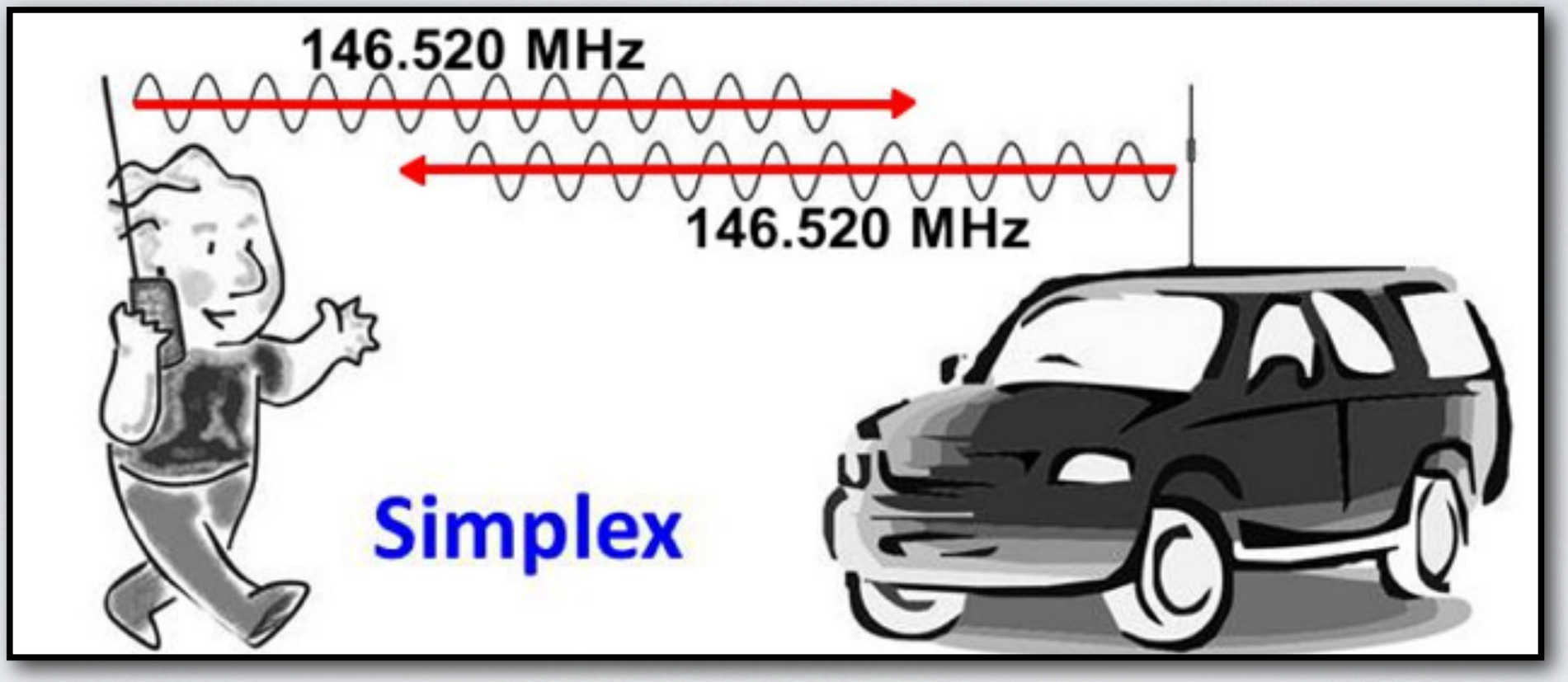
Things to do with an HT (Handi-Talkie)

Things to do with an HT
(Handi-Talkie)

with
Larry Elkin, NY5L
Ed Poccia, KC2LM
Terry Zipes, W4RCN

Operating Simplex



Simplex Frequencies:

2 Meters: 146.52 (National Calling), 146.55, 147.42
1.25 Meters: 223.50 (National Calling) 223.42, 223.52
70 cm: 446.0 (National Calling)

SOTA - Summits on the Air

Summits On The Air is an amateur radio operating award program. Usually an HF project but VHF & UHF operations take place, too.

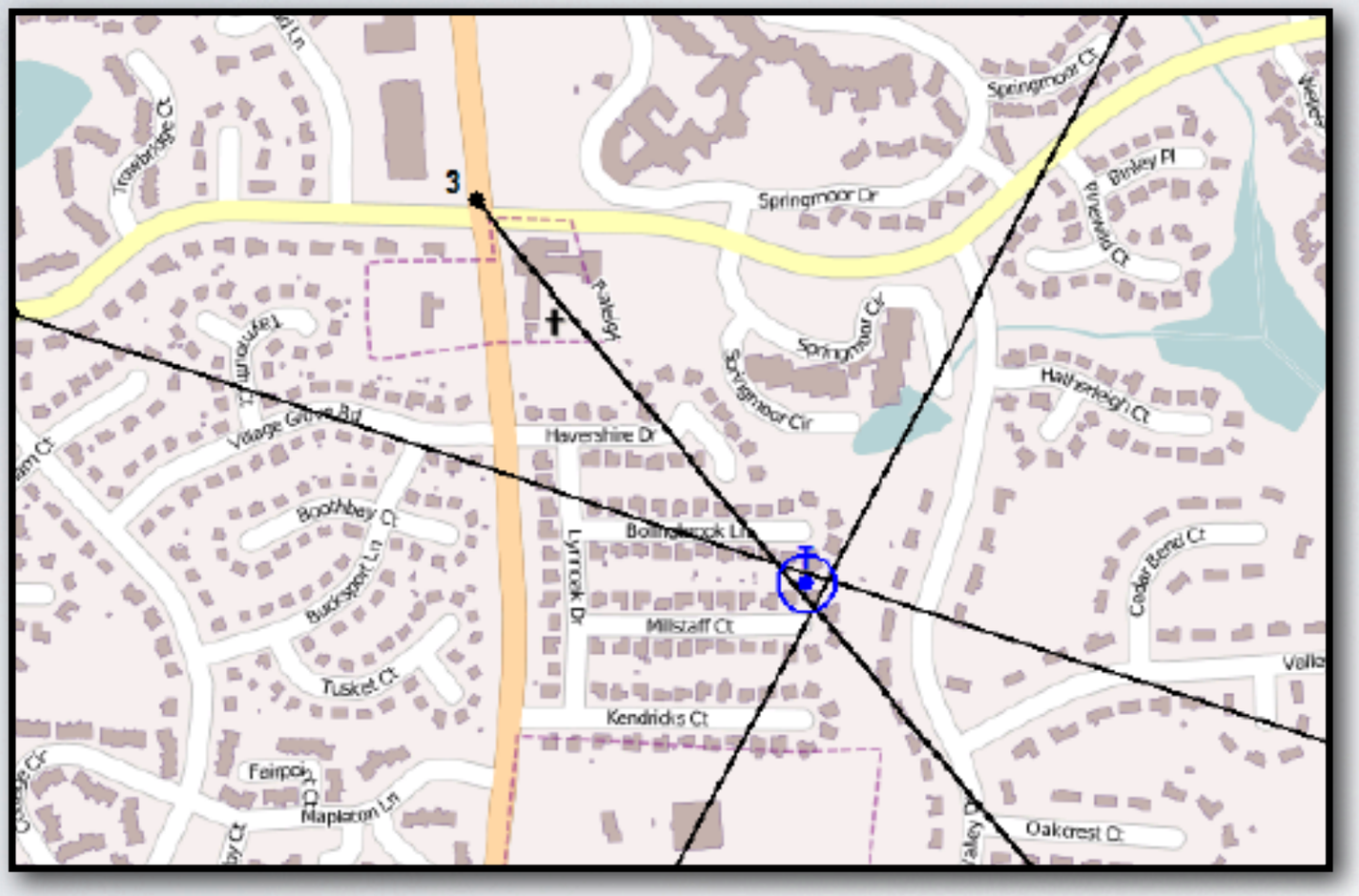
SOTA's aim is to encourage hams to operate temporarily from mountainous locations, combining hiking with operating their HT from the summits of hills and mountains.

* Join the organization, register your operation.
* Chasers (those working summit operators) are also welcome.
* The Elk, Arrow, & Buddipole are popular antenna choices

elkantenna.com, arrowantenna.com & www.buddipole.com

http://www..https://sota.org.uk

Transmitter Hunts



* Homemade directional antennas combined with triangulation techniques enable "Fox Hunters" to locate transmitter targets.

* "Fox Hunt" activities develop skills needed to find interfering signals

http://www.w0qe.com/transmitter_hunting_basics.html

HT Programming

Make a Programming Sheet with ALL Necessary Data

Frequency Mode Menu 21 Press the red "Menu" button and then the 2 and 1 (menu 21), then the red "Menu" button, press the arrow up/down until "FREQ" is indicated on display, then press red "menu" button to save it and then the "Exit" button (you should have a upper display with a frequency number on it (XXX.XXX). Using the HT's key pad input the desired "repeaters" frequency using all six digits (XXX.XXX) and verify on the display.

Six more sets of instructions follow for: **Freq. Offset Direction, Freq. Offset, Saving Memory Channel, Naming the Channel, Naming the Mode**

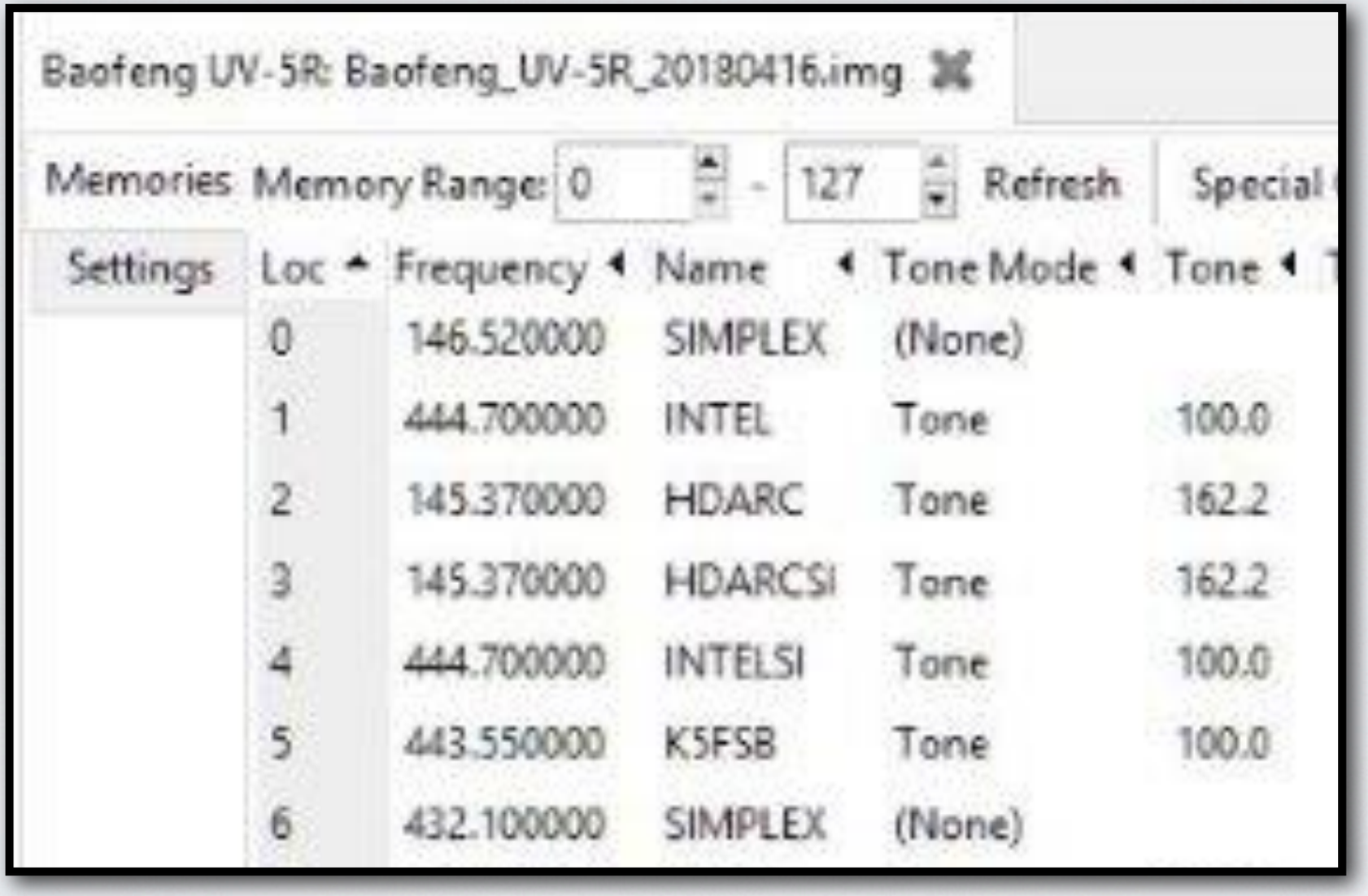
If you were to program ONE set of satellite Memory Channels you would have to do this 35 Times.

Complete Instructions can be found at :
https://www.worldwidedx.com/threads/wouxun-kg-uvd1p-ht-programming-tutorial-by-kj6hyc.80999/

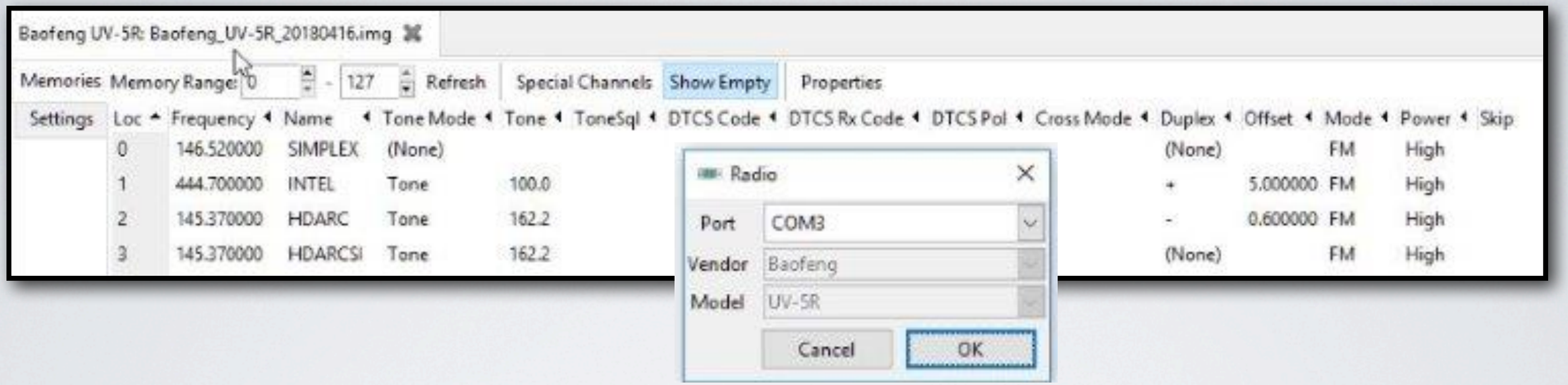
"Chirp" Programming Software

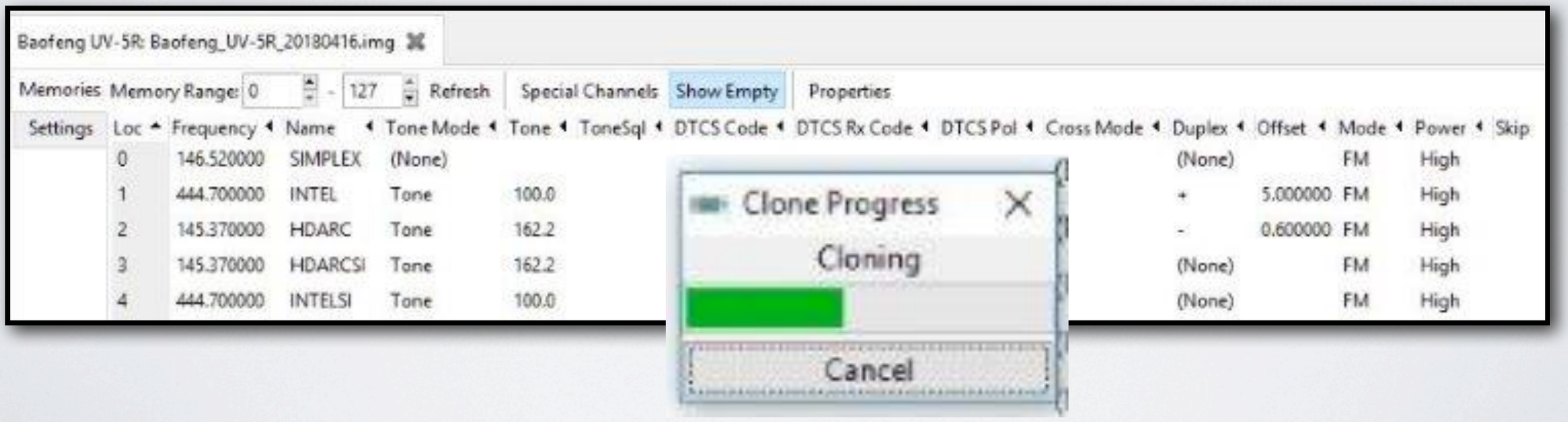
with Terry Zipes, W4RCN

CHIRP is a free, open-source tool for programming your amateur radio. It supports a large number of manufacturers and models, as well as provides a way to interface with multiple data sources and formats.



"Chirp" Programming Software - (con't)





https://chirp.danplanet.com/projects/chirp/wiki/Home

Programming Shortcuts

RT Systems: Programming Software

www.rtsystemsinc.com

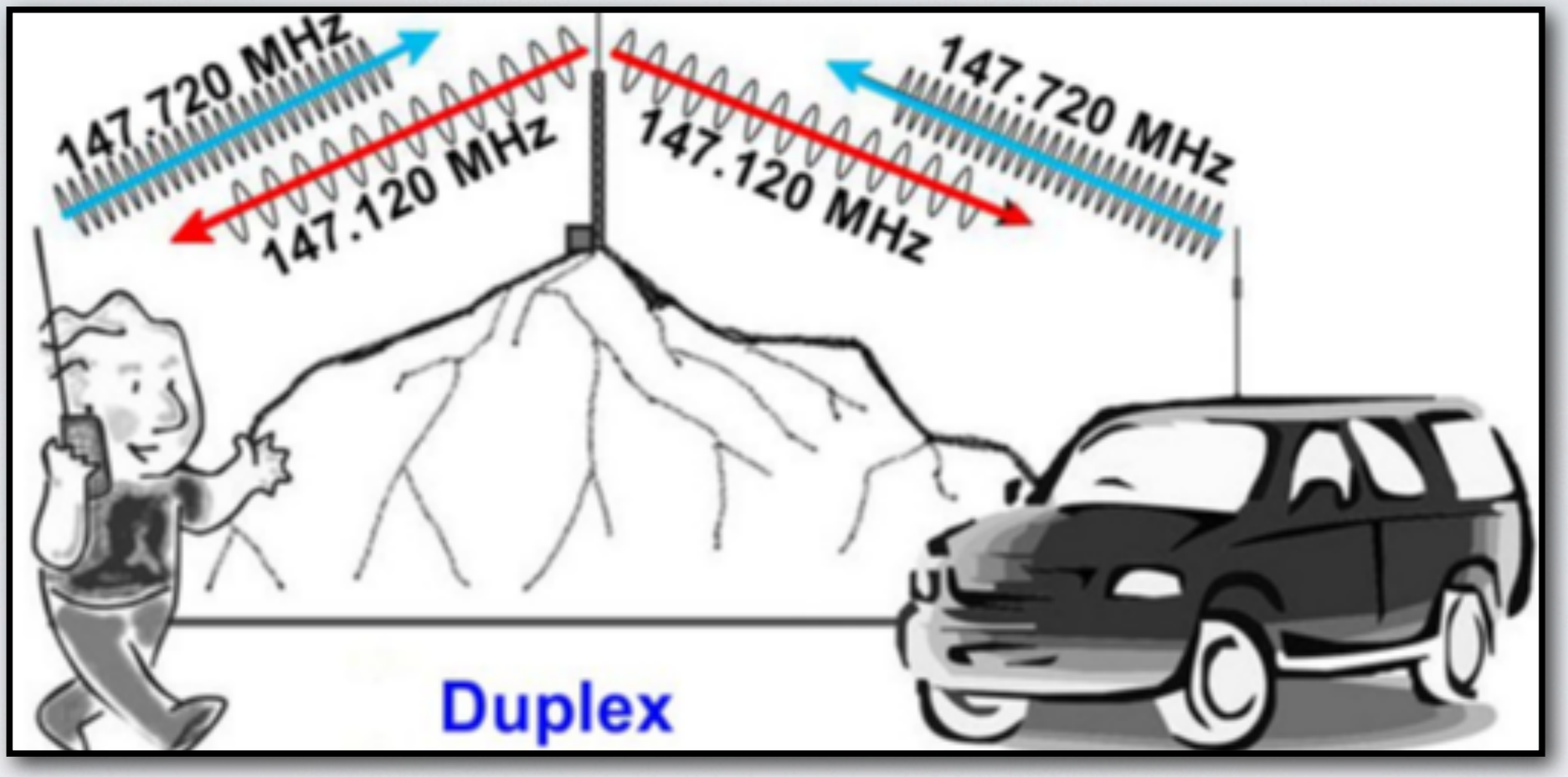
* Greatly simplifies the process of programming modern HTs
* Most Wouxun, Baofeng and Kenwood HTs use the same cable

Wouxun PPG

	Receive Frequency	Transmit Frequency	Offset Frequency	Offset Direction	Operating Mode	Name	Tone Mode	CTCSS	Rx CTCSS	DCS	Rx DCS	DCS Polarity	Tx Power	Scan Add
85														
86	145.98000	435.16000		Split	FM	A085 1	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
87	145.98000	435.16500		Split	FM	A085 2	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
88	145.98000	435.17000		Split	FM	A085 3	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
89	145.97500	435.17500		Plus	FM	A085 4	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
90	145.97500	435.18000		Split	FM	A085 5	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
91														
92	146.96000	435.24000		Split	FM	FOX B1	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
93	145.96000	435.24500		Split	FM	FOX B2	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
94	145.96000	435.25000		Split	FM	FOX B3	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
95	145.96000	435.25500		Split	FM	FOX B4	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
96	145.96000	435.26000		Plus	FM	FOX B5	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
97														
98	145.88000	435.34000		Split	FM	A092 1	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
99	145.88000	435.34500		Split	FM	A092 2	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
100	145.88000	435.35000		Split	FM	A092 3	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
101	145.88000	435.35500		Split	FM	A092 4	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan
102	145.88000	435.36000		Split	FM	A095 5	Tone	67.0 Hz	67.0 Hz	23	23	Both N	High	Scan

Duplex - Repeater Operation

* Repeaters Greatly Extend Range



* Private Line, (PL) tones usually needed
* Standard Offsets: 2 Mtrs Plus/Minus 600KHz, 5MHz 70 CM
* Locate Antennas on Center of Vehicle for uniform coverage

Repeater Operations

with Larry Elkin, NY5L

* Located on hill tops to increase their "foot print".

* Listen First "NY5L Listening"

* Give your name, sometimes with "phonetics"

* Use Round Tables to allow for more participants

* Keep transmissions short

* Provide wait time when turning it over, to allow for priority use. Listen for "breakers."

* Allow times for repeaters to reset. Especially necessary when using linked repeaters or operating through a Mega-Link System

Repeater Operations (con't #2 of 3)

* Join clubs to sponsor & support repeaters

* ID at beginning and end, CLEARLY & at least every 10 minutes; do not ID too often

* Keep things up-beat and friendly, avoid politics & controversial issues

* Selling of ham radio equipment permitted (infrequently)

* Avoid CW and CB lingo: What's your handle, 10-4 good buddy, What's your 20?, Hi Hi, My QTH? LOL...

Repeater Operations (con't #3 of 3)

* Allow directed calls to make connection

* Avoid "Kurcunks" without an ID

* Rush hour/commuting times are busy. Keep chats short to allow for emergency calls

* Use "Priority" or "Emergency" to jump-in for **emergency or priority calls**

* **NM's The Mega-Link System** is about 30 repeaters located throughout the State that permits State-Wide coverage with just a HT.

All Those Nets - ABQ

Daily

Mon.-Sat. 7AM **SCAT Net**: 145.33 (-) PL 100 Hz & 444.0 (+) PL 100 Hz
Mon. - Fri. 8:45 AM **Rusty R.** 146.9 (-) PL 67 Hz, & other linked area repeaters
Everyday - 10:00 PM **220 Rag Chewers Net** 224.480

Sundays

9 PM **Caravan Club** 145.33 (-) PL 100 Hz & 444.0 MHz PL 100 Hz

Mondays

7:30 PM **Sandoval County ARES Net** 147.10 MHz (+, 100 Hz PL), 147.08 MHz (+, 100 Hz PL), 443.00 MHz (+, 100 Hz PL), and 443.10 MHz (+, 100 Hz PL)

Tuesdays

6:30 PM **KC5JBO Memorial SIMPLEX** 146.40 MHz

7:30 PM **Tailgate Tuesday** 145.33 (-) PL 100 Hz & 444 (+) PL 100 Hz

8 PM **Trivia Net** 146.940 (- 100), 146.96 (- 100), 442.600 (+ 100)

All Those Nets - ABQ (con't)

Thursday

7 PM **Bernalillo County ARES** Net 145.13 & 145.15 MHz (-) PL 100 Hz & 442.050 MHz (-) PL 100Hz Albuquerque Linked Repeaters

Friday

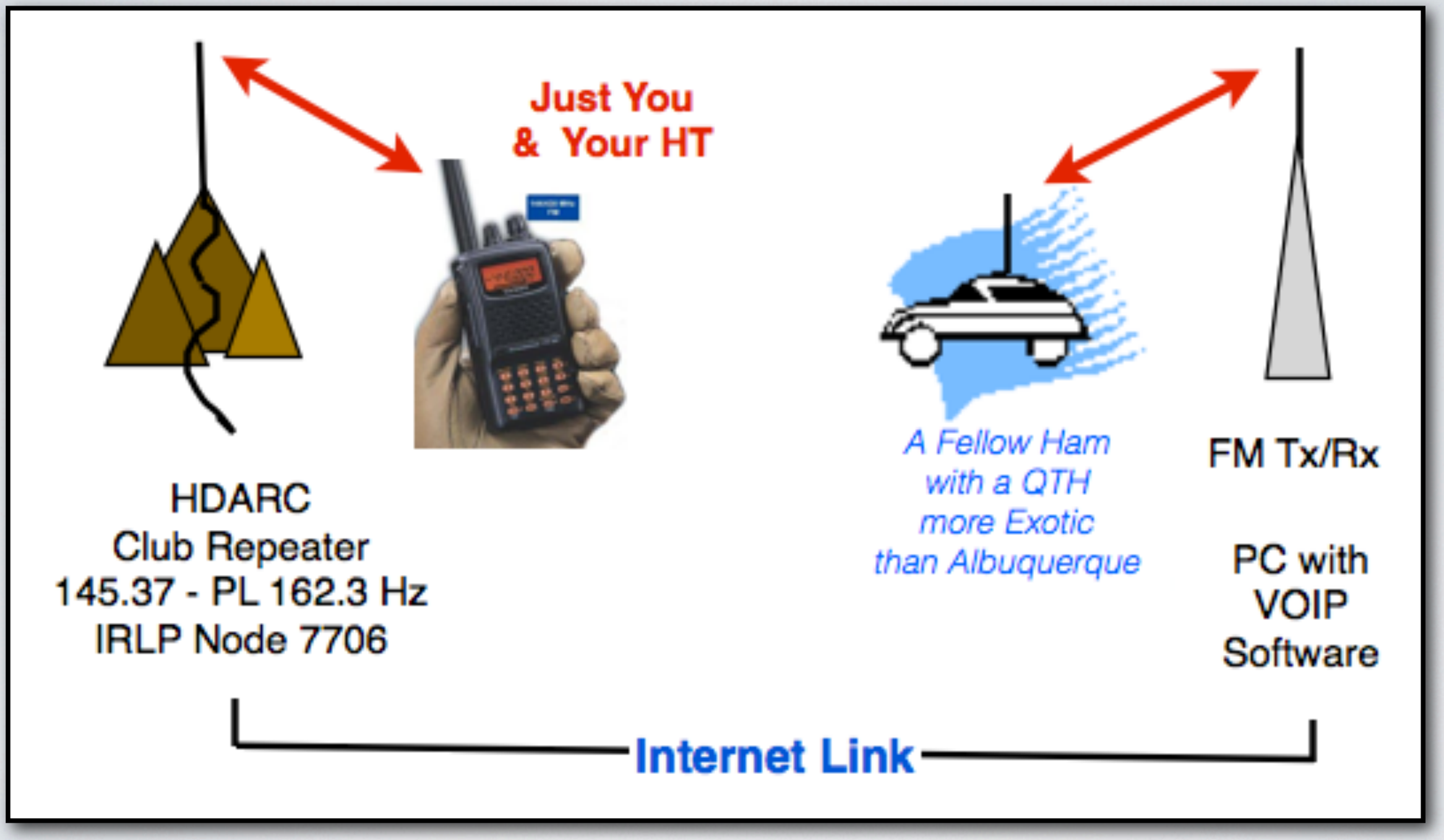
9:00 AM **State Wide New Mexico Dept. of Health Net** on all NM Mega Link Repeaters, 145.29 (-) PL 100 for Albuquerque

Saturday

9 AM **East Mountain FM Simplex** Net 146.55

For a Complete List of New Mexico Nets, visit;
http://www.arrl-nm.org/wp/nets/nets-around-new-mexico

Operating IRLP
(Internet Radio Linking Project)



Operating IRLP (con't)

IRLP Nodes By Country

Country	Nodes	In Use	Idle	Offline	Down
	53	0	10	1	42
American Samoa	1	0	1	0	0
Anguilla	1				
Antarctica	1				
Antigua & Barbuda	1				
Armenia	1				
Australia	164				
Austria	1				
Barbados	2				
Bermuda	2				
Canada	331				
Canary Islands	2				
Denmark	8				
Dominica	1				
Dominican Republic	16				
Ecuador	1				
England	71				
Germany	14				
Guam	1				
Ireland	8	0	4	0	4
Italy	7	1	2	0	4
Jamaica	1	0	1	0	0
Japan	23	0	7	1	15

Pull up the Country List at:
http://status.irlp.net/index.php?PSTART=3
and Click on Japan.

NodeID	CallSign	Node City
8097	JJ2YIW	NAGOYA, AICHI, JAPAN

NodeID	CallSign	Node City
8093	JA2WSM	Seki City

FOLLOW THE SEQUENCE BELOW TO MAKE CONTACTS VIA IRLP.

1. Tune to IRLP Repeater Frequency, Tone and Shift {HDARC 145.370 (-) 162.2 Hz.}
2. Use IRLP finder application or IRLP Node Net to identify a node in the world you wish to access. (http://status.irlp.net/index.php?PSTART=3)
3. **Listen** to be sure your **local repeater** is clear; then
4. "Your Call" - "wanting to use IRLP"
5. **Listen for any call back**, as QSO may already be in operation.
6. Press 7 & 3 to release IRLP node **IF** it is connected to other nodes
7. Type in number of node you wish to access
   - a voice may come on announcing the node (This is the ...)
8. **Listen** to be sure no one else is using the repeater at the other end
9. Call "CQ CQ this is (Your Call)
10. Carry on contact as a normal repeater operation
11. Disconnect the Link when done:
    - "(your Call) Closing the IRLP"
    - press 7 & 3 again

Working the "Birds"

Program the Radio

Receive Frequency	Transmit Frequency	Offset Frequency	Offset Direction	Operating Mode	Name	Tone Mode	CTCSS
145.98000	435.16000		Split	FM	AO85 1	Tone	67.0 Hz
145.98000	435.16500		Split	FM	AO85 2	Tone	67.0 Hz
145.98000	435.17000		Split	FM	AO85 3	Tone	67.0 Hz
145.97500	435.17500		Plus	FM	AO85 4	Tone	67.0 Hz
145.97500	435.18000		Split	FM	AO85 5	Tone	67.0 Hz

Find Azimuth & Elevation of Satellite Pass

AMSAT Online Satellite Pass Predictions - AO-85

View the current location of AO-85

Date (UTC)	AOS (UTC)	Duration	AOS Azimuth	Maximum Elevation	Max El Azimuth	LOS Azimuth	LOS (UTC)
16 Apr 18	03:26:54	00:11:46	351	10	30	92	03:38:40
16 Apr 18	05:06:25	00:15:29	333	64	35	144	05:21:54
16 Apr 18	06:47:39	00:12:43	309	15	263	197	07:00:22

* Use a compass to develop an arc of the satellite's pass.
* Locate landmarks to assist w/capture at AOS, MAX EL, & LOS (Loss of Signal)
* Open Squelch on radio; Baofeng & Wouxun set to "zero"
* Use **Elk or Arrow** antenna to aim and "capture" satellite. (quieting of squelch)
  (Small beam antennas with wide beam widths make precise positioning unnecessary.)
* Twist antenna to keep it aligned with polarity of the satellite
* Change Memory Channel to allow for Doppler Shift as Satellite moves thru arc

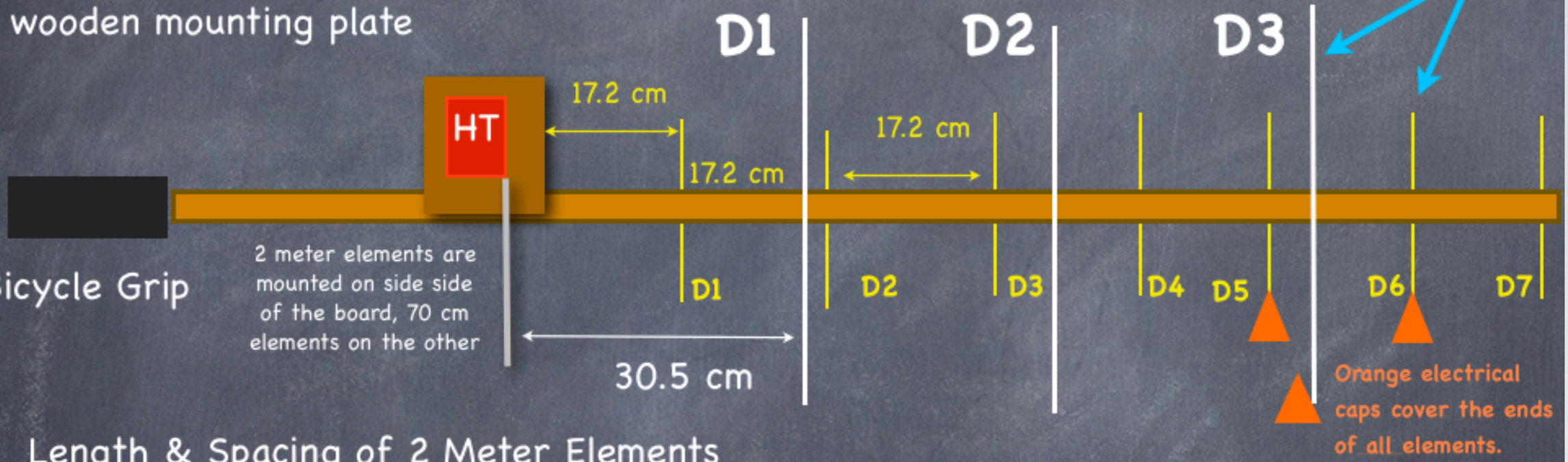
Simple Yagi for the SO-50 Satellite

(without Driven Element, Reflector, Matching Network or Feed Line)

Diagram NOT to Scale

Dual Band HT w/hand mic mounted with a velcro strap on wooden mounting plate

Elements made from 1/8 in. steel rods



Length & Spacing of 2 Meter Elements

Dimensions in centimeters

Director	D1	D2	D3
Length	95.3	92.4	91.4
Ele. Spacing	D1 to D2	D1 to D2	D2 to D3
Spacing	30.5	30.5	30.5

Length of 70 cm Elements

Dimensions in centimeters

D1	D2	D3	D4	D5	D6	D7
29.8	29.7	29.5	29.4	29.2	29.1	28.9

All 70 cm Element Spacing = 17.2 cm

DMR (Digital Mobile Radio)

Digital Mobile Radio uses digital technology along with a time division approach to enable greater levels of efficiency and performance along with improved spectrum usage.

* Enables Conversations with DX entities w/repeaters
* Hot Spots within your home may facilitate operation
* DMR Repeater Maps:

  http://www.va3xpr.net/dmr-repeater-map/

  https://www.repeaterbook.com/

Frequency	Offset	Tone	Location	County	Call	Use
440.8250	+5 MHz	CC1	Lordsburg, Jack's Peak	Hidalgo	N5IA	OPEN
442.2250	+5.05 MHz	CC1	Clovis	Curry	N7EOJ	OPEN
442.2500	+5 MHz	CC1	Albuquerque	Bernalillo	WA5IHL	OPEN
442.2500	+5 MHz	CC1	Aztec	San Juan	N5UBJ	OPEN
442.2500	+4.975 MHz	CC	Los Alamos	Los Alamos	NM5BB	OPEN
442.3250	+5 MHz	CC1	Farmington	San Juan	N5UBJ	OPEN
442.3250	+5 MHz	CC4	Rio Rancho	Sandoval	KG5SLG	OPEN
442.9000	+5 MHz	CC7	Albuquerque, Sandia Crest	Bernalillo	KA8JMW	OPEN

Weather Spotting Nets

Skywarn is a program of the United States' National Weather Service. Its mission is to collect reports of localized severe weather. These reports are used to aid forecasters in issuing and verifying severe weather watches

Local Training Session:
5/21/2018 Mon 7:00pm
Rio Rancho FD
1526 Stephanie Rd.
Rio Rancho, NM 8712₄

Contact: Kerry Jones, Warning Coordination Meteorologist, at (505) 244-9150 x223.

Freq: Rio Rancho 147.700, Santa Fe 147.200 & 147.300, Belen 146.7

SKYWARN training lasts 2 to 2.5 hours and include the basics of thunderstorm development, severe thunderstorm structure, storm spotting techniques and procedures, as well as hazardous weather safety and preparedness information.

Operators involvement is to report local weather conditions to a weather center via ham radio nets.

Preview training material: https://www.weather.gov/abq/skywarn_sked

A.R.E.S

Amateur Radio Emergency Service

Amateur Radio Emergency Service is a group of hams who volunteer to assist in public service and emergency communication.

HDARC Members Dave & Susan McVinny, & Marcie Clark Supporting the MS Bike Ride

Your Help is Needed:

May 6 : Run for the Zoo n7exb@arrl.com

May 20 : Santa Fe Century

August 5 : La Luz Trail Run

August 25-26 MS 150 Bike Tour

Sept. 23 Tour of the Rio Grande Valley

Oct. 21 : Duke City Marathon

Contact: Ed Ricco N5LI

SSTV Images from the ISS

* ISS transmits SSTV images to commemorate special events
* ARRL Newsletter announces upcoming broadcasts
* Use **amsat.org**, Select: Sat. Info, Pass Predictions to track the ISS

AMSAT Online Satellite Pass Predictions - ISS

View the current location of ISS

Date (UTC)	AOS (UTC)	Duration	AOS Azimuth	Maximum Elevation	Max El Azimuth	LOS Azimuth	LOS (UTC)
11 Apr 18	18:44:44	00:10:20	209	33	115	56	18:55:04
12 Apr 18	02:51:06	00:10:37	309	61	215	140	03:01:43

* Grid Locator for ABQ is **DM65**
* 145.800 MHz
* HT & Simple antenna works fine

SSTV Images (con't)

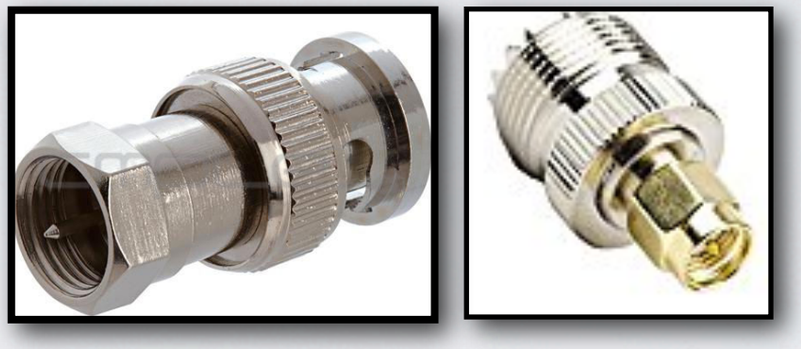
Record

Play

MMSSTV Software
FREE from tigertronics.com

Helpful Accessories

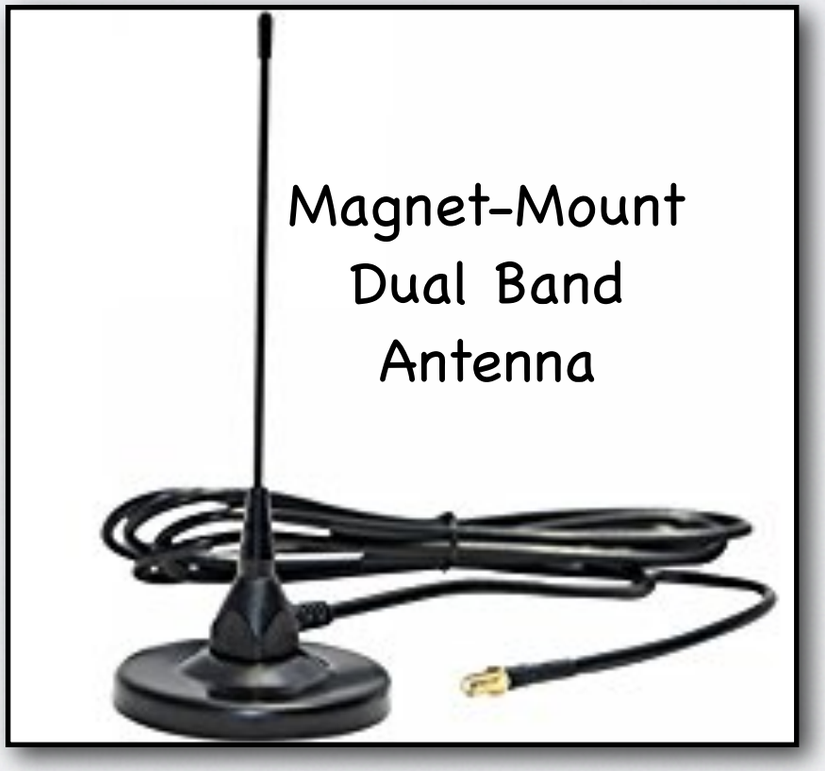
Speaker / Mic



Coax Adapters

Battery Eliminator

Cup-Holder Mount



Magnet-Mount Dual Band Antenna

Dual Band Amplifier
5 watts In
35 watts Out

Questions & Comments: