

Communications Academy 2013

Basic Radio Series

“I have my radio,
now how do I turn it on?”

Scott Currie

NS7C

ns7c@arrl.net

Target Audience

The beginners series has been developed to try and fill the gap in training between what you learned to pass your license exam, and what you need to actually get on the air and enjoy Amateur Radio.

Target Audience

- New Technician Licensees
- Using VHF / UHF Handheld Radios
- FM Simplex and Repeater operations

Most of this material will apply to mobile radios as well. HF radios have additional function that will not be covered in this session.

Critical Concepts

- Basic controls
 - power, volume, squelch, PTT, etc
- Switching between VFO and Memory modes
- Entering a desired operating frequency
- Setting transmitter offset
- Setting transmit and receive tone (CTCSS)
- Saving to a memory location

Session Overview

- Owners Manual Review
- Basic Radio Controls
- Setting Frequency, Offset, Tone
- Memory Operations
- Using Repeaters
- Programming Software
- Advanced Functions
- Frequency Lists and “Cheat Sheets”

Owners Manual

- Download the PDF
 - Just in case you lose the original
 - Build your own cheat sheet
- Consider the translation
 - And what was lost in it
- Is there a quick start section in the beginning?
 - Or a Quick Guide at the end?
- Where are the specs?

Basic Controls

- Power button
 - Powers radio on/off (mostly)
- Volume
 - Increase/decrease received audio
- Squelch
 - Silences speaker when no signal is received
- Function Knob
 - Performs many functions
- Push To Talk
 - Causes radio to transmit (release to listen!)

Basic Controls

- Keypad
 - Activates additional functions during receive
 - Sends DTMF (touch tones) during transmit
- “F” button
 - Like a shift key to access other functions
- Lock
 - Disables most controls
- Charging

Basic Functions

- VFO Mode
 - Directly tune to a specific frequency
- Memory Mode
 - Recall saved frequency/mode/options
- Shift/Offset/Duplex/Simplex
 - Changes the transmit frequency
- Tone/CTCSS/DCSS
 - Turns Tone on/off
 - Sets the Tone frequency

Basic Functions

- Step
 - Sets the tuning rate
 - Beginners leave this at 5KHz
- Band/Dual
 - Switches bands on multiband radios
 - Turns second receiver on/off
- Menus
 - Easy access to many functions







Getting on Frequency

- Must be in “VFO” Mode
 - Use the Function Knob
 - Direct Entry on the Keypad/Mic
- Set Transmit Offset
 - Plus/Minus/Simplex



VFO Mode

Memory Mode

Repeater Operations

- What do we need to know?
 - Repeater output frequency
 - Set with VFO
 - Transmit offset or shift
 - Set with function keys/menus
 - Tone/PL/CTCSS (if needed)
 - Set with function keys/menus
 - Tone frequency
 - Set with function keys/menus



Selector

Offset

Tone

Receive
Frequency

Tone
Freq

VFO

Offset

Tone

Memory Operations

- Use memories to store favorite/frequently used:
 - Receive Frequency
 - Transmit Offset
 - Transmit and Receive Tone
 - Power output (some radios)
 - Familiar Name (limited length)
- Can be arranged in “banks”



Selector

Memory Name

Memory Number

Name/
Frequency

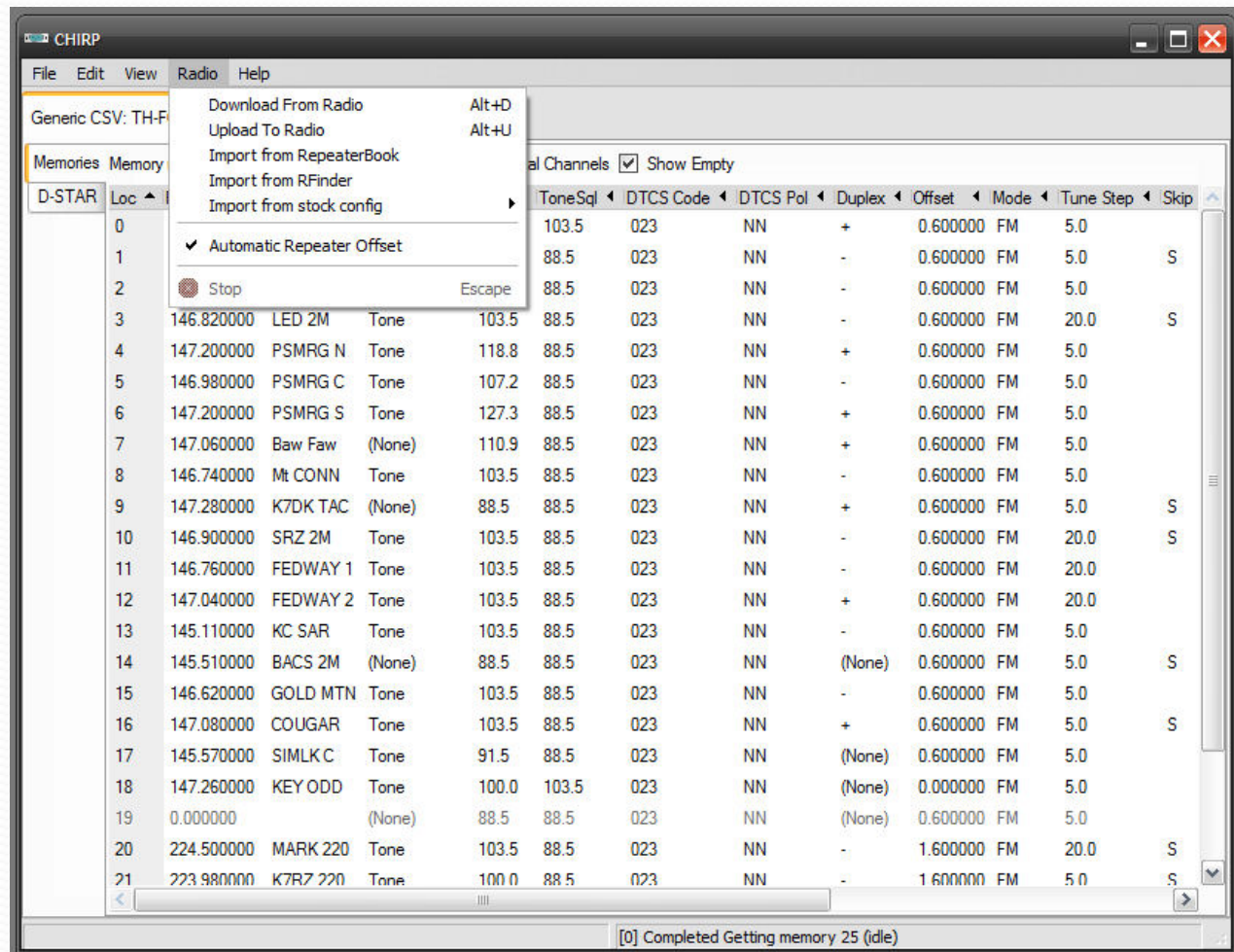
Memory

Call

Programming Software

- Used to program memories and radio settings from a computer
 - There may be over 400 channels to program
- Requires a special cable
 - From the manufacturer
 - e-Bay
 - Build it yourself
- May require a “serial port” on the computer (or a USB to serial dongle)
- Keep multiple files for different situations/locations

Programming Software



Advanced Operations

- Call Channel
 - One button “quick” memory
- Scan Functions
 - Scan through frequencies or memories, stop on active ones
- Dual Band Operations
 - Like having two radios in one box
- Battery Save/APO

Advanced Operations

- DTMF (Touch Tones)
- Out of band receive
 - Public Safety, FRS, GMRS
 - Listen only, no transmit
- Band Scope
- Attenuator
- CTCSS Receive

Advanced Operations

- WIRES
 - Wide-Coverage Internet Repeater Enhancement System
 - Developed by Yaesu, incorporated on most Yaesu radios
 - Easily turned on by mistake!



WIRES
Button

Cheat Sheets

- A quick guide to common functions
 - Copy pages from the user manual
 - Make your own
 - Purchase commercial guides
- Nifty Accessories
 - <http://www.niftyaccessories.com/>
- Ham Radio for Dummies
 - <http://www.dummies.com/go/hamradio>

Cheat Sheets

Kenwood TH-F6A 144/220/440 Triband Transceiver	
Storing a frequency in memory	
1. Select VFO Mode	Press [VFO] Press [A/B] to select the A Band
2. Enter Frequency	Press [ENT]. Direct enter the frequency
3. Select Offset	Press [F] [REV] toggles through +, -, none
4. Activate Tone	Press [TONE]. Verify T is displayed
5. Select Tone Freq	With Tone=ON, Press [F] [TONE] Turn Tuning control or [▲]/[▼] controls to select Press [▶/OK] or [MNU] to accept
6. Store in Mem Channel	Press [F]. Mem Channel Number blinks Turn Tuning control or [▲]/[▼] controls to select Press [▶/OK] or [MR] to save
7. Select Memory Mode	Press [MR]
Other Operations	
Clear Mem Channel	Select the memory channel to clear Turn Power Off Press [MR] + (Power) Press [MR] or [▶/OK] or [MNU] to clear To Cancel Clear, press any other key
Copy Mem to VFO	Press [F], [VFO]
Set Power	Press [LOW] cycles thru H, L, EL
Lock the Keyboard	Press [F] and hold until the Lock symbol appears. Repeat to unlock

Nifty! Quick-Reference™

ICOM IC-92A / AD & IC-E92 ED

Quick-Reference Symbol Key

Ⓜ An Informational Item.

[4 ◀ DUP] Press a function key.

[Key] 1sec Press key 1 sec or more.

◀ DIAL Rotate Dial knob.

— **Basic Controls & Functions** —

Selecting Bands

1. Press [VFO/ MHz] to select VFO mode.
2. Press [BAND] as required to step thru bands.

Selecting an Operating Mode (AM, FM, SSB, etc.)

1. Press [MODE/ REC] 1sec as required.

Entering & Exiting Dual Watch Operation

1. Press [MAIN/ DUAL] 1sec to toggle on/off.

Selecting the Main Band

Ⓜ In Dual Watch, Main band is one controls act on.

1. Press [MAIN/ DUAL] to toggle between A & B.

Setting the Squelch Level

1. Hold [SQL] and ◀ DIAL to set level.

Locking & Unlocking Keyboard

1. Press [MENU] 1sec (alternate action).

Ⓜ key icon displays when locked.

Frequency Lists

Where do we find something to put in all those memories?

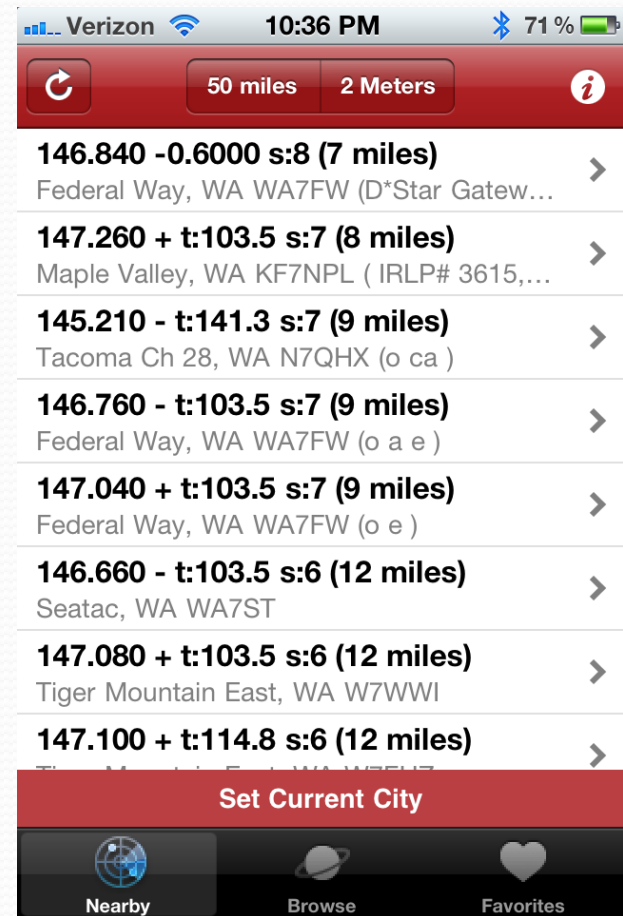
- ARRL Repeater Directory/CD

Internet sites:

- Intercept Frequency Database
 - <http://www.northwestradio.net/intercept/index.html>
- Repeaterbook Repeater Database
 - <http://www.repeaterbook.com>
- Mike and Key Club Website
 - <http://www.mikeandkey.org/repeater.htm>

Frequency Lists

- Freq Finder app for iOS



Frequency Lists

- Freq Finder app on Andriod

The screenshot shows the Freq Finder app interface on an Android device. The top status bar displays 3G signal strength, battery level, and the time 3:21 PM. Below the status bar, the location is shown as -33.868900, 151.207091 and the version is v1.11.96. The main list displays the following entries:

Distance	Frequency	PL	IRLP	echolink
6.5km	438.475MHz (-)	0		
	VK2RST / Lewisham			
7.3km	147.225MHz (+)	0		
	VK2RON / Chatswood			
7.7km	439.925MHz (-)	0	9500	
	REF9500 / Sydney - Virtual PUB			
10.7km	0MHz (X)	0		
	VK2RGR / North Ryde			
14.2km	146.925MHz (-)	0	6912	
	VK2HGK / Hurstville, Sydney			
14.6km	439.175MHz ()	123		
	VK2RUH / Hurstville			
19.2km	438.425MHz (-)	0	6210	
	VK2TTA / Wahroonga, Sydney			
19.4km	439.25MHz (X)	0		

At the bottom of the screen, there are two buttons: "Distance Sort" and "Callsign Sort".