

Welcome to

I T M G

Iowa Ten Meter Group

Serving Central Iowa with

Iowa's Premier 10 Meter Repeater

About us...

- We are an informal group of individuals meeting for the fun of sharing meals, fellowship, ideas, and working on radio projects. Our current projects include repairing equipment for our 10 meter repeater and transitioning to a PiRLP node (IRLP on a Raspberry Pi).
- We participate in 2 weekly nets; Sunday and Thursday evenings at 7:30 local time except on the 4th Thursday of the month on which the group's monthly meeting takes place at Bonanza Steak House. The net is held on the group's 10 meter repeater and through our IRLP node 7652 which is connected to the 9360 Reflector, Channel 5 (9365) for the net.

... still about us...

- Any one is welcome to stop by, check in and say "HI" on the net.
- We joke about if you show up for a meal and meeting you are considered a member of the Iowa Ten Meter Group.
- No dues or formal application is needed to participate in our activities.
- ITMG operates on generous gifts, donations and skill sets of the members and friends of ITMG.
- We look forward to meeting you in person or on the air, 73!

ITMG FOUNDERS COMMENTS

- **Paul Fraas, KD0CST:** “Just remember, it is only a hobby”. Paul, “JP” was and still is a driving force in the group. He drove to Sioux City to get the free Motorola gear made the conversions with the help of others to get the repeater up and running. When he moved to Montana he got the system on IRLP so he could stay connected. He comes back to Des Moines twice a year to visit old friends and work on the gear.
- **Mark Campbell , W0GZR:** was liaison to the DMRAA and our “host” landlords has moved to Nashville, where he remains active via IRLP. His dad resided in a 14 story retirement complex and facilitated locating one of our receivers on the elevator penthouse.

ITMG FOUNDERS COMMENTS

- **Robert Ray, KD0BR:** Bob calls the nets more than any other member. Manages the group affairs. He relates how the net started out on 29.2 in 2010 and got blown off the frequency by a powerful repeater in New York located on the Empire State Building. I found an article about them that claimed they had a 3-500Z in their Amp. We moved to our present frequency of 29.670 and have little trouble with QRM except in high sun spot conditions.
- **Craig Rose, KC0YHU:** Is our computer guru who helped Paul install the IRLP node and keeps it up and running.

ITMG's History

It started several years ago when a group of hams in the Des Moines, IA area was looking for something a little different to do besides the usual 2 meter or 440 nets happening locally. One person suggested 10 meters. It was mentioned that back in the 70's or 80's, there was a 10 meter net taking place in central IA.



AM - Amplitude modulation

USB - Upper Side Band

FM - Frequency modulation



We started out by communicating on Amplitude Modulation (AM). Then we tried Upper Side Band (USB). And eventually tried Frequency Modulation (FM) and everyone just loved it. We started a weekly net on 29.600 FM and on occasion, during band openings, would get others checking in from around the US.

What can we do Next?

Where would
we get the
equipment?

how about a 10
meter repeater?

What would
that take to do
one?

S A R A

SOOLAND AMATEUR RADIO ASSOCIATION

- Mentioned by several persons
- Located in Sioux City, IA on the 29.620 FM frequencies
- It was not on the air.



**Let's go for
it!!!**

The acquisition of the repeater.

- Contact was made with SARA.
- The repeater was off the air.
- It was in need of repair.
- An agreement was reached in that they would donate the equipment to us if we would get it back on the air.
- We acquired, around May of 2010, a split site 10 FM repeater.



We got it!!!

Let's fix it!!!

- Work began on repairs and soon we had a functional repeater on the air under the call sign **WOAK**.
- Thank you to the **DMRAA** for the use of the call sign.
- Being a split site, the transmitter and receiver were moved around the Des Moines Metro several times, trying for the best coverage.
- In August 2011 a link radio, that had failed, was replaced with a donated Motorola from **Larry, NOBKB**.

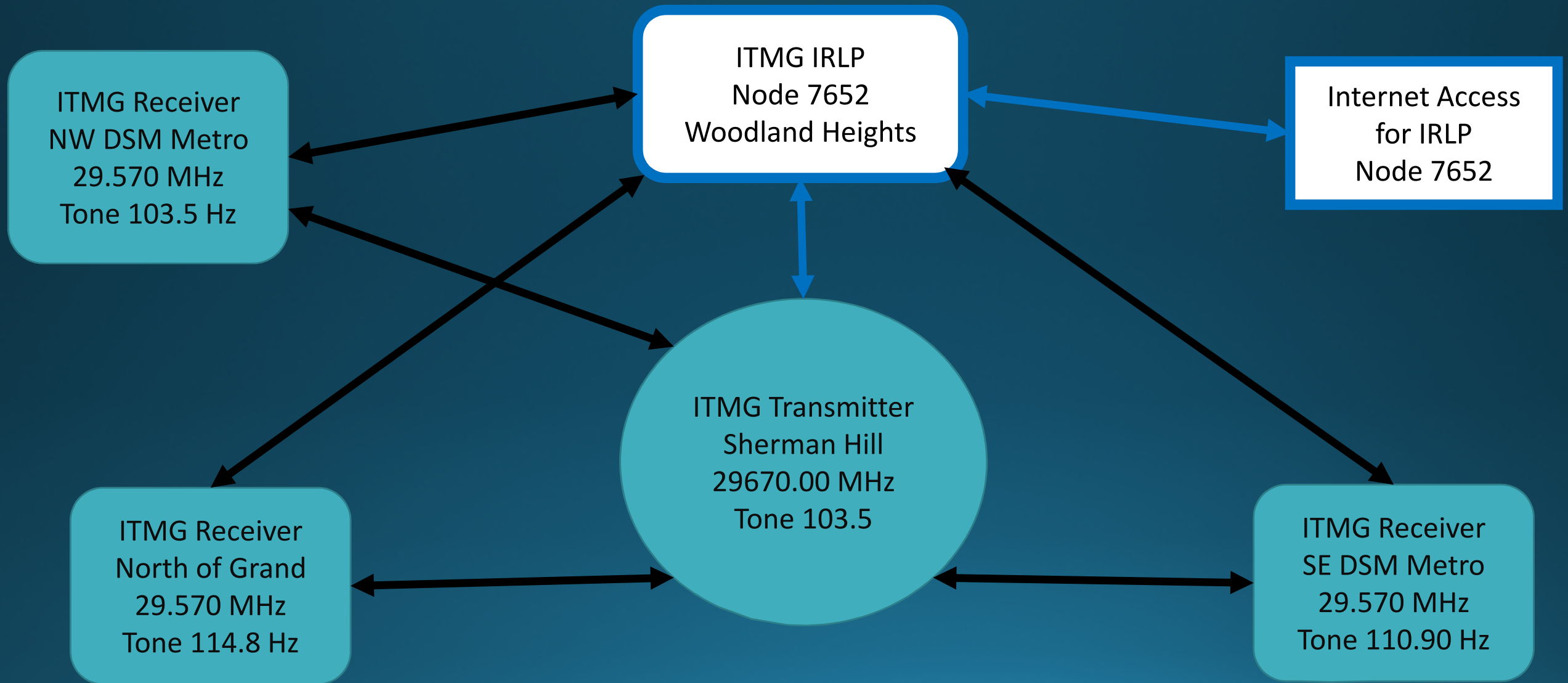
Keep up with the good work

- Work continues on the repeater with every change improving transmitting and/or reception.
- Due to band openings and hearing several repeaters from around the nation, we moved our frequency to 29.670, -.100 offset, and CTCSS of 103.5.
- We now have an [IRLP node](#) connected to the repeater.
- In August 2013 the group decided to acquire a call sign for themselves and the **Iowa Ten Meter Group** (ITMG) was formed.
- We now run under the call of **KDOWPK**.

Locations.

- We have now settled on three locations.
- One receiver is about 30 feet up on a commercial building in Clive.
- One receiver is up about 14 stories on a retirement center in Des Moines.
- The transmitter is up about five stories on an apartment complex, at 1.6 mile separation, in Des Moines.

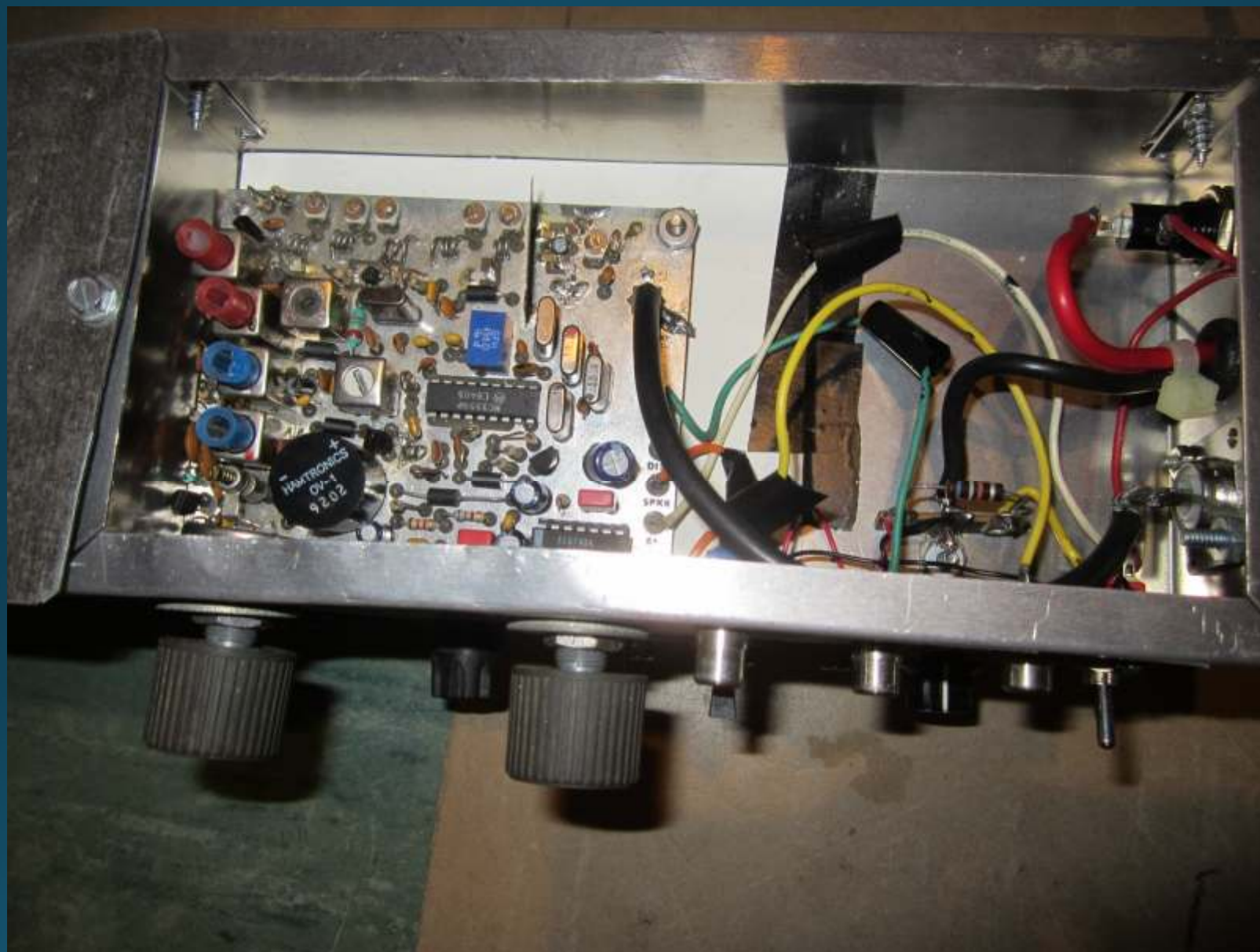
Iowa Ten Meter Group Repeater's Radio architecture



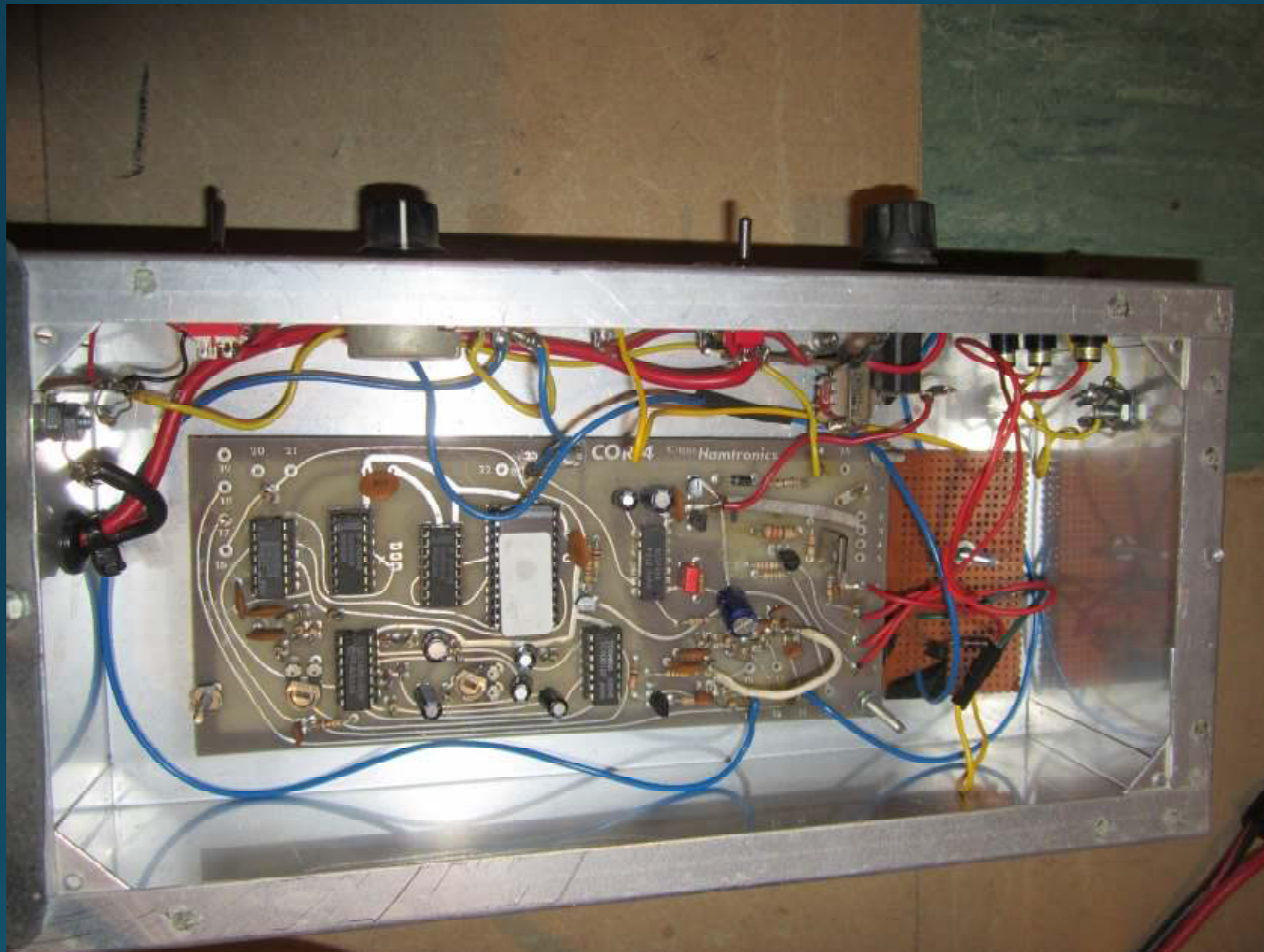
KD0CST, JP's workbench

Working on
Motorola Mitrek
Conversion to
10 Meters

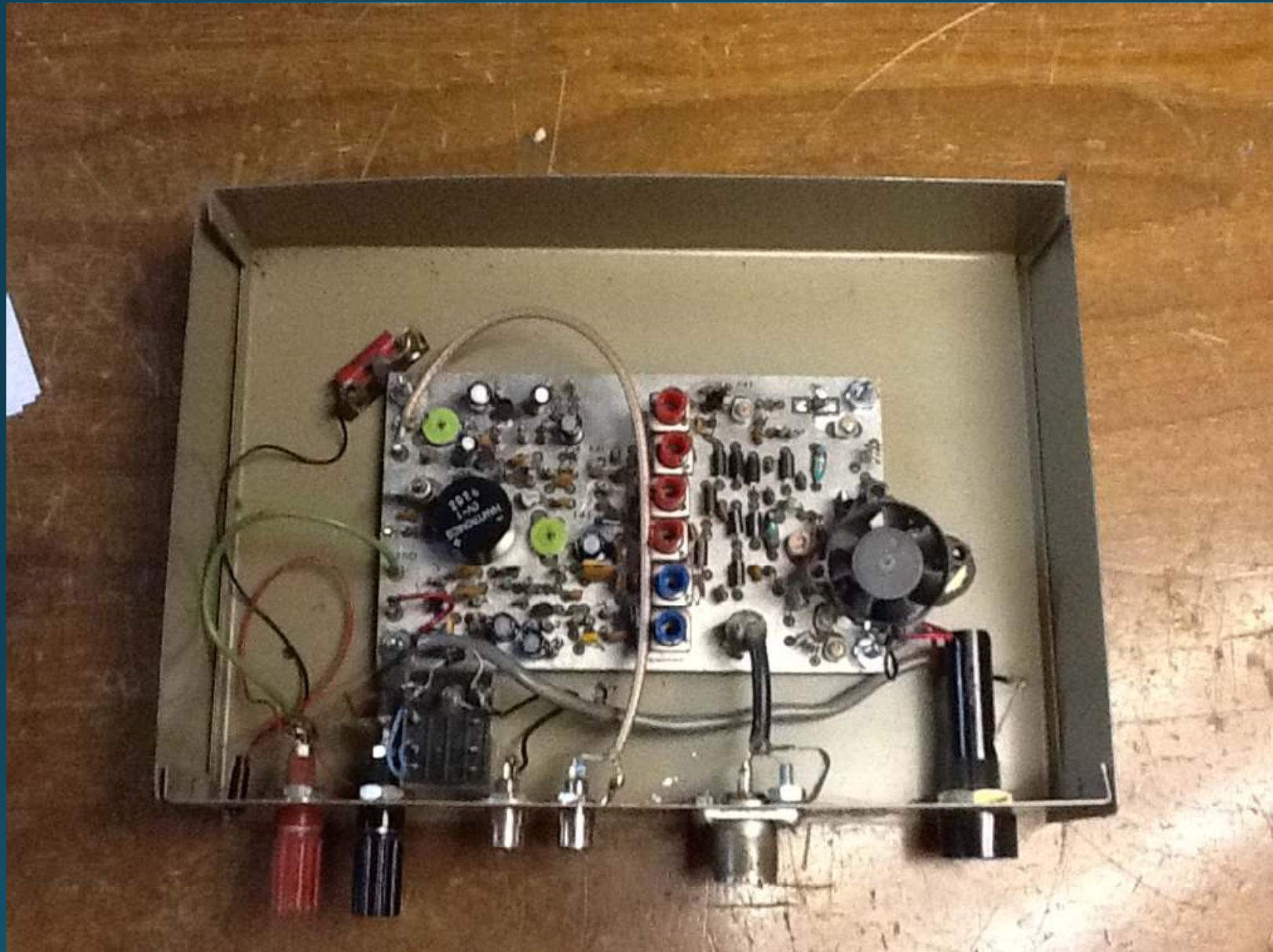




JP' built controller

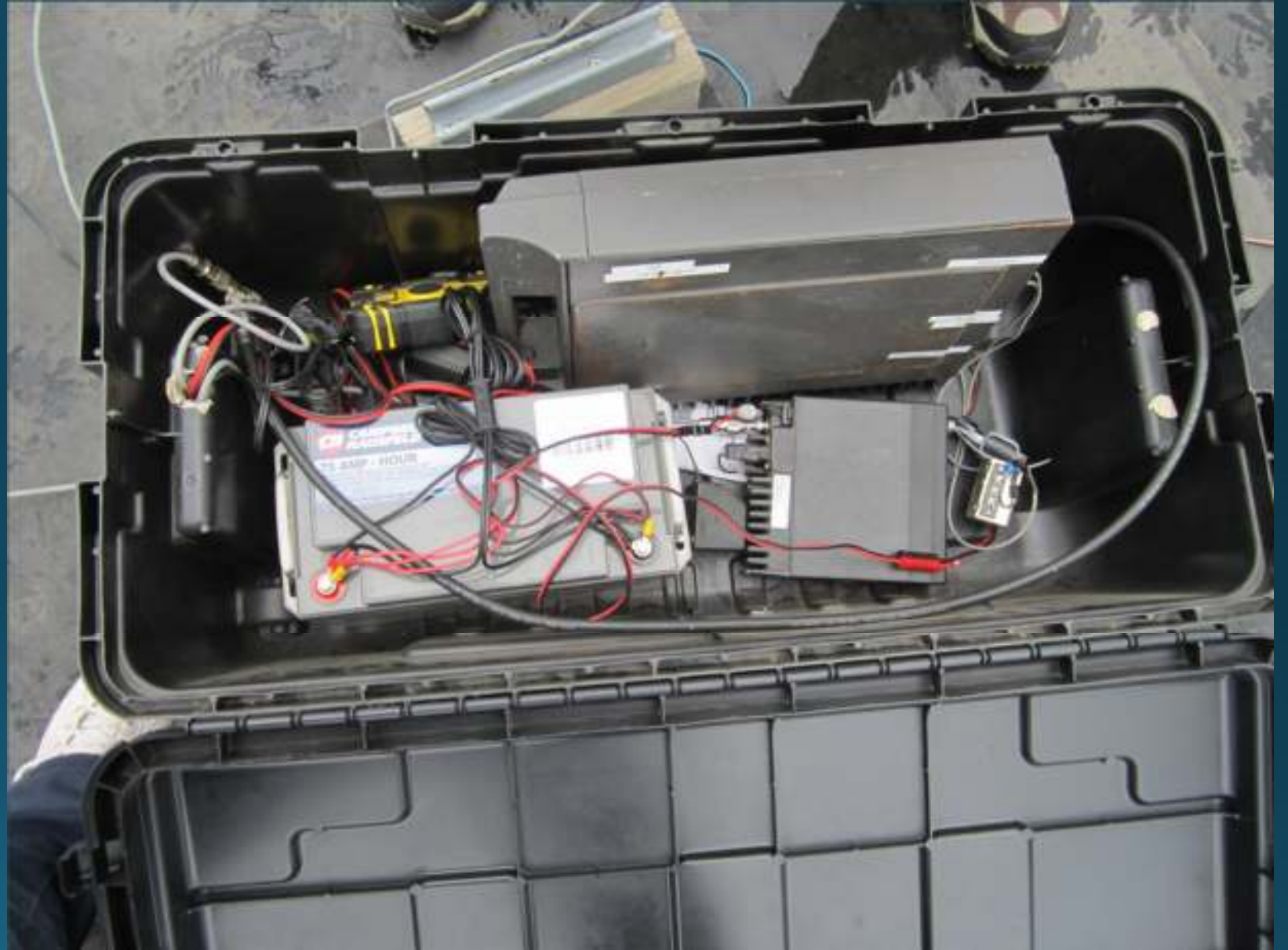


JP's built controller



JP's built controller

- 10 Meter Receiver
- Waterproof container
- Link Radio
- Charging Controller



The old
equipment
from Sioux City



Motorola Micor with modified fan



Satellite receiver



Equipment as
received from
Sioux City
Club

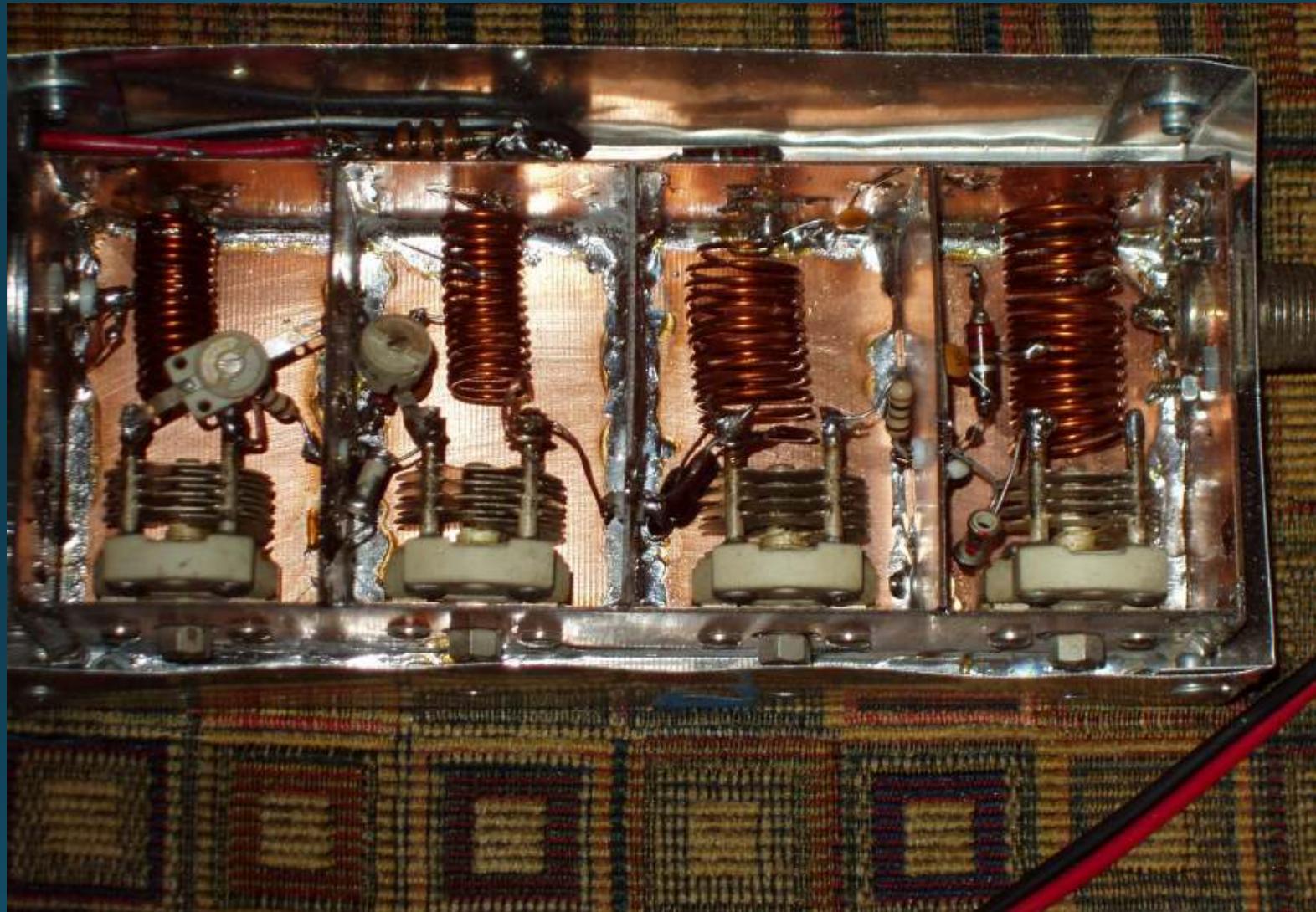


Transmitter antenna

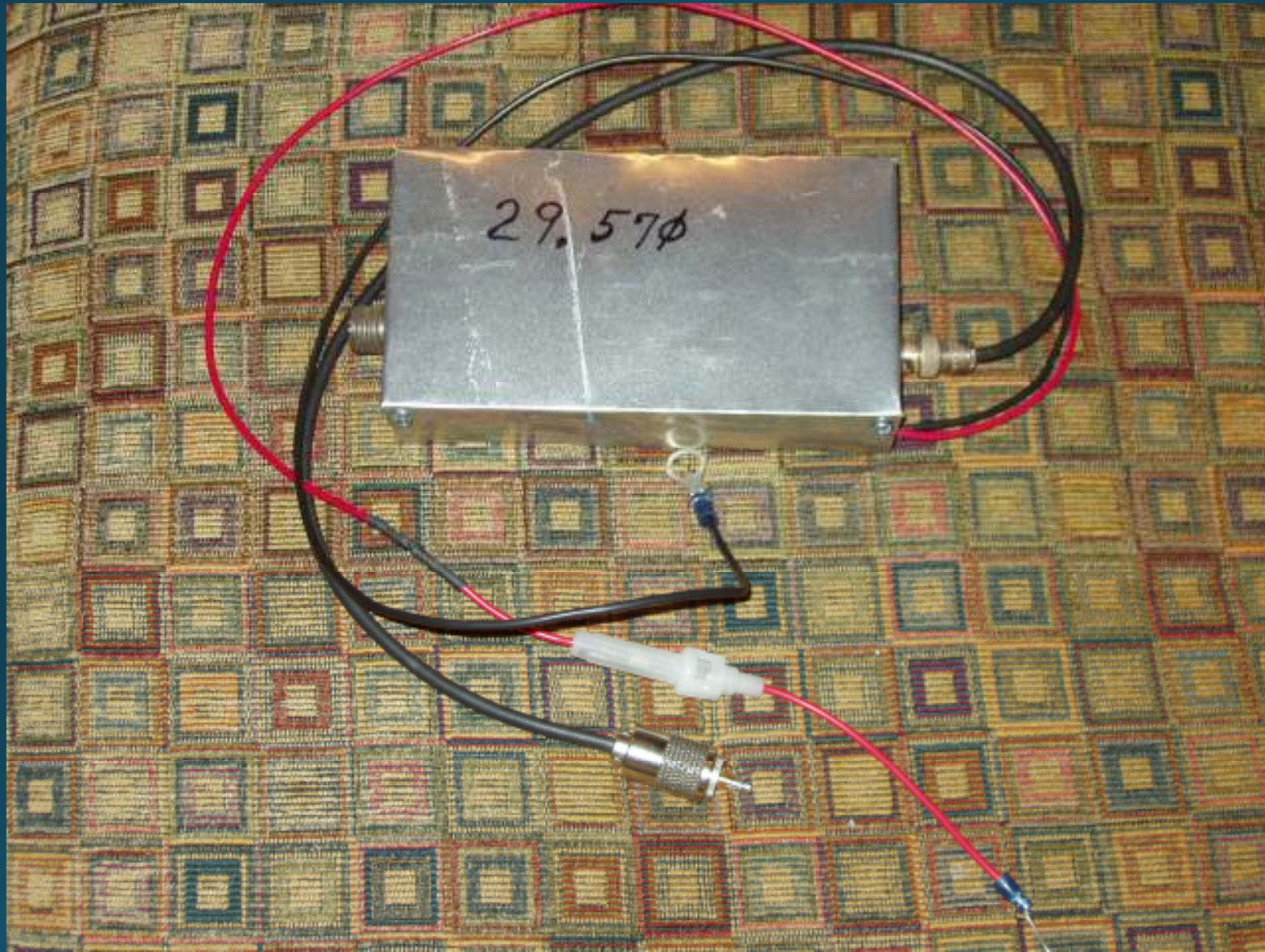


Roof
work
on a
windy
day





Jack's preamp (10 meter)



Jack's preamp (10 meter) completed



JP's controller complete

Antenna
on the
14 story
building



Temporary receiver



Newest
receiver
on the 14
story
building



New Transmitter 125 Watts



Iowa 10-meter ham radio repeater feedline replacement



Jack KØJQA and Craig KCØYHU inspect the new transmitter equipment.

Receiver satellite repair




Ham radio 10-meter repeater feedline replacement



10 meter repeater list

- Our repeater is one of about 145 10 meter repeater in the US.
- The repeater list is available as hand out.

| Frequency | Offset | Tone | Location | St/Pr | Call | Use | Operational status |
|-----------|----------|-------|---------------------------|-------|--------|------|--------------------|
| 29.6400 | -0.1 MHz | | Tuscaloosa | AL | KX4I | OPEN | ON-AIR |
| 29.6400 | -0.1 MHz | 107.2 | Santiago Peak | CA | W6KRW | OPEN | ON-AIR |
| 29.6600 | -0.1 MHz | 107.2 | Pasadena, Mt. Harvard | CA | N6LIZ | OPEN | ON-AIR |
| 29.6800 | -0.1 MHz | 114.8 | Napa, Mt Veeder | CA | N6TKW | OPEN | ON-AIR |
| 29.6400 | -0.1 MHz | 88.5 | Bristol | CT | KB1CDI | OPEN | ON-AIR |
| 29.6600 | -0.1 MHz | 94.8 | Tallahassee | FL | K4TLH | OPEN | ON-AIR |
| 29.6600 | -0.1 MHz | 100.0 | Holly Hill | FL | KI4RF | OPEN | ON-AIR |
| 29.6800 | -0.1 MHz | | Ocala | FL | KA2MBE | OPEN | ON-AIR |
| 29.6700 | -0.1 MHz | 103.5 | Des Moines, Sherman Hills | IA | KD0WPK | OPEN | ON-AIR |
| 29.6200 | -0.1 MHz | 118.8 | Rockford | IL | K9AMJ | OPEN | ON-AIR |
| 29.6400 | -0.1 MHz | 77.0 | Tremont | IL | W6PC | OPEN | ON-AIR |
| 29.6600 | -0.1 MHz | 110.9 | Greens Fork | IN | K9APR | OPEN | ON-AIR |
| 29.6800 | -0.1 MHz | 136.5 | Bedford | IN | N9UMJ | OPEN | ON-AIR |
| 29.6800 | -0.1 MHz | 146.2 | Ingle | KY | AC4DM | OPEN | ON-AIR |
| 29.6800 | -0.1 MHz | 131.8 | Marlborough | MA | W1MRA | OPEN | ON-AIR |
| 29.6700 | -0.1 MHz | 151.4 | Sparta, Air Bellows Gap | NC | WA4PXV | OPEN | ON-AIR |



**I Need
some
Coffee!**



**I Need a
Break!**

I R L P is next ...

I. R. L. P.

Internet – Radio – Linking – Project

Allows you to use your radio to talk to hams all over the world by sending your audio over the Internet.

History: when did it start and why?

- IRLP was invented by Canadian David "Dave" Cameron, VE7LTD
- The Internet Radio Linking Project was started back in **November of 1997** as an attempt to use the internet to link radio systems across Canada.
- The first full time link that was established ran from Vancouver, BC (British Columbia) to Saint John, NB (New Brunswick).
- The link had many problems and was shut down in March of 1998 due to the numerous computer crashes and repeater lockups it was causing, and the lack of user control over the system.
- See <http://irlp.net/> for more and all details pertaining to IRLP)

Significant improvements had to be made !!!



Windows vs Linux

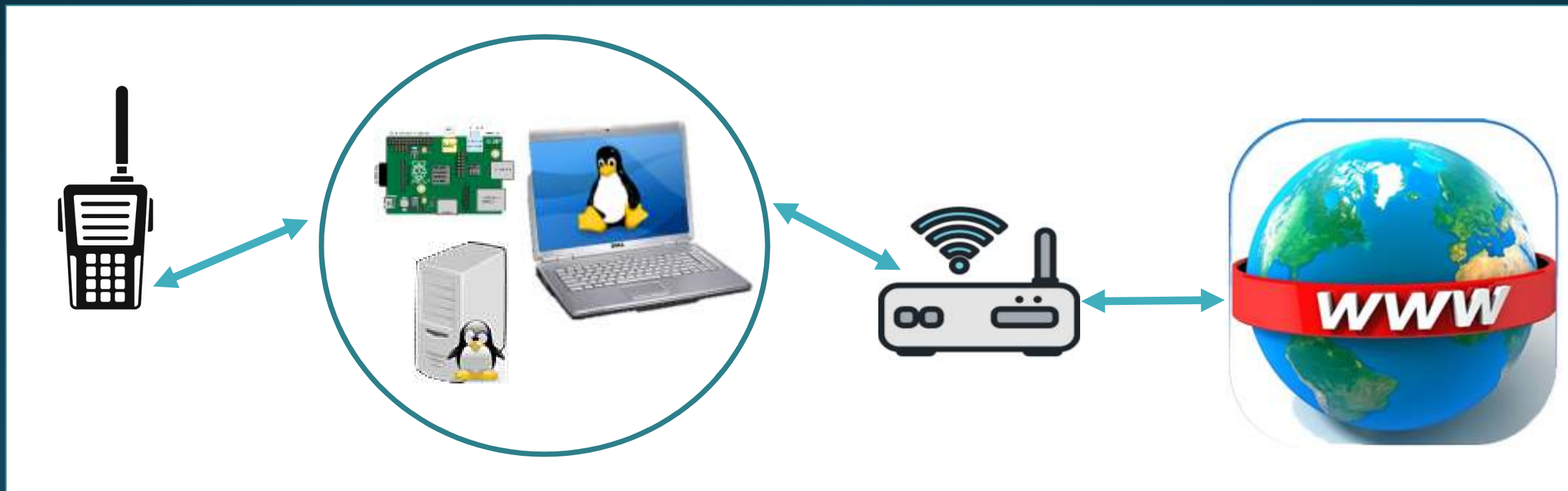


- Dave set out to design a better way to use the same technology to perform the same task, while improving usability, user control, and sound quality.
- His first breakthrough was to replace the existing operating system, Windows, with a more stable and versatile language.
- He chose Linux, an open source form of the operating system UNIX designed by Linus Torvalds, because of its superior networking characteristics, its reliability, and its ease of programming.
- IRLP software is still running under Linux.



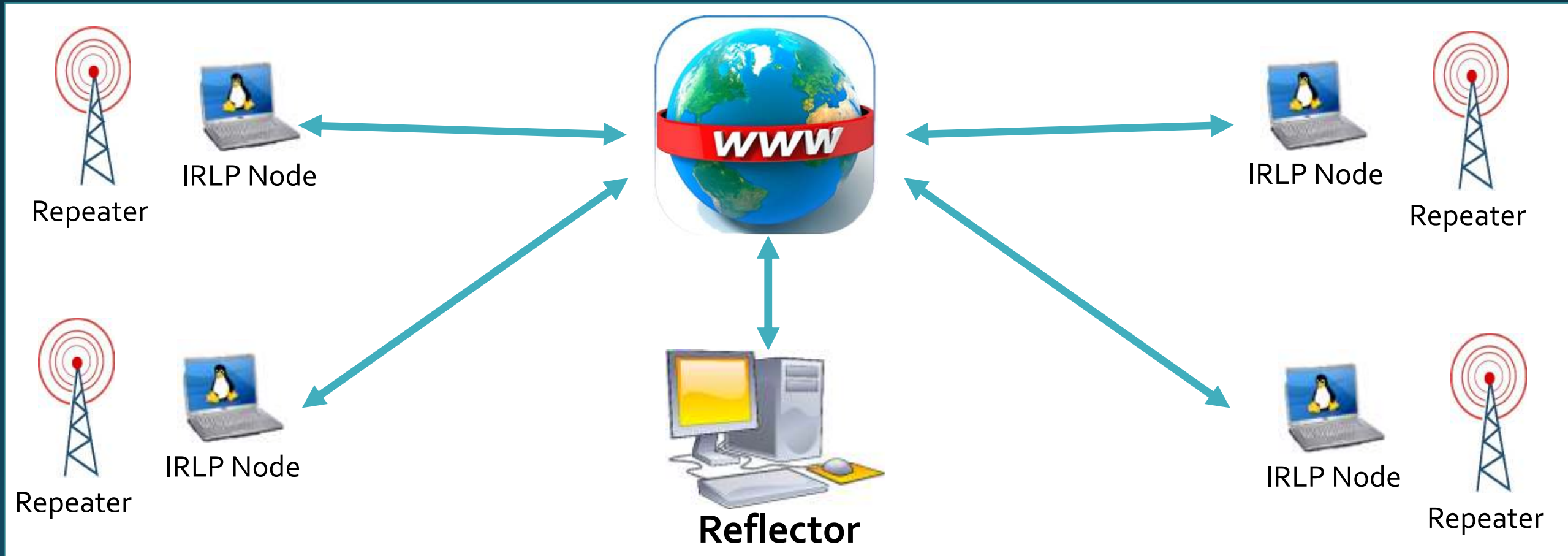
IRLP Nodes

- Each node consists of a dedicated computer running Linux OS and custom software that is connected to both a radio and the Internet. This forms what is known as an IRLP Node.



Reflectors

- Reflectors allow hams wishing to communicate with 3 or more nodes at the same time to connect to what is called an IRLP Reflector. Reflectors are a type of conferencing system. They are computers, connected to the Internet, running specialized software to allow multiple nodes to connect, talk and listen to each other.



ITMG - IRLP Node 7652

- PiRLP Node 7652 is operated by the Iowa Ten Meter Group (ITMG). The current PiRLP (a Raspberry Pi 2) owes its existence to KD0CST (JP) Fraas and Jim Groenke - KR6WP.
- The original PC node was a donation by JP who donated the computer, IRLP software/hardware, radio and antenna in 2013 to ITMG. In its original and current state it is the only Node, in-the-world, that is listed active (24 Mar 2014) that is attached to a Ten Meter Repeater.
- PiRLP Node 7652 currently resides at an ITMG members QTH and operates thanks to their donation of electricity and internet.
- Anyone is welcome to use Node 7652, through the Ten Meter repeater, subject to FCC rules and ITMG's guidelines.

How to connect to ITMG IRLP node 7652

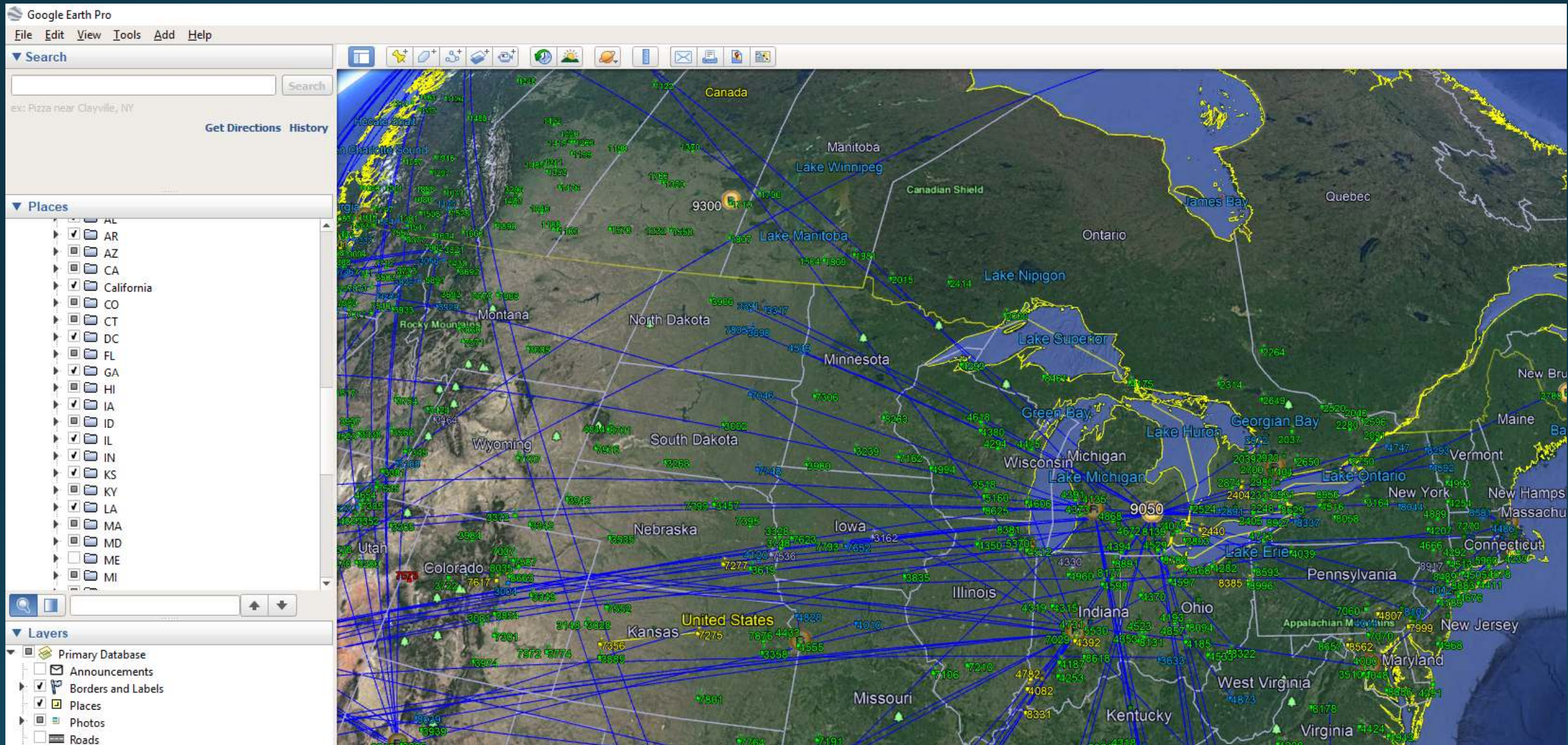
- Ham operators, through a local node, use DMTF tones transmitted through their radios to initiate a node-to-node or node-to-reflector connection anywhere in the world. A searchable list of all nodes and reflectors worldwide (including their current status) is available at: <http://status.irlp.net/>
- Think of node-to-node connections as in making a phone call; it is between two parties (nodes). Anyone communicating, through a radio (an audio stream) on one side, is heard by all on both sides.
- Node-to-reflector connections could be considered a 'party line' or '3 way or more' calling. Anyone communicating, through a radio, (an audio stream) on the node connected to the reflector will be heard by all other nodes connected to that reflector.

Search result for node 7652 on <http://status.irlp.net/>

IRLP Node detail

| | |
|------------------------------------|---|
| Node Number | 7652 |
| Node Callsign | KD0WPK |
| Node City | Des Moines |
| Node Province/State | IA |
| Node Country | USA |
| Node Owner/Sponsor | Iowa Ten Meter Group Ask a Question |
| Node Latitude | 41.60201 North |
| Node Longitude | 93.68223 West |
| Node Base Frequency (MHz) | 29.6700 |
| Node Offset Frequency (KHz) | -100.0000 |
| Node CTCSS (Hz)/DCS | 103.5 |
| AVRS Status | U |
| Node Website URL | http://www.qsl.net/itmg |
| Current Node Status: | 9365 for 0 days, 17 hours, 26 minutes, 33 seconds. |
| Last heard from Node: | 17:22:04 on Jun 03 2019 PDT |

IRLP on Google Earth



We look forward to meeting you
in person at our meetings or on the air.

From Iowa Ten Meter Group

73

Ask your questions

