Echolink and IRLP

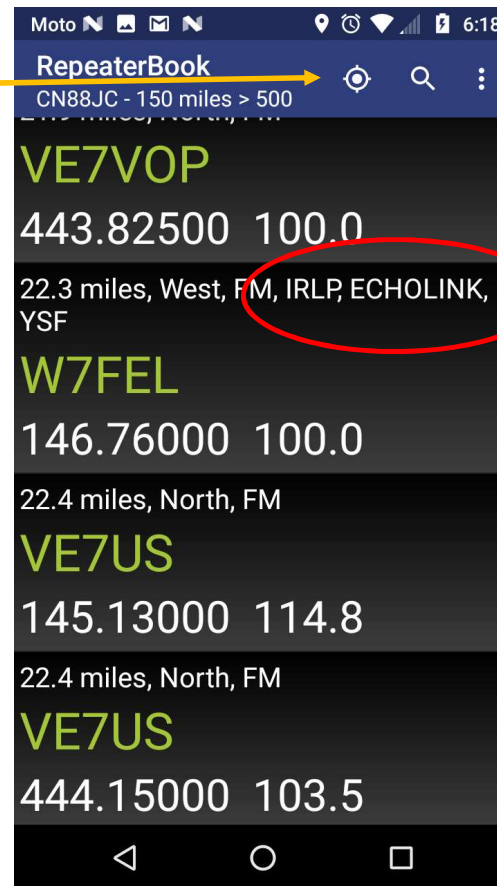A Presentation for CCARES

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What are they?

- FRM: Frickin' Radio Magic

- They are systems that allow you to access (pop-out at) a far away repeater
  - They can be used to check in to a net when you are travelling or can't hit the repeater
  - They can be used to annoy Chuck Jones and perform "fake" DX connections

- VHF / UHF / 6m repeater owners can install hardware and software to put their repeater TX and RX audio over the internet using VOIP

- This allows you to access a far-away repeater either from a local one or from a s/w app (Echolink)

- Be aware that these are **NOT** private connections
  - Your transmissions are being broadcast at the repeaters
  - LISTEN before you transmit

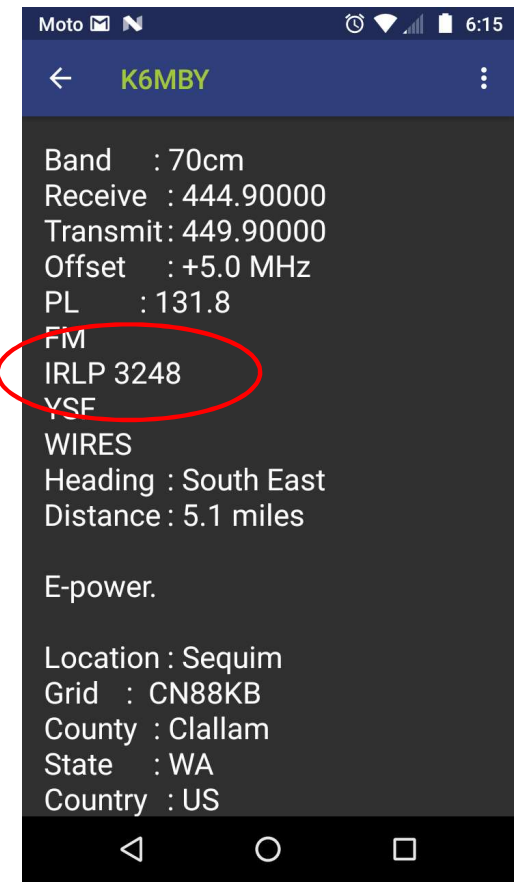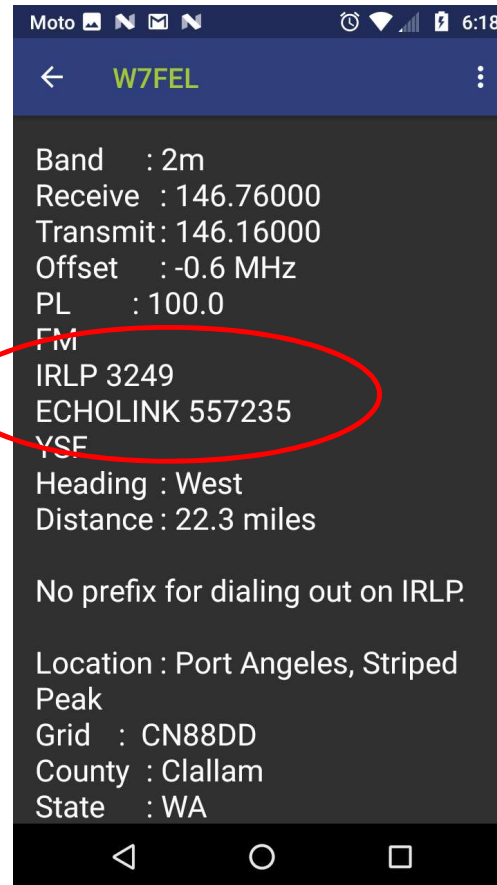- Use RepeaterBook to find repeaters that support these features

Free RepeaterBook Android App

- Search from you current location
  - Use the GPS "target" icon

- Search at a different city

- Search a specific frequency

- Search for a specific call sign

- Specify what bands to include

- The Echolink app provides an alternate location search
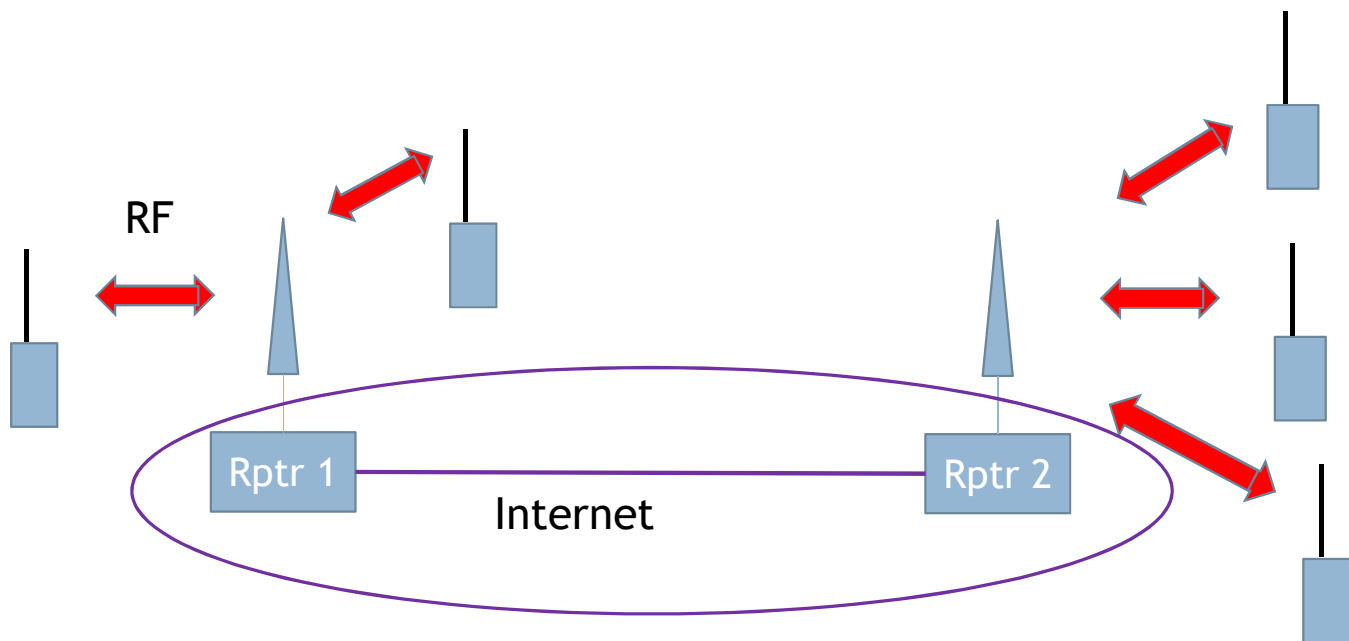
- Tap to get connection info

W7FEL & K6MBY Specifics

- Location
- Distance
- Offset
- PL Tones
- IRLP and Echolink Nodes

W7FEL

Band : 2m
Receive : 146.76000
Transmit : 146.16000
Offset : -0.6 MHz
PL : 100.0
FM
IRLP 3249
ECHOLINK 557235
YSF
Heading : West
Distance : 22.3 miles

No prefix for dialing out on IRLP.

Location : Port Angeles, Striped Peak
Grid : CN88DD
County : Clallam
State : WA

K6MBY

Band : 70cm
Receive : 444.90000
Transmit : 449.90000
Offset : +5.0 MHz
PL : 131.8
FM
IRLP 3248
YSF
WIRES
Heading : South East
Distance : 5.1 miles

E-power.

Location : Sequim
Grid : CN88KB
County : Clallam
State : WA
Country : US

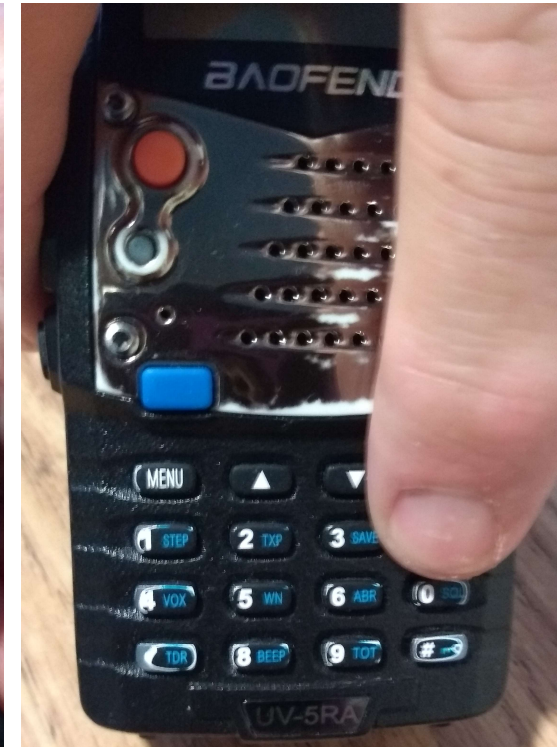# IRLP Connection

RF

Rptr 1

Rptr 2

Internet

IRLP (irlp.net)

- Internet Radio (Repeater) Linking Project
  - Developed in 1997 by David Cameron, VE7LTD

- Connects two or more IRLP-enabled repeaters via internet

- Both repeaters are "hot"

- USE DTMF tones to enable or drop (73)

- 9990 node is "echo-reflector" for loop-back testing
  - Records your transmission and plays it back
  - Everyone on the LOCAL repeater Tx and Rx frequencies can hear it
  - Press 73 to disconnect

- Delay after pressing PTT before speaking or sending codes
  - There can be both internet and repeater delays
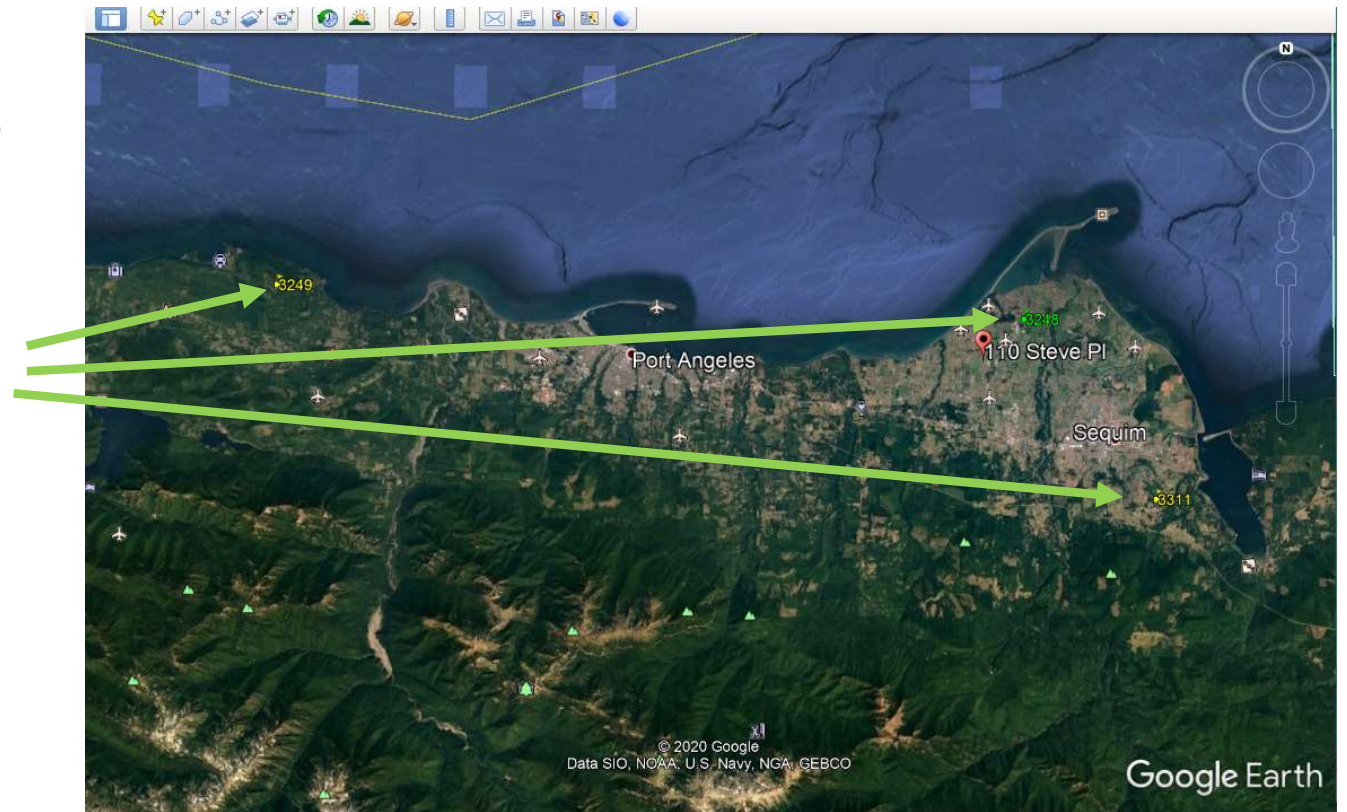 - It is recommended to pause 5 secs between transmissions

Sending DTMF Tones

- Press and HOLD the PTT button

- Press the tone codes in sequence

- They only need to last 0.2 seconds

- Usually a 2-handed process

- Know where A,B,C,D,* and # are
  - They may required for an unlock prefix

- Send 73 to disconnect
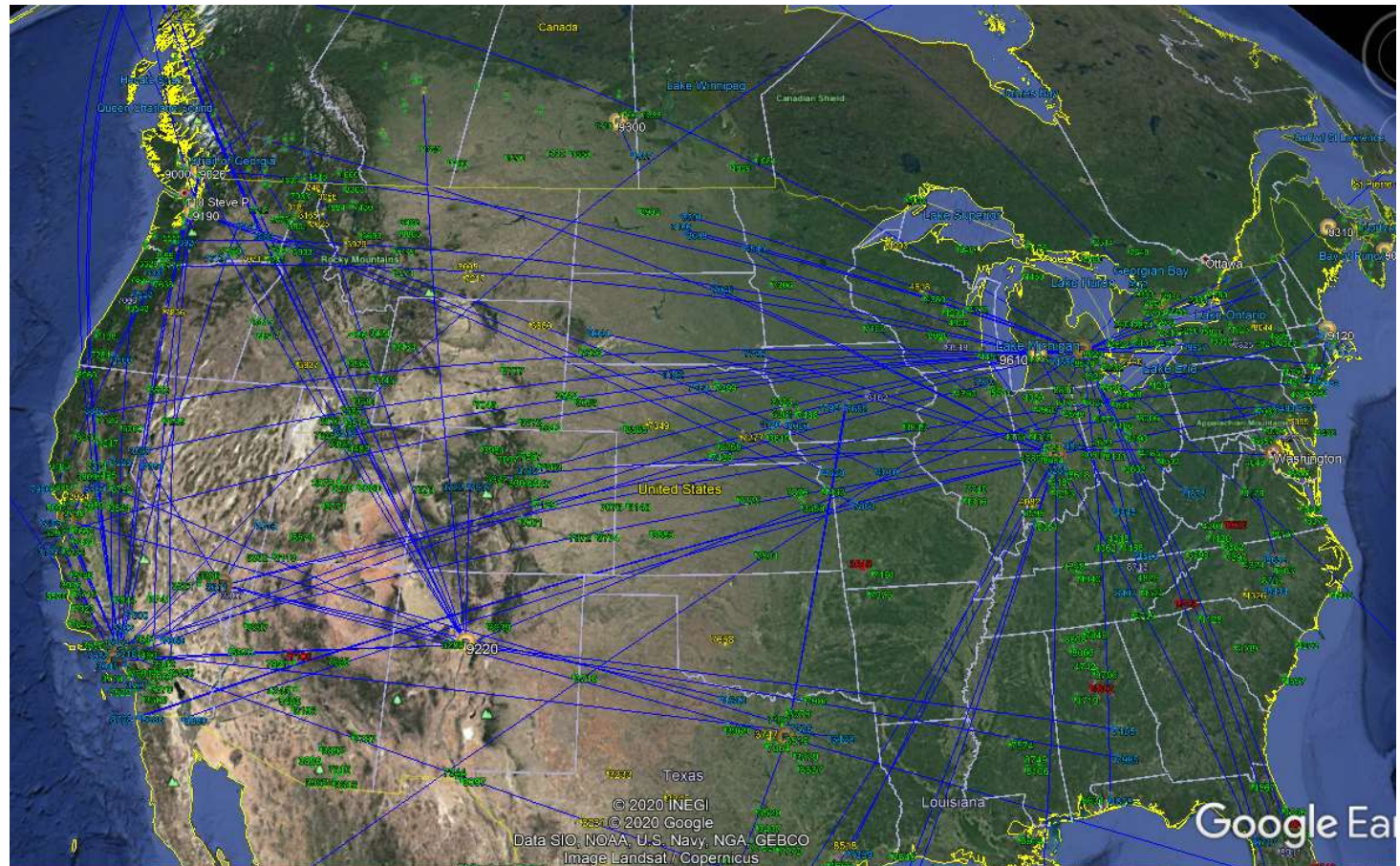
- W7FEL has a prefix required

IRLP Google Earth Node Map

- IRLP website has downloadable kml file of active nodes

- Import to Google Earth

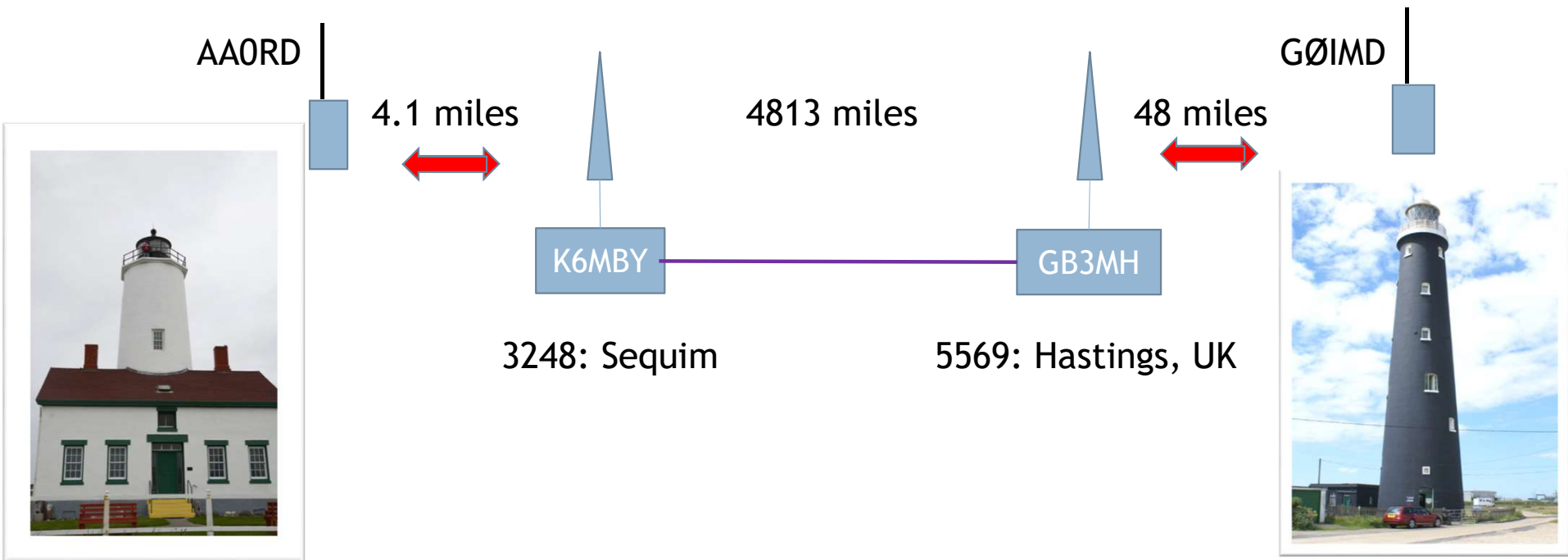- Shows on-line nodes as of download time

IRLP Google Earth Node Map

- Active nodes

My Lighthouse QSO

AA0RD

4.1 miles

K6MBY

3248: Sequim

4813 miles

GB3MH

5569: Hastings, UK

48 miles

GØIMD

Echolink (echolink.org)

- Connects you via radio or internet to an Echolink-enabled repeater

- Free PC or Phone downloaded app
  - Requires call sign verification
    - Download and run Echolink app first, with your call sign in Tools > Setup
    - Send a pdf copy of your license as a reply to the email
  - You must have Wi-Fi or cell data connection to use one of the apps
  - Your side is you only, the repeater side is "hot"
  - No DTMF tones, but loop-back test node
    - Station > Connect To Test Server
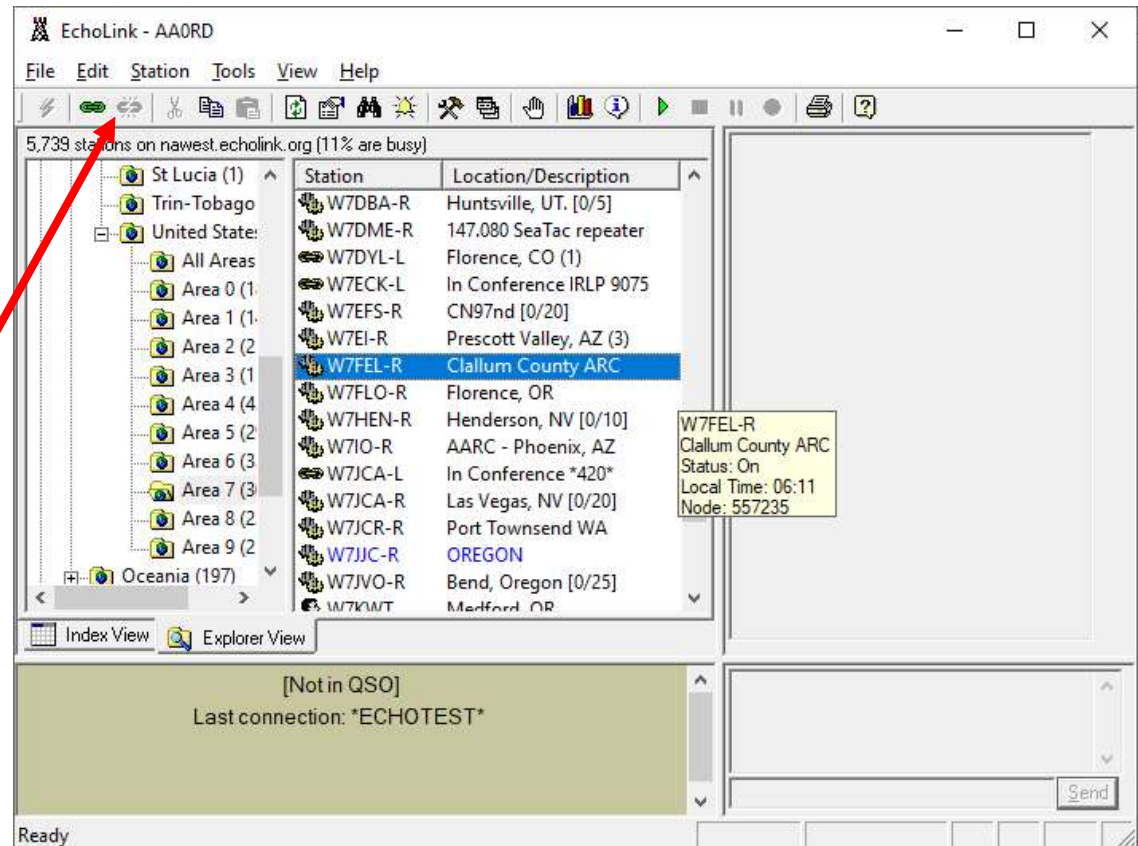   - Adjust Mic and Speaker levels: Tools > Adjust Sound Device

Echolink: Radio Mode

- For radio mode, use DTMF node number codes into the local repeater.

- If the repeater is "EchoIRLP" (supports both modes), then a non-numeric prefix tone will be required to specify an Echolink connection.
  - May not be published

- W7FEL requires C prefix
  - Ex: C71066 for the Hastings, UK 6m repeater

- K6MBY requires # prefix
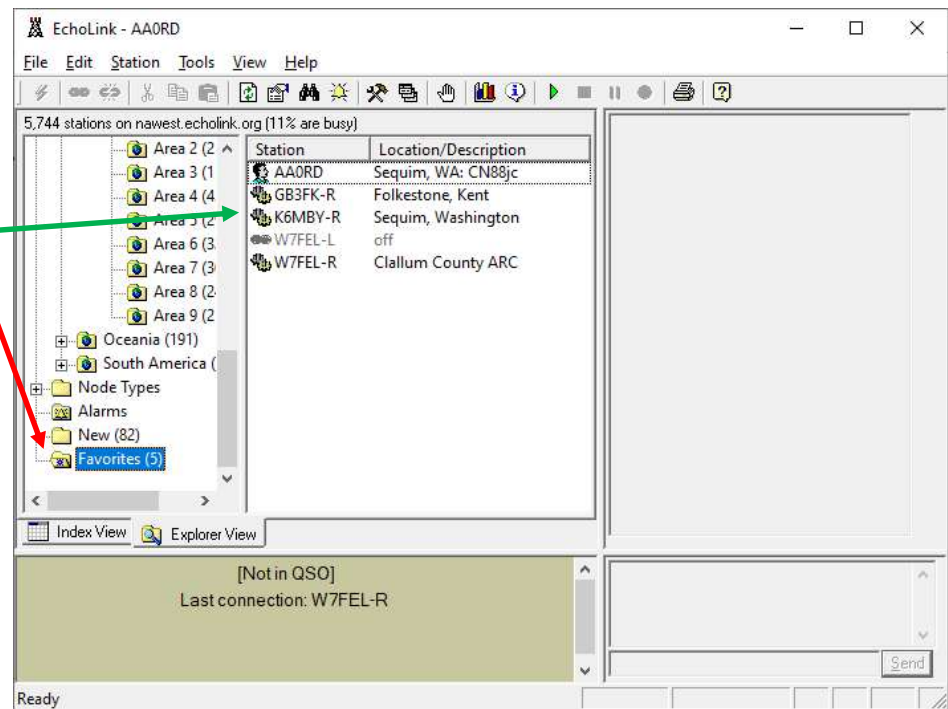 - Ex: #45573 for the Antwerp, Belgium VHF repeater

Echolink PC App – Pick a station

- I prefer Explorer View
- Locations > North America >
  - United States > Area 7
  - Select W7FEL-R
- Makes the connection then! Live!
- Or Right-Click: Add to Favorites
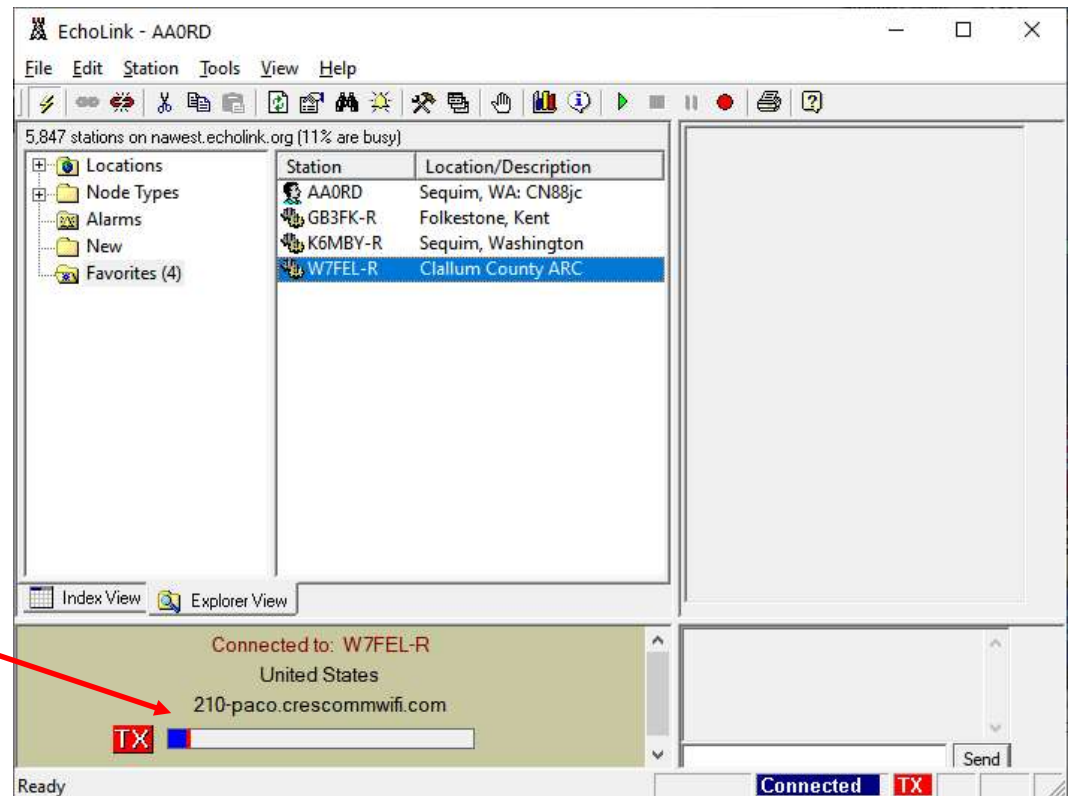
- Connect & Disconnect menu icons

Echolink PC - Favorites

- Favorites "folder" is at the bottom in the Explorer view

- Clicking on a station in the right window will make the connection

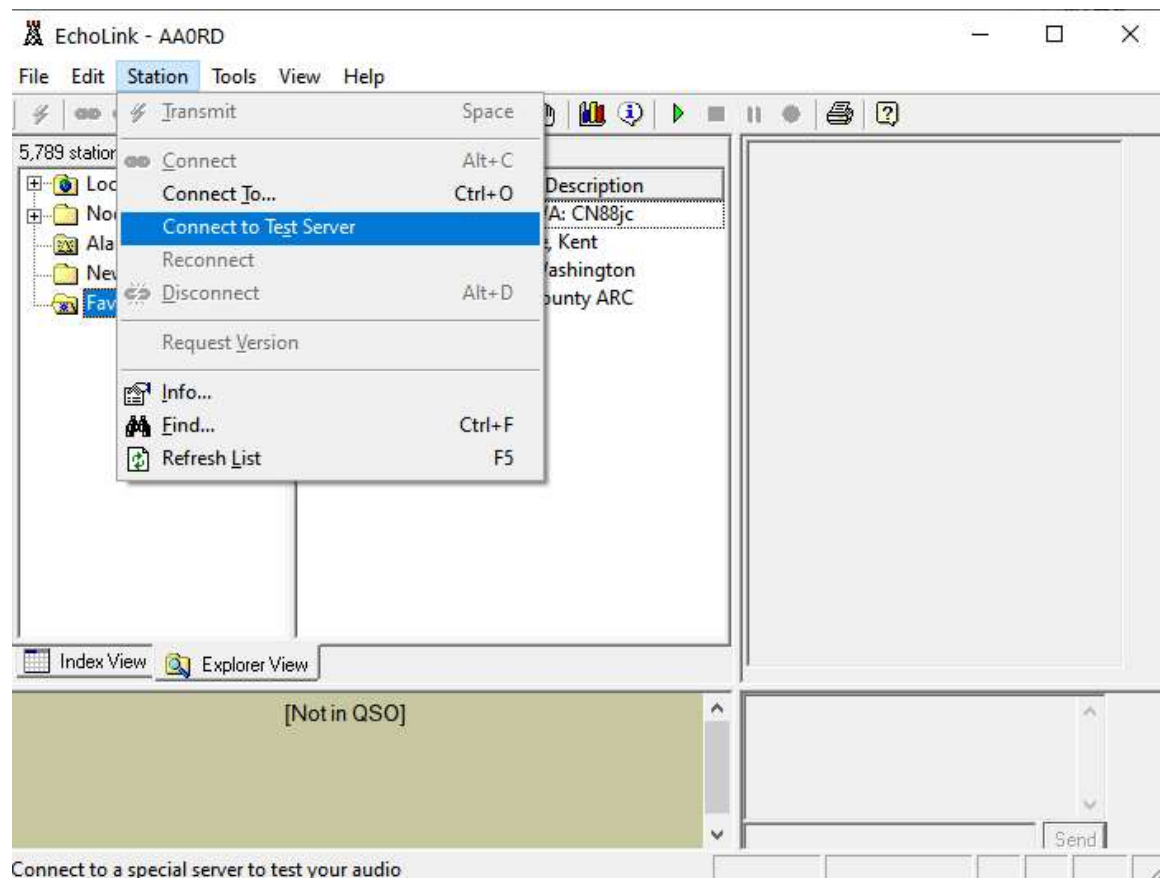- The repeater will announce the connection on that end, and that will echo on your end

Echolink PC - Talking

- Press the spacebar to toggle transmit on and off, like the PTT button.

- Remember that everyone on the repeater can hear you

- The repeater is busy until you tap the spacebar to toggle Tx off, just like keeping your PTT button down

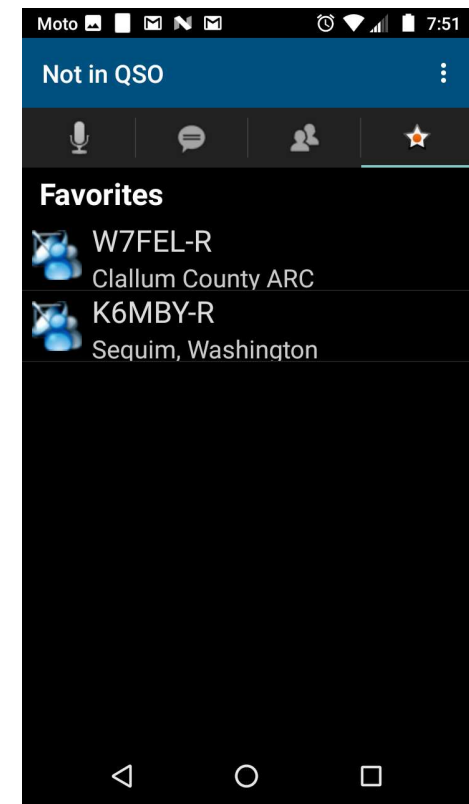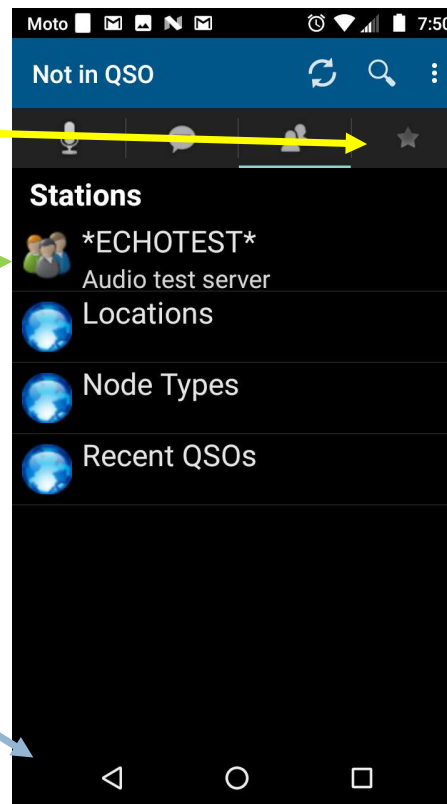- The sliding bar indicates your mic volume level, and shows the red TX box

Echolink Loopback Test
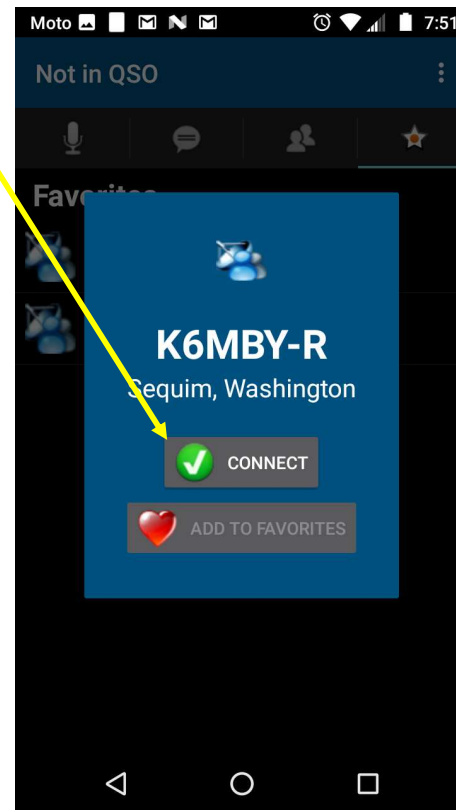
- Menu: Station > connect to test server

Echolink: Android

- Tap the star to see Favorites

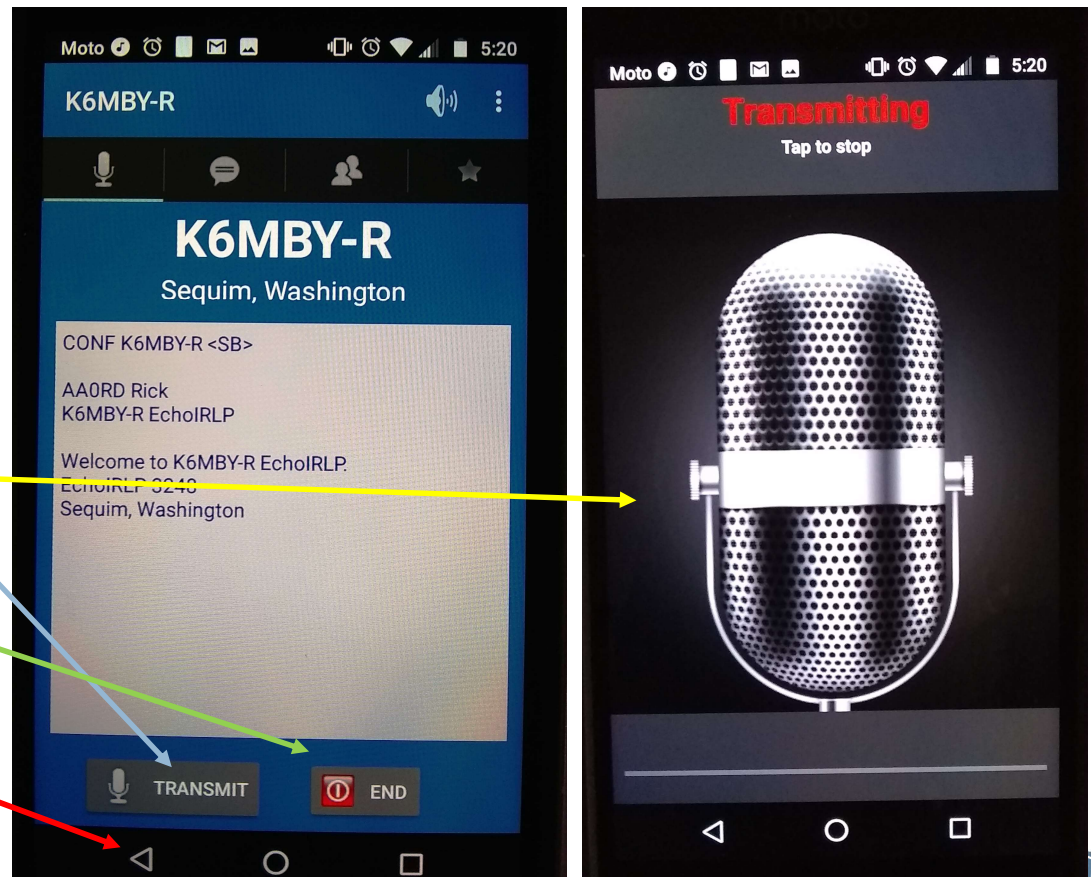- Loopback test server

- Gotta use "back" arrow to close app

Echolink Android: Select Station

- Tap "Connect"
  - Repeater will announce the connection on that end, and that will echo on your end

- Tap "Transmit" as if using PTT at the repeater.
  - Everyone on the repeater can hear you
  - The repeater is busy until you tap the big microphone image.

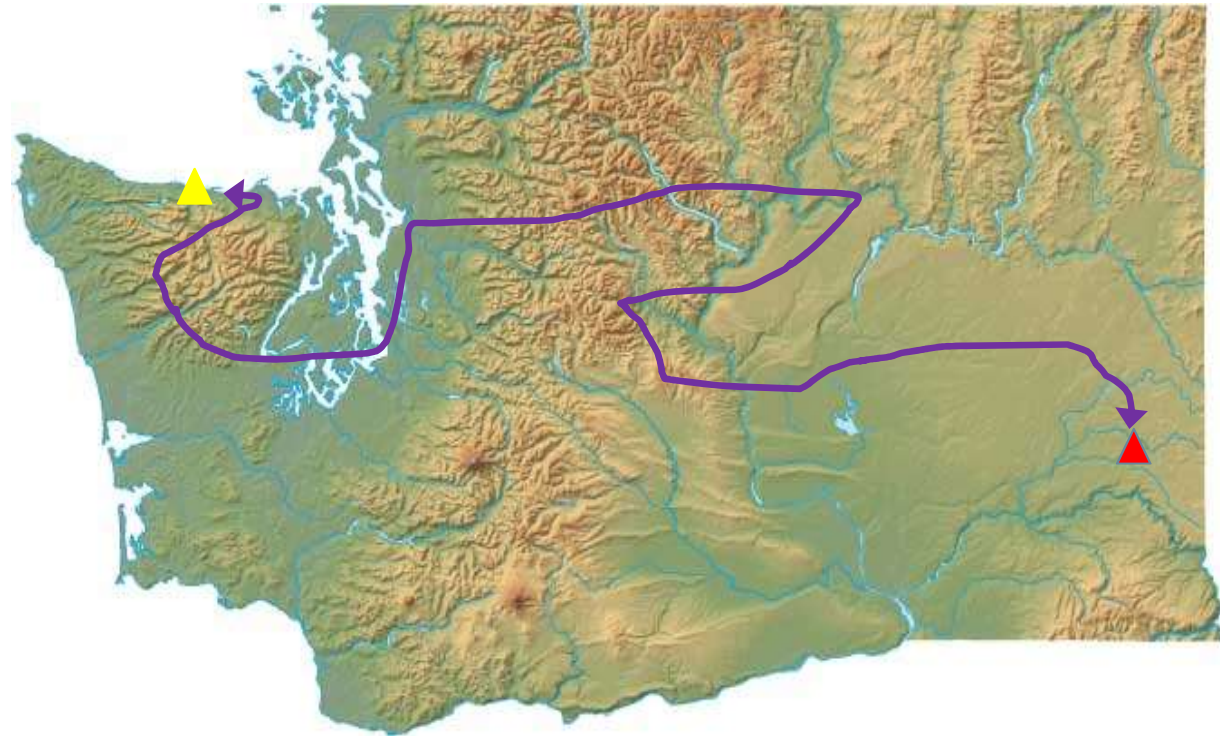- Gotta use "back" arrow to close the app

Echolink Android: Connected

- Tap Transmit
  - The microphone screen indicates that you are transmitting at the repeater
  - The repeater is busy, just like using a PTT button

- Tap anywhere on the microphone to stop transmitting.

- Tap End to release the remote connection

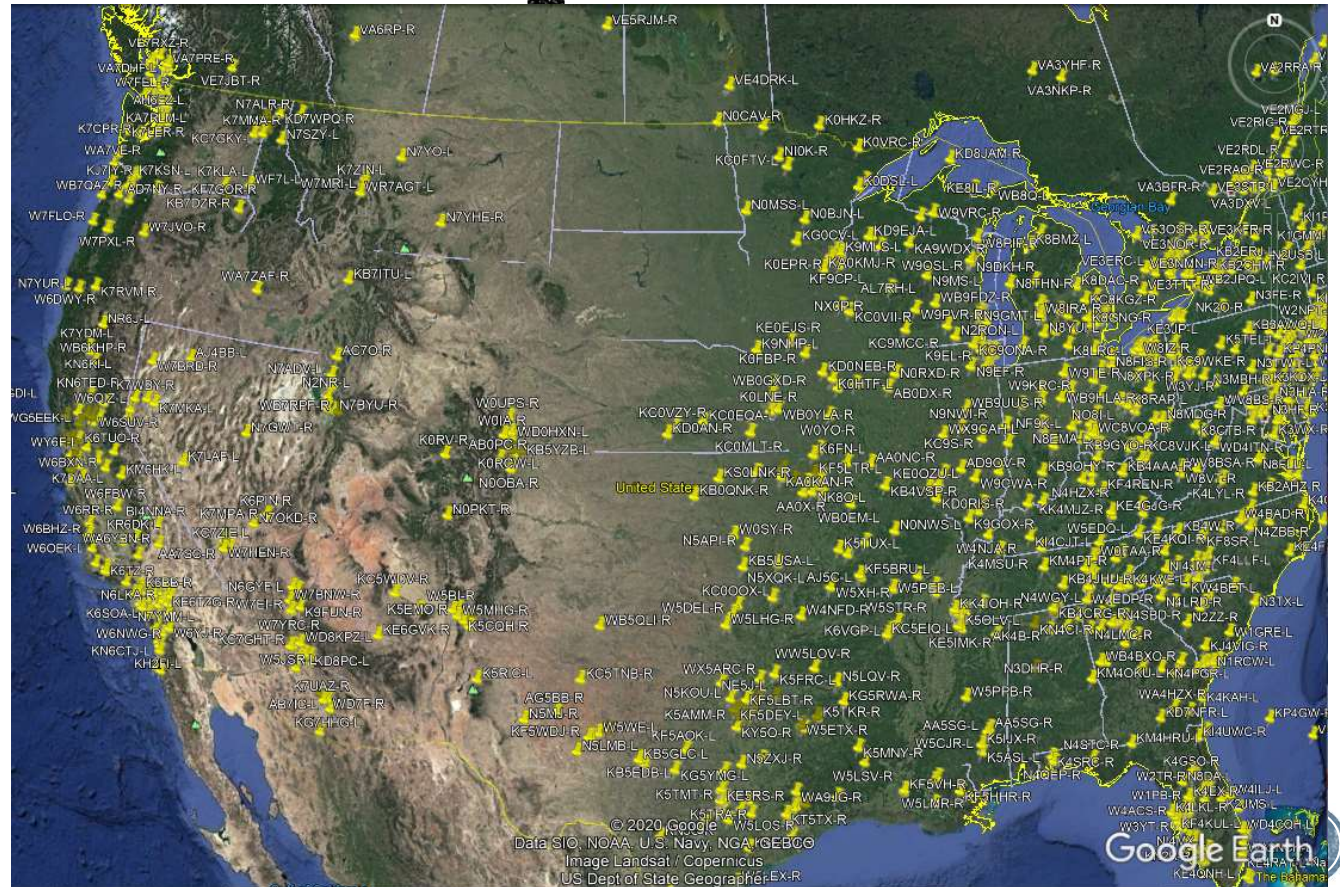- Use the back arrow to close the Echolink app

Echolink: Remote Net Check-in

- We attend the Sprint Boat races in St John, WA; near Pullman

- For a long time there was no Sprint cellphone service

- The only reachable repeaters were not IRLP or Echolink enabled

- We park behind the library; which has free open WiFi

- I would connect to W7FEL via my laptop for net check-in

Echolink: Node Map

- Download kml file
- http://www.echolink.org
  - Link Status
- Display in Google Earth

IRLP Live Demo!

- Connection to Honolulu, Hawaii
- Node 3080 through K6MBY

Echolink Live Demo!

- Connecting to WB6MAX-R in El Segundo , CA
  - Via PC app

- Then via radio to another remote repeater via the K6MBY local UHF repeater