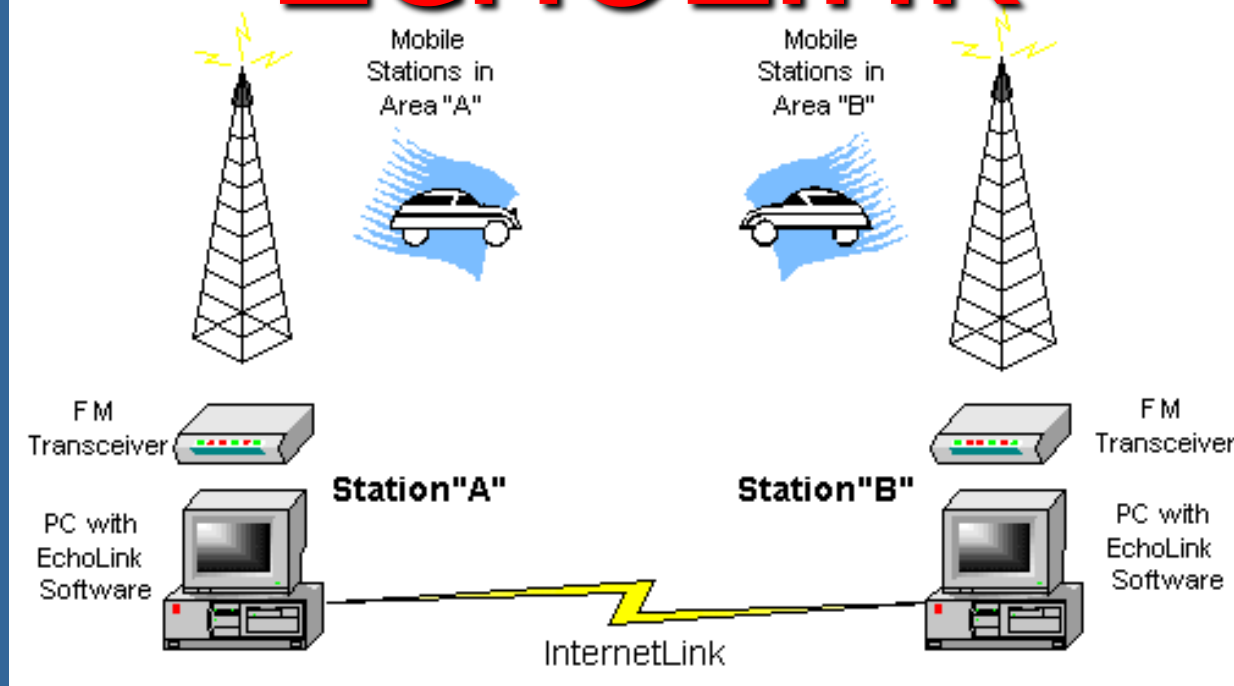


EchoLink



Internet Linking for Amateur Radio

General Topics

- What is EchoLink?
- Various Modes
- Configuring EchoLink Software
 - Computer to Computer via Internet
 - Transceiver to Computer to the Internet
- Physical Radio Interfacing
- Other Linking Software
- Is it really Amateur Radio?
- Questions

What is EchoLink?

- EchoLink uses VoIP (Voice Over Internet Protocol) to allow licensed Amateur Radio Operators to communicate with other Amateurs via the Internet.
- It is primarily a Windows based application and is offered free of charge at <http://www.echolink.org>.
- There is also a new EchoLinux and EchoMac available.
- It was developed by Jonathan Taylor (K1RFD) in 2002 (*He received Hamvention 2003 Special Achievement Award*).

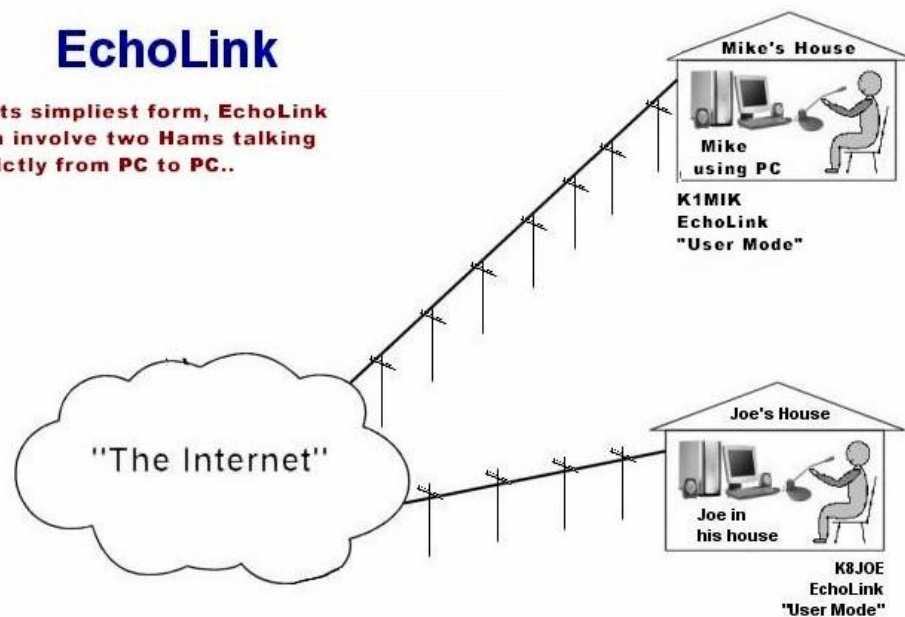
What Modes are Available?

- EchoLink can be operated strictly between two computers connected to the Internet using the PC soundcard with Speakers and a Microphone.
- EchoLink can be interfaced to a standard FM transceiver as a “simplex link” from your home QTH.
- EchoLink can be interfaced to a VHF or UHF repeater for more coverage. This is how we currently communicate through EchoLink

EchoLink "User Mode"

EchoLink

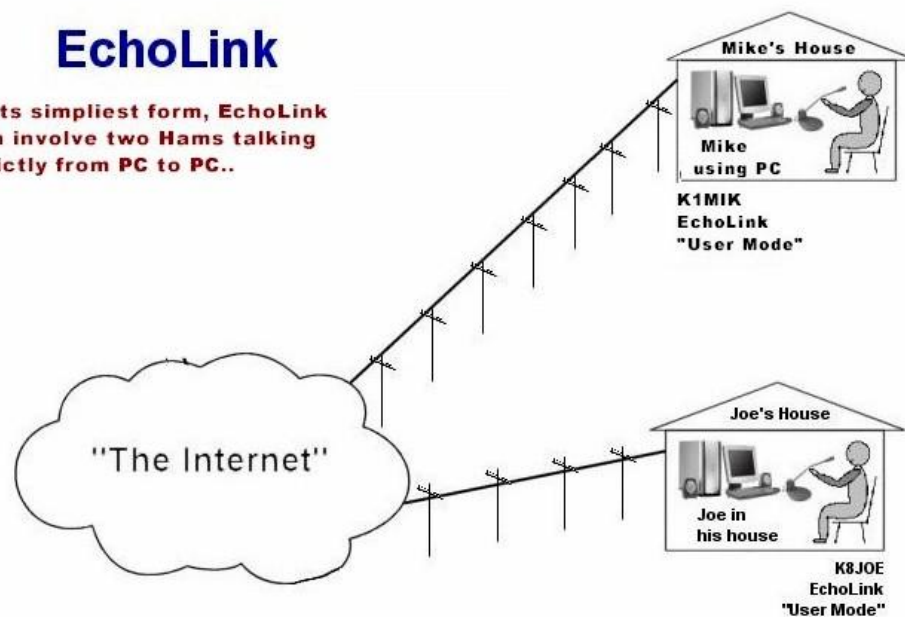
In its simplest form, EchoLink can involve two Hams talking strictly from PC to PC..



Is this really Ham Radio?

EchoLink

In its simplest form, EchoLink can involve two Hams talking strictly from PC to PC..



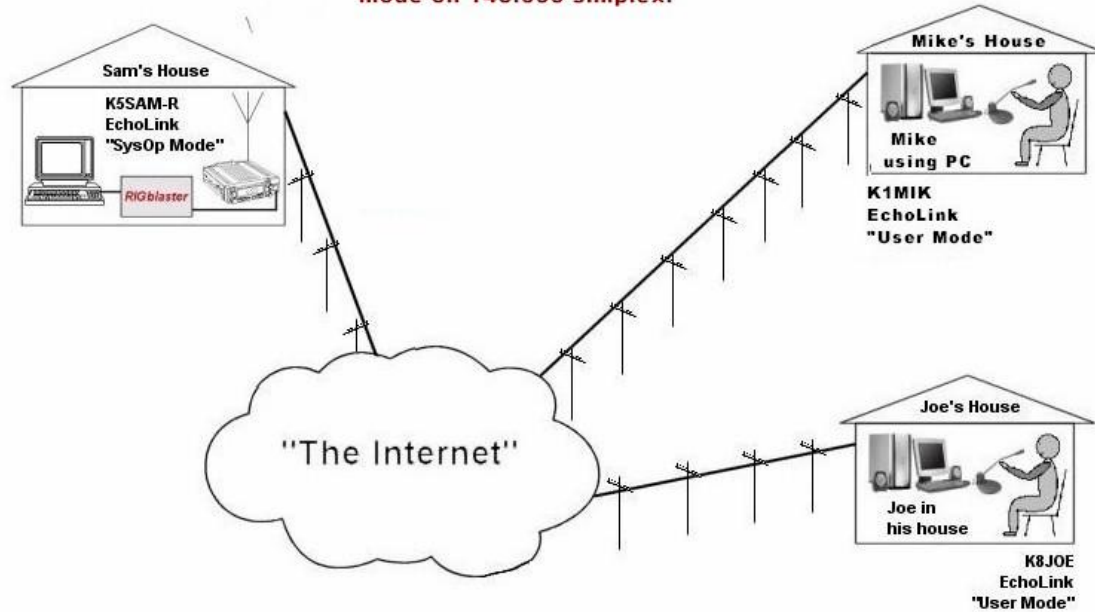
It Depends upon how you “use” it!!

- Single User PC to PC involves no RF
 - It is just another Internet “Chat Room”
- A Simplex-Link or Repeater connection now makes it a “new” Amateur Radio Mode.

Adding a "Simplex-Link"

EchoLink

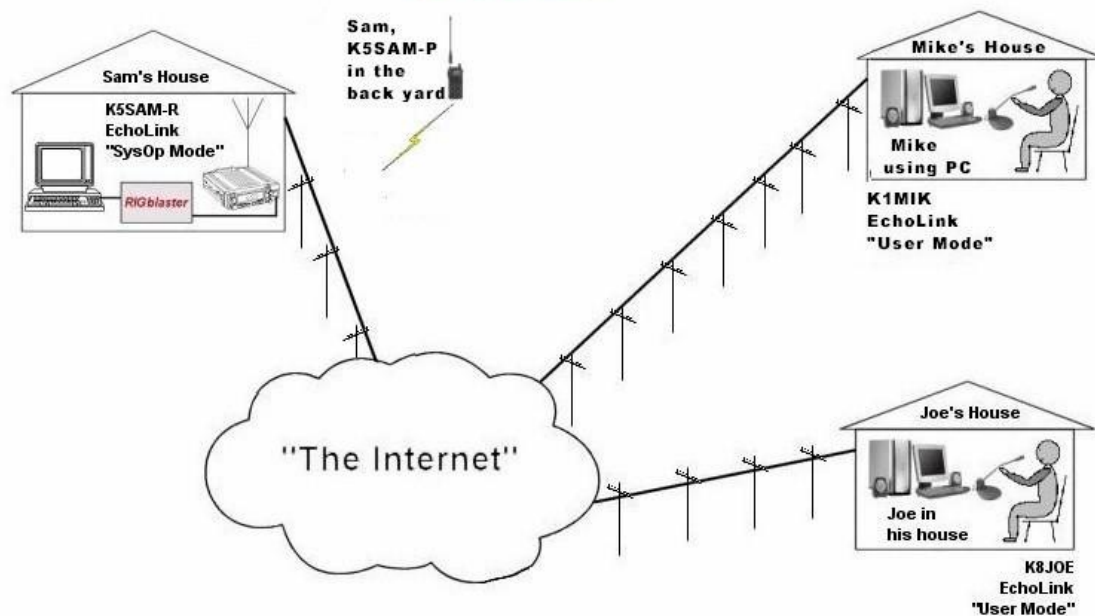
And, now we have Sam joining the conversation with his 2 meter transceiver in "Sys Op" mode on 145.600 simplex.



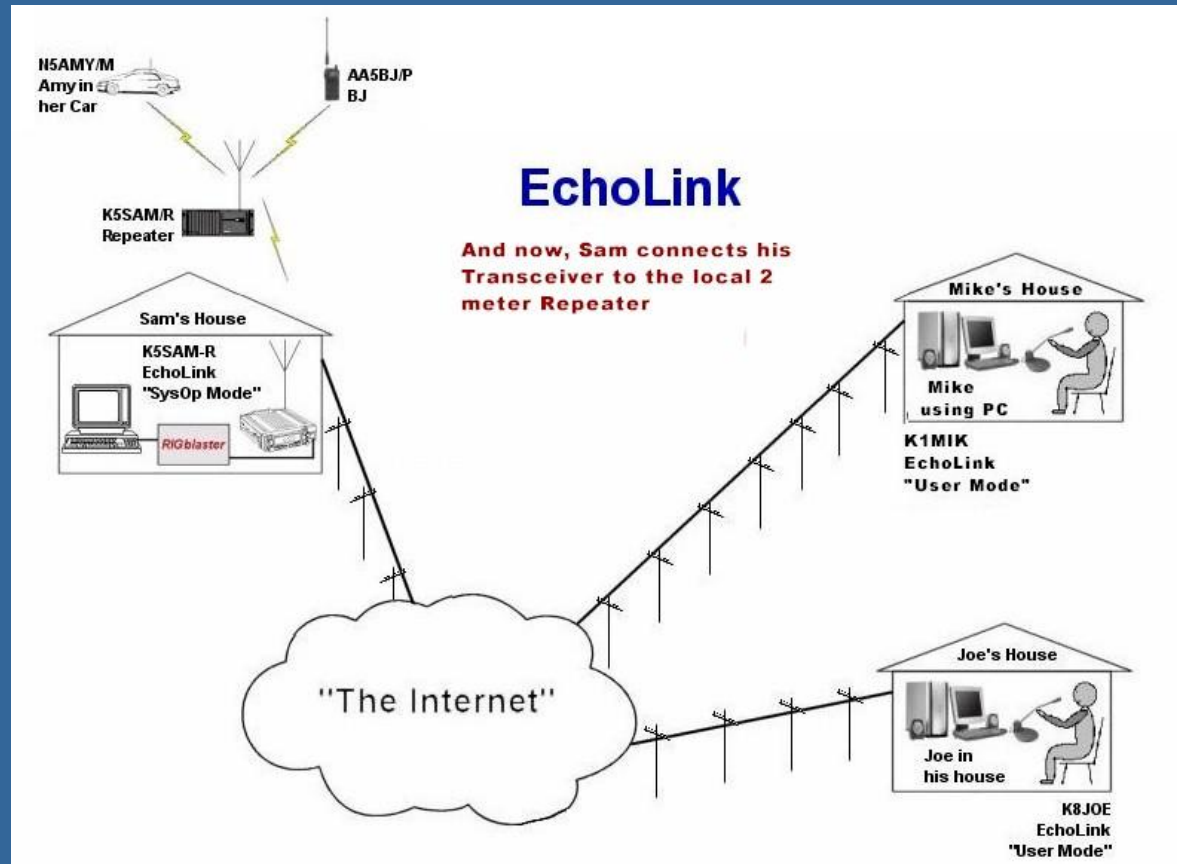
Expanding the "Link"

EchoLink

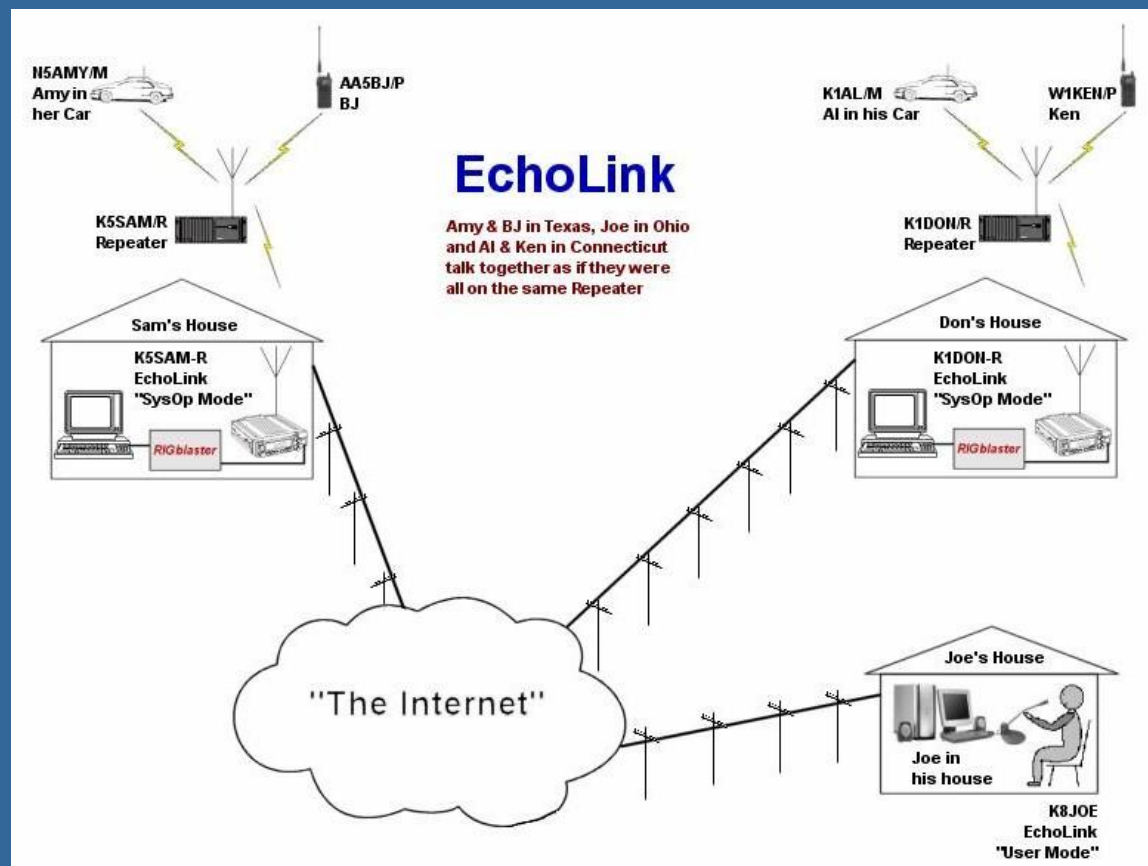
Sam now takes his HT - also tuned to 145.600 and goes into his back yard to operate.



Adding a Repeater



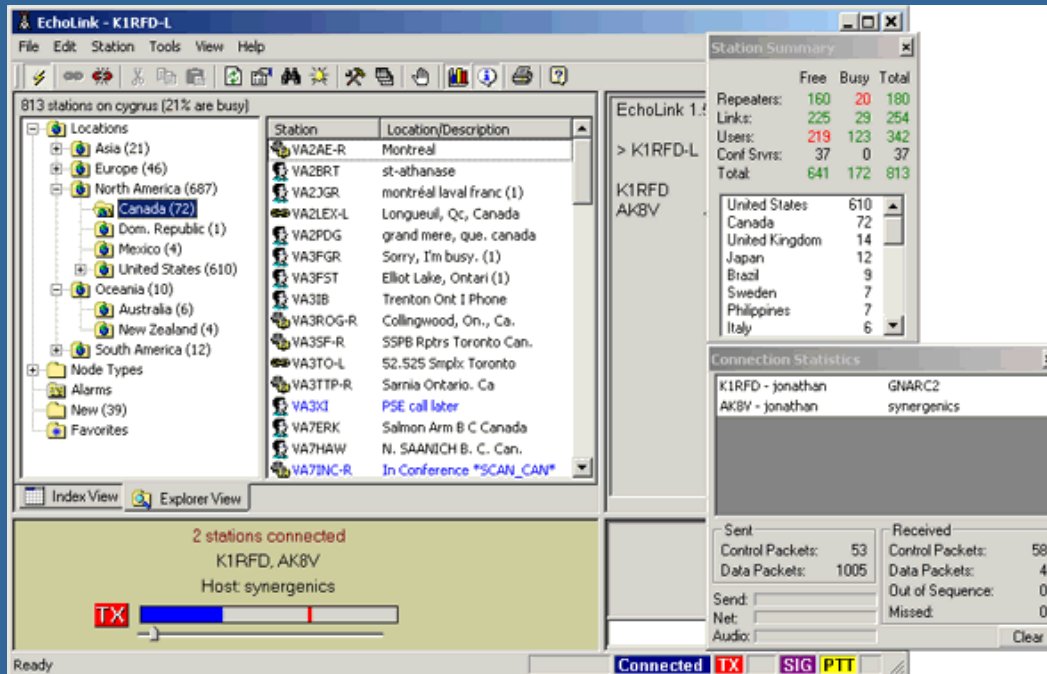
Bringing it all Together



Part 97 Link Requirements

- The Simplex link and Repeater link as depicted here require a control operator.
- If the Link is installed at the repeater side, it becomes a part of the repeater, and can then run in “automatic control”.

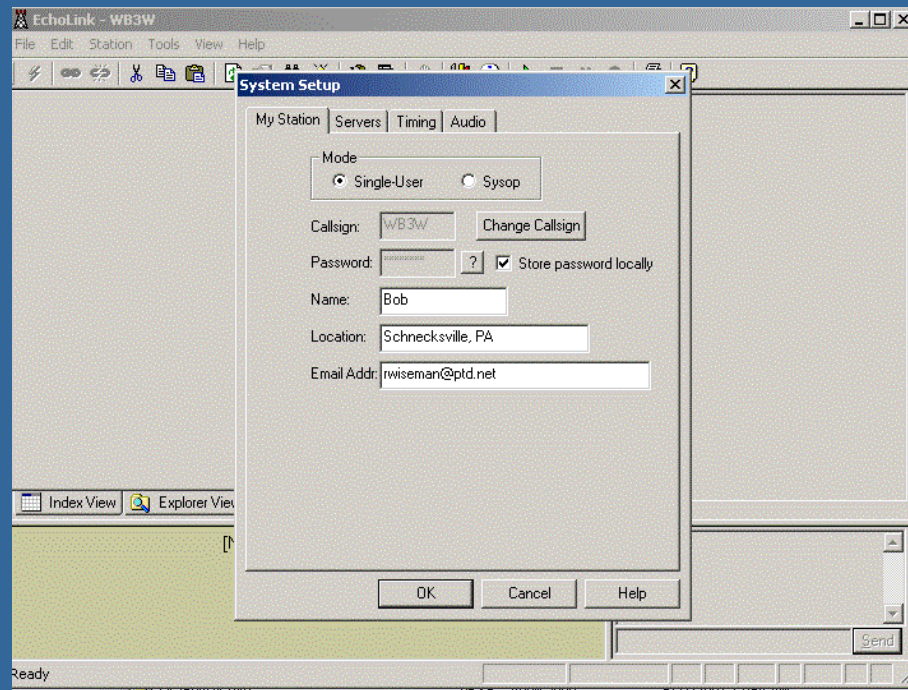
And now -- The Software...



- Here is the main Screen, listing the Stations currently on the Link, by Country, Call Zone etc.

The Bottom of the Screen shows the current Transmit and Receive Audio levels in a colored bar graphic.

Basic Setup

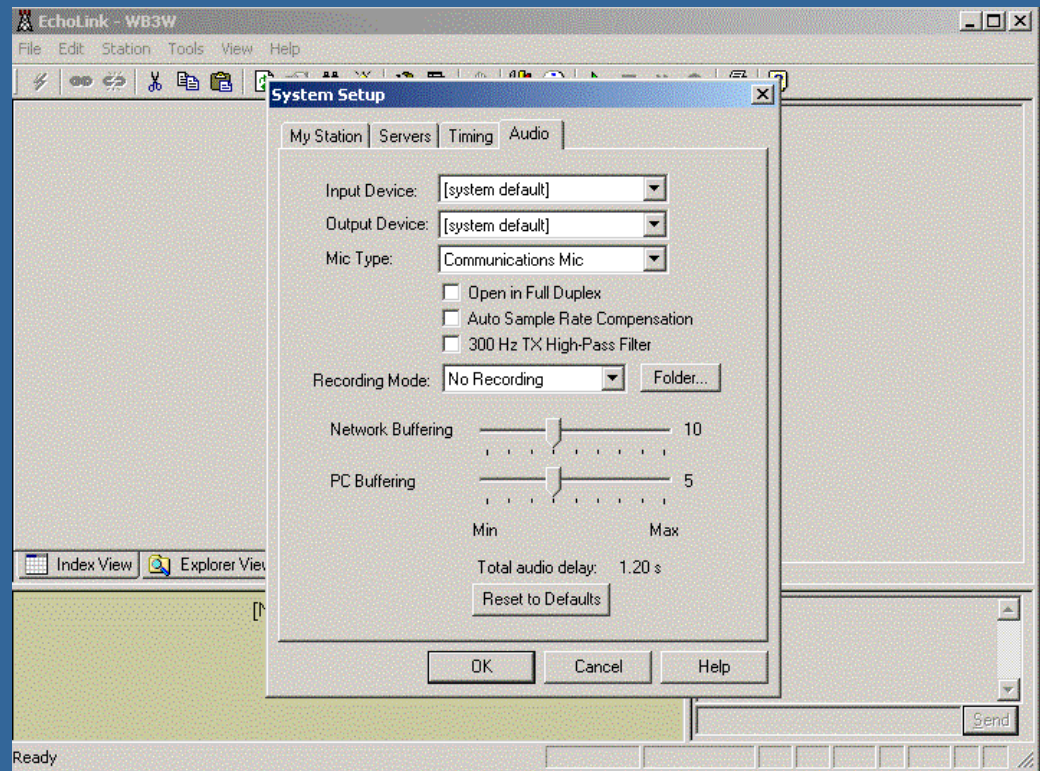


The first thing to do after installing the software is to configure your Station Setup.

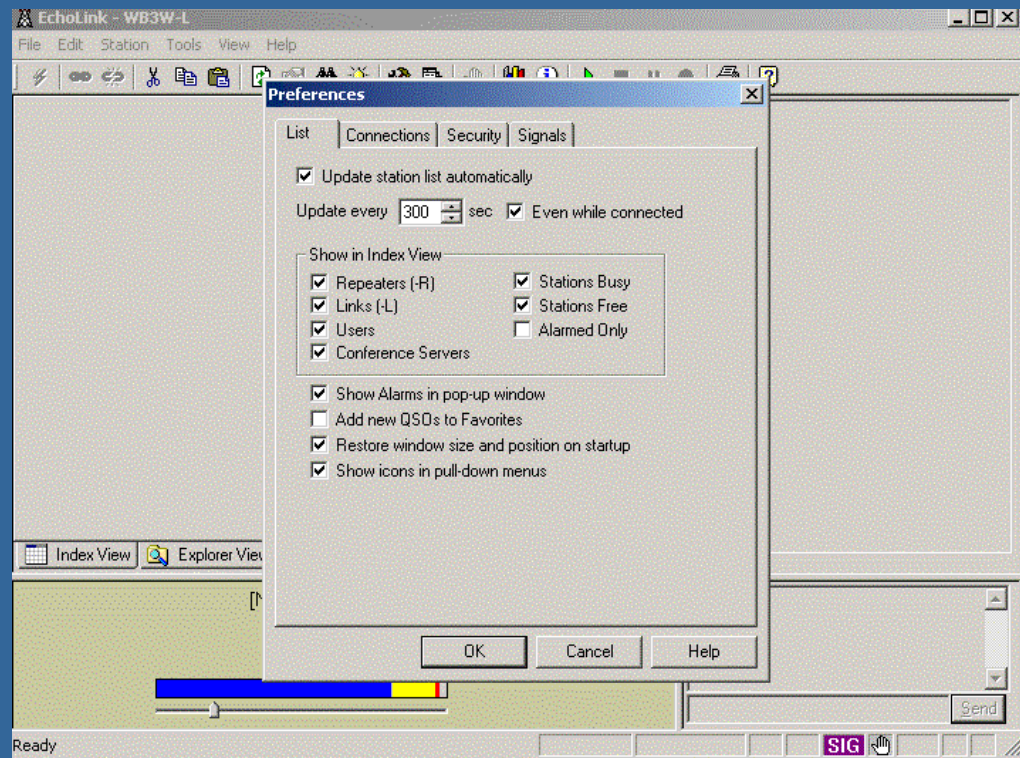
The first time you use Echolink, you will have to wait to be validated, before you are connected to the EchoLink server.

Audio Setup

This includes
your Audio
details, for
the PC
Speakers
and
Microphone.

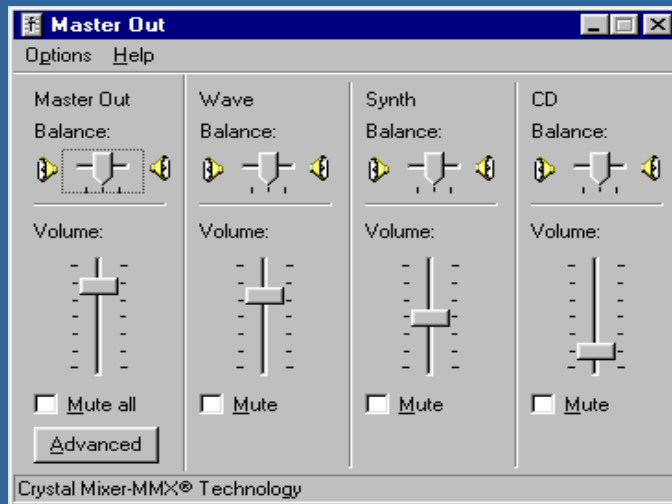


Connection Setup



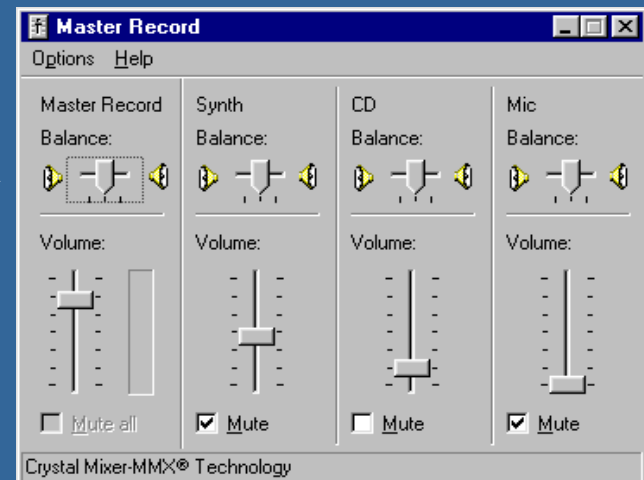
This Screen allows you to configure the various Internet connections you are willing to accept.

The Two Pc Audio Screens



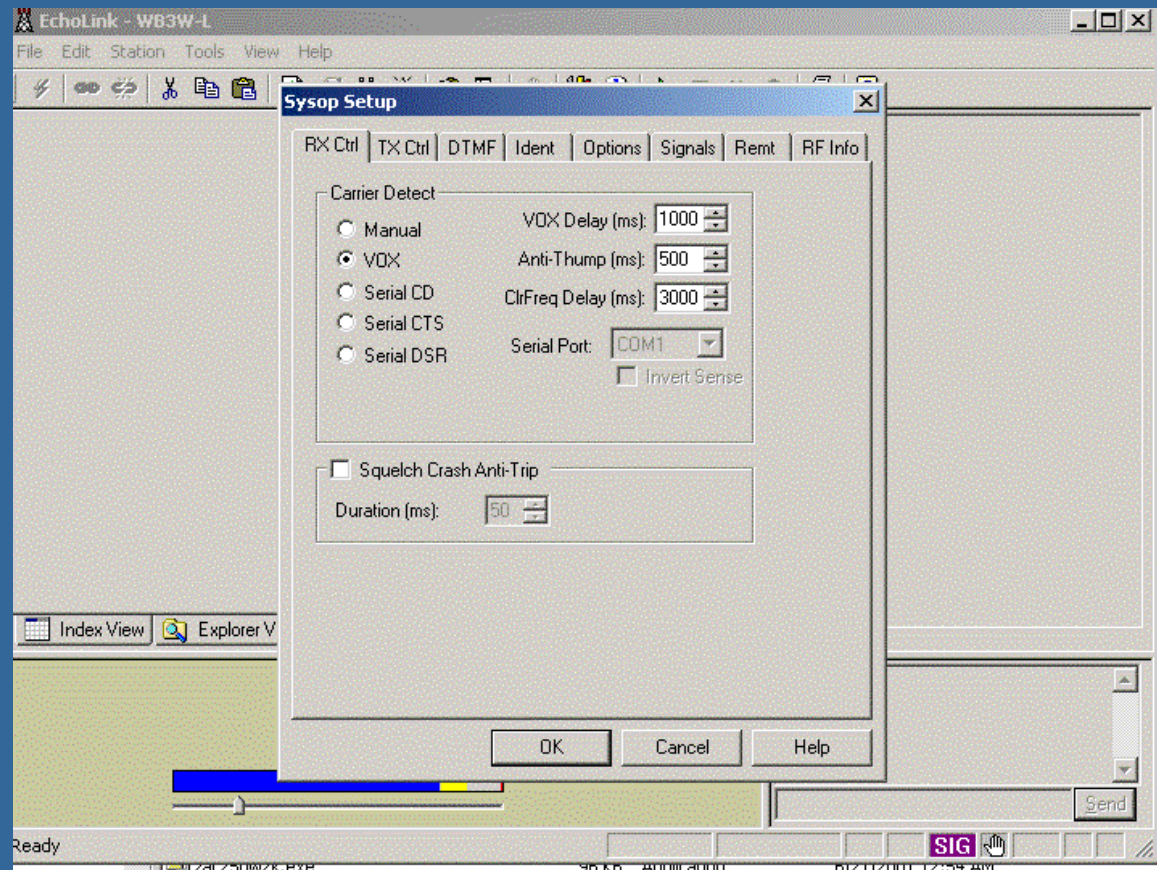
← This is the Output

This is the Input →

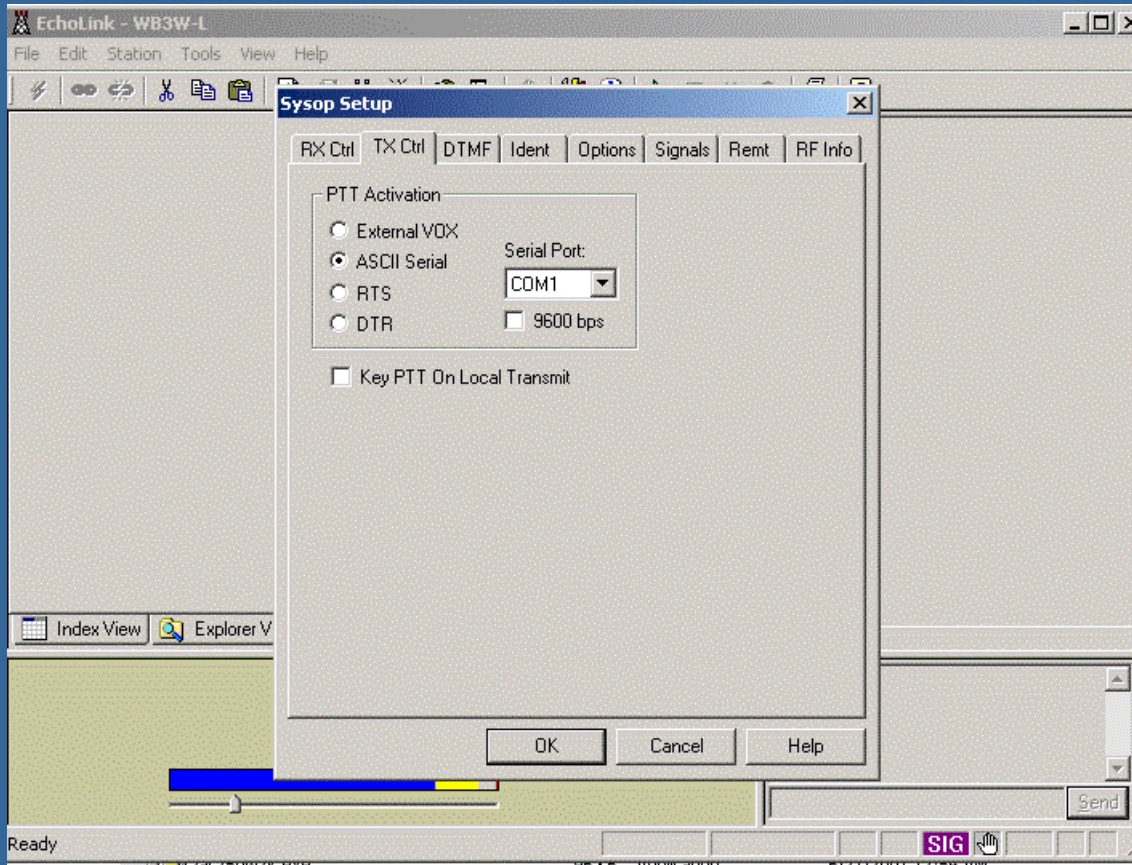


SysOp Receive

SysOp Mode is used when interfacing a Transceiver, and requires additional setup parameters.



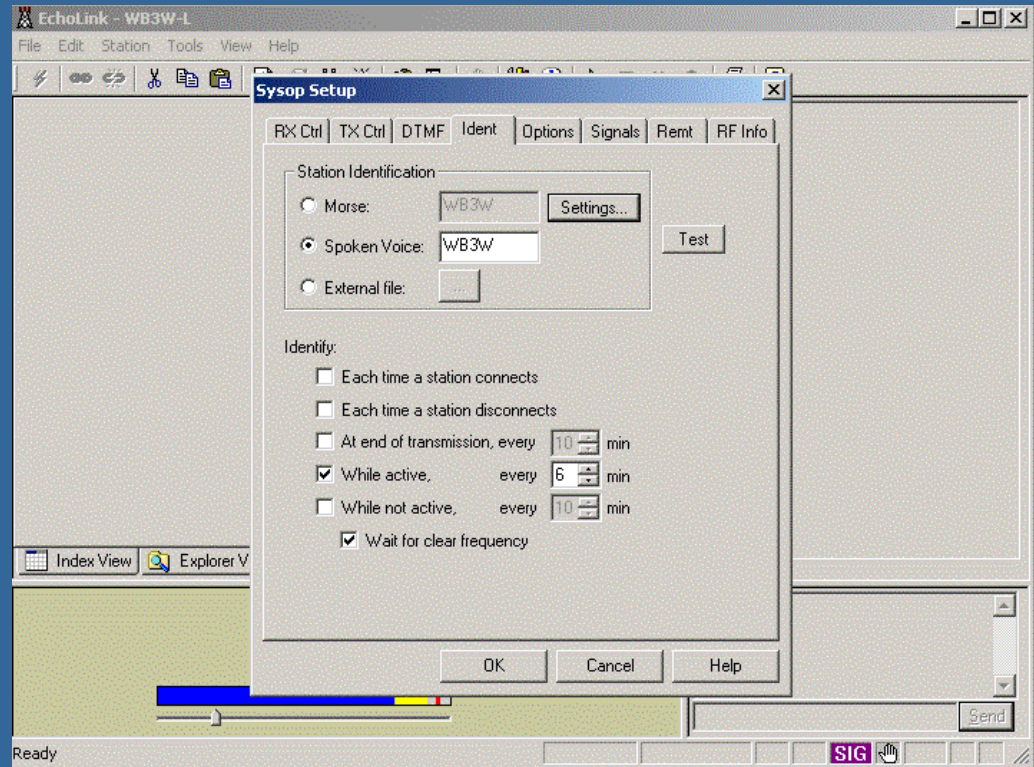
SysOp Transmit



There are a number of choices for triggering the PTT interface to the Rig.

SysOp Identification

Both CW and Voice ID are available, along with the method and time interval for the ID's



What's Needed for SysOp Mode?

Transceiver



Computer and Software

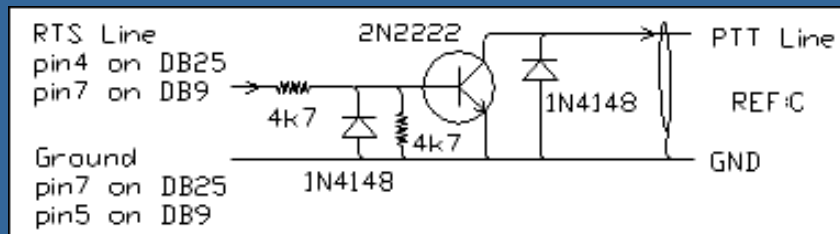


Interface



Making Your Own Interface

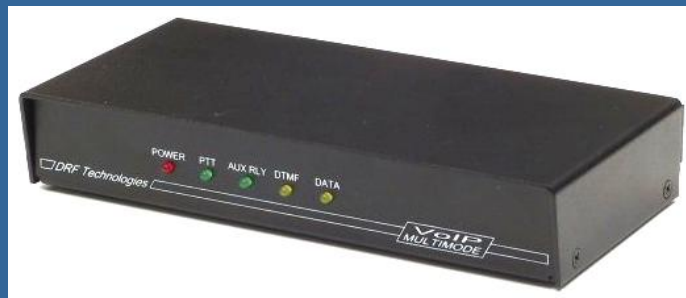
- Stereo patch cord with 1/8" plugs from receiver audio to PC "Line-In".
- Patch cord from PC "Mic-Out" to Transmitter Audio input (should be attenuated).
- Serial PTT circuitry from COM port.



But, a “Good” Interface should:

- Isolate the computer audio from transceiver.
- Attenuate the speaker/line level output.
- Provide matching of audio to mic level.
- Isolation of all grounds.
- Be easy to hook up, and leave in-line.

Some Soundcard Interfaces



The RIGblaster is the more common interface, with jumpers to configure any brand of microphone and rig.

Pros and Cons

- Allows Hams traveling away to stay in contact with Hams back home through a Repeater link.
- Allows Technician licensees a chance to experience DX Contacts.
- QSL's are not valid for things like DXCC.
 - The "middle" connection is the Internet, and this is a "wired" connection – not wireless RF...

But Again – *"Is it Ham Radio?"*

- As long as there is a Simplex or Repeater Link involved it is a new "mode" – It is that simple!
- Worldwide Regulatory agencies like the FCC, ART, IBPT, OFCOM, SRR, etc. have recognized it as another Ham "tool" like SSTV or PSK31.
- Using these "links" you must still ID and follow all regulations, including International rules and Third party agreements.
- If we don't keep using our Radios in as many modes as we can, we are going to lose some of the band allocations we have worked so hard for.

Some Comments

- EchoLink allows us to expand upon our different Ham activities, and gives Amateur Radio a new dimension with a new technology....
- Hook your Transceiver up to it and use it.
 - Other new technologies like Cell Phones, RFID, (BPL?), are competing for our bandwidth, so lets utilize it with all the modes available..

B U T Remember.....

- Although Amateur Radio has grown to embrace new technologies and has now become more than just “Radio” , it is really “*nothing*” without “Radio”....

Our EchoLink NODE

N2UGS-L

Questions

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