



**January 2014
FRRRL Program
AH6EZ**

www.irlp.net /pi

IRLP - Internet Radio Linking Project - Mozilla Firefox

File Edit View History Bookmarks Tools Help

IRLP - Internet Radio Linking Project

www.irlp.net

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In The News
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**Welcome to the Official Home of
IRLP**
The Internet Radio Linking Project

IRLP - Keeping the Radio in Amateur Radio

EMBEDDED IRLP
[Click here for](#) a complete, low power,
IRLP solution!

 [CLICK for IRLP](#)
interactive node mapping

****NEW** - Check out the new [IRLP Topic Channels](#) on a reflector near you! You can also view the [live status of all IRLP Topic Channels](#).**

The aim of this project is to reliably and inexpensively link amateur radio systems without the use of RF links, leased lines, or satellites.

The IRLP uses Voice-Over-IP (VoIP) custom software and hardware. Coupled with the power of the Internet, IRLP will link your repeater site or simplex station to the world in a simple and cost effective way.

IRLP operates a worldwide network of dedicated servers and nodes offering very stable worldwide voice communications between hundreds of towns and cities. All this with unsurpassed uptimes and the full dynamic range of telephone quality audio.

[Click Here](#) for a list of IRLP systems featuring live streaming audio.

[IRLP En Espanol](#) [El Reflector espanol](#)

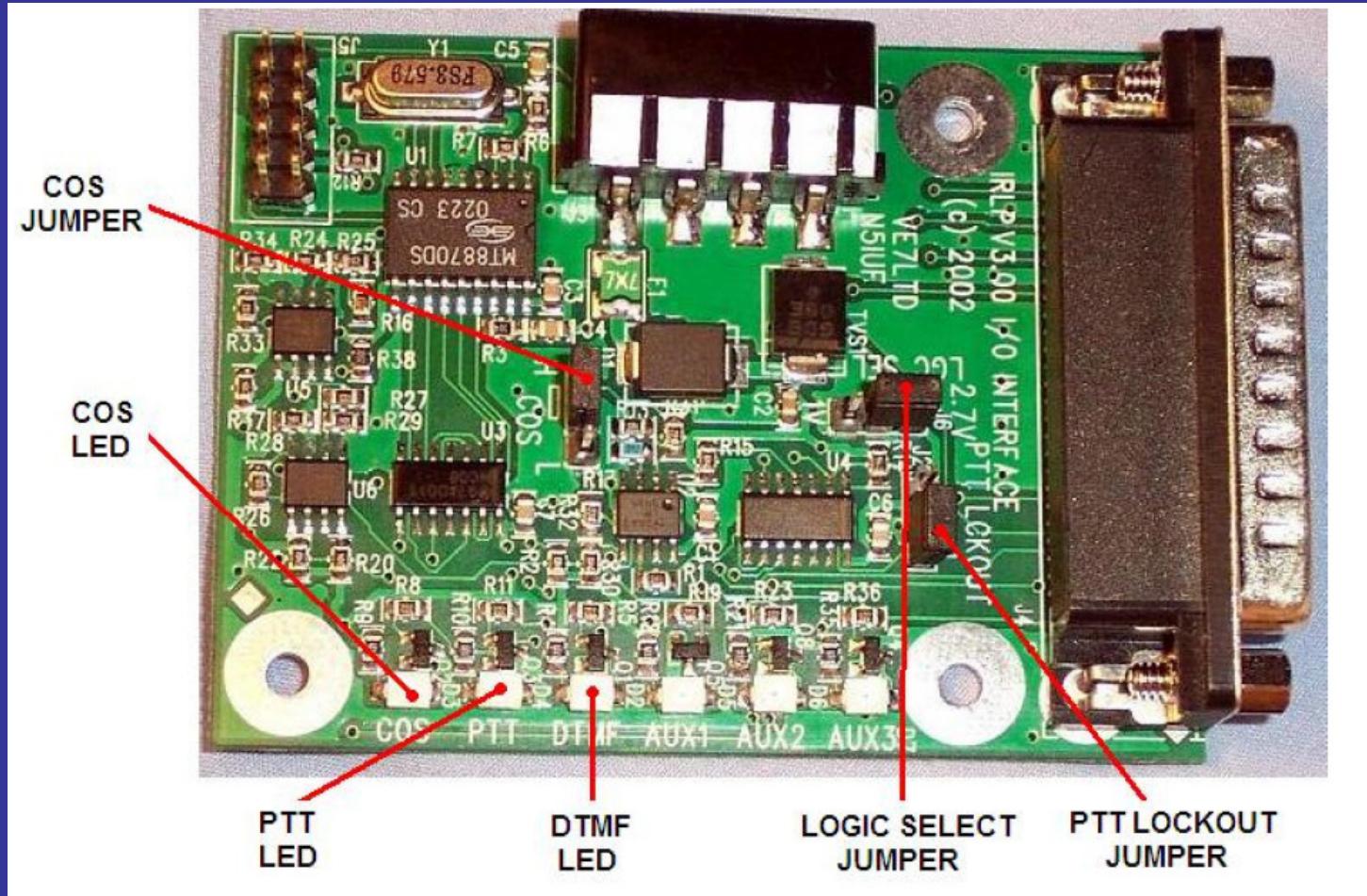
Enjoy IRLP and please "Pass the Word"

If left menu bar is not visible, [click here](#)
last updated March 12, 2010
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Go Back Print this Page

10:00 PM
12/26/2013

IRLP board (normally \$300)



www.echolink.org

Introducing EchoLink - Mozilla Firefox

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Introducing EchoLink

www.echolink.org

Google

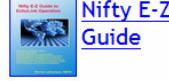
Available on the App Store

iPhone FAQ
Android FAQ

 Introducing EchoLink

[Take a Tour](#)
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[Interfaces](#)
[Support and FAQs](#)
[Help Files](#)
[News and Tips](#)
[Vanity Node Numbers](#)
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[Link Status](#)

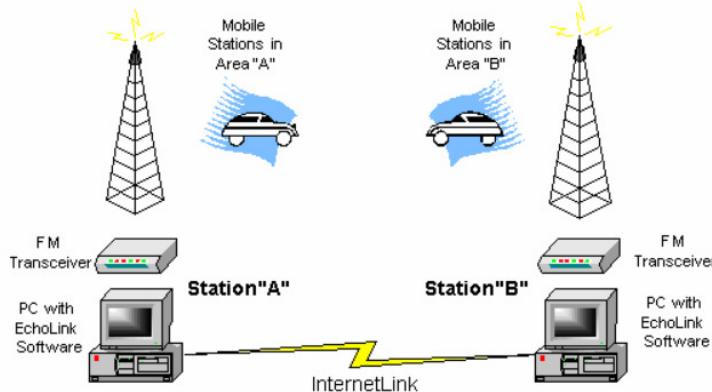

[ARRL Book on Internet Linking](#)


[Nifty E-Z Guide](#)

[NEW Windows 7, 8, and 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 151 of the world's 193 nations — with about 5,200 online at any given time.

Linking Example



Mobile Stations in Area "A"

Mobile Stations in Area "B"

FM Transceiver

PC with EchoLink Software

Station "A"

InternetLink

Station "B"

FM Transceiver

PC with EchoLink Software

10:05 PM
12/26/2013

IRLP vs Echolink

- Radio-Radio Only
- \$300 for IRLP board
- 1645 nodes
- 49 states
- 35 countries
- 4 digit node numbers
- Higher audio quality
- Verified by on the air
- Radio-Radio
- Radio-Computer
- Computer-Computer
- Free: computer, soundcard
- 5428 nodes (RT, Link, PC)
- 50 states?
- 87 countries
- 6 digit node numbers
- iPhone, iPad, Android apps
- Windows, Linux, Mac apps
- Less standardized audio
- Verified by copy of license

Echolink iPad app

The image displays two screenshots of the Echolink iPad app. The left screenshot shows the main interface for station GB3BN-R, located in Bracknell, Berks, UK. It includes a transmit button, a volume slider, and a bottom navigation bar with icons for QSO, Text, Stations, Favorites, and Settings. The right screenshot shows a list of countries in Europe, each with a flag and the number of nodes. Both screenshots show the AT&T network, battery level, and time (10:37 PM and 8:11 AM respectively) at the top.

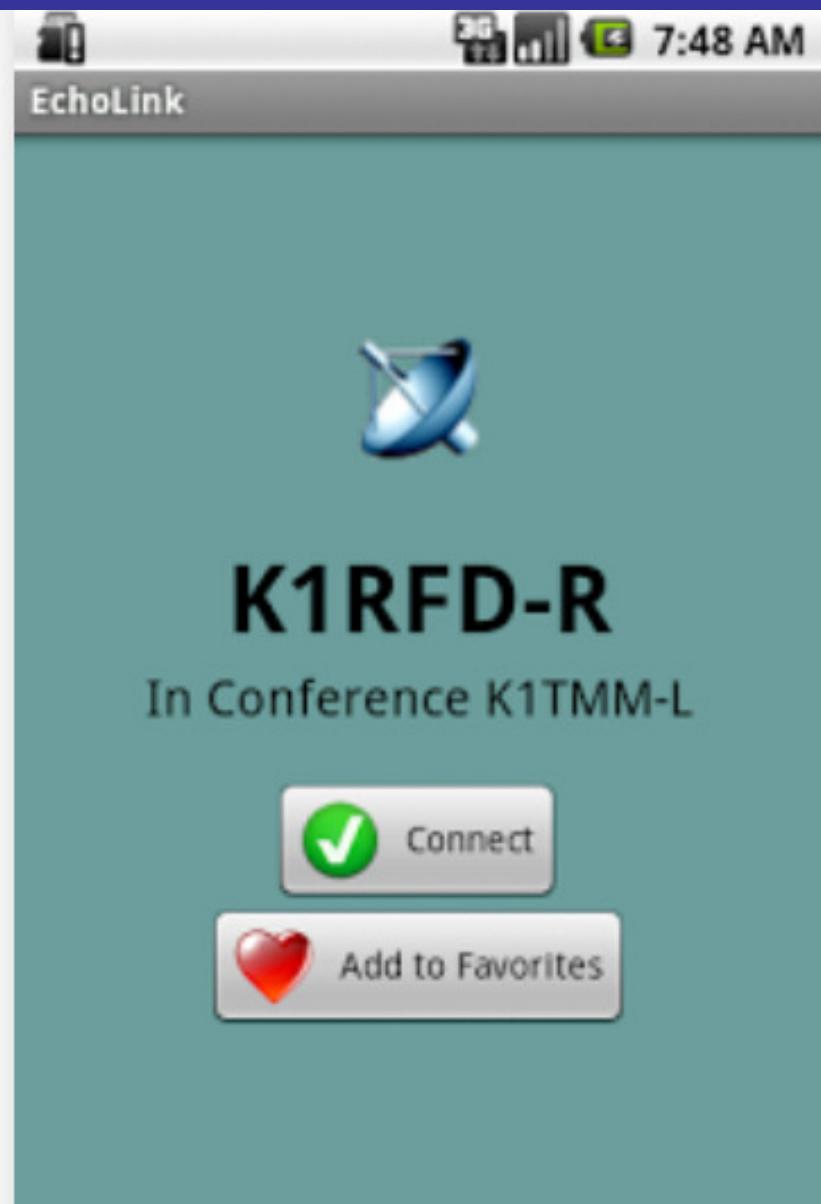
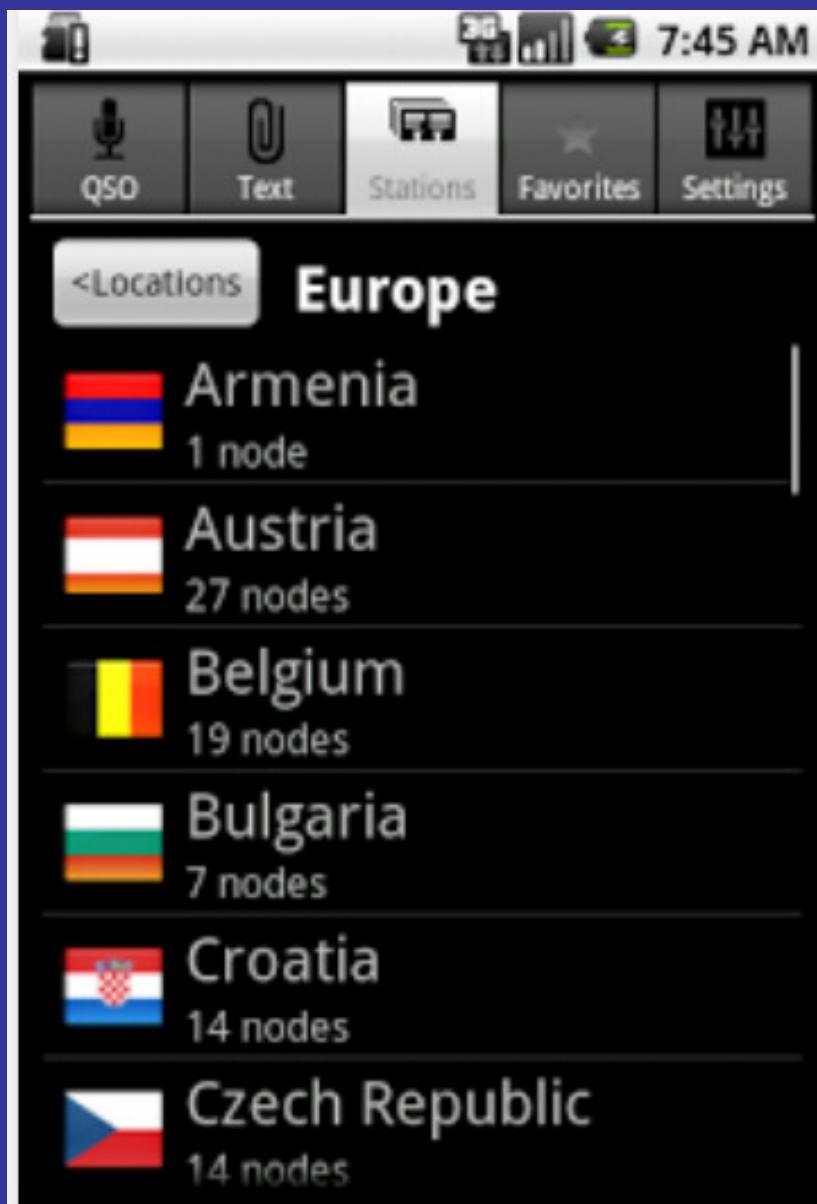
Left Screenshot (GB3BN-R Station Page):

- AT&T 10:37 PM
- GB3BN-R
- Bracknell, Berks, UK
- Bracknell UHF, Berkshire, UK
- Receive frequency 434.600Mhz
- Transmit frequency 433.000Mhz
- CTCSS 118.8Hz (or 1750Hz tone after 0.5s carrier only)
- Providing coverage within the
- Transmit End
- QSO Text Stations Favorites Settings

Right Screenshot (Europe Locations Page):

- AT&T 8:11 AM
- Locations Europe
- Search by callsign or partial call
- Andorra 1 node
- Armenia 1 node
- Austria 34 nodes
- Belarus 2 nodes
- Belgium 29 nodes
- Bosnia-Herz 2 nodes
- Bulgaria 16 nodes
- Croatia
- QSO Text Stations Favorites Settings

Android Echolink app



Windows Echolink

EchoLink - AH6EZ

File Edit Station Tools View Help

5,431 stations on nwawest.echolink.org (17% are busy)

Locations

- Africa (18)
- Asia (885)
- Europe (1,145)
- North America (2,704)
 - Antigua-Barbuda (1)
 - Aruba (1)
 - Canada (228)
 - Cuba (1)
 - Dom. Republic (9)
 - Jamaica (1)
 - Mexico (41)
 - Neth. Antilles (2)
 - St Kitts-Nevis (1)
 - Trin-Tobago (8)
 - United States (2,411)
- Oceania (176)
- South America (272)

Node Types

- Conferences (231)
- Links (2,217)
- Repeaters (2,151)
- Users (832)

Alarms

New (67)

Favorites

Name

Name
All Areas (2,411)
Area 0 (211)
Area 1 (145)
Area 2 (250)
Area 3 (153)
Area 4 (346)
Area 5 (284)
Area 6 (337)
Area 7 (284)
Area 8 (186)
Area 9 (215)

Index View Explorer View

[Not in QSO]
Last connection: W9CEQ-R

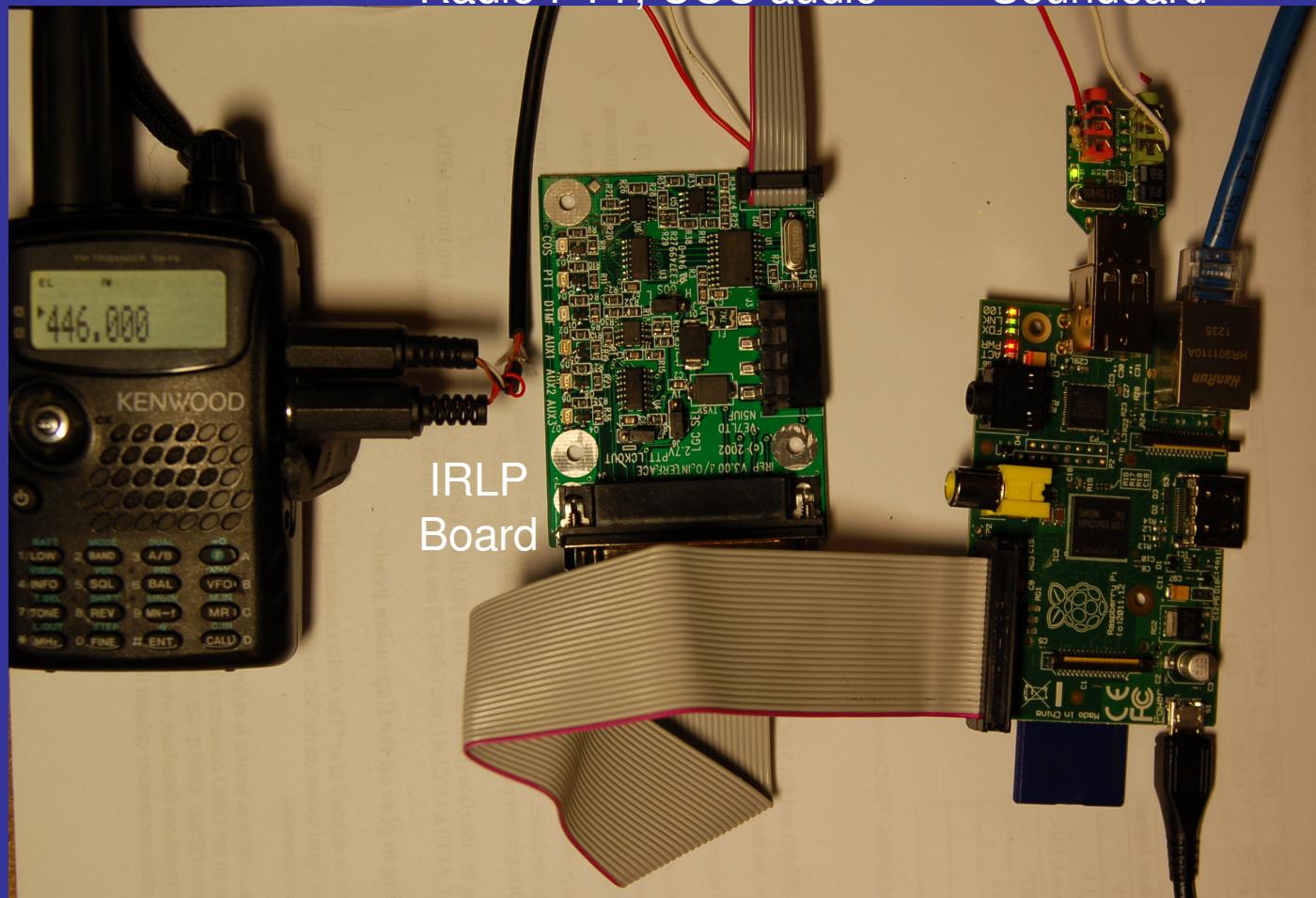
Ready

Send

FRRRL W9CEQ IRLP-Echolink

- UHF Repeater 444.3 114.8 at W9XA QTH
- IRLP node = 4850 since 2002
- Echolink node = 230933
- User guidelines:
<http://www.frrl.org/resources/FRRL%20ECHO-IRLP%20Operator%20Guide.pdf>
- Access IRLP= enter NNNN node
- Access Echolink = enter #NNNNNN node
- Disconnect = enter 73

piRLP Node (\$270 complete)



Node
Radio

Radio PTT, COS audio

USB
Soundcard

Ethernet

IRLP
Board

Raspberry pi
Model B

Parallel to GPIO cable

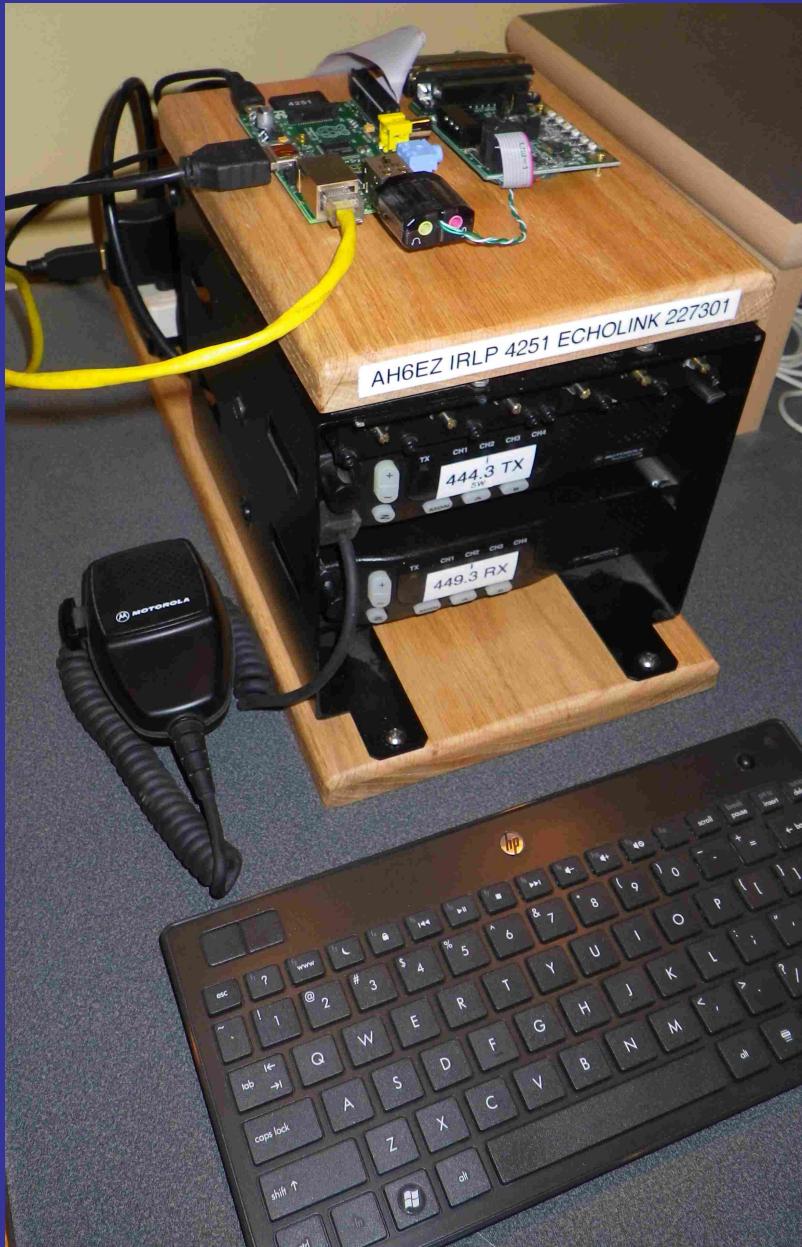
8GB SD card

5v micro USB
Wall transformer

My piRLP Node

12v 9A power supply
5v 1.5A power supply

to HDMI Monitor
or VGA w/adapter
(optional, can SSH)

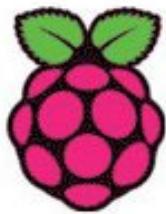


Duplexer, 15W load

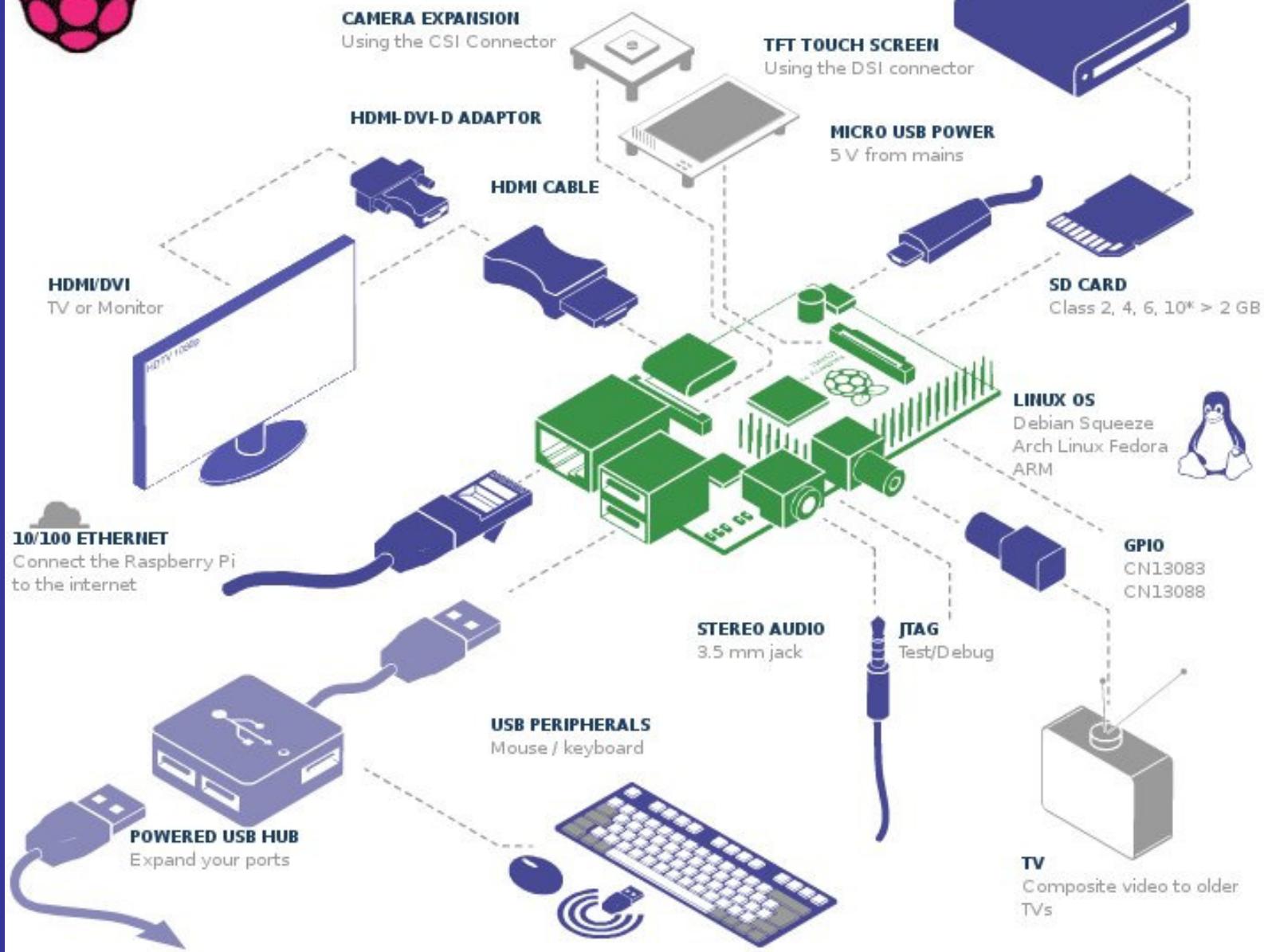
Motorola M1225 TX
(5/25 watts)
Motorola M1225 RX

Paired as Repeater

USB Keyboard w/track ball
(optional, can SSH)



Raspberry Pi



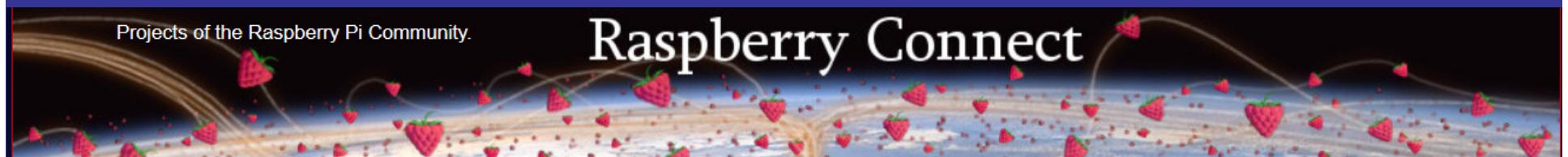
About Raspberry pi

- Started as programming motivator for children
- Over 1 million sold (\$35 each)
- Download Raspian Wheezy operating system
- Write from Win PC to SD card
- Insert SD card
- Plug in 5v power
- Do not interrupt power (may corrupt SD card)
- Do not hot plug/unplug USB or Ethernet
- Use powered USB hub if using keyboard/mouse
- Setup Putty for LAN remote control
- piRLP only boots to command line
- Raspian Wheezy can boot to desktop
- No clock battery, time set by NTP upon boot with LAN connected

Things to do with Raspberry pi

1. piRLP node (Echolink optional)
2. D-Star node
3. Media/file/Cloud server
4. Web browser, web cam
5. Play simple games
6. Learn to program, Scratch
7. Build robots
8. Remote control inputs/outputs
9. ...

<http://www.raspberryconnect.com/raspbian-packages-list/item/71-raspbian-hamradio>



Projects of the Raspberry Pi Community.

Raspberry Connect

Home | About | RPi Projects | Software | Web Directory | Search

Ham Radio Packages

Software

- RPi Software
- Raspbian Packages**
- Operating System's
- Multimedia
- Games
- Educational
- Office
- Communication
- Internet
- Networking
- Tools Utilities

Ham Radio Packages

Rate a Raspberry Pi software package from this list

Let other users know how well packages work on the Raspberry Pi.

Rating Key:

- Working, Not Working, 1 Like, 1 Dislike, 1 Neutral, 1 View Comments
- Speed-Slow, Speed-Usable, Speed Good

Submit Software Advert

Tell us about software you have written for the RPi

To install a package

Packages are installed using LXterminal. First get an updated package list by entering the command `sudo apt-get update` in LXterminal, if this has not been done today.

Then install your chosen package with the command `sudo apt-get install package name`. [Find out more](#)

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HAMRADIOJump to section [a](#) [b](#) [c](#) [d](#) [f](#) [g](#) [h](#) [i](#) [k](#) [l](#) [m](#) [n](#) [o](#) [p](#) [q](#) [s](#) [t](#) [w](#) [x](#) [y](#) [z](#)

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Submit an article without an account.

Write about what you're

RaspberryConnect – unproven Ham Radio apps

- Receive faxes using your radio and sound card
- Morse code training program
- antenna radiation pattern visualization software
- Internet Gateway for the Automatic Position Reporting System
- digipeater for APRS
- AX.25 ham radio applications
- Amateur Packet Radio Node program
- tools for AX.25 interface configuration
- tools for AX.25 interface configuration -- X11-based
- Drivers for the HB9JNX packet radio usb modem
- Chirp - Configuration tool for amateur radios
- Convers client with curses color support
- Cute SDR simple demodulation and spectrum display program
- Morse code tutor - command line user interface
- Morse code tutor - text user interface
- morse daemon for the parallel or serial port
- morse plugin
- d-rats Communications tool for D-STAR amateur radio
- Packet radio mailbox and utilities
- Study tool for USA FCC commercial radio license exams.
- Dfigi digital modem program for hamradio operators
- Utility to calculate long and short path to a location
- reception and transmission of QRSS/DFCW signals
- MFSK, RTTY and other digital mode terminal for HF/amateur radio
- Satellite tracking program
- GTK-based psk31
- Gui to the Ham Radio Control Libraries
- Smith Chart calculator for impedance matching
- Study tool for USA FCC amateur radio (ham) exams.
- Receive/send radio facsimile transmissions with Soundcard/PTC-II
- hamradio menus for GNOME and KDE
- Software control for ICOM radios with CI-V interface
- Icom PCR-1000 command line control
- Icom PCR-1000 development kit
- Icom PCR-1000 control shared libraries
- KDE ham radio logging program
- ax25 library development files
- ax25 library for hamradio applications
- Utilities to support the hamlib radio control library
- Qt based AX-25 Mail Client
- program for operating PSK31/RTTY modes with X GUI
- training program about morse-code for aspiring radio hams
- Multimon Linux Radio Transmission Decoder
- translation of the NEC2 FORTRAN source code to the C language
- NEC2 Antenna Modelling System
- Amateur Packet Radio Node program (transitional package)
- utility to program Wouxun dual-band handheld radios
- Remote configuration daemon for Gracilis Packeten
- PSK31 terminal for X11
- Graphical Satellite Tracking Client Program
- Satellite Tracking Program with Optional Voice Output
- Qt based program for viewing antennas as described by NEC files
- Icom PCR-1000 GUI control
- high speed morse trainer, similar to DL4MMI's Rufz
- Qt-based slow-scan TV and fax
- Software Defined Radio (SDR)
- Sound Card Amateur Packet Radio Modems
- analyze point-to-point terrestrial RF communication links
- Tk GUI for the ICOM IC-R2 receiver
- Experimental Software for the ICOM IC-R5 Receiver
- QSL log signing for the Logbook of the World (LoTW)
- VHF/UHF/SHF Hamradio contest log version 2
- World clock for ham radio operators
- Soundcard-based X program for operating PSK31
- weak-signal amateur radio communications
- Calculates distance and azimuth between two Maidenhead locators
- Amateur Station Tracking and Information Reporting
- Morse code tutor - graphical user interface
- GTK+ Morse Code Decoding Software
- GTK+ Logging program for Hamradio Operators
- GTK+ Logging program for Hamradio Operators
- calculate and display radio antenna properties
- NEC structure and gain pattern viewer
- Smith Chart calculator for X
- software to analyse performance of Yagi-Uda antennas
- Utilities for Z8530 based HDLC cards for AX.25

Terminal Node Controller for the Raspberry Pi (TNC-Pi)



TNC-Pi is a terminal node controller device, GPIO add-on board used by amateur radio operators to participate in AX.25 packet radio networks.

TNC-Pi is a special version of TNC-X designed to interface directly with the Raspberry Pi computer. It can connect to the Pi either via the Pi's serial port or via the I2C protocol. In the latter case, a single Pi can support multiple TNC-Pi's at the same time, since each TNC-Pi can be given a unique I2C address.

The TNC-Pi features a 9 pin D-Sub port and GPIO through port allowing TNC-Pis to be stacked.

For more information visit www.tnc-x.com/TNCPI.htm

How to Set-up an EchoLink linknode

How to build your own EchoLink linknode using a Raspberry Pi for amateur ham radio users

Kristoff on My Ham Stuff has put together a guide on how to make an EchoLink linknode for amateur radio enthusiasts using A Raspberry Pi, A USB audio fob, USB to Serial adapter, a "digital modes" interface board, a handheld radio and external antenna, all for under 100 euros (\$135, £85).

The EchoLink software allows Amateur Ham Radio stations to communicate using audio streaming over the Internet.

Highlighted useful uses for a EchoLink linknode are:

- For areas with no repeaters available
- Extend the range of existing repeater
- Using a EchoLink Conference
- Battery powered emergency communication set-up

Full details at My Ham stuff <http://villazeebries.krbonne.net/hamstuff/?p=341>

Go Enjoy...



Your OWN pi...