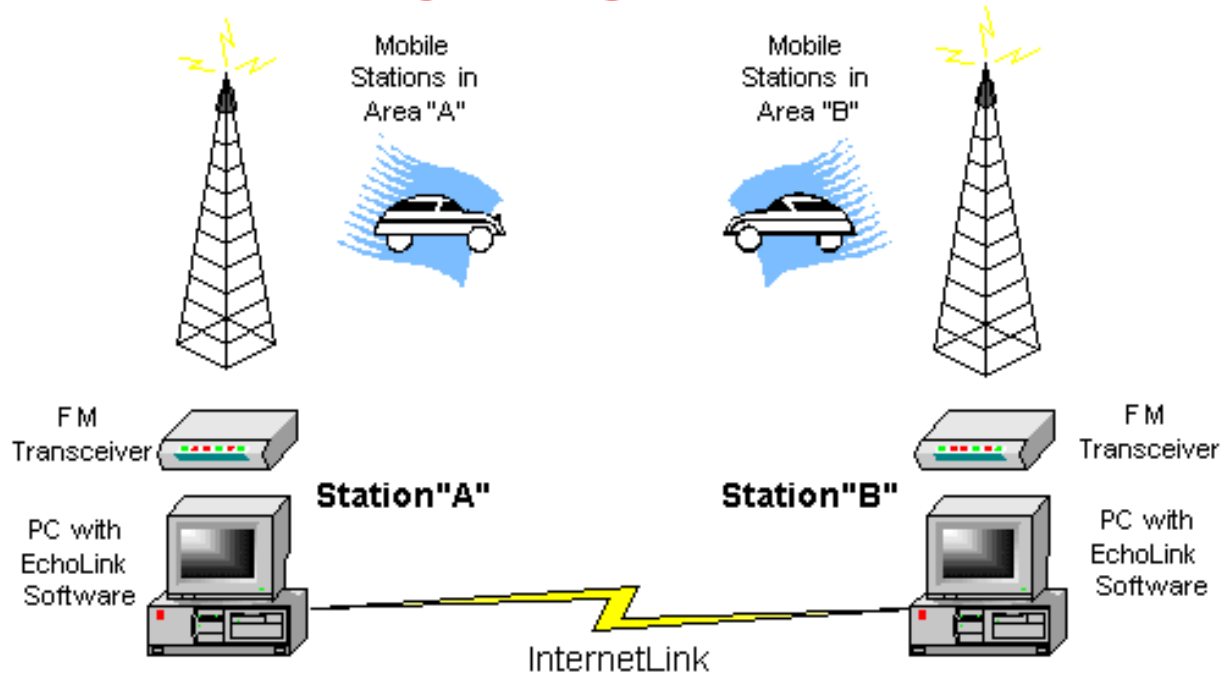


# EchoLink



Internet Linking for Amateur Radio

# What is EchoLink?

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- 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.
- Now available is an iPhone and Android app that can be used to connect to operators around the world while you are on the go.
- It was developed by Jonathan Taylor (K1RFD) in 2002 (*He received Hamvention 2003 Special Achievement Award*).

# What is EchoLink?

---

- The system allows reliable worldwide connections to be made between radio amateurs, greatly enhancing Amateur Radio's communications capabilities. In essence it is the same as other VoIP applications (such as Skype), but with the unique addition of the ability to link to an amateur radio station's transceiver.
- Before using the system it is necessary for a prospective user's call sign to be validated. The EchoLink system requires that each new user provide positive proof of license and identity before his or her call sign is added to the list of validated users.

# What Modes are Available?

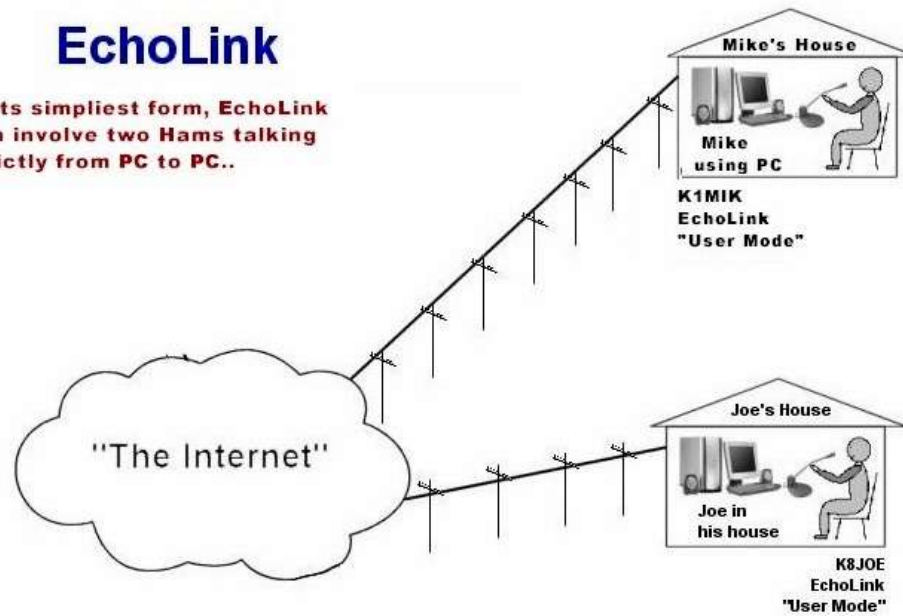
---

- 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.

# EchoLink "User Mode"

## EchoLink

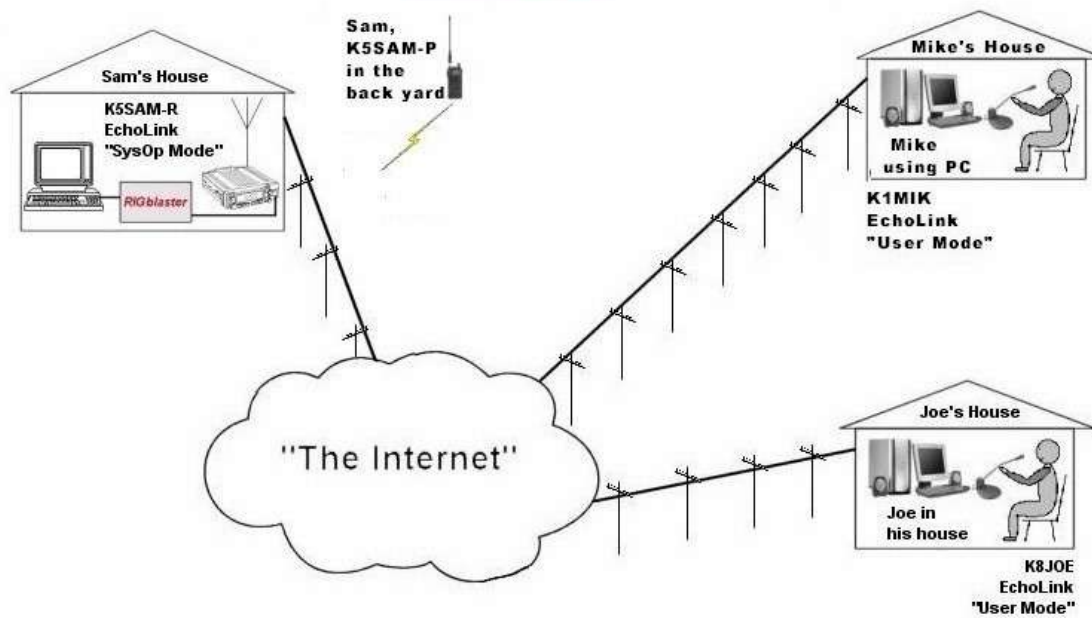
In its simplest form, EchoLink can involve two Hams talking strictly from PC to PC..



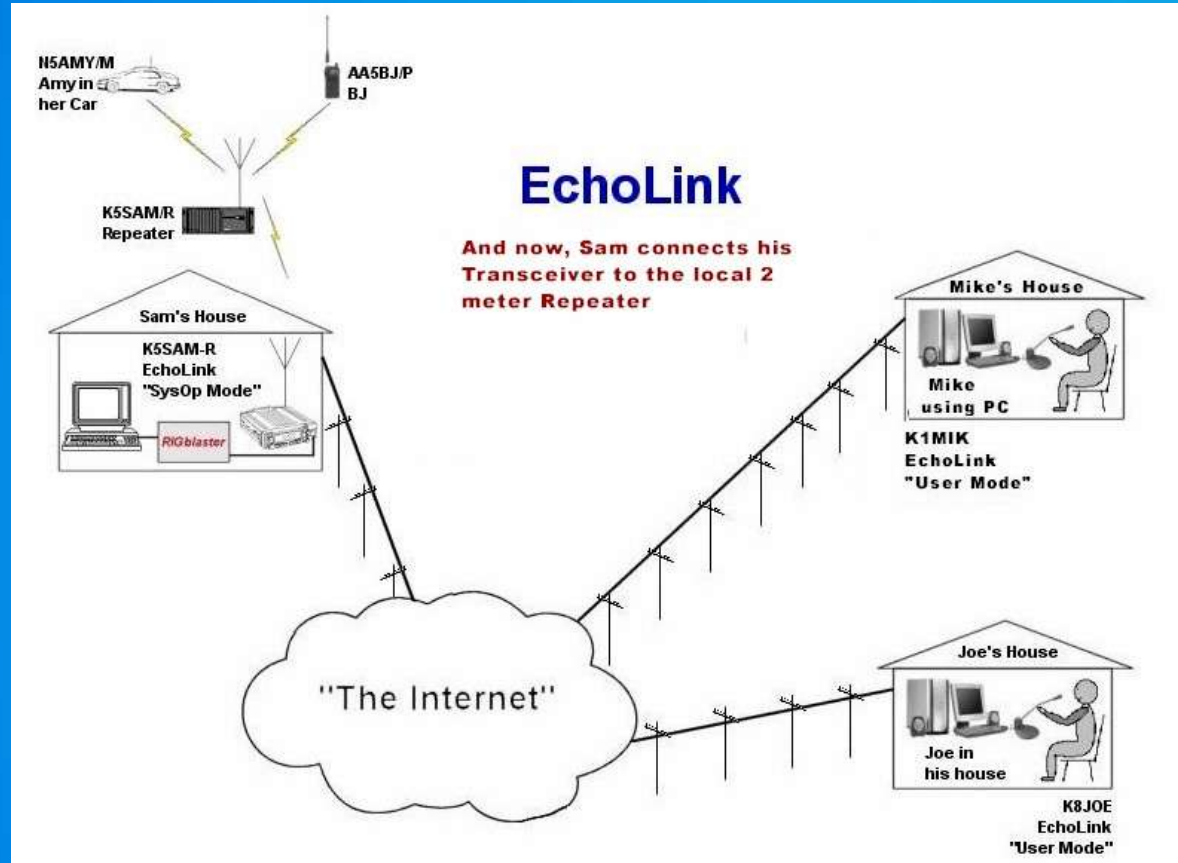
# Expanding the "Link"

## EchoLink

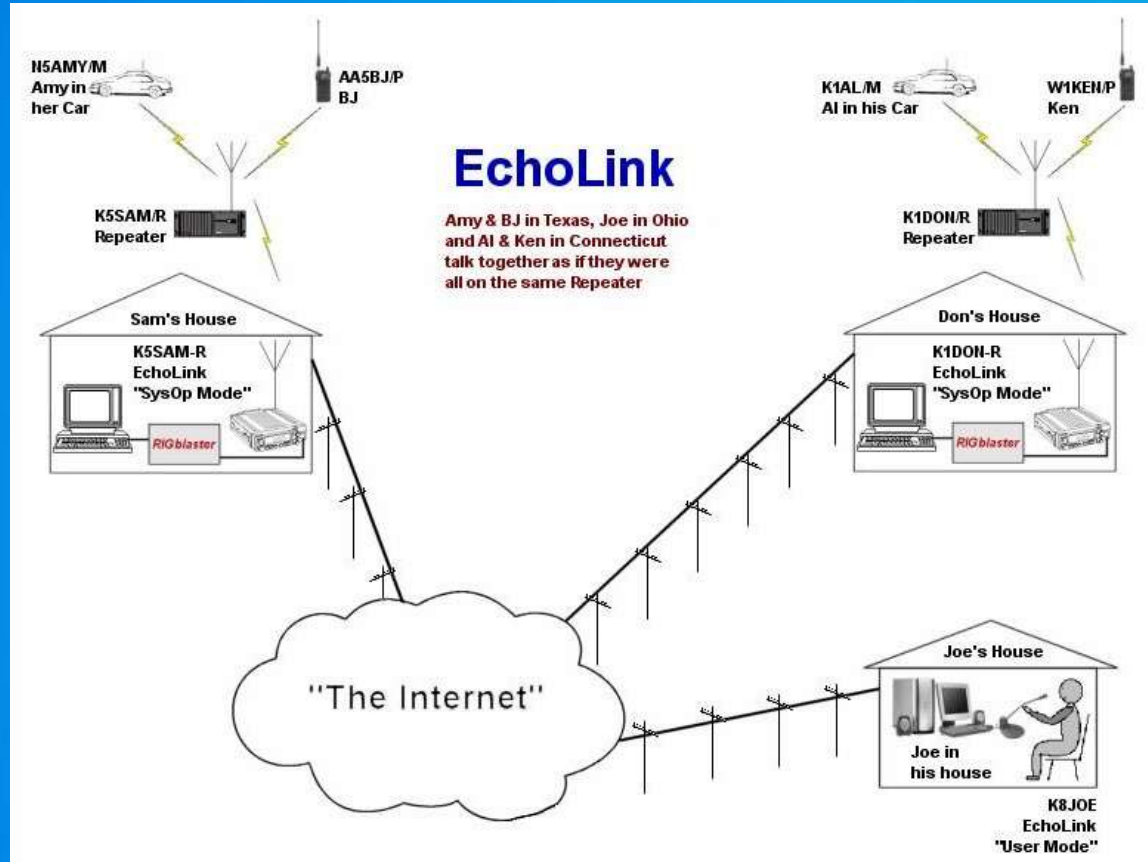
Sam now takes his HT - also tuned to 145.600 and goes into his back yard to operate.



# Adding a Repeater



# Bringing it all Together





# EchoLink Server Architecture

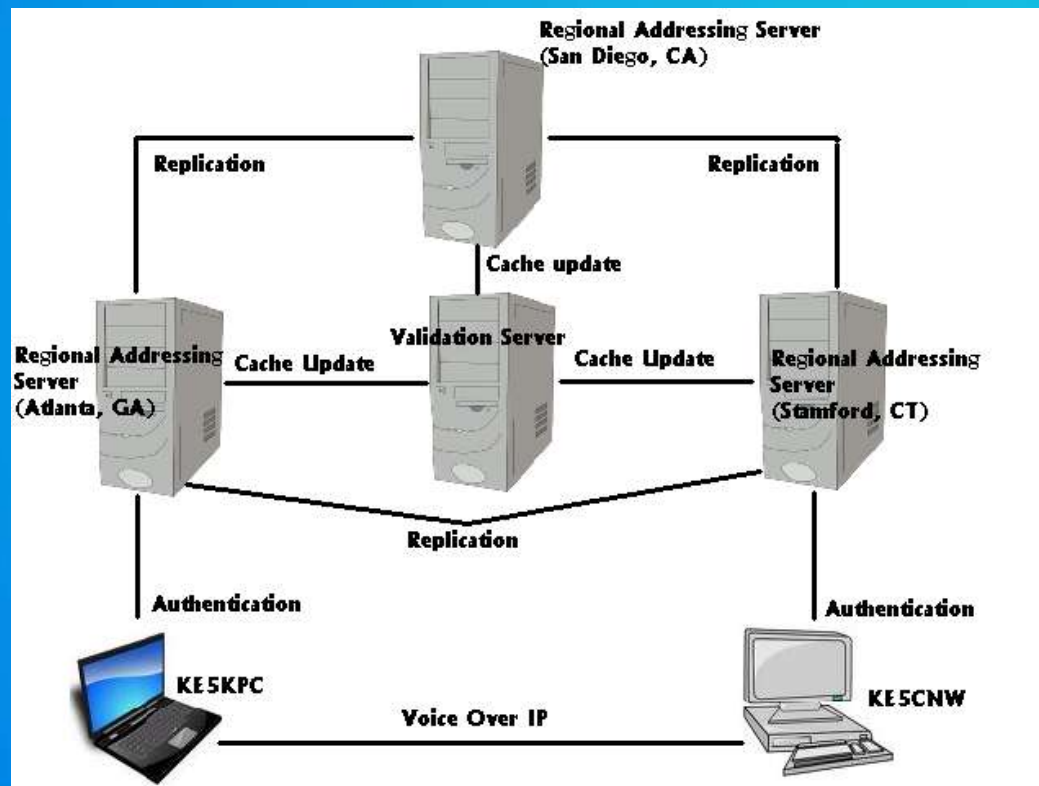
---

EchoLink stations communicate directly with each other over the internet. This type of communication is called peer-to-peer. However, it will be impossible for each station to keep track of all the users of EchoLink and who is currently signed on. To help solve this problem, EchoLink has set up regional servers that provide help in keeping track of who is on and keep access restricted to authorized user. The servers provide:

- Authentication: identifying the user and making sure they are who they say they are
- Access Control: Determines if the user is allowed to use the system
- Discovery: keeps track of all the user currently signed on
- Location: keeping track of the Internet address of each station.

# EchoLink Server Architecture

There are several of these servers through out the country. Each one is connected to the other and share information continually. If for some reason a server fails, the others pick up the slack and take over. This setup also allows for the addition of more servers to handle more users if needed



# Rules

---

Keep in mind that all the rules you have to comply with on the radio also apply to EchoLink.

- You must ID your station at least every 10 minutes and then at the end of your QSO.
- You must operate within your license class.

# What Equipment You Need

---

To use EchoLink you will need:

1. A computer with access to the internet
2. A sound card in the computer
3. A microphone for the computer
4. Speakers
5. EchoLink installed and validated

# Installing the Software

Go to [www.echolink.org](http://www.echolink.org) and click on "Download"



## Introducing EchoLink

[Take a Tour](#)  
[Download](#)  
[Validation](#)  
[Interfaces](#)  
[Support and FAQs](#)  
[Help Files](#)  
[News and Tips](#)  
[Vanity Node Numbers](#)  
[Routers and Firewalls](#)  
[Current Logins](#)  
[Link Status](#)



[ARRL Book on Internet Linking](#)

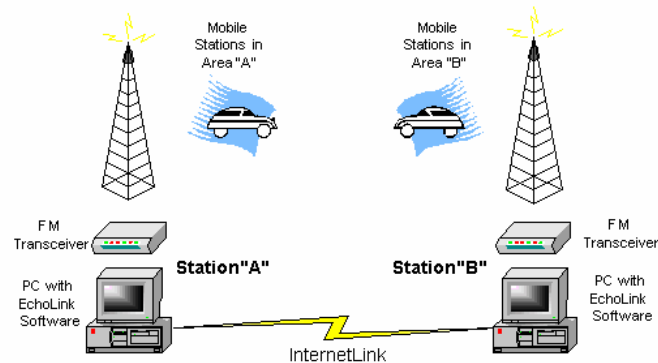


[Nifty E-Z Guide](#)

**NEW** [Windows 7 and Windows Vista Information](#)

EchoLink® software allows licensed Amateur Radio stations to communicate with one another over the Internet, using streaming-audio technology. The program allows worldwide connections to be made between stations, or from computer to station, greatly enhancing Amateur Radio's communications capabilities. There are more than 200,000 validated users worldwide – in 162 of the world's 193 nations – with about 5,000 online at any given time.

## Linking Example



# Installing the Software

---

Enter in your call sign and email address  
Click on "Submit"



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[Link Status](#)



[ARRL Book on  
Internet Linking](#)

## Download EchoLink

EchoLink® software is offered free of charge to licensed Amateur Radio operators worldwide, for Amateur Radio use only. Please note that **you must hold a valid Amateur Radio license** in order to use EchoLink. After installing the program, you must provide proof of license if you wish to use it; see [Authentication](#) for more information.

Please register by entering your callsign and e-mail address below. Then, choose Submit for instructions on how to download.

Callsign:

E-Mail Address:

# Installing the Software

- Click on “EchoLinkSetup\_2\_0\_908.exe” (or latest version)
- This will open another window
- Then click “Run” and then follow the directions.
- Once the program is installed, run the program.



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[Current Logins](#)  
[Link Status](#)



[ARRL Book on Internet Linking](#)

## Download EchoLink

[EchoLinkSetup\\_2\\_0\\_908.exe](#)

Version 2.0.908

Size: 2.8 MB

This is a self-extracting installer, which installs the program and the help file. Download this file to your hard drive and then open it to begin installation. After installing, you can run EchoLink from the Programs section of your Start menu.

If you are upgrading from an earlier version of EchoLink, do not un-install or delete your existing software. Simply download and install the new version, and the software will be upgraded automatically, retaining all of your existing settings.



[Click Here to Download](#)

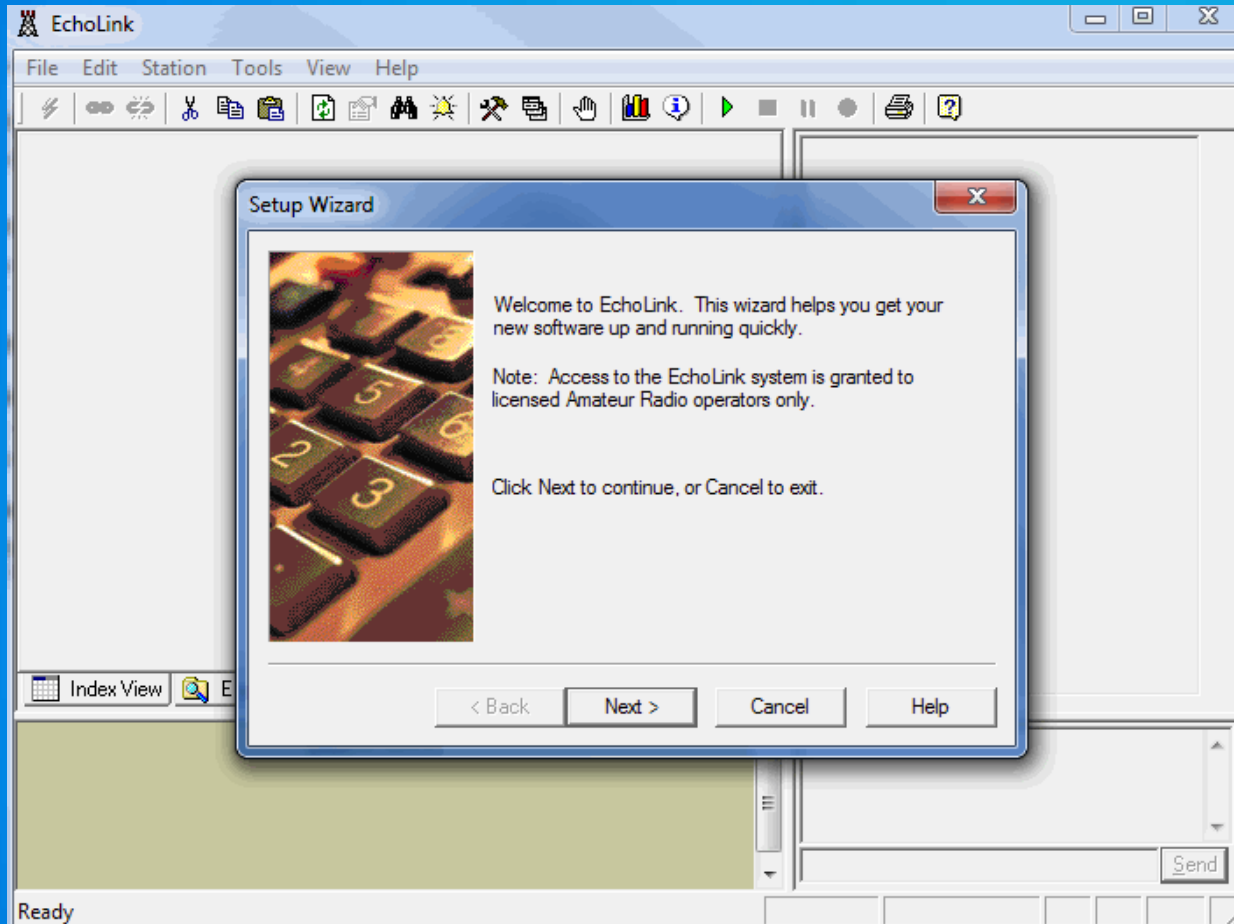
Proof of license is required for all new EchoLink users. After downloading and installing the software, please run it to register your callsign with the system. Then, to begin the validation process, click [here](#).

[Prior Version](#) | [New Features](#) | [Upgrade Notes](#) | [Windows 95 Notes](#) | [Installation Help](#) | [Other Downloads](#)

Note: If you have difficulty installing on Windows 2000 and older Windows versions, you may need to first update your Windows Installer system; download and run one of the links below.

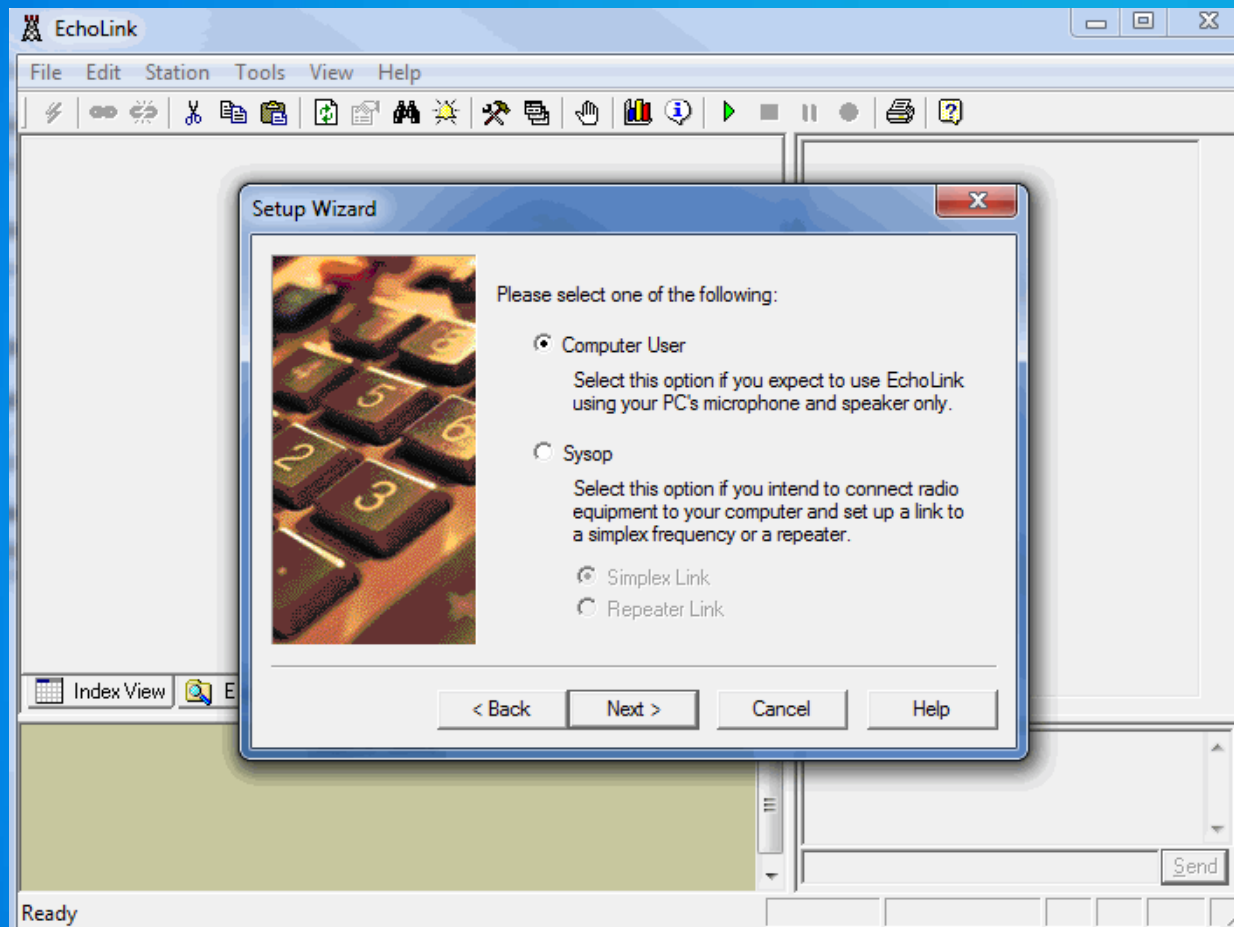
- [Windows Installer for Windows 95/98/ME](#)
- [Windows Installer for Windows NT and Windows 2000](#)

# Installing the Software

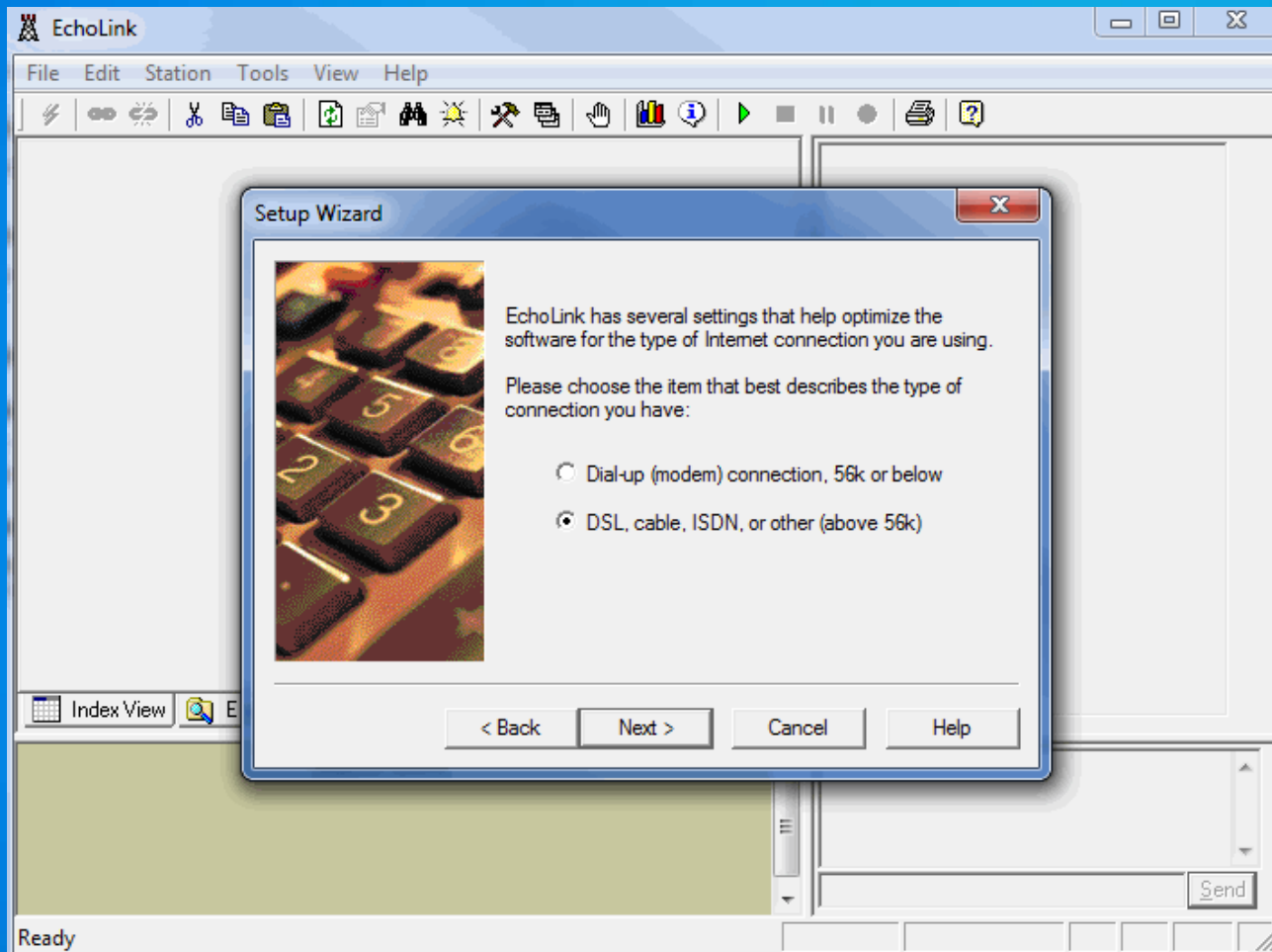




# Installing the Software



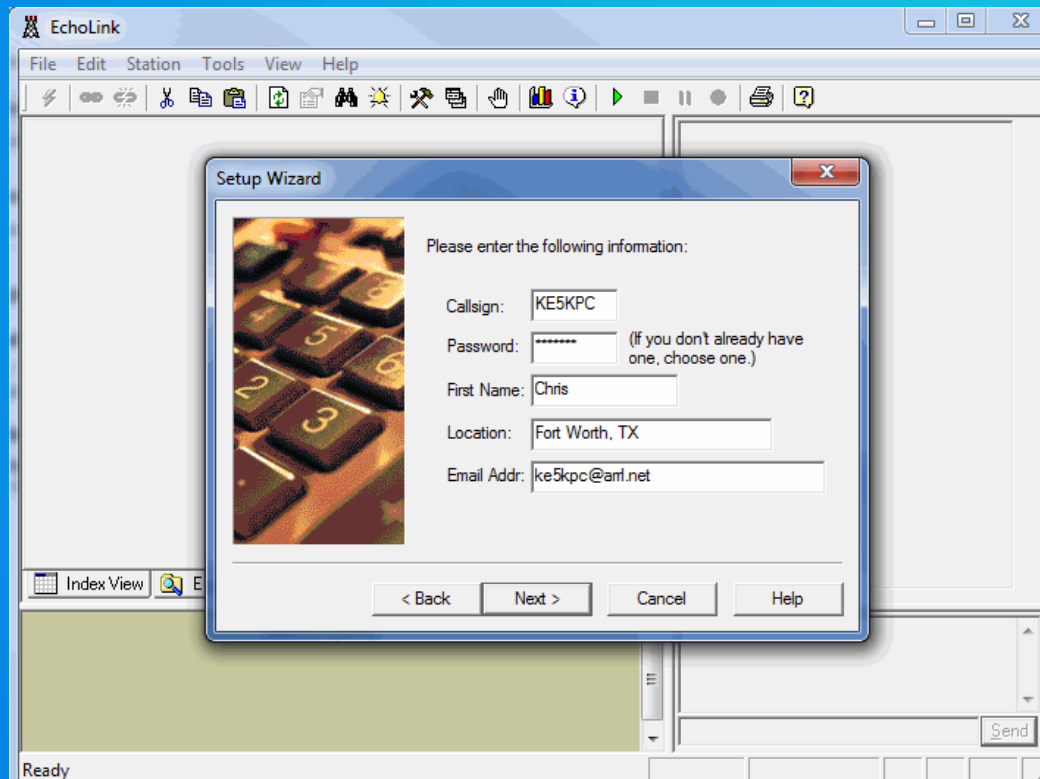
# Installing the Software



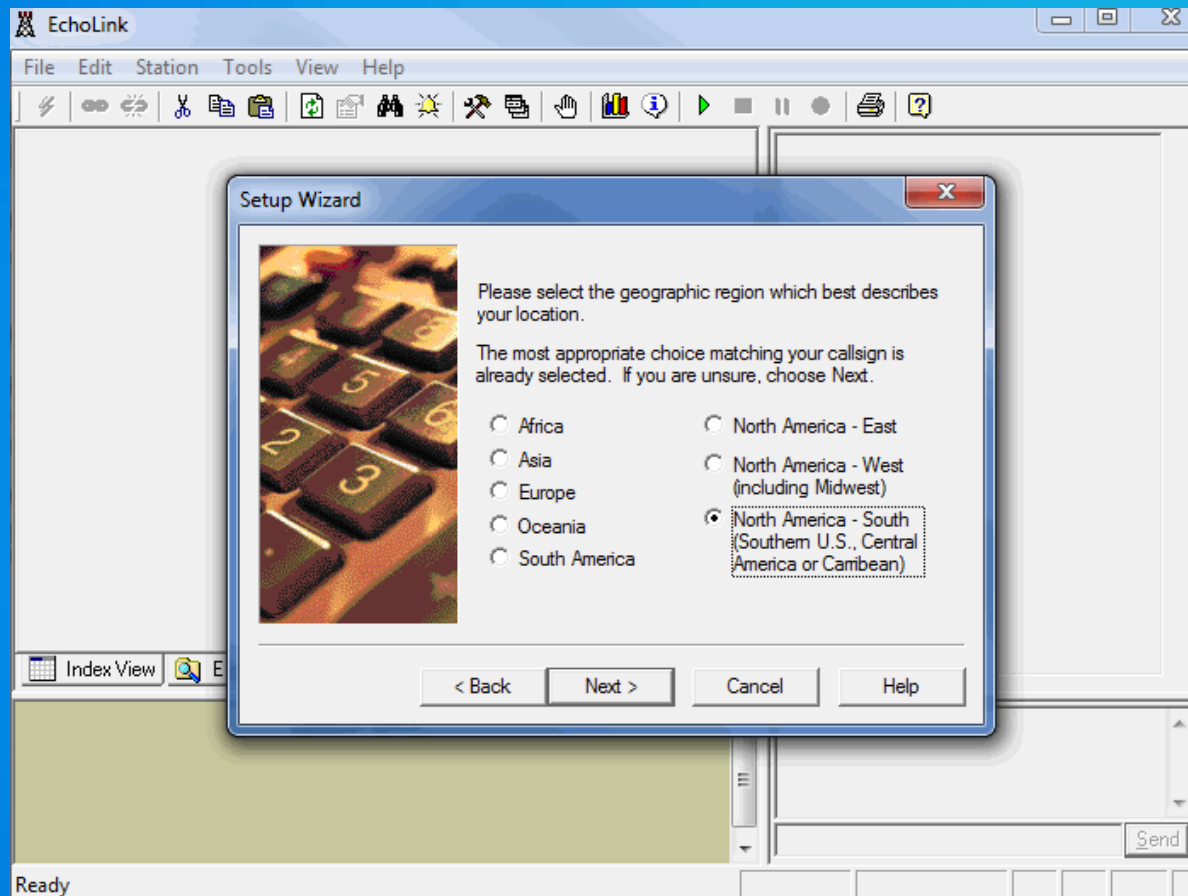
# Installing the Software

You must enter in a valid call sign and email address. This is part of the verification process.

Also, enter a password that you can remember.

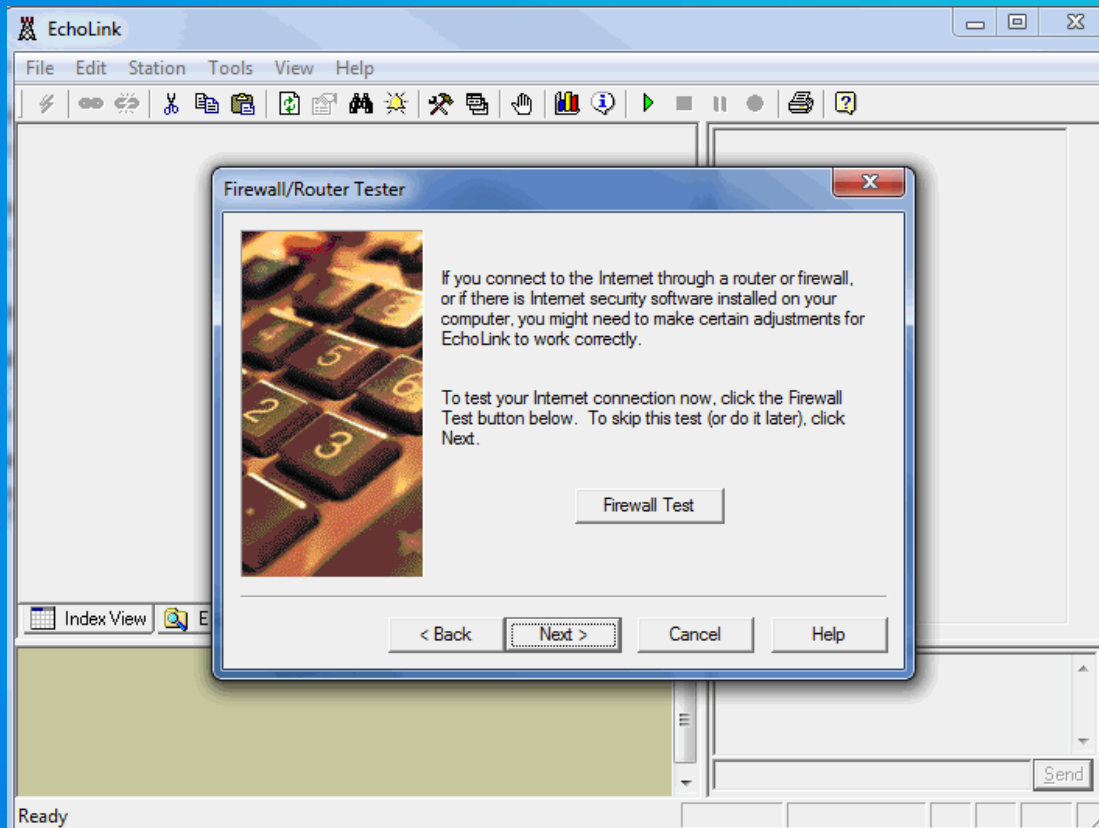


# Installing the Software



# Installing the Software

**This is an important step:** Click on “firewall test”. This will make sure that EchoLink will be able to connect to the server and allow you to communicate.

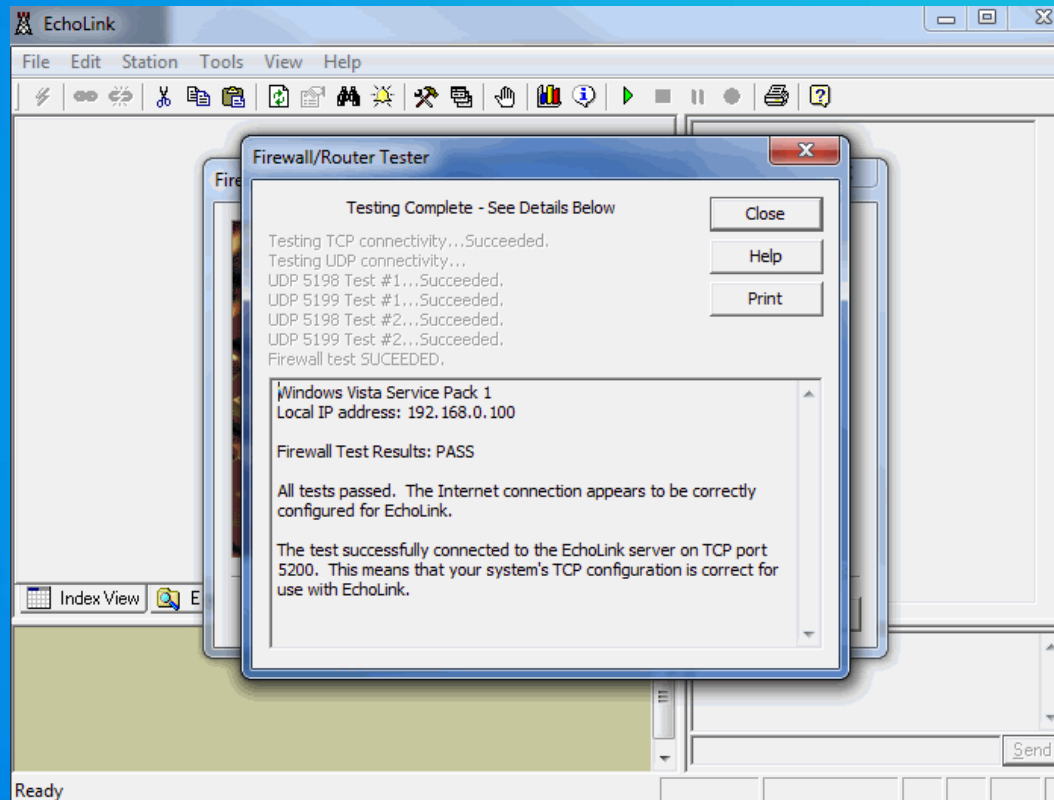


# Installing the Software

If for some reason any of the tests have failed you will have to configure your router to port forward

Allow UDP destination ports 5198-5199 between Internet and PC in both directions

Allow TCP (source port any, destination port 5200) from PC to Internet



# Installing the Software

---

With so many different routers and equipment out there, it will be impossible to list how to configure each one. You are going to have to do some reading on how to configure yours.

EchoLink has a few links to get you started

[http://echolink.org/firewall\\_solutions.htm](http://echolink.org/firewall_solutions.htm)

<http://echolink.org/firewall-friendly.htm>

The link below is another place to start. It is also found on EchoLink's page

[http://portforward.com/english/applications/port\\_forwarding/Echolink/Echolinkindex.htm](http://portforward.com/english/applications/port_forwarding/Echolink/Echolinkindex.htm)

# Installing the Software

---

Congratulations you have installed the program.

However you are not finished just yet

When you click “Finish” you are going to have to validate your call sign- otherwise you will not be allowed to use EchoLink





# Installing the Software

---

You received this message after you clicked “Finished”.



# Installing the Software

---

Return back to EchoLink's website to begin your validation.

<http://echolink.org/validation/>

Enter in your call sign



## Validation

EchoLink opens a world of new communications possibilities by joining Amateur Radio stations over the Internet. Since the Internet is a shared, public resource, security is naturally a very important part of the system.

Each new user of EchoLink must provide proof of license before access is granted. This is to ensure that only licensed Amateurs have access to the system, and to ensure that each user is using a valid callsign that he or she is authorized to use.

There are several different ways you can provide proof of license. These options vary somewhat by country. The various options will be explained on the pages that follow.

First, please be sure that you have downloaded, installed, and **run** the EchoLink software. This registers your callsign with the system. Then, please enter your callsign below, and click Continue.

Callsign:

# Installing the Software

Make sure your call sign is selected, and then

Enter in your E-Mail Address



## Validation - Choose Callsign

The callsign you entered is:

EchoLink can be set up with any of several different callsign suffixes. The callsign **Your Call** (with no suffix) is used in Single-User mode, and the callsign **Your Call-L** or **Your Call-R** are used in Sysop mode. (Sysop mode requires connecting a radio to your computer's sound card using a special interface device.) Each of these three is considered a separate callsign, and must be validated separately for EchoLink.

The following callsign(s) are registered with EchoLink:

Callsign	Status	Date Registered (UTC)
<input checked="" type="radio"/> <b>Your Call</b>	Ready for validation	30-Mar-2011

From the list above, please choose the callsign you wish to validate.

Enter your **current, valid e-mail address** in the box below.

E-Mail Address:

When you click "Request Validation" below, EchoLink will verify this e-mail address.

# Installing the Software

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After you have clicked "Submit". Wait a few minutes- then go check your email

You are going to receive a message similar to the one below. Click the link provided. If it doesn't work- just highlight the link- then copy and paste to your browser.

\*\*\* This is an automated response. \*\*\*

This message is to confirm your request for EchoLink Validation.

To verify your e-mail address and continue with the Validation process, please click the URL shown below.

<https://secure.echolink.org/validation/em.jsp?ayhkcgm3dbdkn3bj6ahufittgldbyzekxsqw3n7vyc3zj7vemlr6fntu5b7p4k7cch4xtwnorceo>

(If the URL above isn't clickable, try copying it and pasting it into the Address bar of your Web browser.)

Thanks and 73,

EchoLink Validation

# Installing the Software

You have five different options to choose from on how you want to validate your call sign.



## Validation - Choose Type

Callsign: **Your Call**  
Country: **United States**

There are several different ways you can authenticate yourself for EchoLink, so that this callsign can be validated. Please choose *one* of the methods below for more information.

Please choose **one** of the validation methods below:

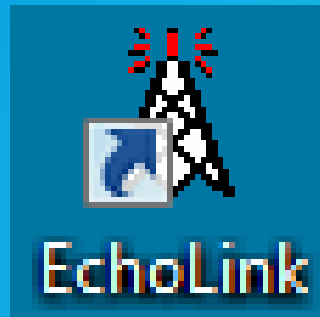
<a href="#">Telephone</a>	From your home phone, call a special telephone number to authenticate yourself.
<a href="#">Credit Card</a>	Match your credit card billing name and address with your FCC-registered mailing address. (There is a \$1.00 fee for this option.)
<a href="#">Scan and Upload</a>	Scan or photograph a copy of your license document and upload it online.
<a href="#">Fax</a>	Send a copy of your license document using a fax machine.
<a href="#">Digital Signature</a>	Use your ARRL Logbook Of The World digital certificate.

# Using EchoLink

---

Now that you have the program installed and have your call sign validated, you are able to use EchoLink.

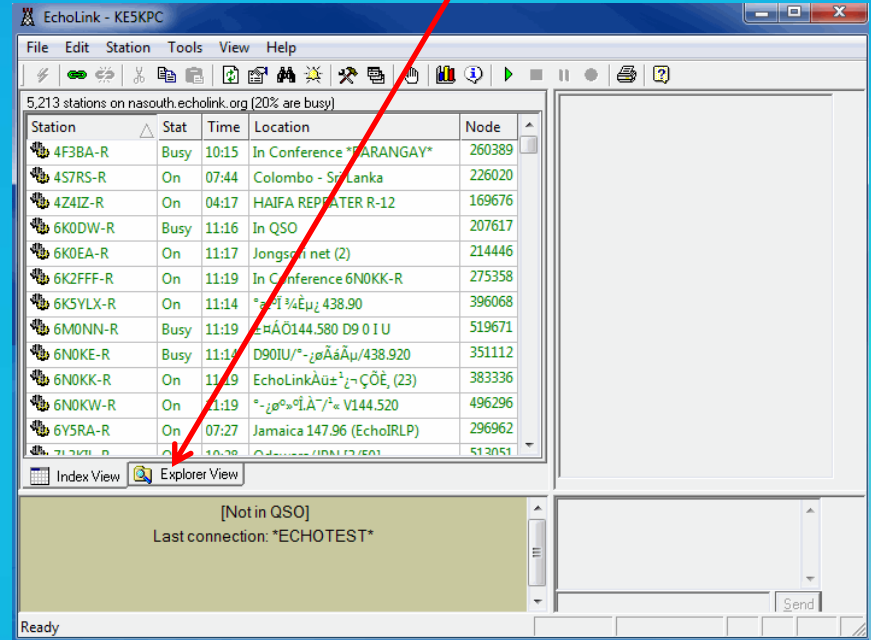
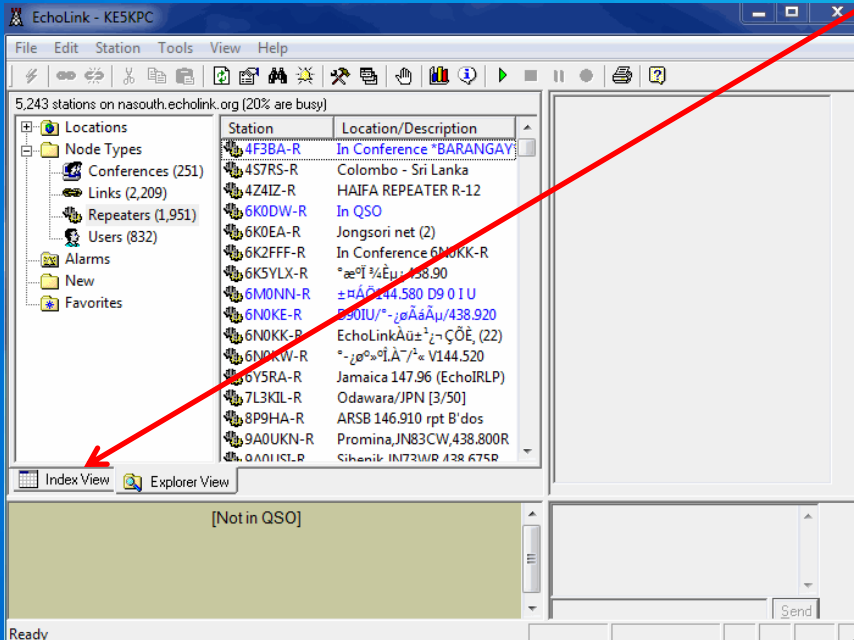
So lets get started!



Open the program using the EchoLink Icon

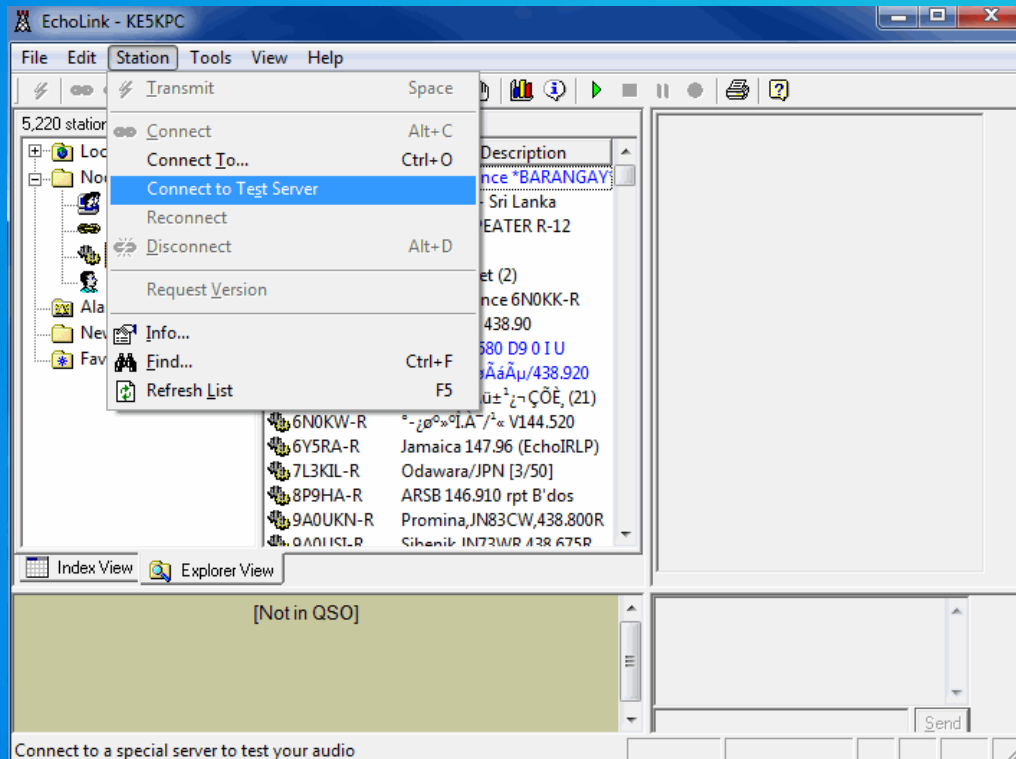
# Using EchoLink

One of these is the first screen you will see once the program is up and running. To switch between the two, click on index view or explorer view



# Using EchoLink

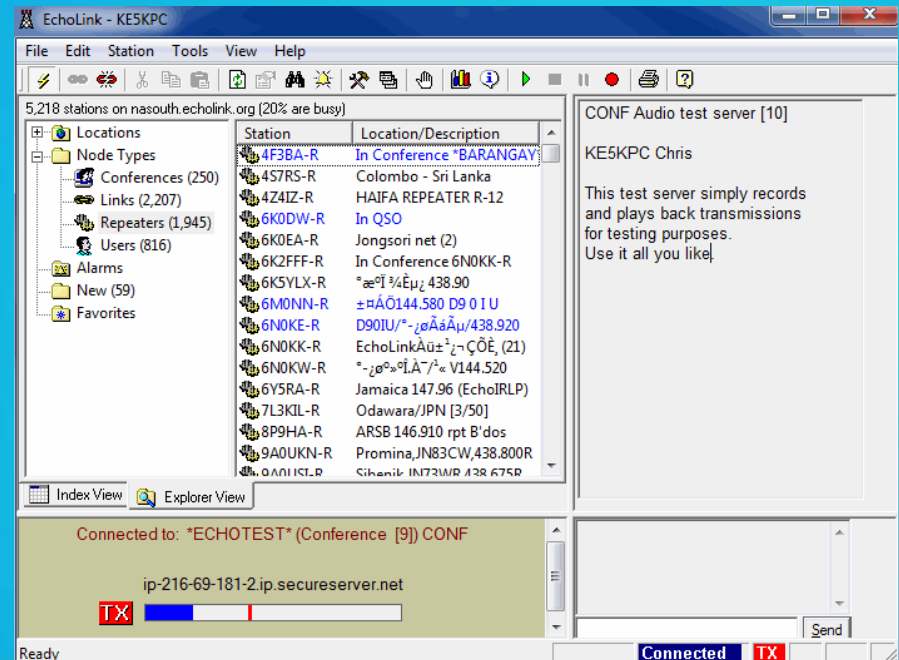
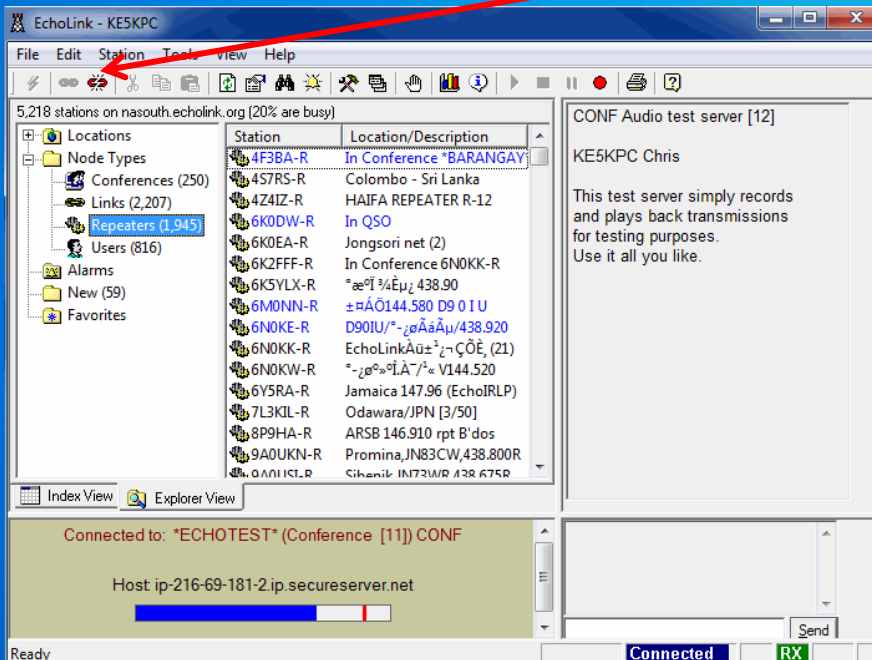
- Since this is the first time you are using the program, you will want to connect to the test server to see if you have all of your equipment set up correctly. Click on the “Station” tab then “Connect to Test Server”
- This will allow you to record a statement and then listen to it.





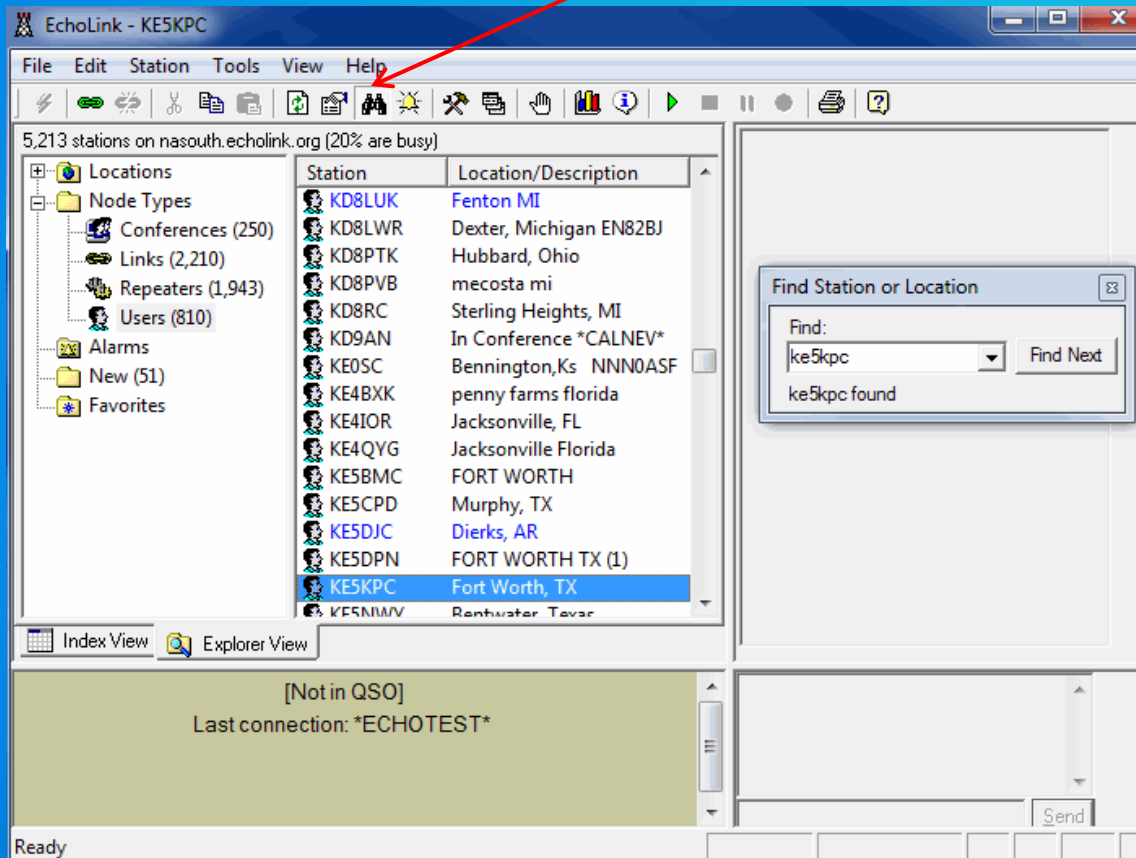
# Using EchoLink

- To make a test recording, push the space bar, make your recording, then push the space bar again.
- The image on the left is what it looks like when you are receiving.
- The right image is when you are transmitting.
- Once you are finished with your test click on the red link to disconnect from the test server.



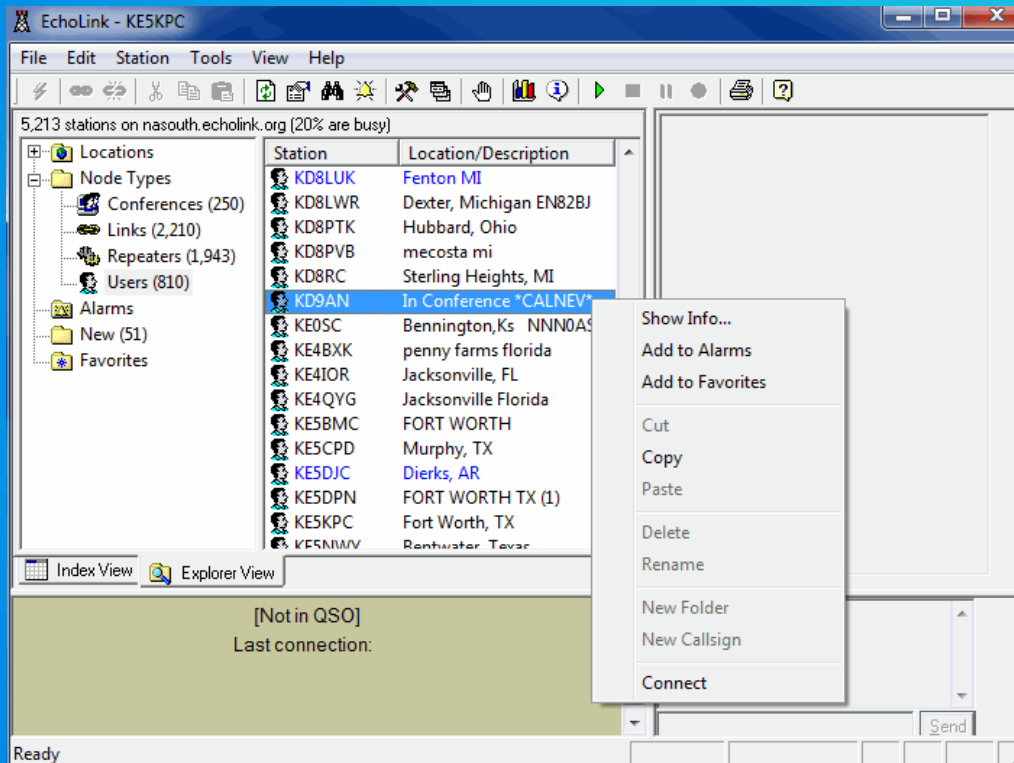
# Using EchoLink

- To find a station, click on the “binoculars”
- Then type the station name in the search box.



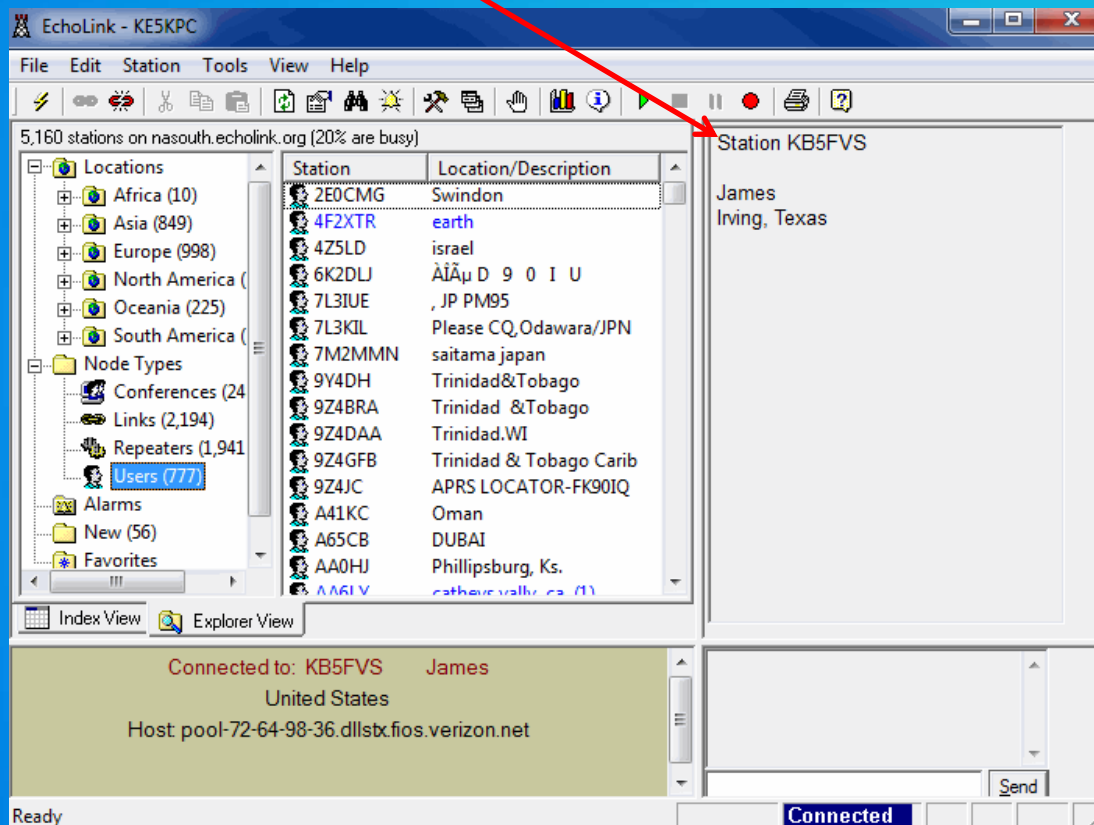
# Using EchoLink

- Once you have found the station you are looking for, you are going to have to connect to it to make a contact. There are 2 ways to do that:
  1. you can double click on it
  2. right mouse and then connect



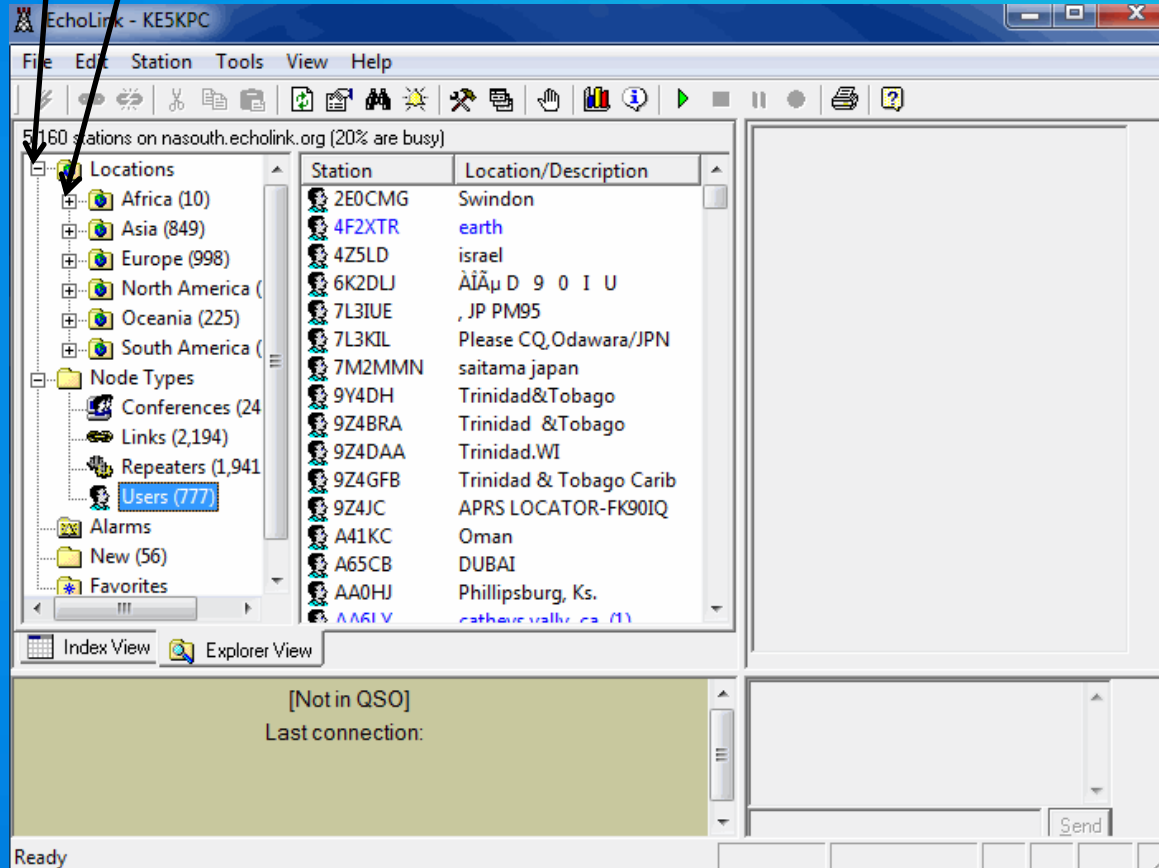
# Using EchoLink

- Once connected:
  - Use the space bar as PPT (push once to talk, push again to listen)
  - You will see a list in right column of stations connected to the station



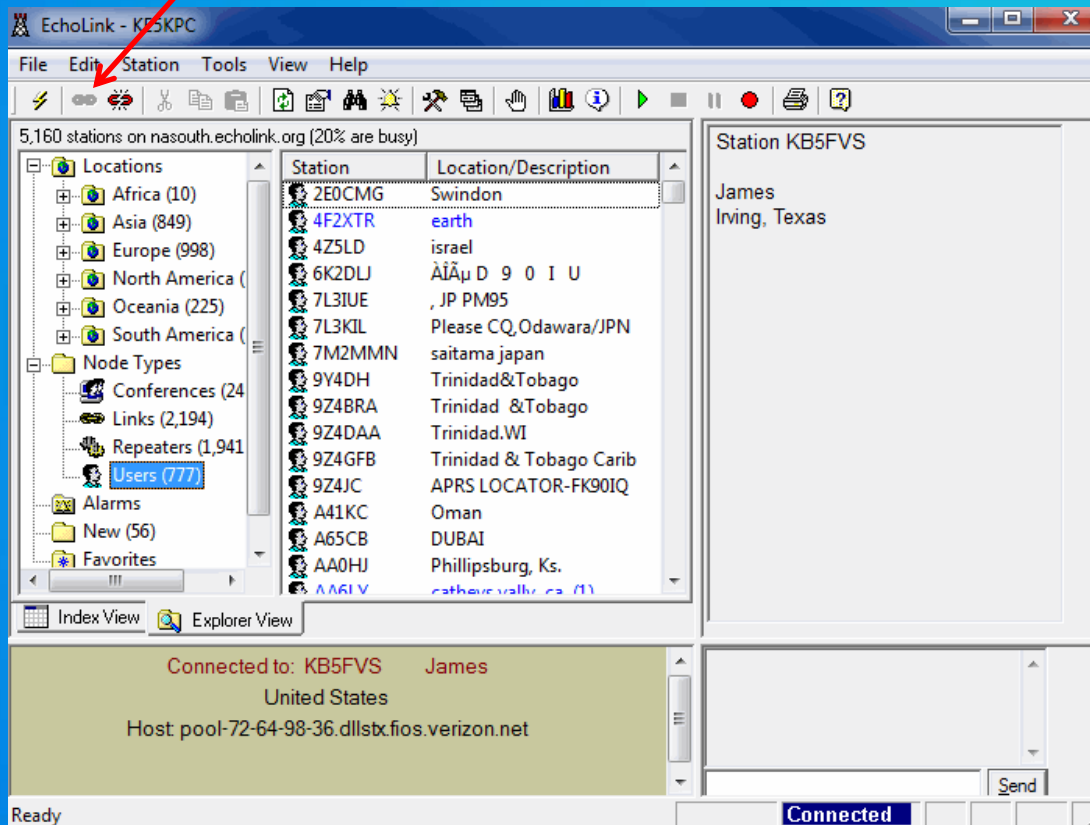
# Using EchoLink

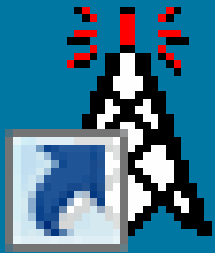
- Or if you want to find a new station you can search in the left column by areas
- Click in the - or +. This will expand or collapse the areas



# Using EchoLink

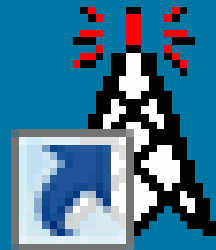
- After you have finished your QSO:
  - Click on the red link
  - Or just close the program





EchoLink

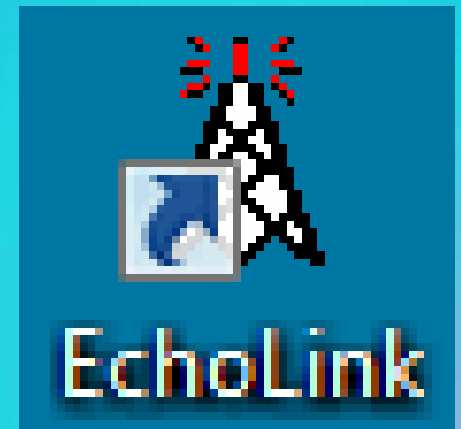
# Questions??



EchoLink



# The End





# References

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Program Homepage  
[www.echolink.org](http://www.echolink.org)

Program Support Page  
<http://www.echolink.org/support.htm>

VoIP Internet Linking for Radio Amateurs  
<http://www.arrl.org/shop/VoIP-Internet-Linking-for-Radio-Amateurs/>

<http://itunes.apple.com/us/app/echolink/id350688562?mt=8>

<http://www.appbrain.com/app/echolink/org.echolink.android>

<http://groups.yahoo.com/group/echolink/>