

Introduction to EchoLink

Brian Roode

NJ6N

nj6n@soara.org

Voice over Internet Protocol

The Internet is a vast network of computer networks.

The Internet Protocol (IP) is responsible for moving data between computers on the world wide Internet.

Voice over IP (VoIP) is used to provide voice communication between computers over the Internet using IP.

Amateur Radio use of VoIP

There are several VoIP applications used in Ham Radio:

iLink, eQSO, EchoLink, IRLP, Wires-II (Yaesu) are some of the VoIP Applications in use today.

EchoLink is one of the most well-known and most-used VoIP applications with over 100,000 registered users in over 137 countries!



EchoLink

- Jonathan Taylor, K1RFD, won the Dayton Hamvention's Special Achievement award, 2003, for writing and developing EchoLink and EchoStation.
- EchoLink software is available for Windows, Macintosh OS/X and Linux, free of charge.



Getting started with EchoLink

- Hardware & Software Requirements
 - Personal Computer
 - Sound Card Interface
 - Headset or Microphone & Speaker
 - EchoLink Software
 - Valid Amateur Radio License
- Download & Install the software
 - Standard Windows software installation
 - Follow the on-screen setup “Wizard” to configure EchoLink.
 - A unique node number will be automatically assigned to you after your callsign has been verified.

EchoLink Operation

- Nodes, Links, Repeaters!
 - Each connected station has a unique station ID called a “node number” that is assigned automatically.
 - There are several different node types:
 - Users: Stations that are using a personal computer.
 - Links: Stations with computers running EchoLink interfaced to a radio transceiver. These stations are designated by their callsign followed by “-L”.
 - Repeaters: Stations with computers running EchoLink interfaced to an FM repeater through a repeater controller or via remote transceiver. These stations are designated with their station callsign followed by “-R”
 - Conferences: Special interest “chat rooms”

Demonstration of EchoLink

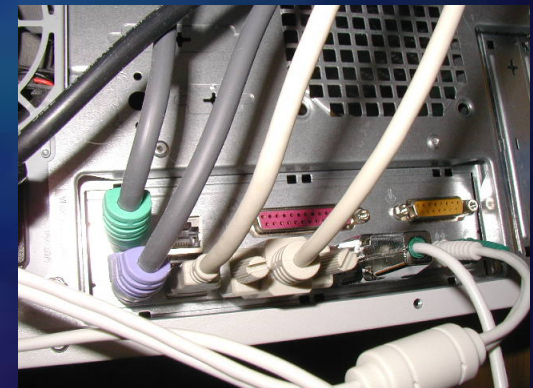
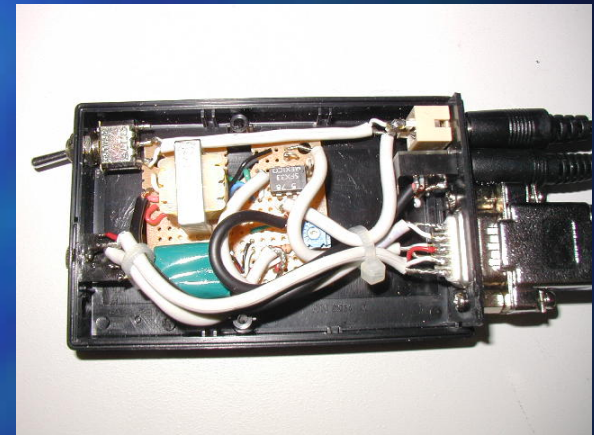
- We will now connect to the Internet using Howard's laptop and make an EchoLink contact or two!
 - First we'll try to contact Don Schleuse in South Dakota @ node 116244
 - Next we'll hook up with the KG6F0S-L Link in Bakersfield @ node 41577 and see if we can contact Steve, N5YRJ who is there on a business trip.
- We can also connect to EchoLink through an EchoLink "link" station over the air.
 - Brian will contact Howard's laptop (node # **109683**) through a remote link (node **125251**)

Firewall Issues

- A Firewall or “Cable/DSL router” is a device that shields your computer from unwanted inbound connections.
- You will need to configure the router to "forward" UDP ports 5198 and 5199 to the PC on which EchoLink is running. It must also allow incoming connections on TCP port 5200.
- Software Firewalls, including the built-in firewall on Windows XP must be configured to enable EchoLink.

Link Operation

- Link Interfaces interconnect your radio transceiver to your computer.
- This enables you to use EchoLink from an HT or mobile radio, remotely.
- Interfacing enables many other digital modes including PSK31, SSTV, RTTY, etc.



Interfaces

- There are quite a lot of commercially available interfaces available as kits or pre-assembled and tested versions.
- Basic interfaces provide minimum interfacing necessary to get on the air.
- Advanced interfaces provide additional features such as remote rig control, local microphone and PTT control, computer reset via RF, etc.



Traveling with EchoLink!

- Take EchoLink along with you on your travels!
 - All you need is your HT or a laptop and an Internet connection.
 - SOARA members Howard Brown, KG6GI, Richard Saunders, K6RBS, and Steve Leander, KG6OYK, took their laptops and HT's with them on their travels recently.
 - Using EchoLink and through the cooperation of Dave, KG6QCI, Richard was able to check into the Tuesday night 2 meter net from Hawaii! Moments later, Steve checked in through Brian's Echolink node from San Francisco.
 - Howard used EchoLink "conferencing" features while on his recent trip across the United States to keep in touch with Bob Grand, W6CIC and Don Schleuse, KF6NSU. This is a very good thing considering that Howard and Bob are responsible for maintaining our 7 repeater systems!

More on Travelling with EchoLink

- If you're planning on using EchoLink from a remote location, here are a few things to keep in mind:
 - Research your destination before you go. You will want to find out which local repeaters support EchoLink if you're planning on using an HT. You may also need to obtain the permission of the repeater owner and access codes.
 - Make a list of the node numbers of the stations you wish to contact – dialing zero doesn't get you the EchoLink Operator 😊

Final Thoughts

- EchoLink was used to tie repeaters together during the Space Shuttle disaster recovery operation. EchoLink will no doubt be used in many new and interesting ways in the future.
- Using the Internet for voice communication through applications like EchoLink has generated a considerable amount of discussion in the ham radio community.
- EchoLink provides yet another way we can get new people interested in our wonderful hobby, especially those already well-versed in how to use the Internet. EchoLink

For more information:

- QST Magazine, February 2003, pg. 44.
- Software
 - <http://www.echolink.org> (Windows)
 - <http://www.dogparksoftware.com/EchoMac.html> (Mac OS/X)
- Computer/Radio Interface:
 - <http://www.ilinkboards.com/>
 - <http://www.westmountainradio.com/>
 - <http://www.packetradio.com/rascalmkv.htm>
 - <http://ilinkca.com/>
- Building your own Interface
 - <http://www.qsl.net/wm2u/interface.html>
- Dayton Hamvention Award:
 - <http://www.hamvention.org/winners.html>

That' s All Folks!

Many thanks to Howard, Steve, and Richard for their help in creating this presentation!