

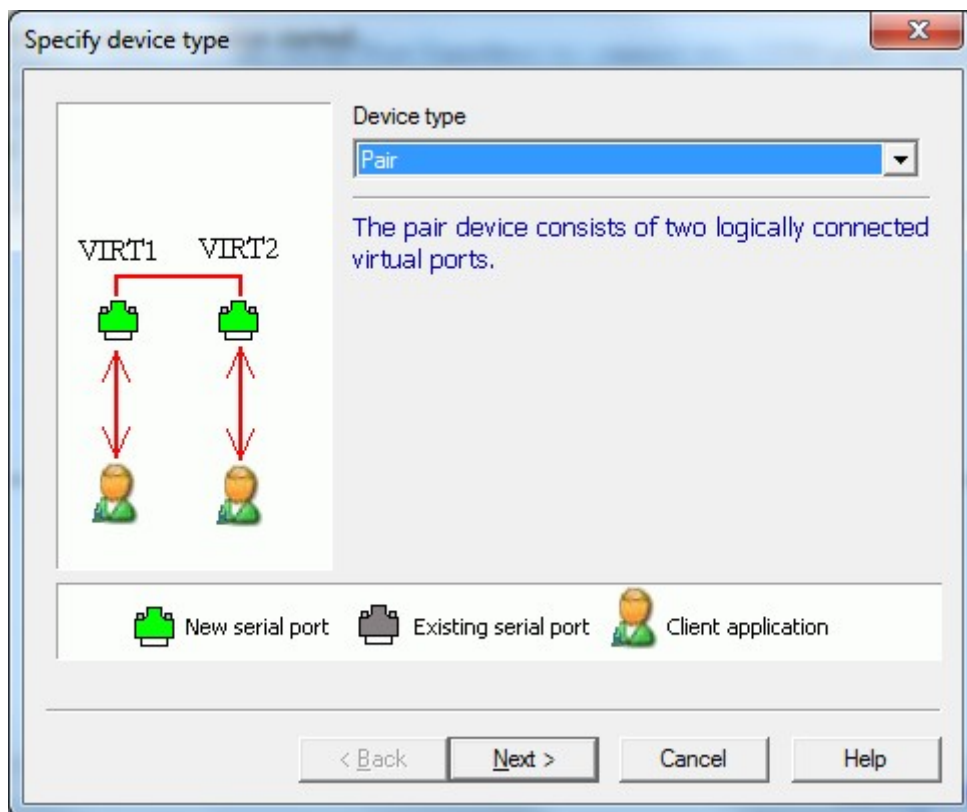
Using MixW with TRAK

User Setup guide to use Tigertronics Signalink USB external sound card with TRAK on HF.

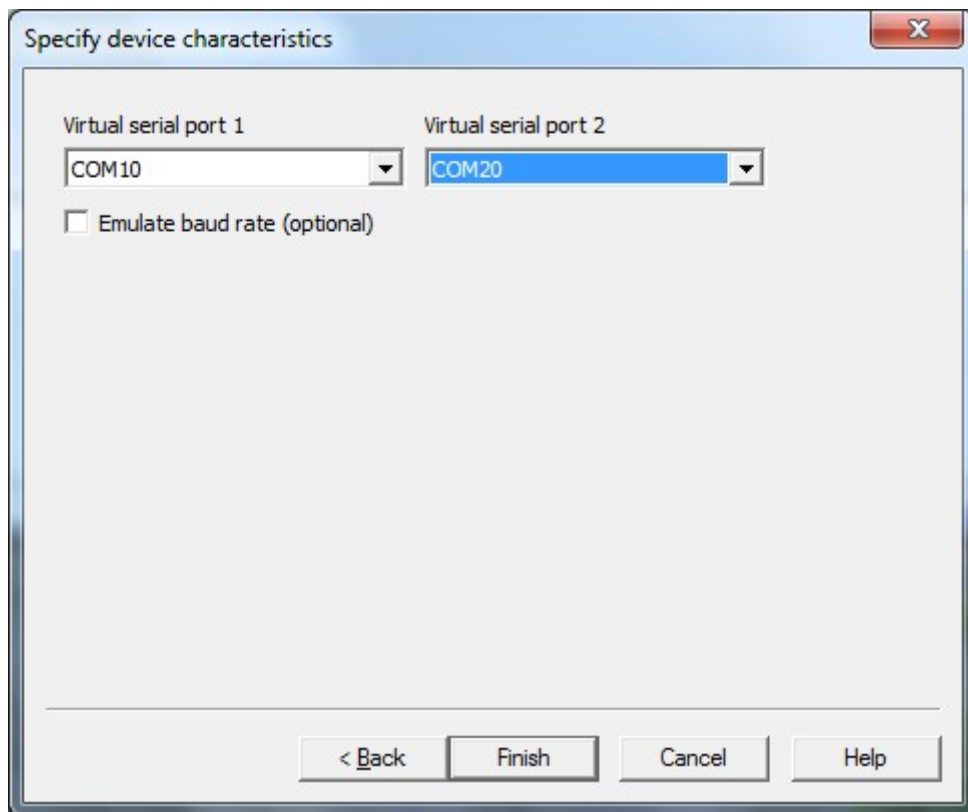
This setup guide uses VSPE (Virtual Serial Port Emulator) to connect two COM ports together. Download from <http://www.eterlogic.com/>

Step 1 – Create New Device....

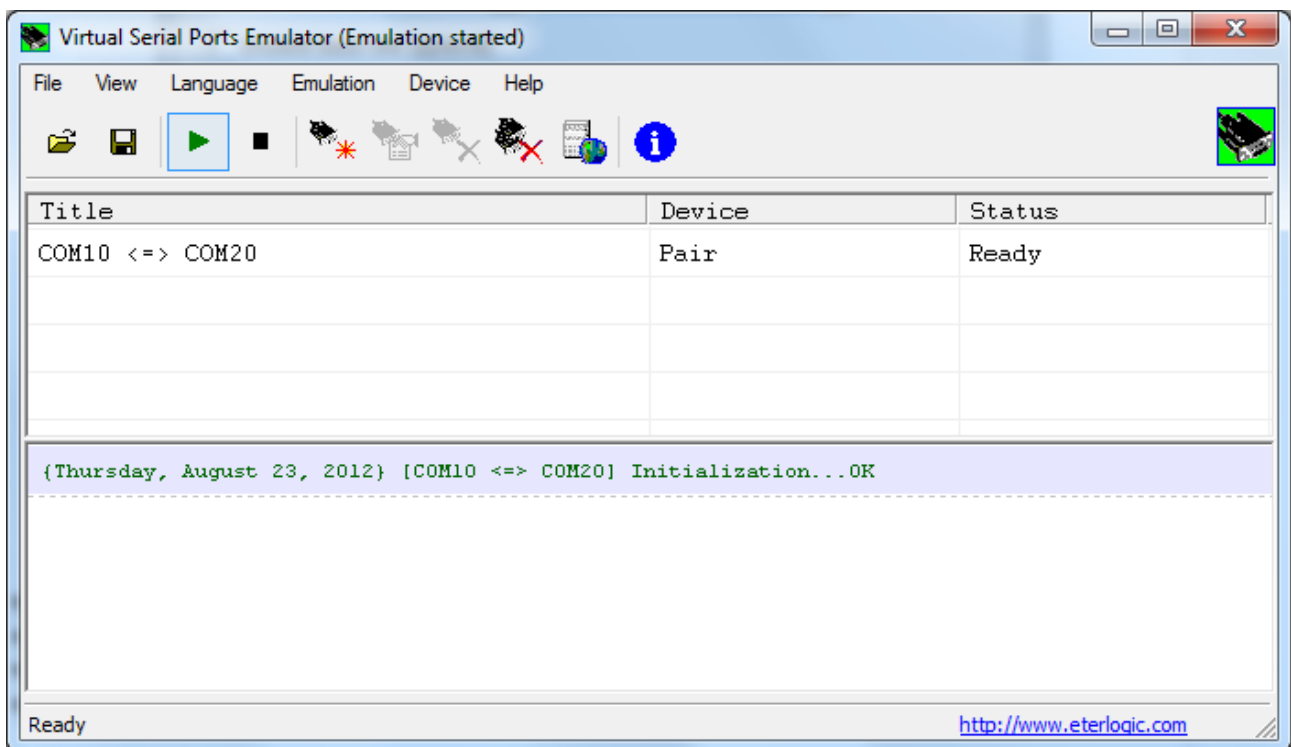
Create new 'Pair' Device type



Select 2 COM ports that are free on the PC. Eg COM10 for MixW and COM20 for TRAK. This provides a virtual cable between the two COM ports.

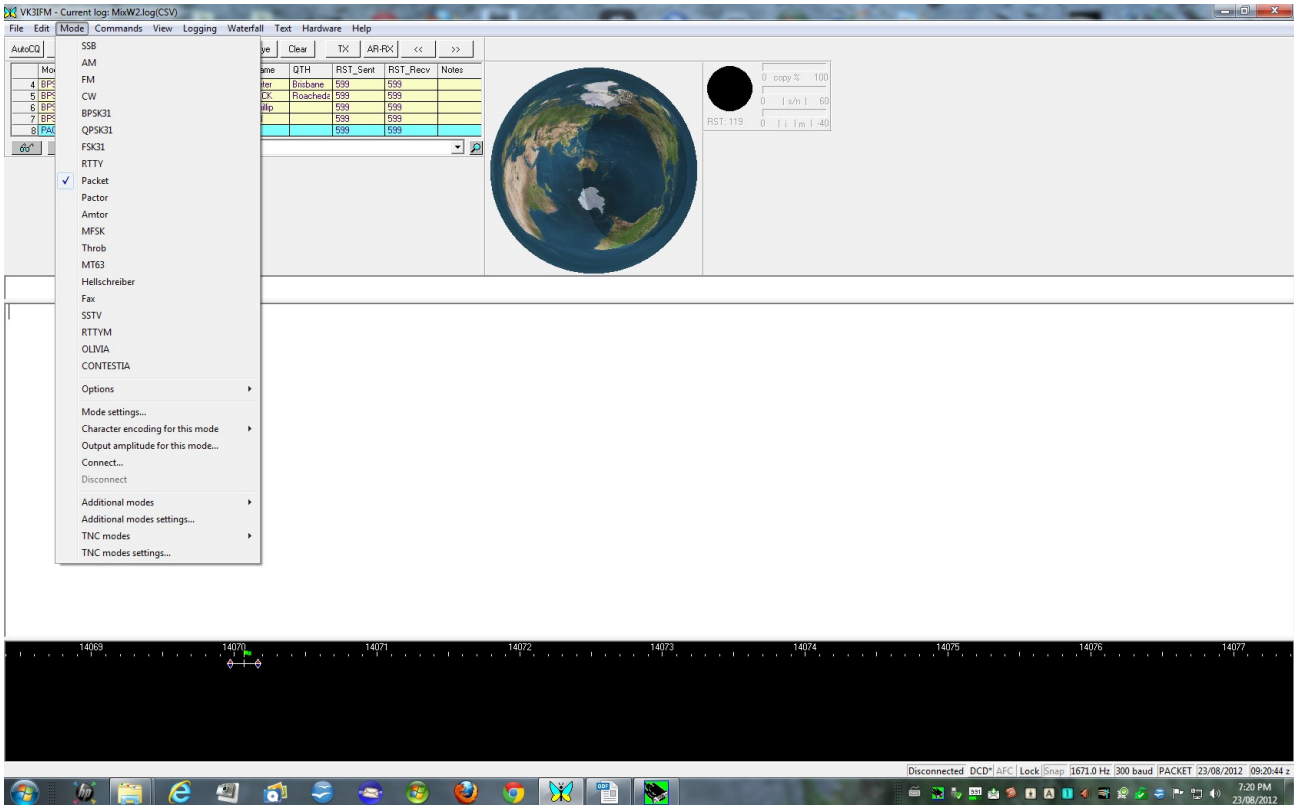


The configuration can now be saved for reloading next time you run VSPE eg MixW10toTRAK20.vspe **VSPE should be started before MixW and TRAK**



Step 2 – Launch MixW

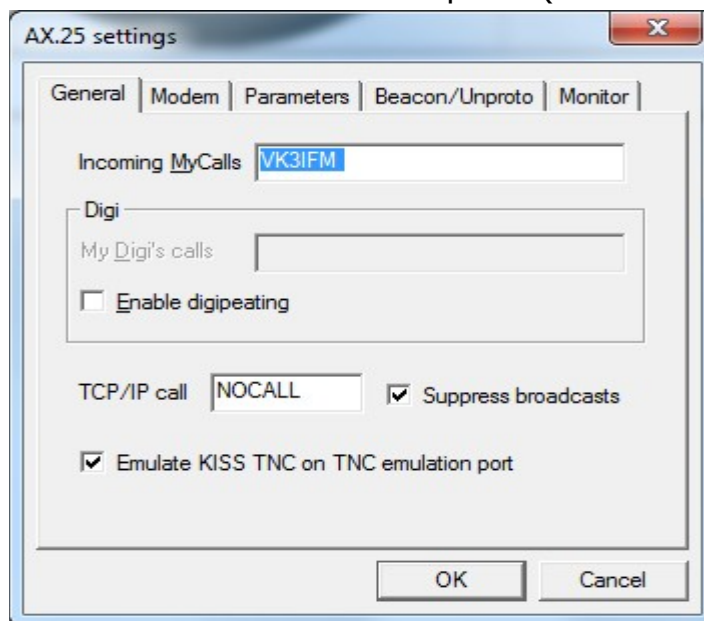
In the Mode menu select PACKET



In the Mode menu select Mode Settings..General tab.

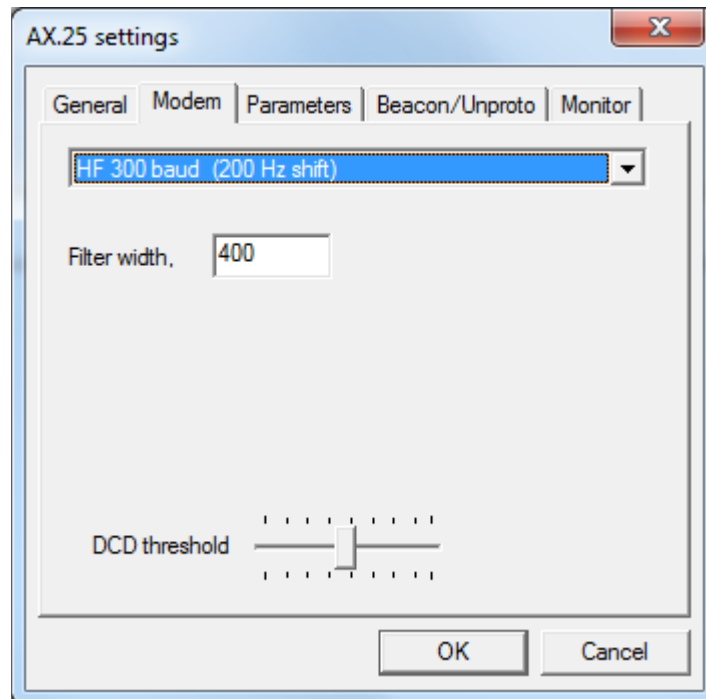
In Incoming MyCalls Set you Callsign.

Set "Emulate KISS TNC on TNC emulation port" (tick the box)



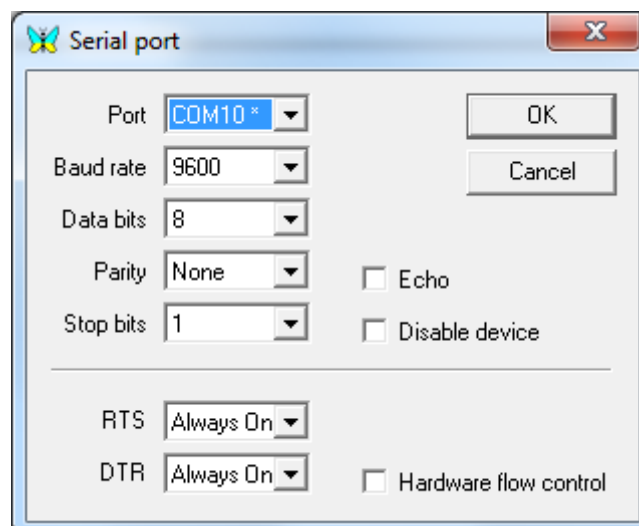
In the Mode menu select Mode Settings..Modem tab.

Set HF 300baud (200Hz shift) from the list box.



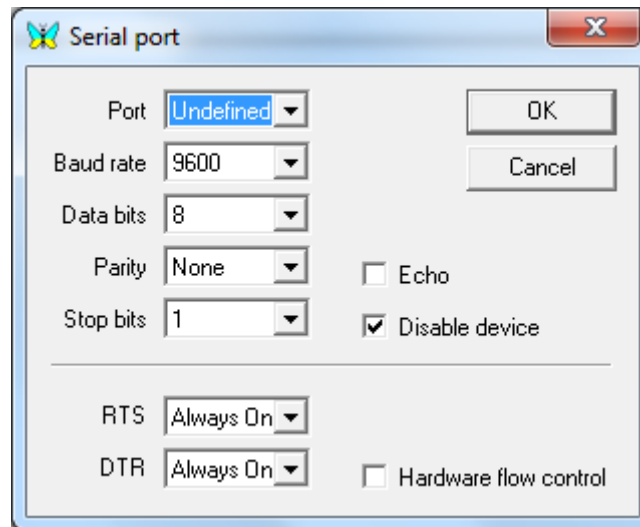
In the Configuration menu select "TNC Emulation".

Set port to COM10 and ensure "Disable device" is NOT checked.



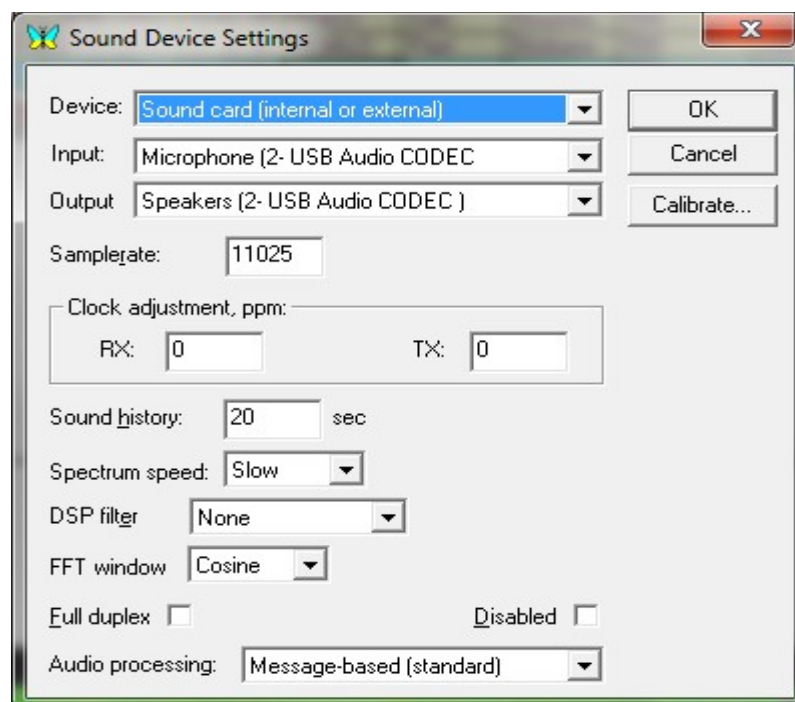
In Configuration menu, select TNC Settings

Disable device is ticked.



Check the Signalink USB is selected.

Step 2a Device Input and Output should be set to "USB Audio CODEX" when using Signalink USB external Sound Card



Step 3 Launch TRAK and configure for COM port 20 in this example.

Please note the UserSettings.txt file in the TRAK folder should be edited to read.

```
* Remove '*' from lines required to set KISS mode for your TNC.  
* If no lines are selected or this file is not found  
* by TRAK, it will look for KPC type then MFJ type.  
*  
*** MFJ 1270B or similar  
*SETKISS=KISS ON,RESTART  
*  
*** KPC3, KPC3+, KPC4, KPC9612 or similar  
*SETKISS=INTERFACE KISS,RESET  
*  
*** TNC-X, No TNC or other KISS only mode TNC  
SETKISS=DIRECT  
*
```

Step 4 Level adjustment Receive

The Radio should be setup and tuned to the required frequency.

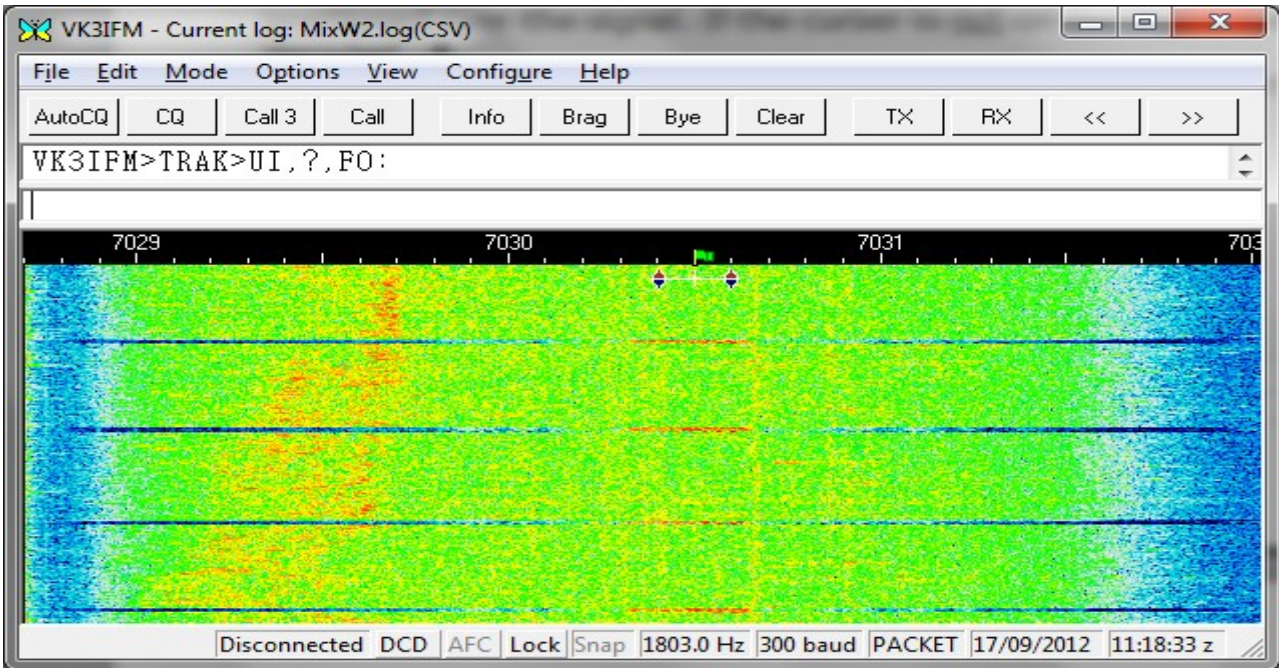
- Upper Side Band
- AGC set to fast.
- No DSP
- Adjust the RX Level on the Signalink USB gradually increasing it until receive signals show up as red on the waterfall display.
- Position the cursor on the waterfall over the receive signal.

Speaker volume control should be independent to the level control on the Signalink USB.

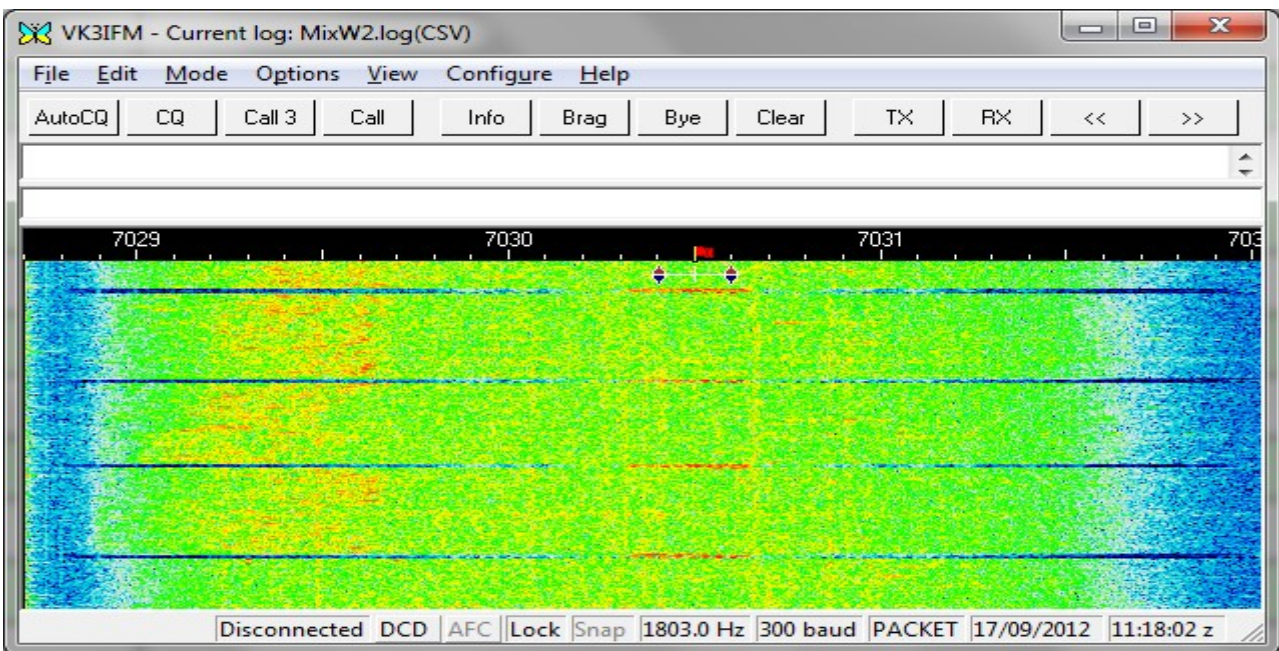
Lock the channel frequency on the Waterfall

The Decoding cursor is positioned on the Waterfall over the receive channel frequency. There can be a number of channels on the same frequency. Select the one to be decoded. This sets the digital filter to the required frequency for RX and TX channel. When receive signals are seen on the waterfall the cursor is positioned over the signal. If the cursor is not on the signal it will NOT be decoded.

After the cursor is correctly positioned lock it in position from the Option menu select Lock. The green flag will go Red.



Now cursor is locked



Step 5 Level adjustment Transmit

The radio should be setup and tune to the require frequency.

- No Compression.
- RF Power should be set to the maximum setting.
- If the Radio has a Microphone gain control it should be set to 10%
- Set the Signalink USB Delay control to minimum or 0 and the TX Level adjustment to 0 also.
- Use the Registration function in the Link menu in TRAK to transmit a registration signal. This is a short transmission and can be sent repeatedly. PTT Red LED on the Signalink USB will light along with the TX indication on your radio. There may not be any output power at this point.
- In small increments increase the TX Level on the Signalink USB while send Registration signal from TRAK. Increase until the output power is 25-30% of total output power available from your radio.
- If there is not enough adjustment to get the required output power, then adjust the Mic gain and repeat the adjustments. Note -- if the gain is too high; ALC will not be zero.
- Now check your ALC (Automatic Level Control) Set the metering on your radio to show ALC. Repeat the TX Registration function in TRAK. ALC should be zero.

6 Diagnostics.

Can't Register to TRAK Net Control – AND – No others stations heard.
Use your mic and confirm voice contact with other station on data frequency. Ensure Tx offset is not set. Output Power OK, SWR OK.

PTT red LED is **not** lighting on the Signalink USB when registering.
Check step 2a
Check Tigertronics Signalink USB - SETTING THE AUDIO LEVELS – Transmit Audio Adjustment. In the Installation & Operations extract below.

Radio switching to TX mode – AND – No output power.
Audio level problem between Signalink USB and Radio. Check Step 5

Extract from **Tigertronics Signalink USB Installation & Operations Document**

- SETTING THE AUDIO LEVELS -

The Signalink USB's built-in sound card provides the same consistent audio levels no matter what computer you are using, so the software audio level setting procedure has been greatly simplified. Before you operate your Signalink USB on the air, you will need to adjust the PLAYBACK software volume controls, and the Signalink's TX and RX level controls. Note that the Signalink USB does NOT use software RECORDING controls ("waterfall drive", etc.), so you will not need to worry about adjusting those. Adjustment of the Receive Audio is done completely by the Signalink's RX level control. While most levels are not too critical, incorrect adjustment of any of these levels can cause poor performance or unreliable operation. This procedure tells you how the levels should be set.

Preliminary Setup

- Before you can adjust the audio levels, the Signalink USB must be connected to the computer and radio. Both the Signalink USB and the radio should be powered ON and a communications program that you have selected should already be installed on your computer. Note that you will be using the communications program to generate the audio tones that are used to adjust the level controls, so CW programs should NOT be used unless they have a continuous "Tune" mode. A PSK-31 program like DigiPan is ideal for making these adjustments.
- Set the Signalink USB's TX level control to minimum (fully counter-clockwise), and the RX level control to 50%. The Delay ("DLY") control can be set to minimum for now.
- Start your communications program and verify that the sound card selected for both Transmit and Receive is "USB Audio Codec" (this is the sound card name used by the Signalink USB). Most programs allow you to select the sound card that you want to use in their "Configure" or "Setup" menu. Once selected, you should not need to select the Signalink USB again, as long as it is plugged in before starting the program.

Radio Setup

CAUTION – *Be sure that your radio is connected to an antenna or dummy load before proceeding.*

- If you already know how to configure your radio for digital operation, then you can skip to the "Transmit Audio Adjustment" section below.
- If the Signalink USB is connected to your radio's Mic jack, then set your radio to "USB" mode (note that you can change this later if the mode you want to run requires LSB).
- If the Signalink USB is connected to a Data or Accessory Port, then you will need to set your radio to the appropriate mode for this type of connection. USB will work on most radios, but you may need to select a special mode such as "Data", "User", or "D-USB". If you are not sure which mode to use, then consult your radio manual.
- Set the radio's Mic Gain control to 50%. Note that if the Signalink is connected to a Data or Accessory Port, this control may not have any effect on power output.
- Set your radio's "Forward Power" control to provide maximum power (this will be adjusted later to bring the power down to a suitable level). Note that the "Forward Power" control might be labelled "RF Power" or "Carrier Power" on your radio. Newer radios will have an "RF Power" menu setting instead of a knob.
- Your radio's Speech Processor / Compressor and VOX features should be turned OFF.

Transmit Audio Adjustment

- Open the Windows Volume Control Panel by clicking on the Start Button and selecting Programs (or "All Programs"), Accessories, Multimedia (or "Entertainment"), and then Volume Control.
- From the Options menu, select Properties to display the Properties page.
- In the "Mixer Device" drop-down menu, verify that "USB Audio CODEC" is selected. This is the name /identifier used by the Signalink USB's built-in sound card, so this MUST be selected.
- In the "Adjust Volume For" window, select Playback.
- In the "Show the Following Volume Controls" window, verify that the Speaker and Wave

controls are checked. Other controls can also be checked but they will not be used.

- The Properties window should now look like the one shown below in Figure 2. Verify that it does and then click OK

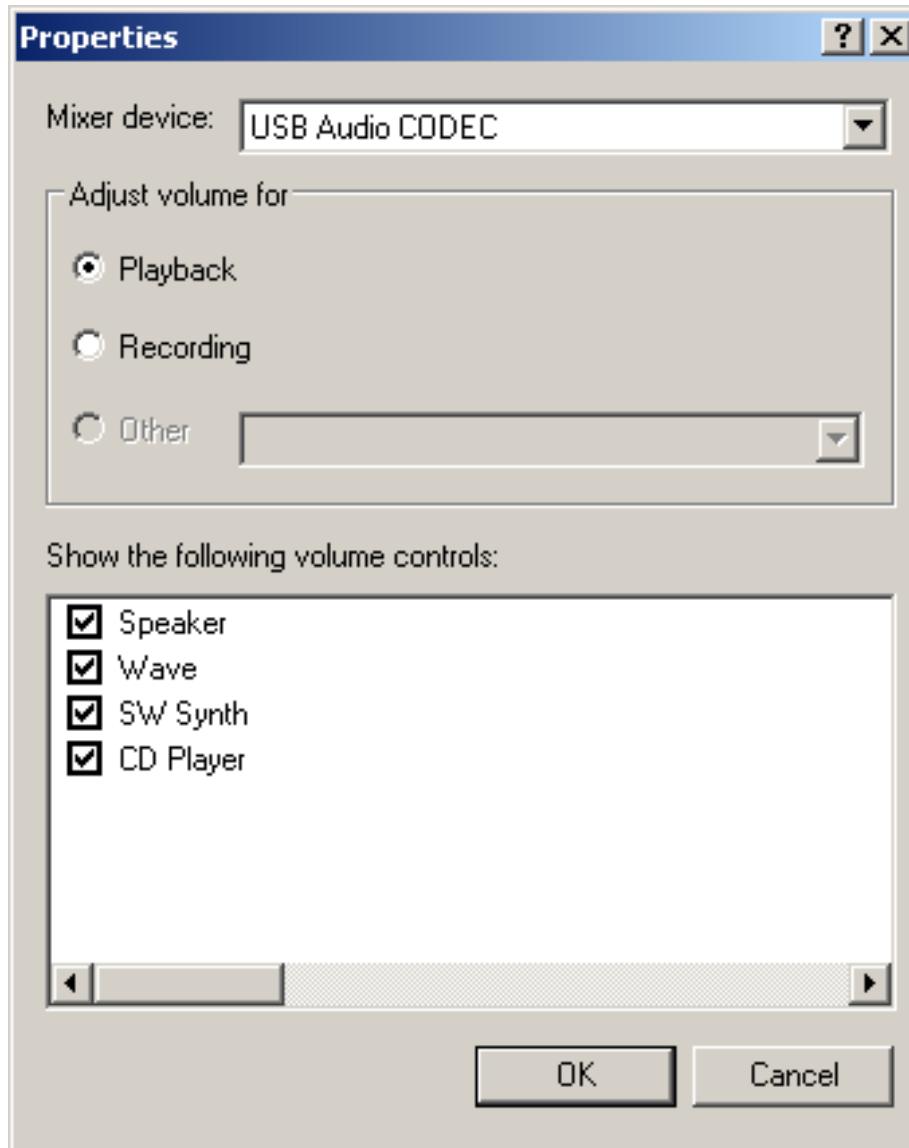


Figure 2 –Properties Window

- The volume control panel will now open. Set the "Speaker" control (far left control) to 100% max volume, and set the "Wave" control to 50%. Note that the Speaker and Wave controls should NOT be muted. All other controls can be. Your volume control panel should now look similar to the one shown below in Figure 3:

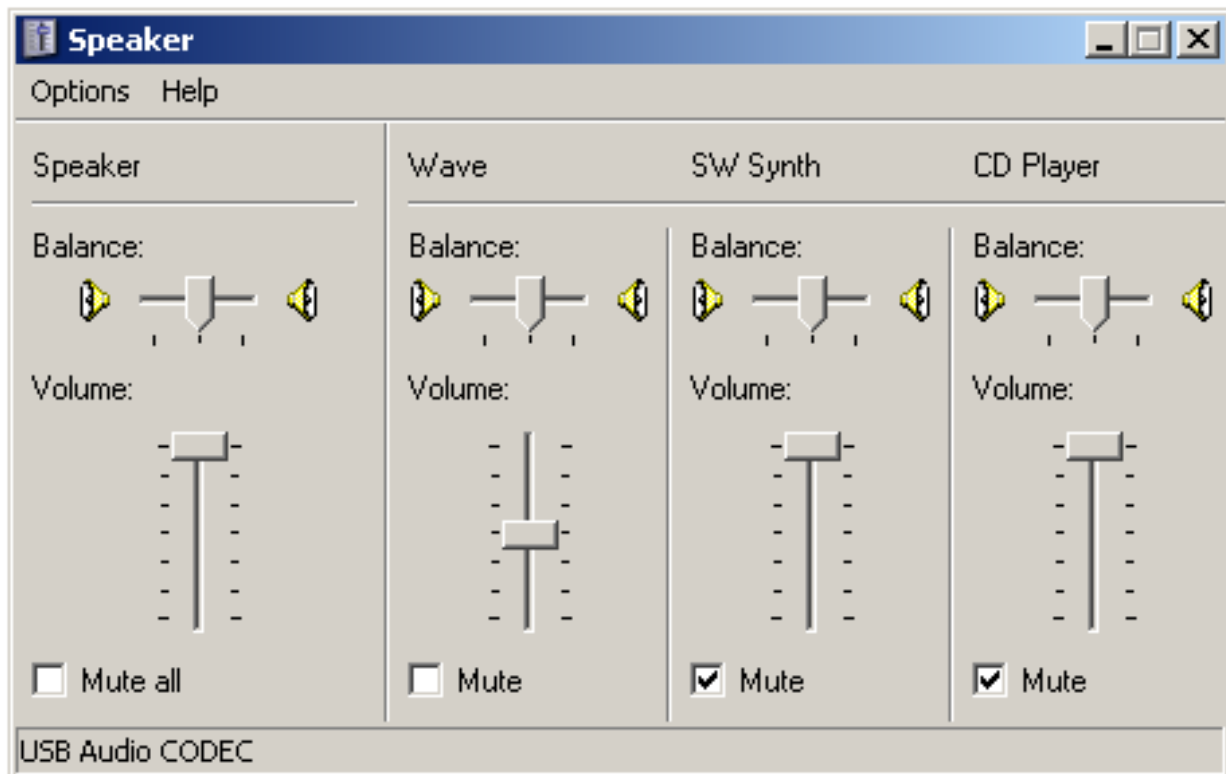


Figure 3 –Volume Control Panel

- The Signalink's software volume controls are now set to provide an audio level that is suitable for most radios. If you determine that you need more audio (complete this procedure first!), then you can increase the "Wave" control. A special jumper can also be installed inside the Signalink USB to provide even more audio (see the "Special Jumpers" section of this manual)
- Select "TUNE" in your communications program. The Signalink's PTT LED should now be ON, and your radio should be transmitting. If the PTT LED is not ON, then you may have the wrong sound card selected in your communications program or the volume control panel. If you cannot get the PTT LED to turn ON, then see the Troubleshooting section at the end of this manual.
- You should now be able to adjust the Signalink USB's "TX" level control for the desired Transmit power level (**see important note below**). If you cannot get adequate power, then see the notes on jumper JP3 under the "Special Jumpers" section of this manual. If the problem still persists, then please see the Troubleshooting section at the end of the manual.
- Be sure to turn your program's "TUNE" function OFF when you are finished making adjustments!

IMPORTANT: We strongly suggest that you consult your radio manual to verify the manufacturers recommended maximum transmit level and duty cycle. Most digital modes are 100% duty cycle and cannot be run at full power without damaging your radio. Also, some modes (like PSK-31) typically only require 25 watts or less for reliable communication. You can actually "swamp" out other users if you use too much power.

Release V2.4 Sep 2012
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