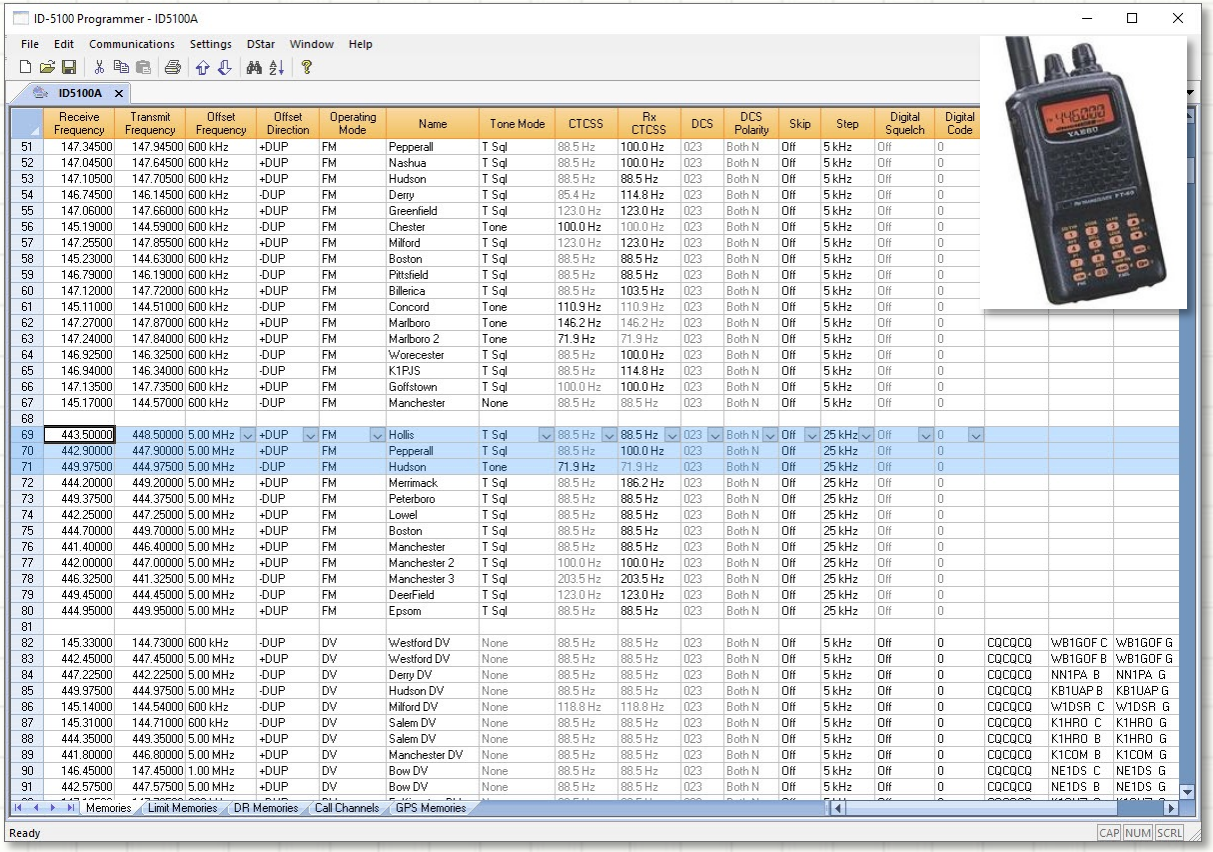
Note: We will be recording all Bootcamp Sessions. Anyone not wishing to be recorded should mute their video or disconnect.



RADIO PROGRAMMING

Nashua Area Radio Society

Fall 2021

Radio Programming

The Basics

- You will store frequency and other repeater/channel access information in your radio's memories
- Your radio probably has a VFO/MEM or V/M button
  - Use this to put your radio in **Mem**ory Mode
- Most radios have a knob that can be turned up/down or arrow buttons to scroll through the radio's memories.
  - Use this control to select the desired memory
- You'll want to setup memories for:
  - Your favorite Repeaters
  - Simplex and calling channel frequencies for the bands that your radio has
  - Fox frequencies if you do Fox Hunting
  - Satellite Frequencies if you do FM EasySats

Radio Programming

Methods and Tools

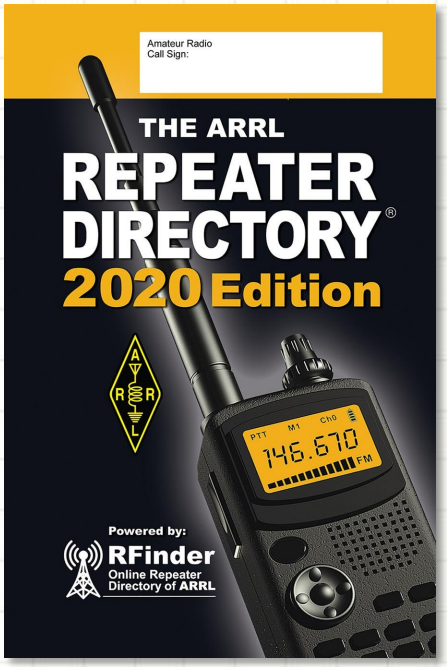
- Radio Keypad Entry
  - Covered in your radio's manual
  - Difficult for most beginners to master
  - Difficult to enter more than a few repeaters
- Manufacturer's Program
  - Most are not very easy to use
  - Usually requires purchasing a proprietary cable
  - 3rd Party Programmers usually cost only a bit more and are easier to use
- Commercial 3rd Party Programmers (ex. RT Systems)
  - Easiest to use and most reliable
  - Effective help included with programs
  - Usually packaged with a cable for your radio
  - Easy to move your program from one radio to another
  - Biggest disadvantage is the $

Best Choice for most beginners

- Free Programmers (ex. CHIRP)
  - Often requires fiddling to get to work
  - Will still need to purchase a programming cable in most cases
  - Not the best choice for a beginner

Radio Programming

Data Sources



- **Repeaters (FM, DSTAR, Fusion)**
  1. Repeater Book - https://repeaterbook.com
  2. Regional online Repeater Directories
  3. ARRL Repeater Book (Printed)
  4. Applications (ex. iPhone, Android, RFinder)
- **Satellites**
  1. AMSAT Sat List – https://amsat.org/two-way-satellites
  2. AMSAT Sat Status – https://amsat.org/status
  3. AMSAT Getting Started with Satellites – https://amsat.org/shop
- **Foxes**
  1. Your local Fox Hunt coordinator will publish the fox frequencies

A word on DMR – While very cost effective, DMR radios are by far the most difficult to program and use. For these reasons, they may not be the best choice for the beginner. The same advice goes for other digital formats.

Radio Programming

* Your Rx or Repeater "Output" Freq.

* Operating Mode

* Access & Squelch Tones

DSTAR Repeater Access Info

* These items available via repeater directories/

Kenwood TH-D74 Example Program

	Receive Frequency	Transmit Frequency	Offset Frequency	Offset Direction	Operating Mode	Name	Tone Mode	CTCSS	Rx CTCSS	Lockout	Step	Your Callsign	Rpt-1 CallSign	Rpt-2 CallSign	Comment
000	146.52000	146.52000		Simplex	FM	2m Call	None	88.5 Hz	88.5 Hz	☐	5 kHz				2m Calling Channel and Simplex Frequencies
001	146.40000	146.40000		Simplex	FM	2m S1	None	88.5 Hz	88.5 Hz	☐	5 kHz				
002	146.41500	146.41500		Simplex	FM	2m S2	None	88.5 Hz	88.5 Hz	☐	5 kHz				
003										☐					
004	146.73000	146.13000	600 kHz	Minus	FM	Hollis2M	T Sql	88.5 Hz	88.5 Hz	☐	5 kHz				FM Repeaters
005	443.50000	448.50000	5.00 MHz	Plus	FM	Hollis70	T Sql	88.5 Hz	88.5 Hz	☐	5 kHz				
006	224.64000	223.04000	1.60 MHz	Minus	FM	Peperl220	None	88.5 Hz	88.5 Hz	☐	5 kHz				
007															
008	145.31000	144.71000	600 kHz	Minus	DR	Salem DR	None	88.5 Hz	88.5 Hz	☐	5 kHz	CQCQCQ	K1HRO C	K1HRO G	DSTAR Repeaters
009	444.35000	449.35000	5.00 MHz	Plus	DR	Salem DR	None	88.5 Hz	88.5 Hz	☐	5 kHz	CQCQCQ	K1HRO B	K1HRO G	
010	444.35000	449.35000	5.00 MHz	Plus	DR	REF010CL	None	94.8 Hz	94.8 Hz	☑	5 kHz	REF010CL	K1HRO B	K1HRO G	Links Reflector 10C to K1HRO 70cm DSTAR Repeater
011															
012	145.96000	145.96000		Simplex	FM	DL91	None	67.0 Hz	67.0 Hz	☑	5 kHz				Channels for AO-91 Satellite
013	435.24000	435.24000		Simplex	FM	UL91 AOS	T Sql	67.0 Hz	67.0 Hz	☑	5 kHz				
014	435.24500	435.24500		Simplex	FM	UL91 APR	T Sql	67.0 Hz	67.0 Hz	☑	5 kHz				
015	435.25000	435.25000		Simplex	FM	UL91 RCA	T Sql	67.0 Hz	67.0 Hz	☑	5 kHz				
016	435.25500	435.25500		Simplex	FM	UL91 DEP	T Sql	67.0 Hz	67.0 Hz	☑	5 kHz				
017	435.26000	435.26000		Simplex	FM	UL91 LOS	T Sql	67.0 Hz	67.0 Hz	☑	5 kHz				
018															
019	146.59500	146.59500		Simplex	FM	FOX0	None	88.5 Hz	88.5 Hz	☑	5 kHz				NARS Fox 0 - Large 500 mW
020	146.60000	146.60000		Simplex	FM	FOX0+5	None	88.5 Hz	88.5 Hz	☑	5 kHz				
021	146.60500	146.60500		Simplex	FM	FOX0+10	None	88.5 Hz	88.5 Hz	☑	5 kHz				
022	439.78500	439.78500		Simplex	FM	FOX0x3	None	88.5 Hz	88.5 Hz	☑	5 kHz				
023	439.79000	439.79000		Simplex	FM	FOX0x3+5	None	88.5 Hz	88.5 Hz	☑	5 kHz				
024	439.79500	439.79500		Simplex	FM	FOX0x3+10	None	88.5 Hz	88.5 Hz	☑	5 kHz				
025	439.80000	439.80000		Simplex	FM	FOX0x3+15	None	88.5 Hz	88.5 Hz	☑	5 kHz				
026															
027	144.39000	144.39000		Simplex	FM	APRS-Ground	None	88.5 Hz	88.5 Hz	☑	5 kHz				Ground-based APRS
028	145.82500	145.82500		Simplex	FM	APRS-Space	None	88.5 Hz	88.5 Hz	☑	5 kHz				Space-based APRS
029															

* Offset/ Simplex

* Access Tone Mode (None, Tone, T Sql)

Scan Lockout

Simplex & FM Repeaters

Fox (RDF)

DSTAR

APRS

FM Easy Sat

Questions?

To Learn More:

Check out the Nashua Area Radio Society's Tech Night Program at:
n1fd.org/tech-night

Become an Internet Subscriber (or members of NARS):
n1fd.org/join-us

Much more information, pictures and video are available on our Blog at:
stationproject.blog