Little Black Box Interface

Quick Start Guide

Certain assumptions are made when purchasing this interface unit.

- You are a licensed Amateur Radio Operator
- You have some working knowledge of the EchoLink or IRLP software
- You have basic computer knowledge
- You understand this unit is configured for EchoLink VOX operation only.

Connecting the *Little Black Box Interface* to the Phoenix Radio

There are two sets of connecting pins on the back of the Phoenix. It is obvious as to what plug fits on which set of pins. For proper installation, **the locking ridge on top of each Molex connector needs to be pointed UP (toward the top of the radio)**. Press each connector firmly into place. *Incorrectly connecting the Molex connectors to the back of your radio may cause damage to the radio and/or the interface.*

With both connectors in place, the interface box can be attached to the radio with the provided self-stick Velcro strips. Once the interface is secured to the radio, a 12 volts can be supplied to the radio. The Phoenix radio will work well with a 7amp or larger power supply.

Note: *There is no external speaker supplied with this interface and not all Phoenix SX radios have an internal speaker. This interface will work with or without a speaker.*

Connecting to the Computer

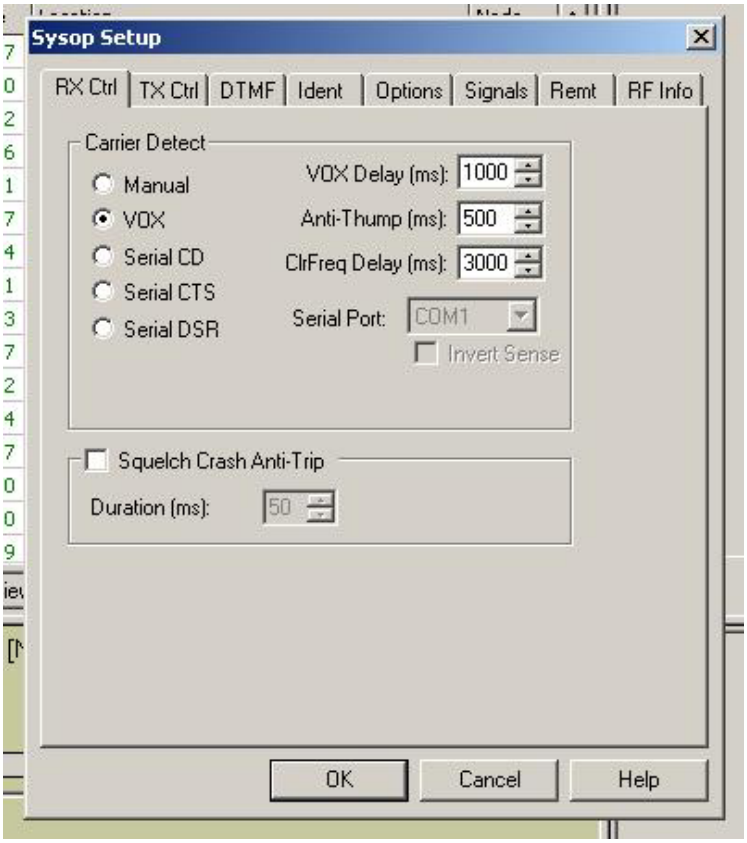
The *Little Black Box* interface comes with a 6 foot cable connecting the interface to the computer. A DB9 connector is used to connect the interface to the computer. Two1/8 inch plugs are wired from within the DB9 connector. The two plugs are colored green and gray. **The GREEN plug connects to the sound card speaker jack and the GRAY plug connects to the soundcard microphone jack.**

Connect the DB9 to the comm port at the back of the computer. Note which comport the DB9 is connected to as this will have to be configured within the EchoLink software.

The small slide switch mounted on top of the DB9 is used to toggle the mic plug wiring to the sound card (tip vs. ring). Not all sound cards are alike. *Most sound cards use the mic plug's **tip** to supply audio to the sound card while others utilize the ring. This switch toggles tip to ring allowing the interface to be compatible with nearly any sound card.* **There is a small mark on one side of the switch indicating the "tip" setting**. The unmarked side is "ring". Although most sound cards use the "**tip**" setting, you may need to toggle this switch until audio is detected to determine what type of sound card mic jack configuration the computer has.

Once the Molex plugs are connect to the radio, the DB9 is connected to the computer, and the mic and speaker plugs are connected to the sound card, you're ready to configure the EchoLink software.

Configuring the EchoLink Software

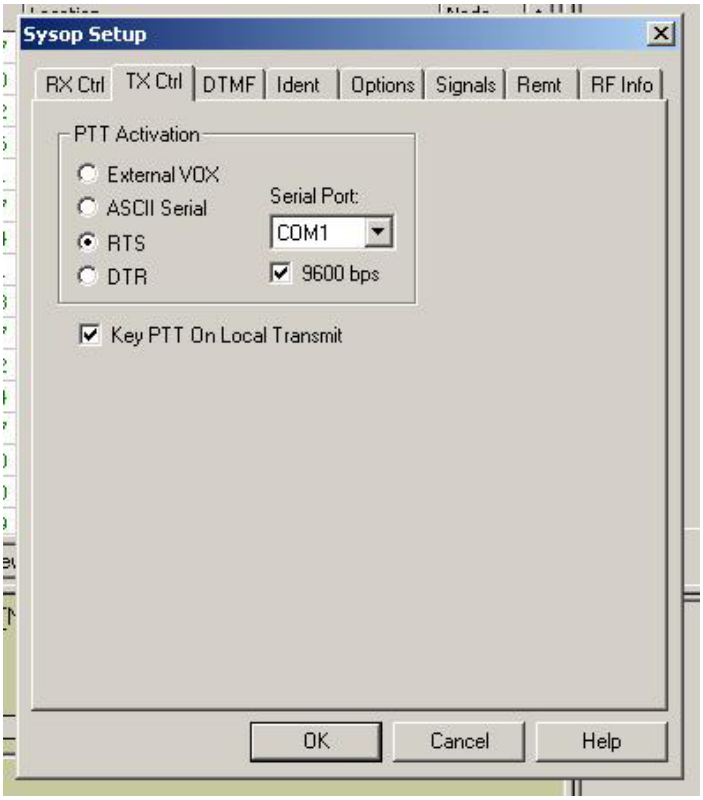


To make the configuration process as easy as possible, this guide provides screen captures of the settings needed to get you started. These are not deemed the "perfect settings" for your node or repeater link, but the settings should get you to the point where all you will have to is tweak them to your particular needs.

The following settings are found under "Tools" and "Sysop Settings" within the EchoLink software.

The Carrier Detect setting must be selected as "VOX". *This interface is not configured for COS detect from the radio.*

Hint: *VOX delay may need to be increased if your audio is being dropped in between pauses in your transmitted conversation. If you experience problems, try a higher number. If you have a long squelch tail on your radio, either tighten the squelch setting on your radio or enable the Squelch Crash Anti-Trip. See software help files for hints and recommendations.*



Your interface will not work unless you have EchoLink configured to "RTS".

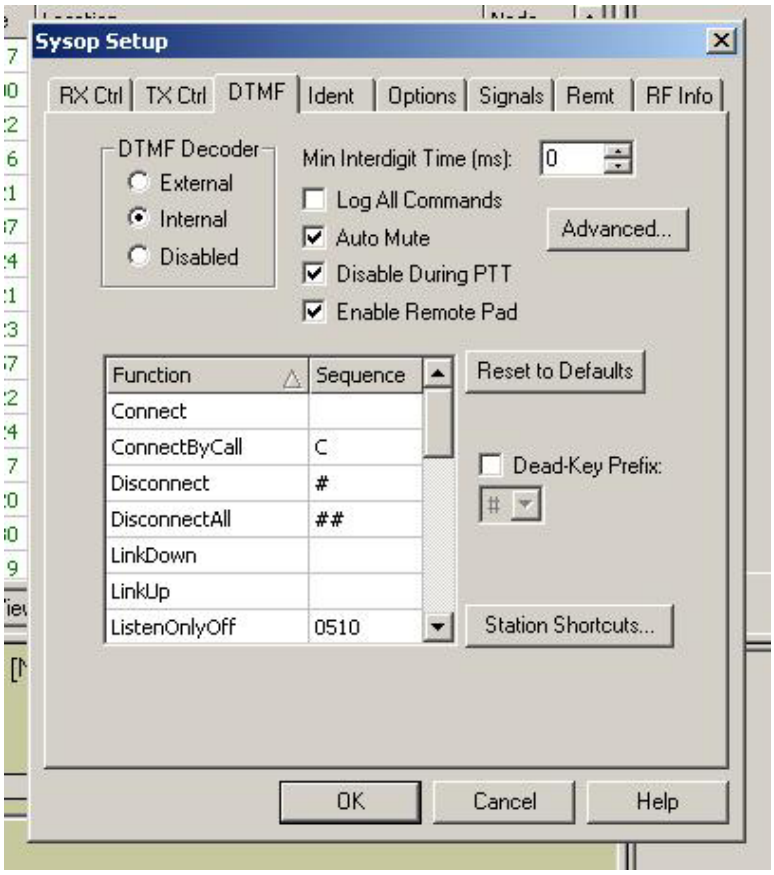
Be sure you have chosen "RTS" before continuing.

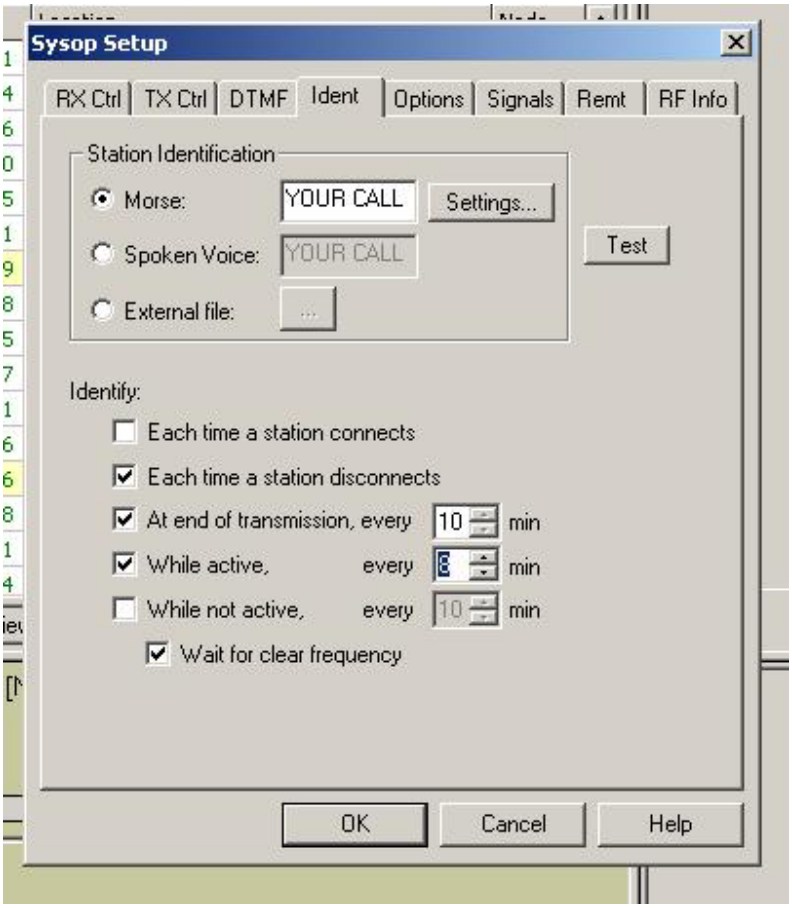
DTMF "Internal" must be chosen. This setting allows the computer to decode all DTMF commands. It will NOT work unless you have "Internal" selected.

Choose "**Auto Mute**" to avoid having your DTMF tones propagate into the VoIP audio stream.

"Disable During PTT" keeps other DTMF tones from other EchoLink stations from disconnecting you.

Other settings and their functions are found in the EchoLink help file provided with the software.





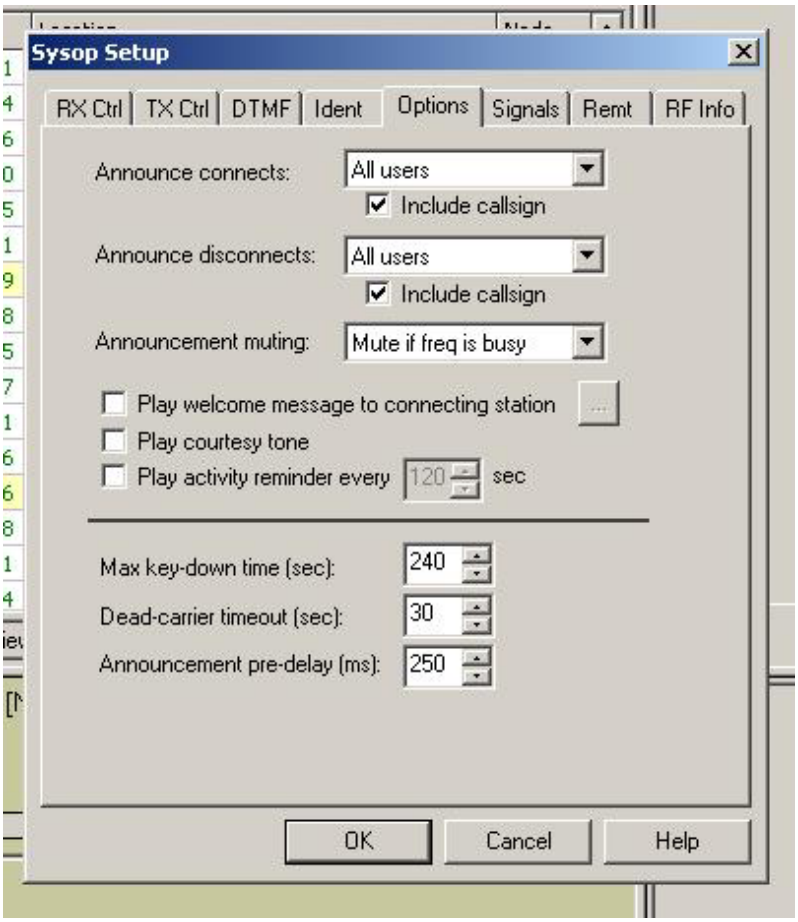
To comply with station ID requirements per FCC part 97, enter your call sign in the box labeled "your call". Choose the settings button to configure the tone and speed of your Morse (CW) ID. If you prefer a voice ID in lieu of a CW ID, choose "spoken voice" and enter your call in that box.

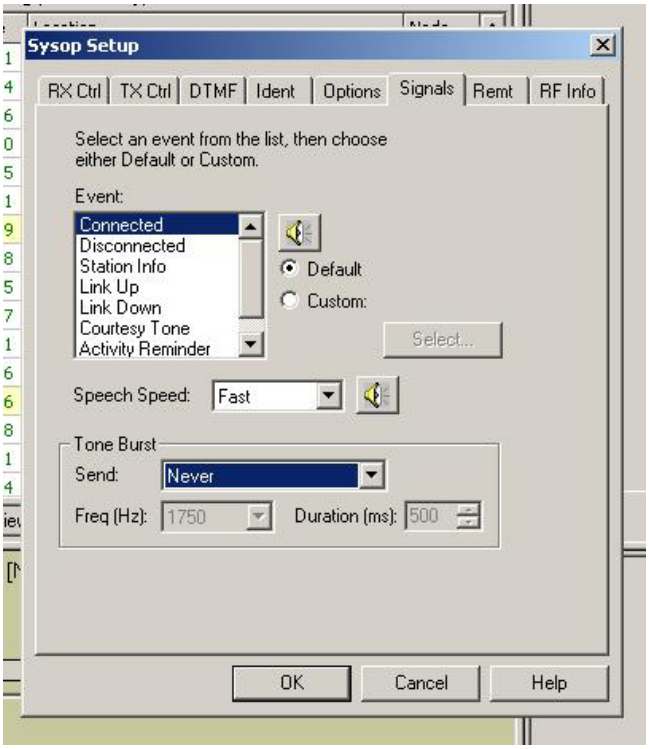
**See the EchoLink help files for more options.*

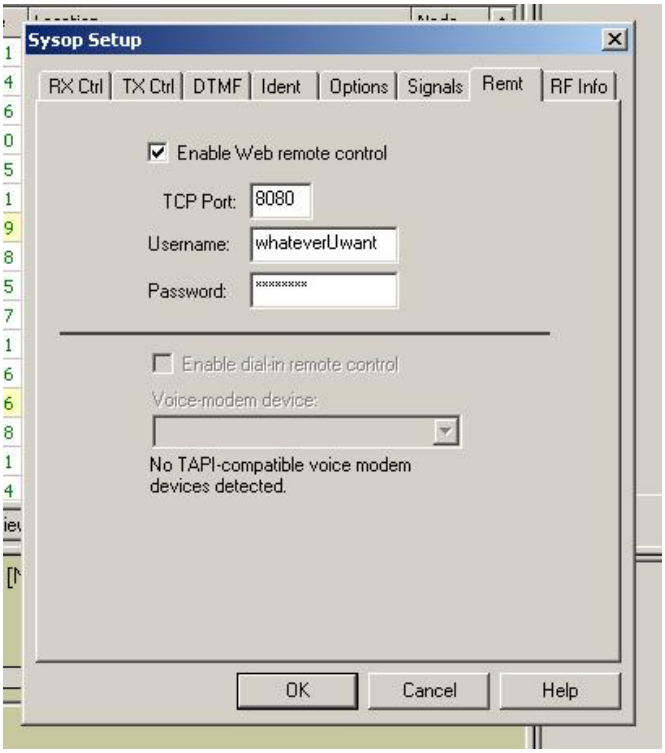
Be sure to set the software to automatically ID every 10 mins as required by FCC part 97.

Choose the options that best fit your needs.

Note: *Set your Max key-down time similar to your radio's time out timer. Your Phoenix SX radio should have its "Time Out Timer" programmed. Common programming will have the Phoenix stop transmitting after 3 to 4 minutes*.

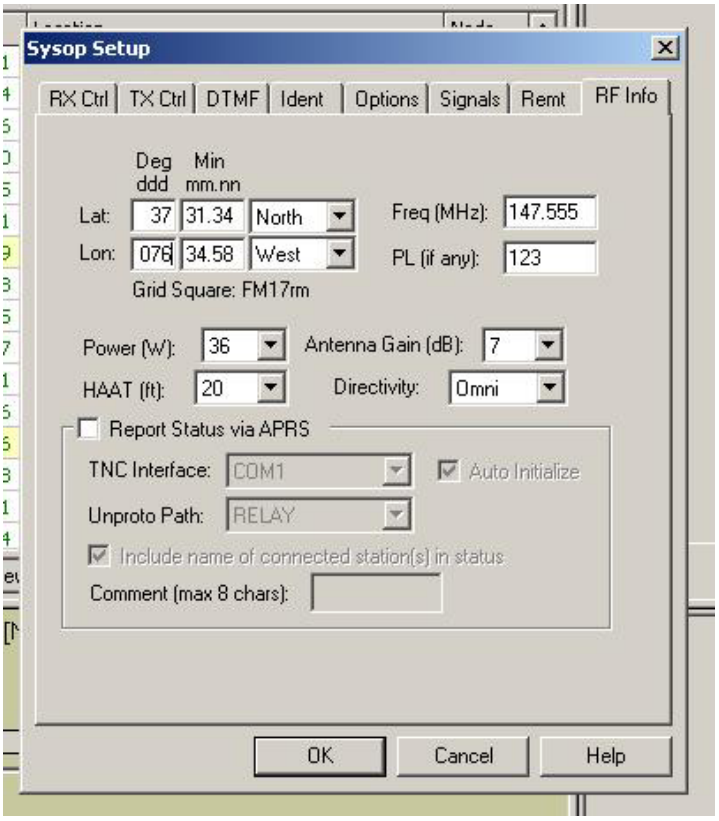






Defaults shown above should work just fine.

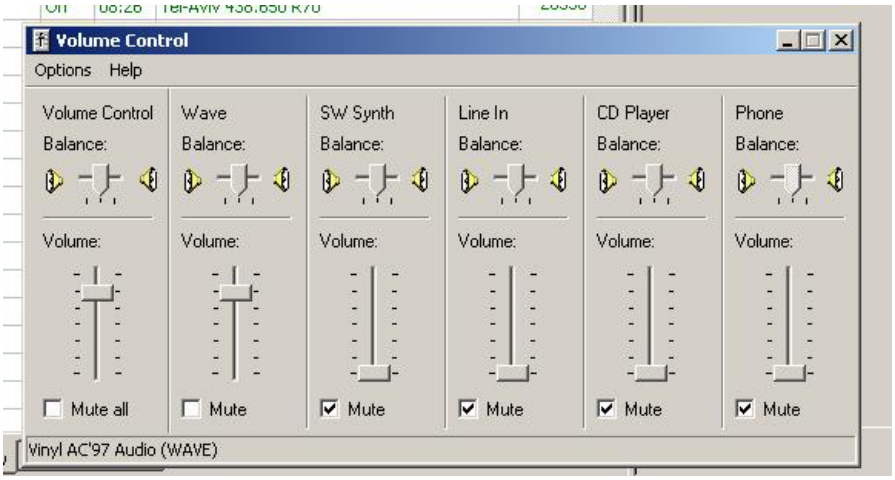
The screen shown below is where you configure your remote access functions to disable or enable your node. This option works well if you are unable to remotely disable your node/link via phone or UHF link.



If you leave your Lat/Long coordinate fields blank, your station location and status will not be broadcasted. This is optional but a nice courtesy to those looking for usable nodes and repeater links.

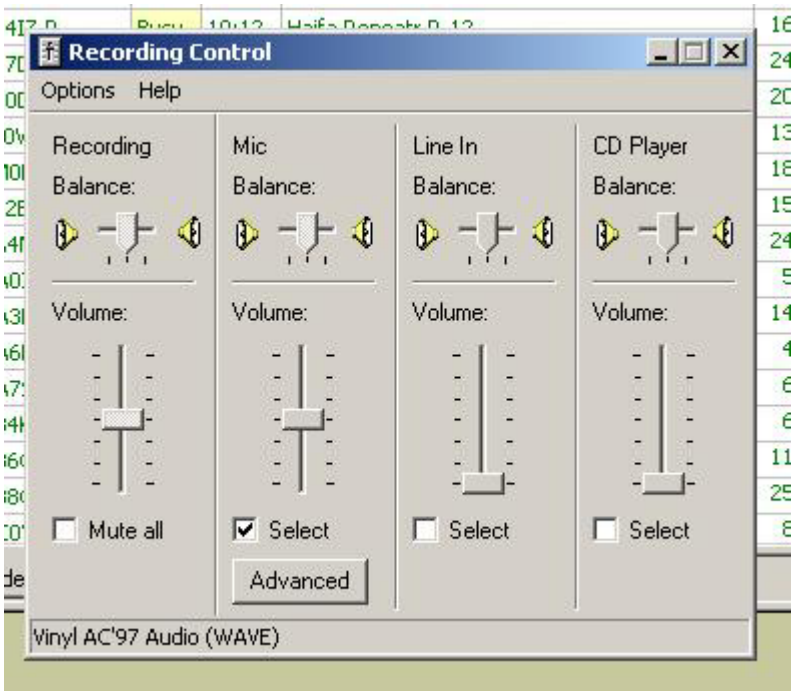
Audio Adjustments - Making it work

This is the most critical part of your setup. Audio levels are critical to a good sounding node and repeater link.



Preferably, a second radio (hand-held) works well to assist in adjusting audio levels.

From within the Windows operating system software, configure the Volume Control panel similar to what is shown here. Both **Volume Control** and **Wave** need to be selected (un-muted).
Mute the remaining controls as they are not needed. Bring the levels of **Volume** and **Wave** about midpoint or slightly higher and adjust louder or software as needed.



After setting the initial Volume Control Panel settings, go to the Recording Control panel and select the "**MIC**" setting. Some settings offer a 20db mic boost. Be sure this is OFF as it is NOT typically needed with this interface.

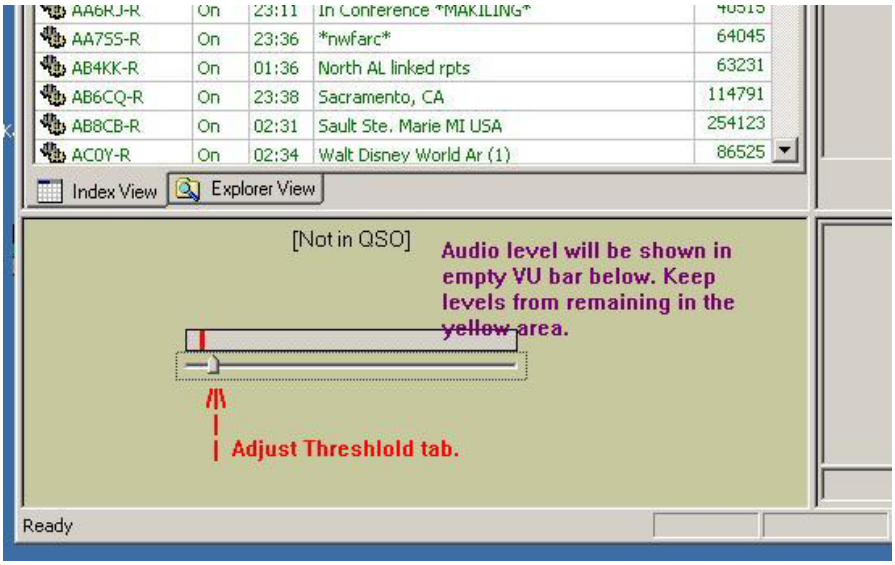
Move the "mic" and "recording" levels to midpoint. This is a good starting point.

Now, adjust your radio volume. As a recommended starting point, turn your radio volume level up ¼ to 1/3rd. The "mic" setting within the Recording Control shown at the left works in conjunction with the radio volume control.

Receiver audio can be tweaked by adjusting the radio volume and the mic input level together to find an appropriate audio level for the PC sound card.

When the initial volume and mic settings are completed, use a second radio (preferably a hand-held) tuned to the Phoenix radio's frequency. While receiving the incoming signal, adjust the Phoenix radio volume and sound card audio levels by watching the audio level bar (VU) at the bottom of the EchoLink screen.

The audio from the Phoenix radio will move the audio level indicator (VU bar) in relation to the audio received. The audio level indicator shown below will move to the right. Keep the audio level bar from moving far into the yellow (far right). If the audio detection bar swings too far to the right, distortion will result. Reduce or increase levels via the Sound Card recording settings or the Phoenix radio's volume control.



When no signal is being received, adjust the **VOX threshold tab** by clicking and dragging it left or right. **This is the VOX threshold level.** The tab should be set so that it is slightly above any audio level indication. An incorrect setting will continuously key receiving nodes you are connected to.

**See EchoLink help files for complete descriptions and help on settings.*

Note: *Connecting to the ***ECHOTEST** Conference Server will give you the best gauge of how the audio sounds over the internet.*

Hint: *Once you find the best radio volume level, take some finger nail polish, paint, or tape to mark the appropriate volume level on the radio's volume control knob. This will save you from having to readjust and re-tweak the setting if you choose to turn off the radio with the control knob.*

You're on the air!

Now that all of the settings are complete, connect to the ECHOTEST conference server to hear how your station sounds. This conference will echo back any received audio from your node. Adjust and tweak your audio to find the best sounding audio out of your radio and into the internet audio stream. When the adjustments are satisfactory, the DTMF tones should decode with ease to allow you to remotely connect across the world via EchoLink. See the help file within EchoLink to assist you with all of the options and settings of the EchoLink software**.**

This guide is written to assist you in hooking up the *Little Black Box* interface only. It is <u>not</u> intended to walk you through the EchoLink software. There is a wealth of information within the EchoLink software help files to make you an expert user in no time.

Congratulations on using one of the best radios for EchoLink. The Phoenix SX is a hearty transmitter that will bring you many years of service as you connect around the world via EchoLink.

Welcome to the world of VoIP and EchoLink and thanks for choosing the Little Black Box interface.

Useful GE Phoenix Links

Having problems?

Perhaps a couple of settings and simple things have been over looked. Go to the *Black Box Interface Tech Support* website at http://www.vainio.net/interface/support for troubleshooting and user tips.

For more information, a copy of this guide, or to purchase an interface, please visit **http://www.vainio.net/interface**

Questions/Comments:
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