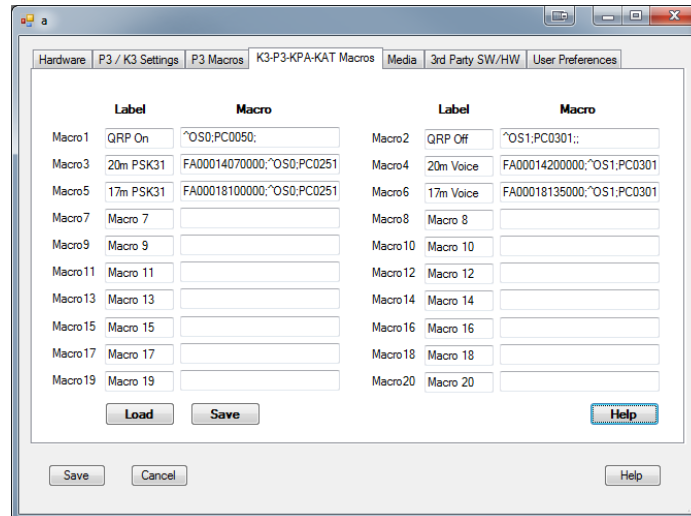
Programmable Macros

Win4Yaesu Suite supports 20 programmable macro buttons.



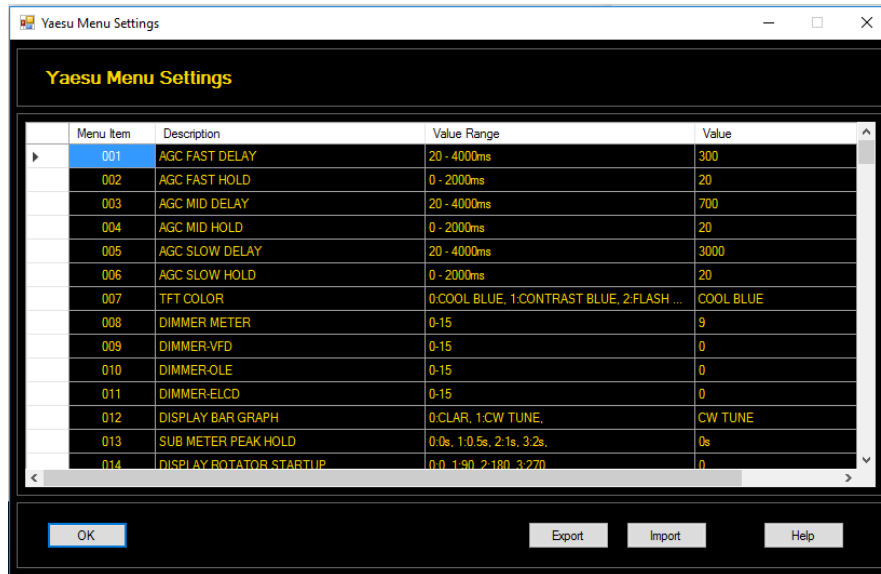
Each button can be programmed and labeled differently. Sets of macros can also be saved to a file and loaded allowing different sets depending on needs. To load a new file Right Click on the macro window.

Macros are setup in the Tools Settings menu under Macros tab.



Radio Menu Items

From the "Tools" menu, select "Radio Menu Items". This will open the following screen:



When this window is opened, all values shown are the values obtained during start up of the program and any changes made in the software after this point. If you make any changes on the radio directly, they will not show up here until the next time Win4Yaesu is started. So you should do all changes in the software once it is running and not the radio.

To change a value just click anywhere in a given row and select an option from the list.

Exporting and Importing Menu Data

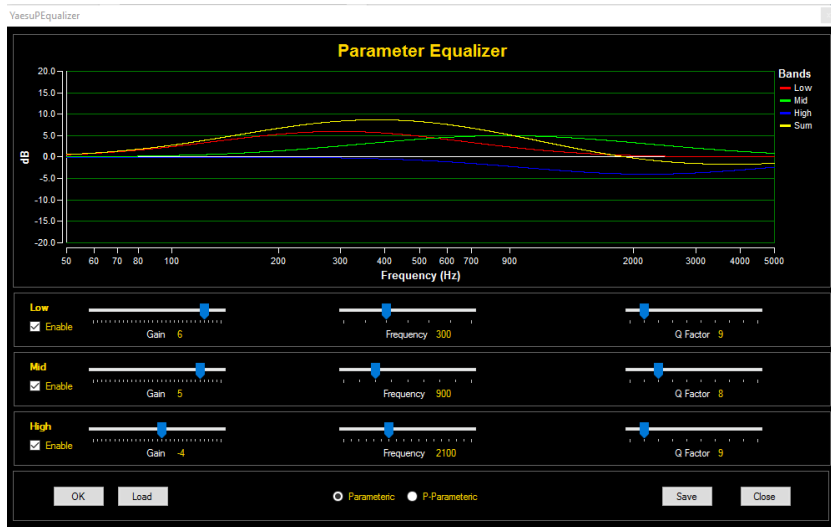
Clicking on the "Export" button will save all the settings in a file that you can reload in the future. This is useful for saving your settings prior to doing a firmware update for example. Be careful however to check the release notes of the firmware update to determine if any new menu items have been added or existing ones have been changed. If they have, then please take a look on

<http://yaesu.va2fsq.com/documentation/>

for up to date information

Parameteric Equalizers

The Yaesu radios offer equalizers for transmit with the speech processor on or off. Win4Yaesu Suite offers a graphical user interface to set the equalizers and it also offers a way to save and load equalizer settings.



Pressing the Save button will save ALL settings including whether the equalizer is on or off for both the Parametric and P-Parametric. Be sure to set both before saving the settings.