



Welcome to Ham Radio 101 New Tech Session

Sponsored by Bay-Net www.bay-net.org



Agenda

New Technician / New Licensee

- 8:00 Kickoff
- 8:15 VHF/UHF Gear - David
- 9:00 VHF/UHF Operating - George
- 9:45 Digital Radio- George

New General / Extra

- 10:15 HF Gear - George
- 11:00 HF Operating - David
- 11:45 Q&A
- 12:00 Wrap up

Bay-Net www.bay-net.org

Virtual Amateur Radio Club

> 440 “members” - groups.io

7 repeaters @ 2 sites

Analog FM

DMR, D-Star & C4FM Digital

IRLP / EchoLink VOIP

Events

Field Day

Antenna Shootout

BayCon

Urban Shield

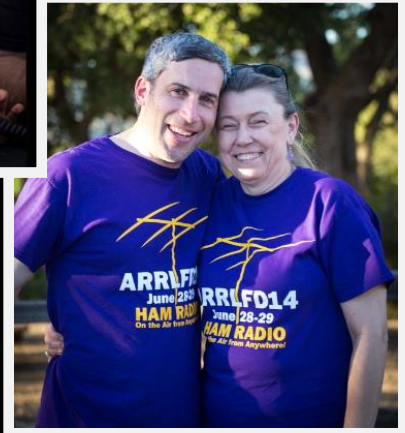
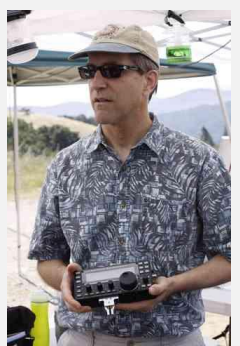
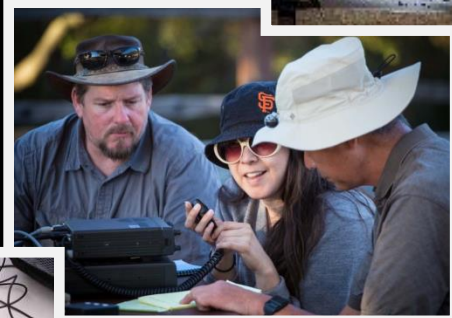
Supports

American Red Cross

FEMA USAR TF 3

Radio Mala - Nepal

501(C)3 Non-profit



Great Resources

- Ham Radio Workbench Podcast www.hamradioworkbench.com
- TX Factor  www.txfactor.co.uk
- The Doctor Is In www.arrl.org
- QSO Today podcast www.qsotoday.com
- Bay-Net website www.bay-net.org

BayCon 2020

Annual Bay-Net Radio Conference

February 8th - 9 AM – 5 PM

Plug-n-Play Tech Center – Sunnyvale

Terms...

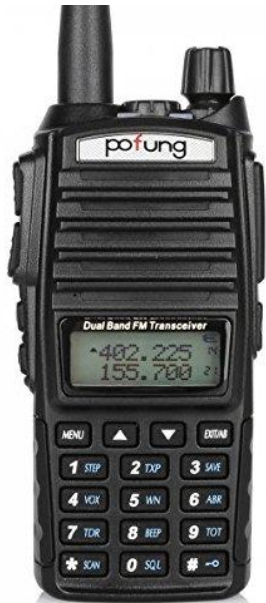
- “Station” - Your transceiver not specifically a place
- “Shack” - Your home station
- “Rig” - Your radio (even a hand held)
- “Go Bag” or “Go Kit” - Organized set of accessories you can “grab and go” and be fully operational
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- VHF = 2 meters (2m)
- UHF = 70 centimeters (70cm) = “440”

Assumptions - You Want To Operate...

- Portable/Handheld - “HT - In your hand”
- Mobile radio - “In your car”
- Base station - “In your shack”

Choosing Your First HT

Go Cheap But Functional



Baofeng UV82~ \$30
Upgrade later
Basic VHF/UHF

Go Mainstream



ICOM IC-T70A - \$199
Yaesu FT-60 - \$154
Solid Analog VHF/UHF
<http://tinyurl.com/y7u8s8ty>

Go Feature-Rich



Yaesu FT2D
~~\$419~~ \$369
Great radio ++
Digital, APRS, etc.

Choosing Your HT

Go Cheap But
Functional



Baofeng UV82
\$30

Upgrade later

- Start with a cheap HT <\$100
- Learn the basics
- Camping / Hiking
 - On roof
 - Loaner
- Upgrade later when you know what you want
 - D-STAR
 - System Fusion
 - DMR
 - APRS

HT Accessories

- Drop-in charger
- External speaker / mic
- Programming SW & cable
- Bigger antenna
- Ed Fong - roll up J-Pole antenna

Turn your HT into a mobile radio?

- Mobile DC power cord
- Mobile antenna
- Power amplifier
- External microphone
- External speaker

Pro: Cost effective

Cons: Mess of wires.
Lower performance than
a real mobile radio.

Mobile Radio

Radio...

- Good: Single band (VHF)
- Better: Dual band VHF / UHF
- More better: Dual band / dual VFO (V/V, V/U, U/U)
- Best: Dual band / dual VFO ++
 - APRS / D-Star digital / C4FM digital

Antenna...

- For repeaters - small is fine
- For simplex - bigger is better
- Mounts are equally good: Magmount, bracket, hole

Base Station



- Kenwood TM-V71A
- Dual band / Dual VFO
- Easy to use
- APRS capable.
- \$335 ~



- 50' RG-8X
- \$40



- Comet X-50A
- \$89 ~



- Powerwerx
- 30A Switching power supply
- \$110 ~

Standardize on Power Pole Connectors

- Anderson Power Pole
- **THE** standard for ARES / RACES interoperability
- Buy them at any amateur radio store
- Easy to use
- Buy the crimper if you plan to make a lot of connections



CQCQCQ!



Feed Line & Connectors

Cable Type	Attenuation @ 144 MHz	Attenuation @ 440 MHz	Advice...
LMR-400 *	1.5	2.6	Best
RG-213	2.3	4.5	Good
RG-8X	4.6	8.5	OK
RG-58	5.1	12	Bad
RG-174	10.1	20	Dummy load

* or equivalent



Connectors: N (Best)



BNC (Good)



UHF PL-259 (OK)



Learn to Program Your Radio

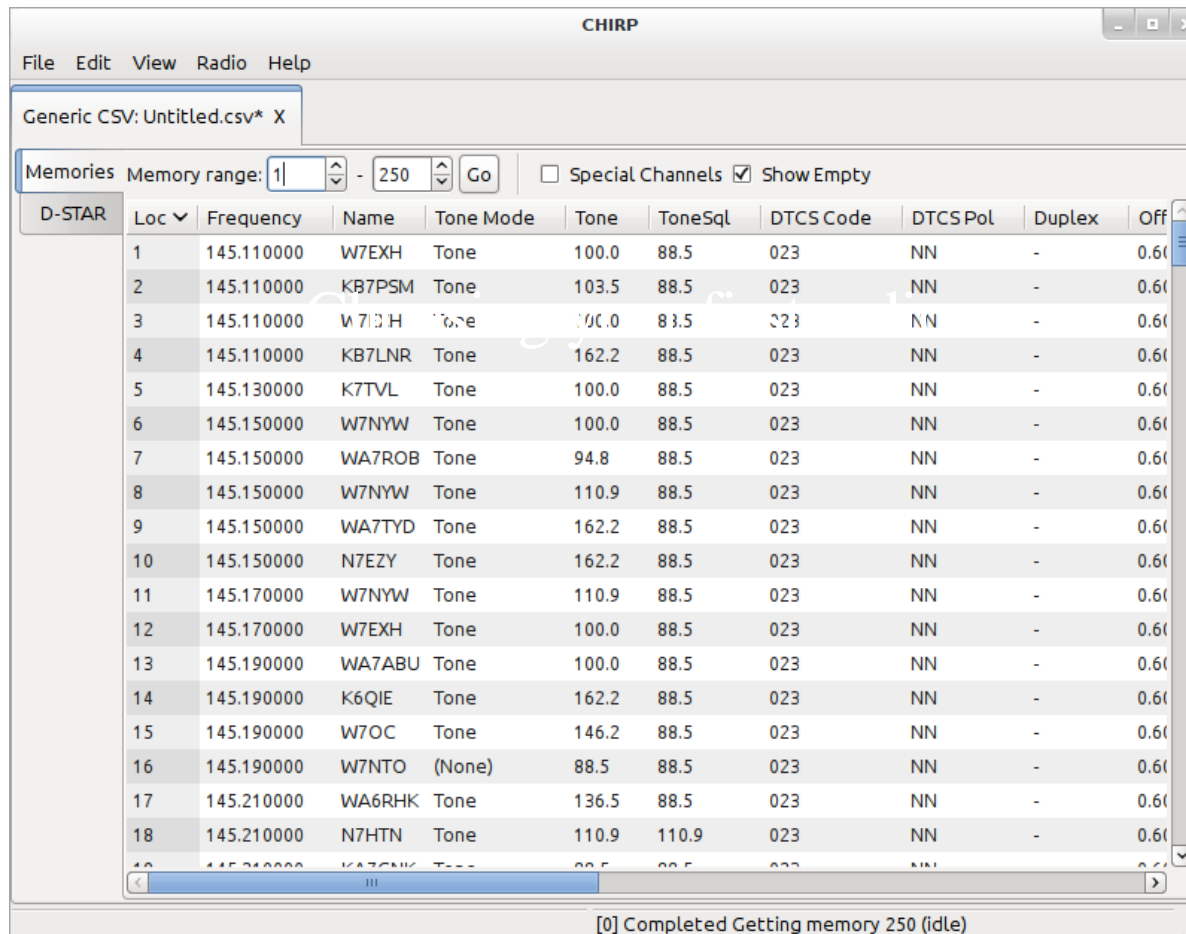
- Set frequency, Tx/RX offset, tone, power
- Save into a memory
- Advanced features
- Program your memories in banks / groups
 - Favorite repeaters
 - More repeaters
 - Simplex
 - Public safety, weather, etc...
- Program multiple radios (HT, mobile) with the same channel / frequency assignments

More Programming Options

- RT Systems - radio specific software & cables
- Icom/Kenwood/Yaesu/Wouxun make software for their radios
- “KG-UV Commander” - Free software for Wouxun
- Chirp - Free open-source software for many radios
- Radio Reference web site - Public service frequency lists
 - <http://www.radioreference.com>
- Repeater Book is a great web site for finding local and remote repeaters
- iPhone & Android apps - Also has API Chirp can access
 - <http://www.repeaterbook.com>

Programming Your Radio

“Chirp” software is a way to program many radios with the appropriate cable



Go Kit - Be Prepared

Detailed Go-Kit Info at
www.bay-net.org

- VHF / UHF HT Radio
 - Battery (rechargeable)
 - Battery (AA)
 - Charger & Power cord
 - External mic & earphone
- First aid kit
- Notebook and pen
- Flashlight & headlamp
- Batteries & FM Radio
- Kleenex
- Personal items/meds
- Frequency directory
- SUN BLOCK!!



Radio Advice...

- Get a cheap HT. Good to start, useful later.
- Upgrade to a better HT when you know what you want
 - D-STAR / Fusion / DMR / APRS ???
- Add a mobile radio for better performance
- Outside antennas make a big difference
- Program your local favorite frequencies (like Bay-Net!!!)
- Standardize on Anderson Power Pole connectors

10 Things to do in your first year

- Get a radio
- Learn how to use it
- Find a friendly repeater
- Listen to the repeater
- Join a club or find an “Elmer”
- Get on the air, simplex & repeater
- Go to a ham radio convention (CHECK!)
- Show your friends
- Go to a Field Day or other contesting event

Q&A