

# IRLP

Internet Radio Linking Project

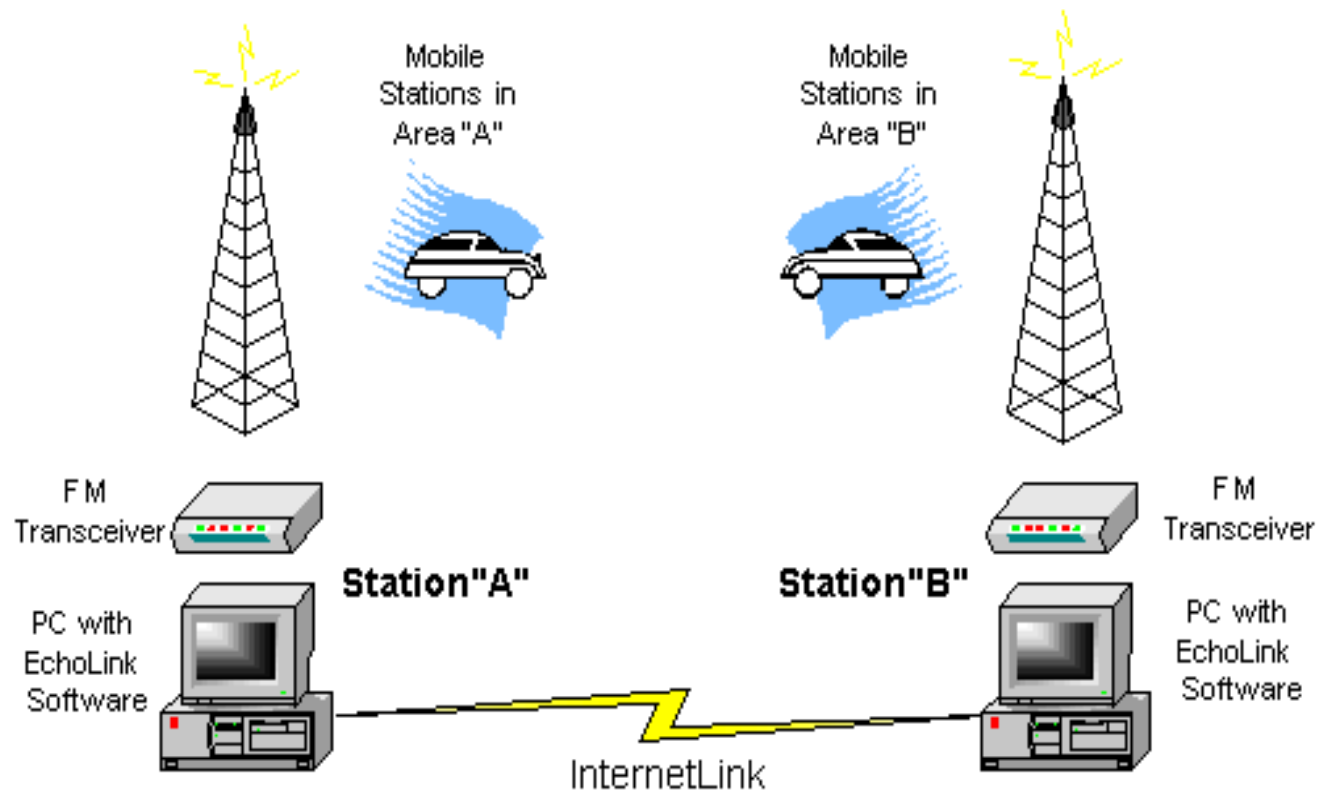
<http://www.irlp.net/>

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

John Teagardin AA8UU

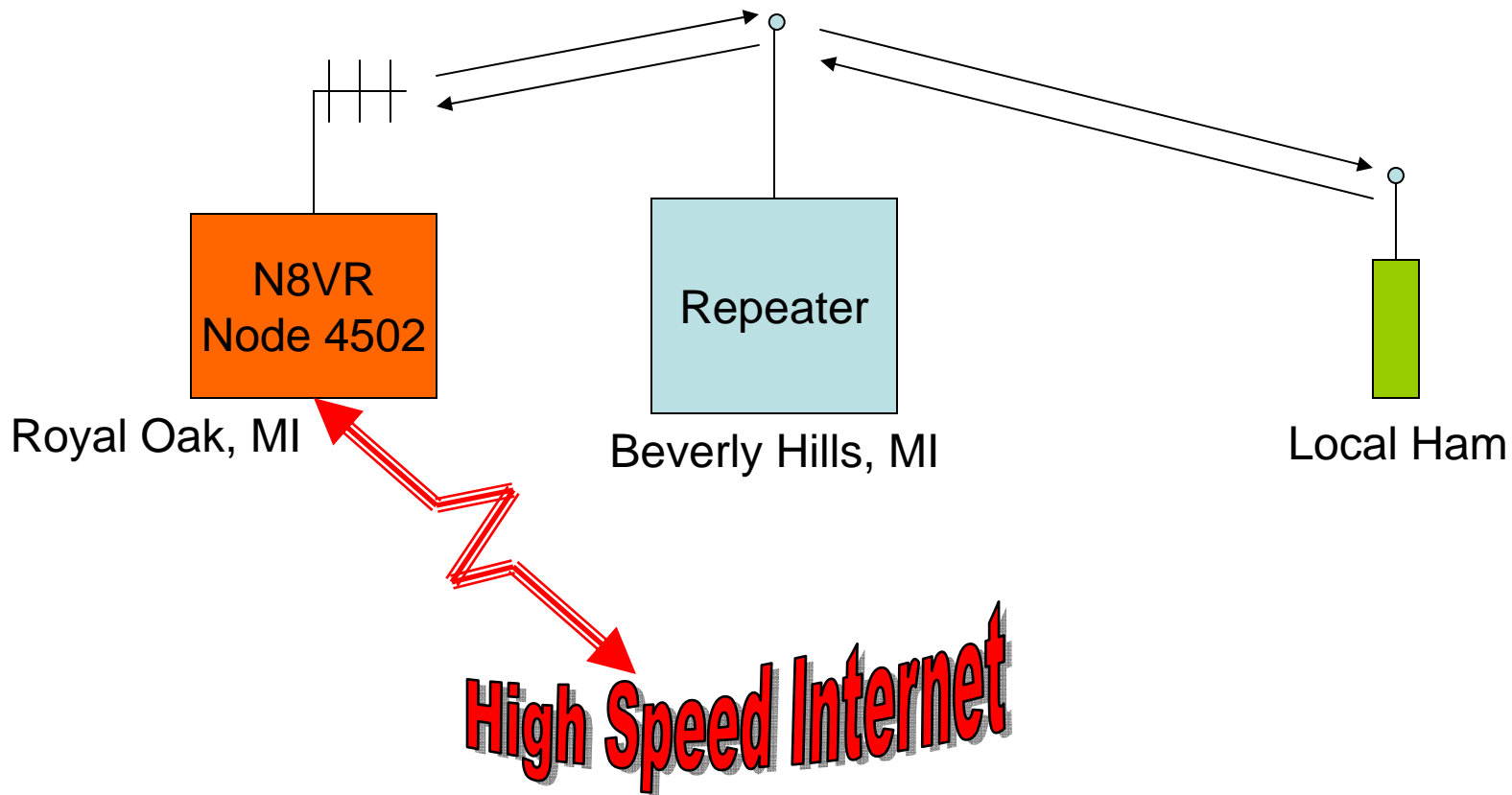
# The Last Mile

## Linking Example

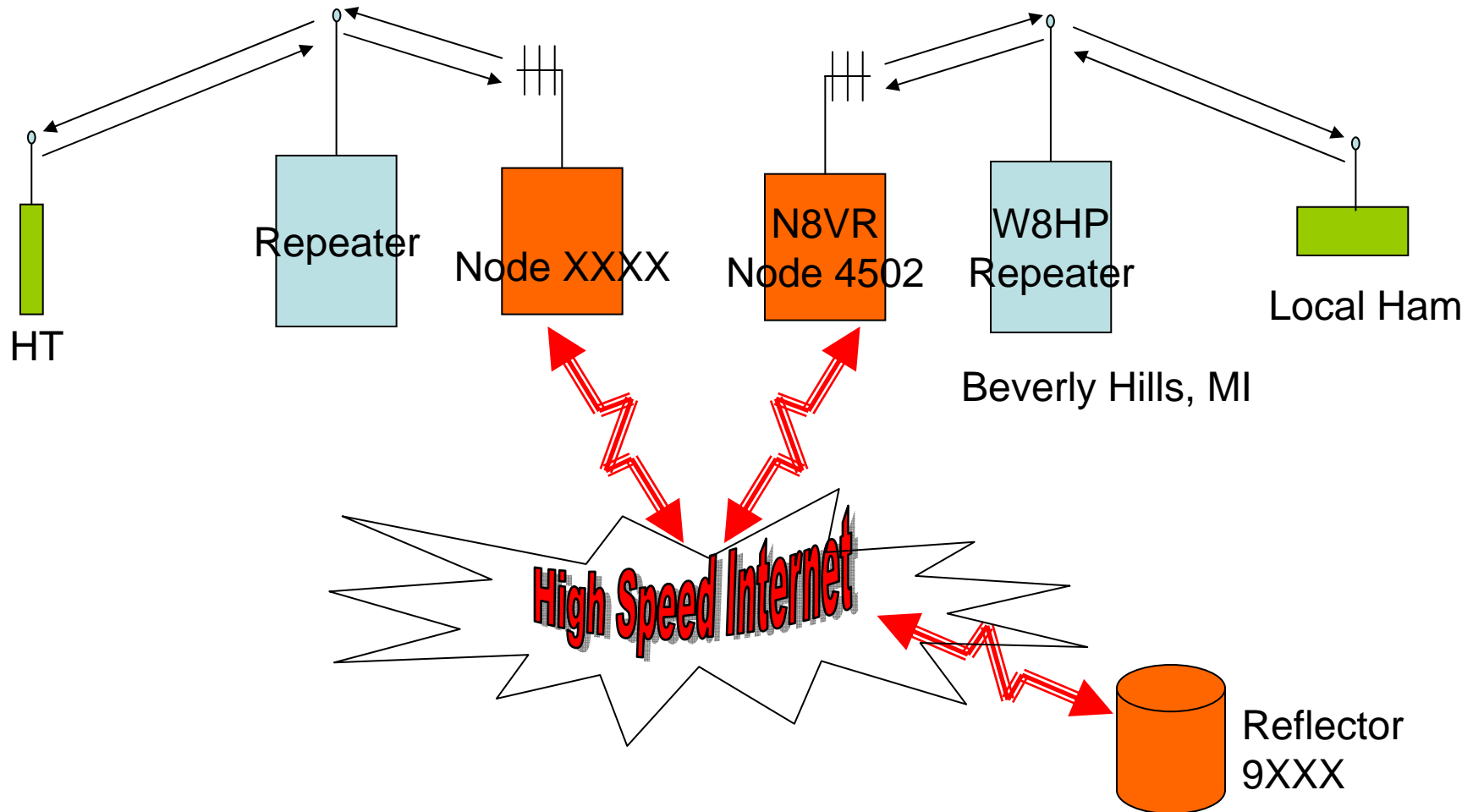


# IRLP W8HP-440 MHz

443.225 - PL107.2

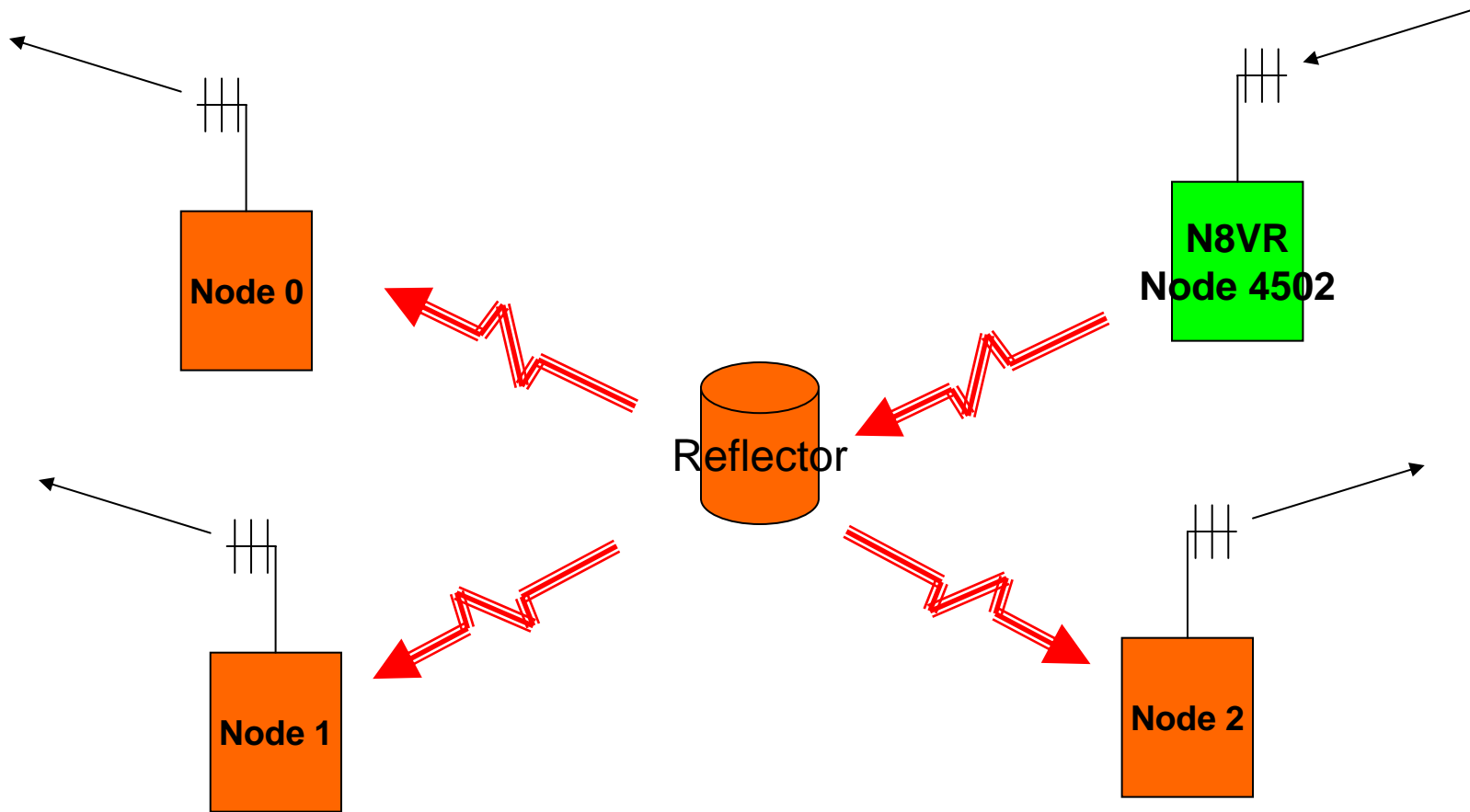


# The whole communication path



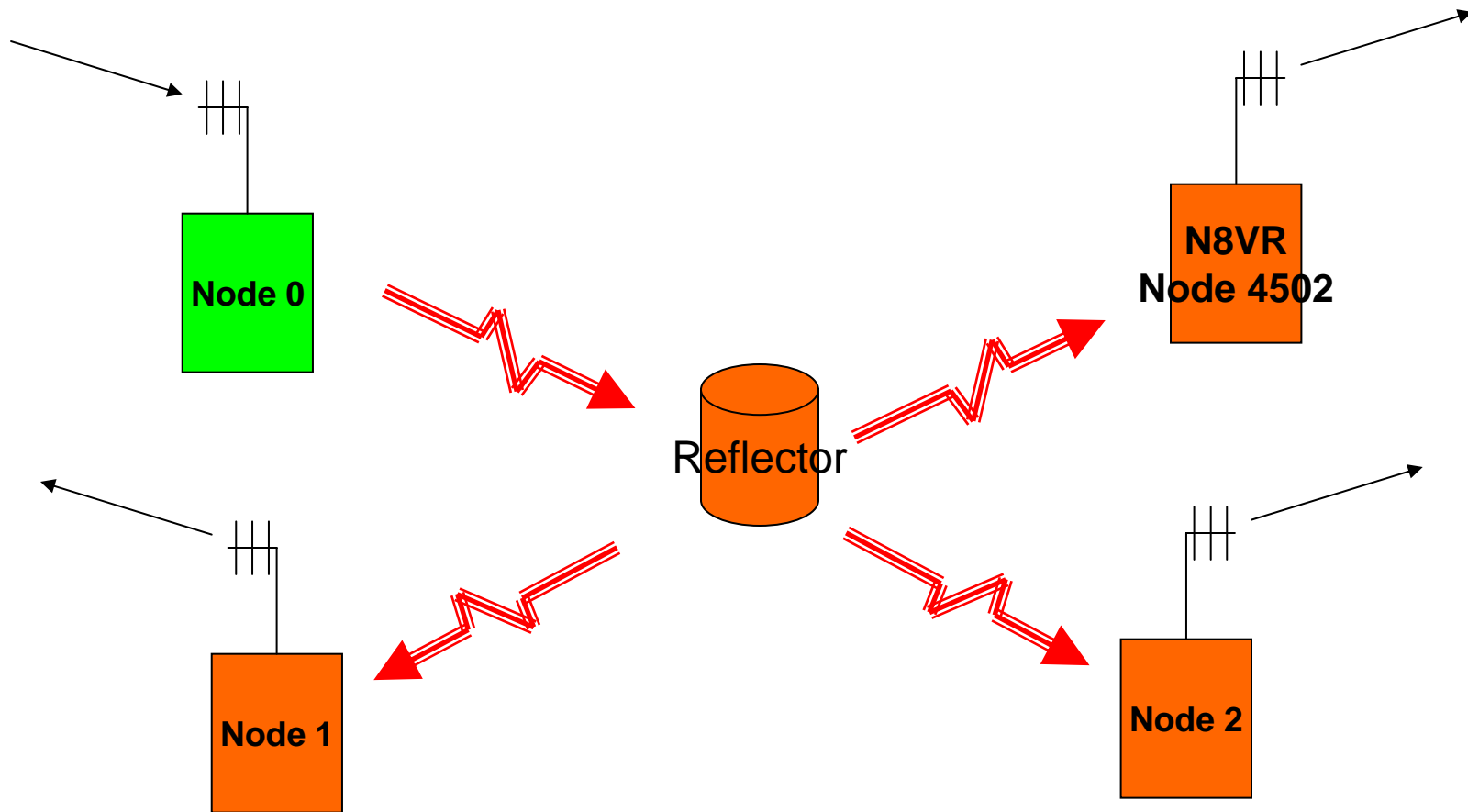
# Reflector Details

Node 4502 transmits audio to Nodes 0, 1, & 2

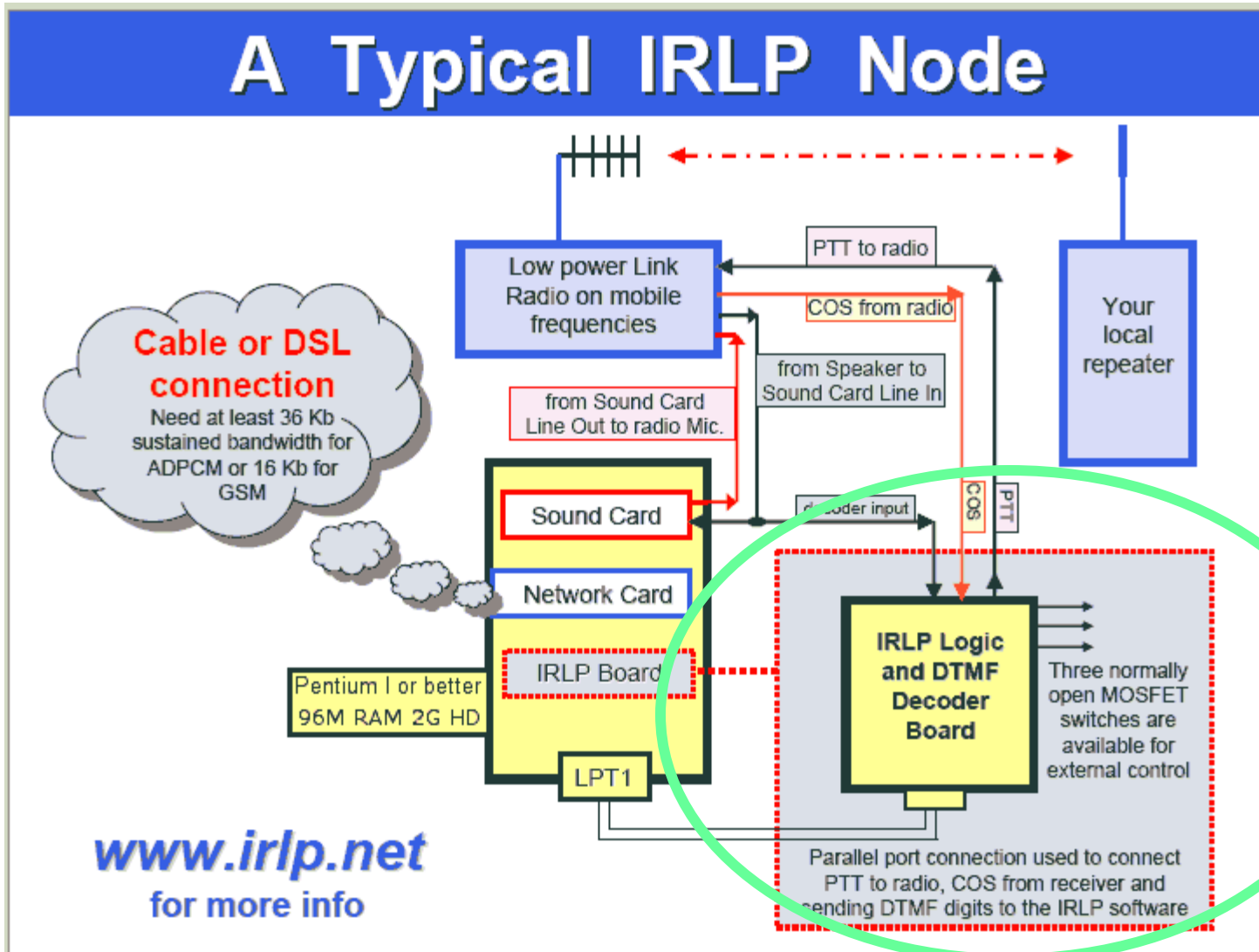


# Reflector Details

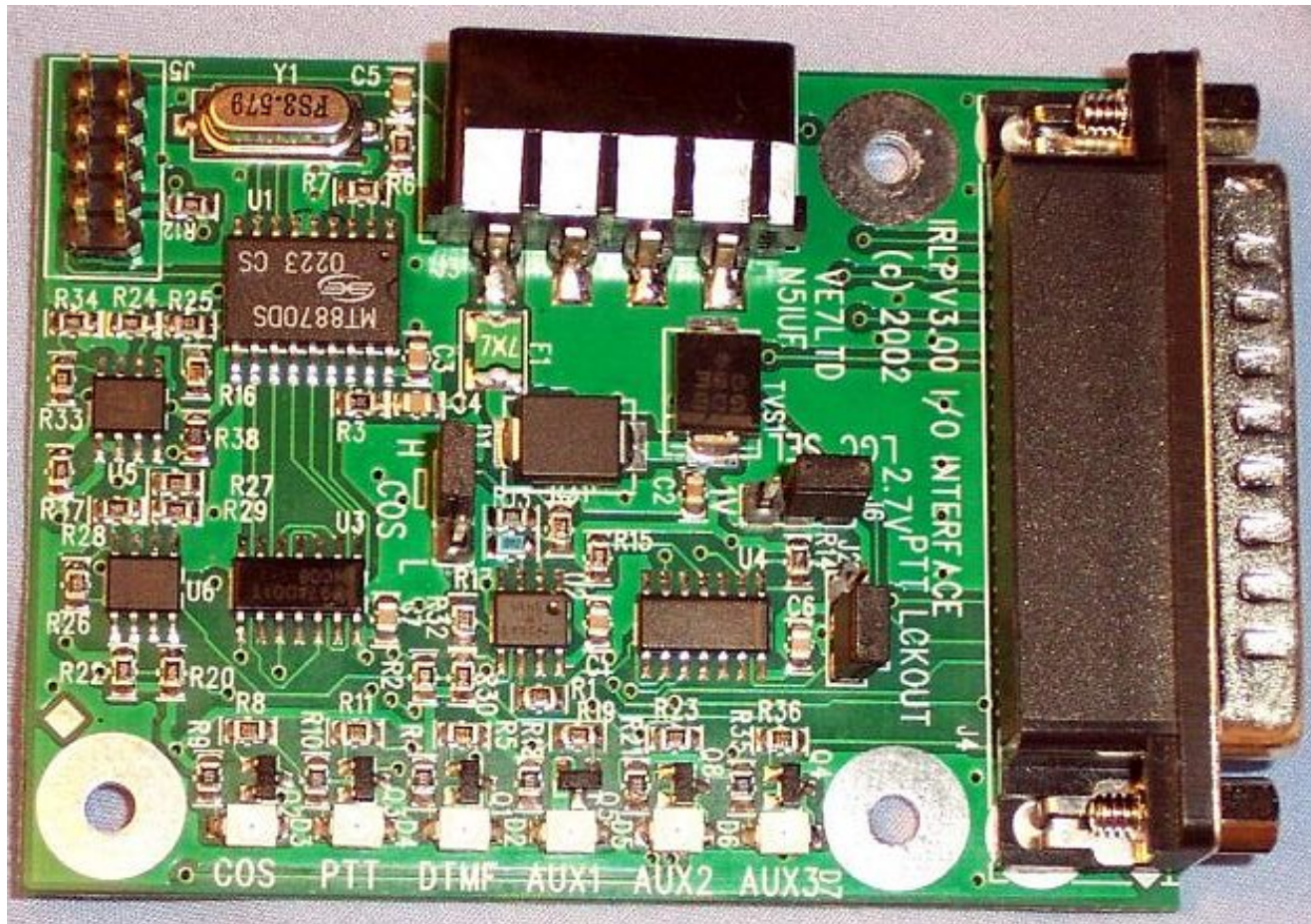
Node 0 transmits audio to Nodes 4502, 1, & 2



# Computer / Radio Interface



# IRLP Logic And DTMF Decoder



# How it works

The concept of IRLP's use of VoIP is as follows:

1. Sample the audio using an analog to digital (A/D) converter. The A/D converter used by IRLP is the input source of a standard PC sound card. This creates a continuous mono 16-bit digital stream of raw audio at 8000Hz (120000 bps).
2. Compress the audio by downsampling the stream and using an 4-bit ADPCM algorithm to reduce the size of the stream by a factor of four (32000 bps)
3. Split the sample into small chucks (or packets).
4. Transmit the packets to the remote host using a User Datagram Protocol (UDP) stream. UDP does NOT confirm the reception of packets, so it uses a "fire and forget" method.
5. Receive the packets on the remote host.
6. Join the split packets back into a 4-bit ADPCM stream.
7. Uncompress the ADPCM stream back into an 16-bit raw stream of audio.
8. Play the raw audio stream through a digital to analog (D/A) converter (the output device of your sound card).

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

*IRLP - Keeping the Radio in Amateur Radio*

[CLICK HERE](#) for the winners of the ALINCO RADIOS drawn during the NEW YEARS EVE NET

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

 [CLICK](#) for IRLP interactive node mapping

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](#)

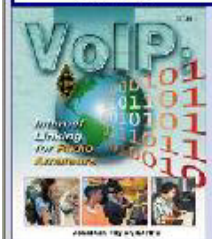
[El Reflector espanol](#)

**Enjoy IRLP and please "Pass the Word"**

If left menu bar is not visible, [click here](#)  
last updated January 02, 2009  
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## Node Information

*IRLP provides a number of real-time reports and node locating tools.*

*IRLP - Keeping the Radio in Amateur Radio*

**NOTE:** If you are searching for a known node and it does not appear on the status page, it is likely that node has been down for more than 5 days in which case the node is temporarily removed from the status pages.

### IRLP Reports

**NEW** [Google Earth IRLP interactive node mapping](#)

[Connected Nodes and Reflector status](#)  
*the active IRLP network at a glance*

[Status info as a new full page window](#)

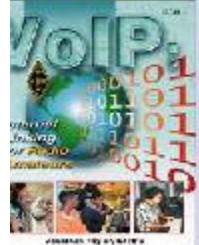
[List of nodes and Frequencies](#)  
*see note below*

**NEW** [Up-To-Date Node List in PDF Format](#)

[Find area US Node by ZIP Code](#)  
*Now using up-to-date IRLP db info*

[Find nodes using Lat/Long](#)  
*Find nodes within nn miles of a Lat/Long*

[Tab delimited format for PDA use](#)  
*open in your browser, save as a text file then open with your spread sheet selecting tab delimited*





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## IRLP Status Page

[Summary](#)
[Reflector Usage](#)
[Connected Nodes](#)
[Nodes by Country](#)
[All Nodes](#)
[Mini All Nodes](#)
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### Connected IRLP Nodes

This page is a snapshot. It will not refresh. All Headers will sort the columns locally.

NodeID ▲	NodeCall	NodeCity	Province	Country	NodeFreq	Lcl Time	Status	Length
<a href="#">1269</a>	VA7SCA	Vancouver WIN System A	BC	Canada	444.4000	07:33	Linked to 9453	2 Hours 47 M
<a href="#">1360</a>	VE5CC	Saskatoon	SK	Canada	449.9750	09:33	Linked to 9012	13 Days 5 H
<a href="#">1370</a>	VE5LAK	Prince Albert/Christop	SK	Canada	146.6100	15:33	Linked to 9012	1 Days 13 H
<a href="#">1375</a>	VE7DTT	Okanagan Falls	BC	Canada	147.3300	07:33	Linked to 9205	30 Mins 7 Se
<a href="#">1380</a>	VE5MLR	Meadow Lake	SK	Canada	147.3300	09:33	Linked to 9012	1 Days 9 Ho
<a href="#">1396</a>	VE7RPS	Vancouver	BC	Canada	442.2250	07:33	ECHOIRLP	9 Hours 41 M
<a href="#">1882</a>	VE5PSC	Moose Jaw	SK	Canada	147.5250	09:33	Linked to 9012	12 Days 8 H
<a href="#">1981</a>	VE4PIN	Pinawa	MB	Canada	146.4900	09:33	Linked to 9002	2 Days 0 Ho
<a href="#">2015</a>	VE3JJA	Sioux Narrows	ON	Canada	146.5800	09:33	Linked to 9002	19 Days 6 H
<a href="#">2105</a>	VE2RXY	Le Bic	QC	Canada	145.4500	10:33	ECHOIRLP	3 Hours 20 M
<a href="#">2314</a>	VE3YGR	Sudbury	ON	Canada	444.2000	10:33	Linked to 9205	34 Mins 2 Se
<a href="#">2400</a>	VE3SUE	London	ON	Canada	444.4000	10:33	Linked to 2750	3 Mins 24 Se
<a href="#">2414</a>	VA3IGN	Ignace	ON	Canada	147.1800	09:33	Linked to 9002	14 Days 10 H
<a href="#">2530</a>	VA2RXY	St-Medard,EQC	QC	Canada	147.0300	10:33	ECHOIRLP	3 Hours 20 M

## **Internet Radio Linking Project—IRLP Node 4502**

### **Operation:**

1. Key up on 443.225 (107.2PL) and ID. (“This is KC8TEV.”)
2. When frequency is clear, ID and announce link.
3. (“This is W8PDI accessing the link.”)
4. While keying, punch in the 4 digit repeater code for the repeater you want to connect. (Ex: 5600—this repeater is in London, England)
5. Allow time for link to connect, when the connection is made, a computer-generated voice greets you with a message. If a message is not heard, no connection was made. Try again!
6. After the connection is made, listen for a conversation already in progress. If clear, announce your call and location.
7. (“This is N8FI calling from Royal Oak, Michigan.”)
8. When finished, ID, then clear link by keying 73.
9. Then, if you are finished with the repeater, you must announce
10. (“This is KC8TGW clearing the link.”)
11. When the connection is broken, a computer-generated voice will notify you of the node number with which you have just disconnected.

[http://irlp.g4eid.co.uk/status/all\\_reflectors.html](http://irlp.g4eid.co.uk/status/all_reflectors.html)

Live IRLP Reflector Status Sat Jan 3 2009 20:42 UTC

Reflector 9450 Dallas

Channel 0

4433 KA4EPS Norfth Boynton Beach

Channel 3

3031 AG6AU Pilot Peak WIN System/Red Cross  
3058 KK7ECV Reno-Sparks WIN System Affiliate  
3105 NM7R Chinook - WIN System Affiliate  
3143 WA6HWW Grants Pass-Win System Affiliate  
3195 N6MDH Apple Valley  
3207 WB6IAG Paradise  
3269 N5RWH Houston-Clear Lake City  
3351 WA7G Sugarloaf peak - WIN System Affiliate  
3358 K6PNG Victorville- Win System Affiliate  
3395 KP4UZ Las Vegas  
3421 WR6ABD San Jose - LPRC - WIN System  
3423 AJ9Y Tolleson - WIN System  
3426 K7FAY Boulder City  
3449 K6JSI Thousand Oaks - WIN System  
3469 K56I Tehachapi  
3492 K6JSI Modesto - WIN System  
3497 AF6EQ Sunnyvale-WIN System Affiliate  
3500 K6JSI San Diego - WIN System  
3537 KL3NP Nome  
3550 AA7RP Green Valley, WIN System Affiliate  
3612 AF6CV Huntington Beach  
3628 KE7JFA Idaho Falls - WIN System Affiliate  
3638 KE7KKA Seattle  
3648 KE7UOR Brookings  
3653 KI6XQ Costa Mesa  
3658 K6BDM Westlake Village - WIN System  
3698 KB8JXX Anchorage - WIN System Affil.  
3754 W7RUG Idaho Falls - WIN System Affiliate  
3783 K6JSI Coalinga - WIN System  
3784 N6WXD Poway  
3828 WA6AXO Juneau  
3847 K6JSI Fresno - WIN System  
3877 W16RE Ridgcrest/China Lake - WIN System  
3923 K6JSI Westlake Village Frazier Link  
4120 KF6SWL Omaha - WIN System Affiliate  
4175 N5CWH Leesville  
4324 W6SMV Templeton, CA  
4417 W8DOW Livonia  
4599 WD0JDM Jackson  
4629 NV4P Pensacola WIN & EchoIRLP 46290

Reflector 9250 Western Reflector

Channel 0

3027 AL2I Kuparuk  
3039 W7RAT Portland  
3260 N7ARR Las Vegas NARRI  
3298 AD5EX Springdale  
3323 K7IZA Las Vegas, NARRI Affiliate  
3454 K7CSL Tempe  
3467 KE0TY Grand Junction  
3491 N7ARR Pahrump NARRI  
3641 N7ARR Las Vegas Gateway NARRI  
4500 N3FE Mansfield [ILS]  
4590 N1HUI Branford  
4719 W4UAL Tuscaloosa  
4739 WB4SD Cleveland  
5453 2E0NNH Northampton  
5530 KE6YRU Indianapolis  
5620 WA7GIE Salt Lake City  
7960 KL3K Alaska Gateway

Channel 6

5140 GB3LF Kendal  
5200 G4NJI Rothham  
5550 KD7PSG Bellingham

Channel 8

3082 N7ARR Reno - Sparks NARRI  
3194 N7ARR Las Vegas NARRI  
3227 N7JEH Spring Creek - (EIR) Area  
3290 N7ARR Las Vegas NARRI  
3396 N7ARR Tonopah NARRI  
3705 N7ARR Mesquite NARRI

26 node(s) connected

Reflector 9200 Crossroads Reflector

Channel 0

1667 VE5FUN Saskatoon WIN System Affiliate  
2000 VA3LU Thunder Bay  
4730 K9IP Indianapolis  
7265 HP1GAP Long Island

Channel 1

4134 KP4EOP Chicago  
4714 KC2MUM East Islip  
7008 KP4IP Maricao PR  
7569 KP4IP San Juan PR  
7578 WP3HY Hattilo PR  
7697 KP4MPR Aguada PR  
7777 KP4EOP Rio Grande PR  
7796 WP4IUO Humacao PR  
7841 WP4NSY San Sebastian PR

Channel 2

3098 W7AAE Henderson

Channel 8

3278 KC6PXL Los Angeles  
3339 W6DVI San Gabriel  
3484 XE1FUZ Arandas  
3669 XE2ALC Puerto Peñasco  
8365 XE2LRD Durango  
8378 XE2SI Tijuana  
8501 XE1VY Morelia  
8628 EA8EE Las Palmas GCanaria  
8757 XE1TH Tulancingo

23 node(s) connected