

Program a Baofeng HT

- Initial setup

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- Basic Programming Pattern

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- Nice features

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- Nice features
- CHIRP

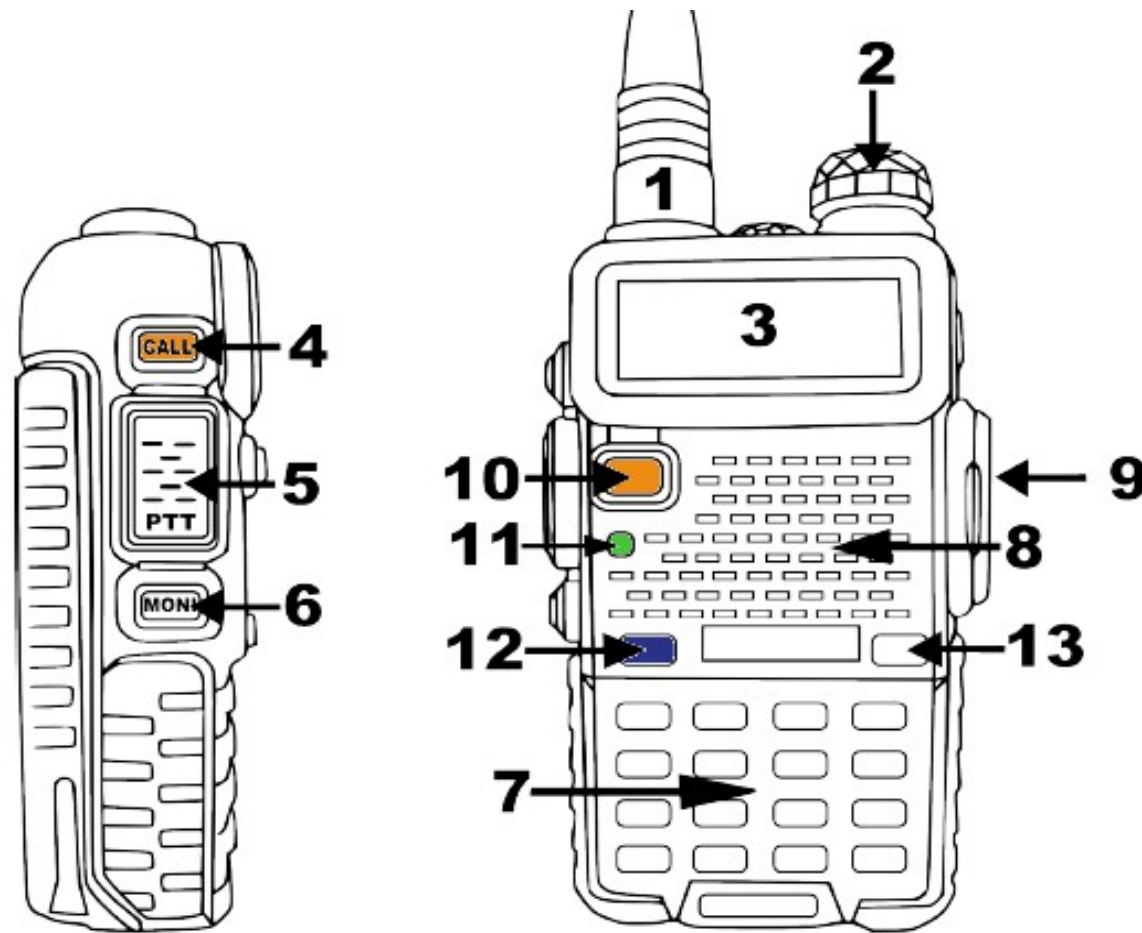
Initial setup

My personal experience:

Your Baofeng HT may differ slightly.

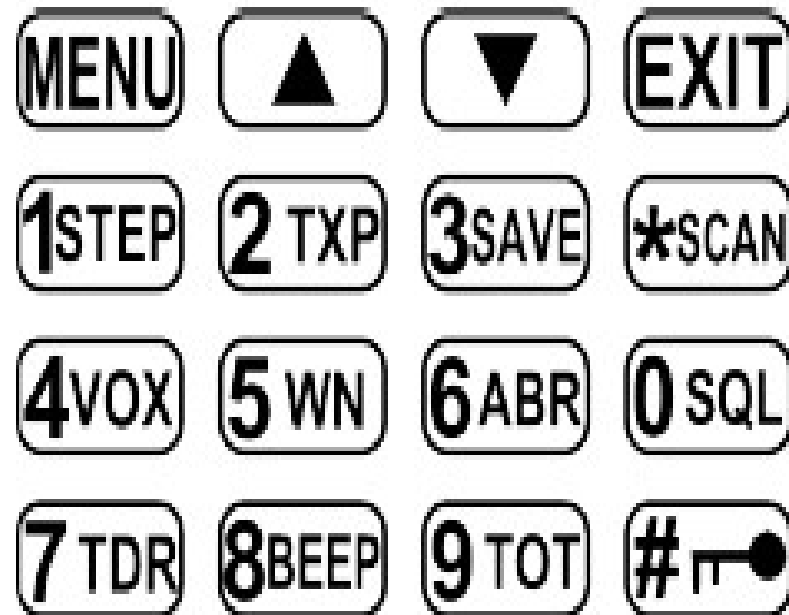
Examples in this slide set are for a UV-5R.

Initial setup



Initial setup

Baofeng UV-5R, keypad



← also reverse

Initial setup

All programming is done in VFO mode.

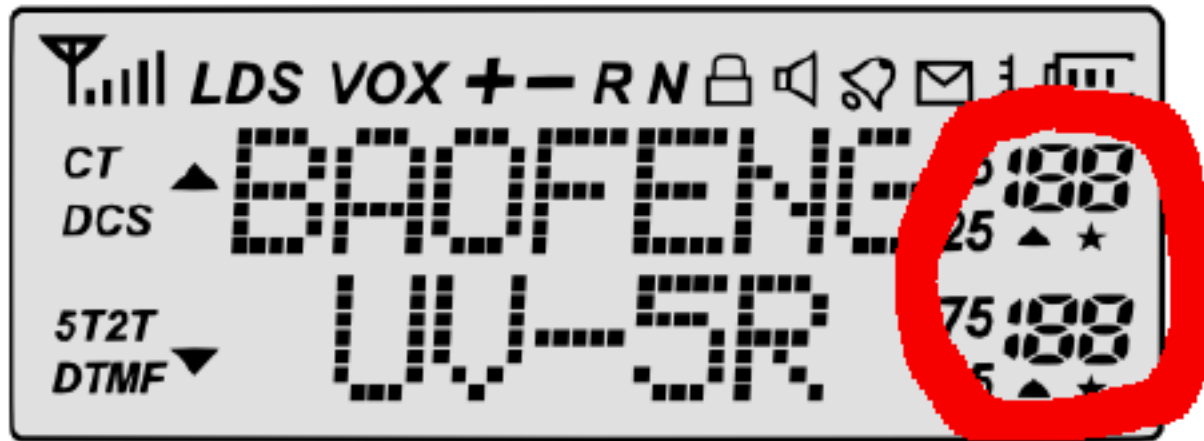
VFO = Variable Frequency Oscillator
or Frequency Mode

MR = Memory Recall
or Channel Mode

The front orange button changes modes.
On a new radio it is labeled VFO/MR.

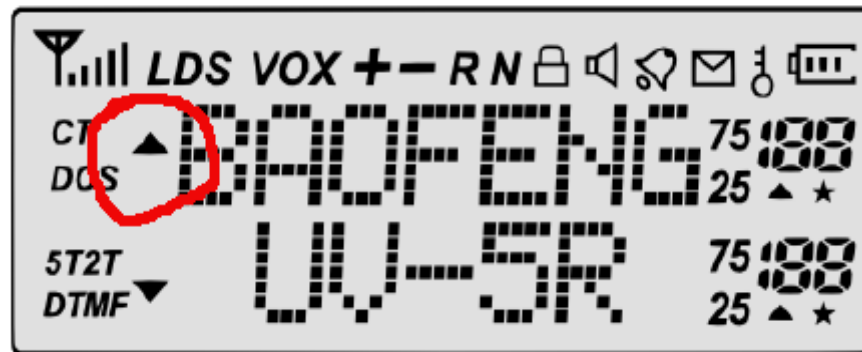
Initial setup

If a channel number appears here, you are **NOT** in frequency mode.



Initial setup

All programming is done in the top display (display A).



The front blue button changes displays.
On a new radio it is labeled A/B.

Initial setup

To set a frequency just type it in.

For example, type

146520

and you're there!

(Probably. We'll come back to this.)

Basic Programming Pattern

- [Menu]
- Scroll & find function (or type shortcut)
- [Menu]
- Scroll & find value
- [Menu] to set
- [Exit] to exit from menus

-
- [Exit] any time to quit

Set English Prompts

- [Menu]
- Find VOICE (14)
- [Menu]
- Find ENG
- [Menu] to set
- [Exit]

Set Low Power

- [Menu]
- Find TXP (2)
- [Menu]
- Find LOW
- [Menu] to set
- [Exit]

Set Squelch to Minimum

- [Menu]
- Find SQL (0)
- [Menu]
- Find 1
- [Menu] to set
- [Exit]

Set 146.400 PL 94.8

- Type 146400

Receive side

- [Menu]
- Find R-CTCS (11)
- [Menu]
- Find 94.8HZ
- [Menu] to set
- [Exit]

Transmit side

- [Menu]
- Find T-CTCS (13)
- [Menu]
- Find 94.8HZ
- [Menu] to set
- [Exit]

Save Settings to Memory

- [Menu]
- Find MEM-CH (27)
- [Menu]
- Find an empty channel
- [Menu] to set
- [Exit]

CH-001 is full. 001 is empty.

tip: Write down the channel & settings.

Delete a Memory

- [Menu]
- Find DEL-CH (28)
- [Menu]
- Find your unwanted channel
- [Menu] to set
- [Exit]

CH-001 is full. 001 is empty.

Set 145.150 offset -0.6, DCS 664

part 1

- Type 145150
- [Menu]
- Find SHFT-D (25)
- [Menu]
- Find -
- [Menu] to set
- [Exit]
- [Menu]
- Find OFFSET (26)
- [Menu]
- Type 000600
- [Menu] to set
- [Exit]

Set 145.150 offset -0.6, DCS 664

part 2

Receive side

- [Menu]
- Find R-DCS (10)
- [Menu]
- Find D664N
- [Menu] to set
- [Exit]

Transmit side

- [Menu]
- Find T-DCS (12)
- [Menu]
- Find D664N
- [Menu] to set
- [Exit]

Save Settings to Memory

part 1

- [Menu]
- Find MEM-CH (27)
- [Menu]
- Find an empty channel
- [Menu] to set *This sets the receive memory*
- [Exit]

Save Settings to Memory

part 2

- Press [*] *This reverses xmit/rcv*
- [Menu]
- Find MEM-CH (27) *(you're already on it)*
- [Menu]
- Find your channel *(you're already on it)*
- [Menu] to set *This sets the transmit memory*
- [Exit]
- Press [*] *This reverses xmit/rcv again*

Set 146.520 simplex

To set a frequency just type it in.

For example, type

146520

Q: WHY AM I NOT COMMUNICATING?

Set 146.520 simplex

To set a frequency just type it in.
For example, type
146520

Q: WHY AM I NOT COMMUNICATING?

A: Check the other settings:

- CTCS rcv & xmit (11, 13)
- DCS rcv & xmit (10, 12)
- Offset (25)

VFO vs MR Mode

Q: How do I use the channels I saved?

A: Use memory recall mode (channel mode).

- Switch to MR with the front orange button.
- Scroll to desired channel, or type it in.
Typing requires a 3-digit number,
e.g. 001 for channel 1.

Reset to factory defaults

Caution: this action is irreversible

- [Menu]
- Scroll & find **RESET (40)**
- [Menu]
- Scroll & find **ALL**
- [Menu]
- [Exit]

Nice features

Monitor a frequency before transmitting

- Press and hold the [MONI] button

Nice features

Lock the keyboard

- Press and hold the  button

Nice features

Flashlight

- Tap the [MONI] button

Nice features

Scanner

- ~ 3 channels per second in channel mode
- ~ 30 kHz/sec in frequency mode
- Press and hold the [SCAN] button

Nice features

FM Broadcast Receiver

- Press the orange button on the left side
- Key in the desired frequency
- Example:
88500

CHIRP

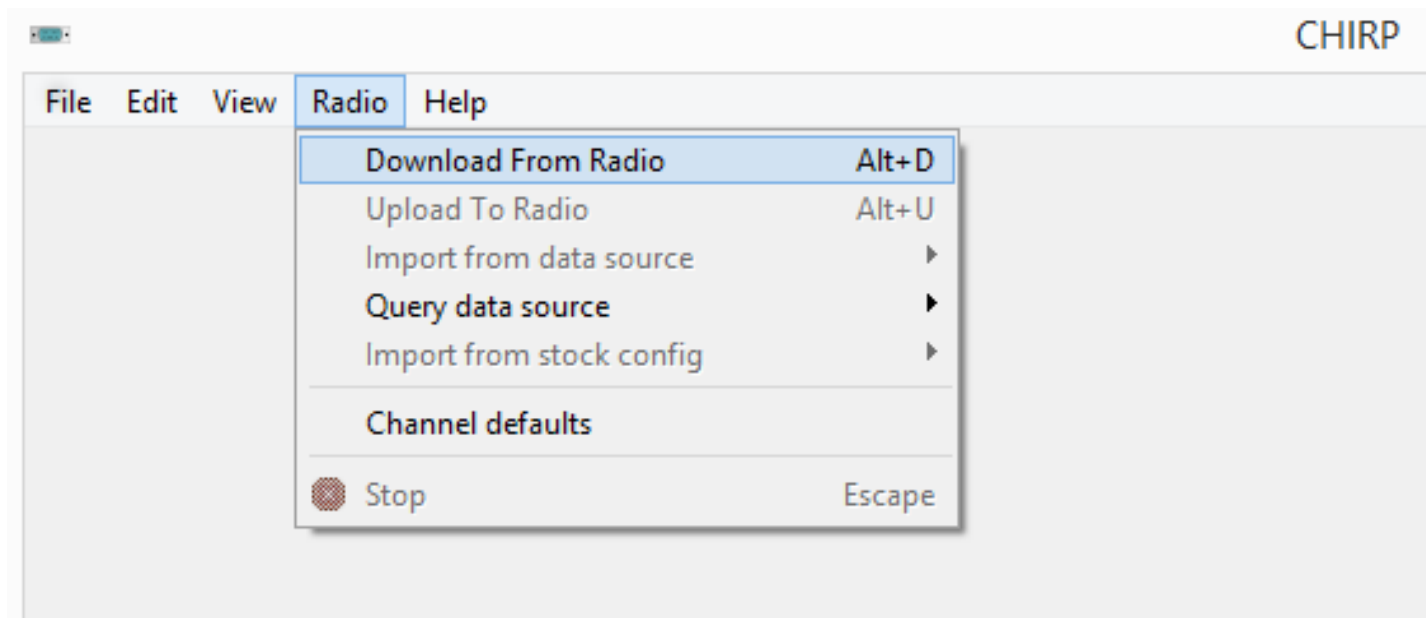
Use a good FTDI cable



- This one worked for me:
~ \$26
XLT Painless Programming Cable
BuyTwoWayRadios.com

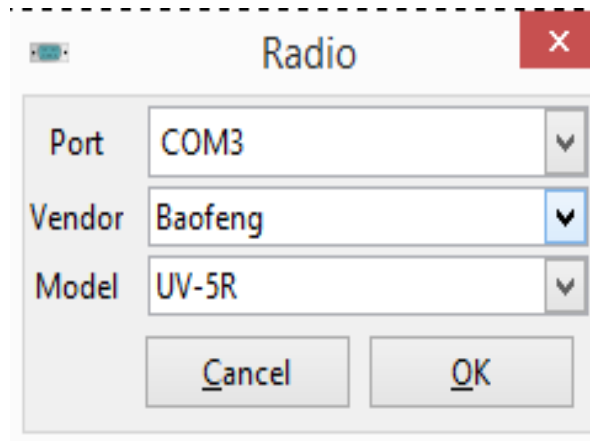
CHIRP

First, download your radio image . . .



CHIRP

select settings . . .

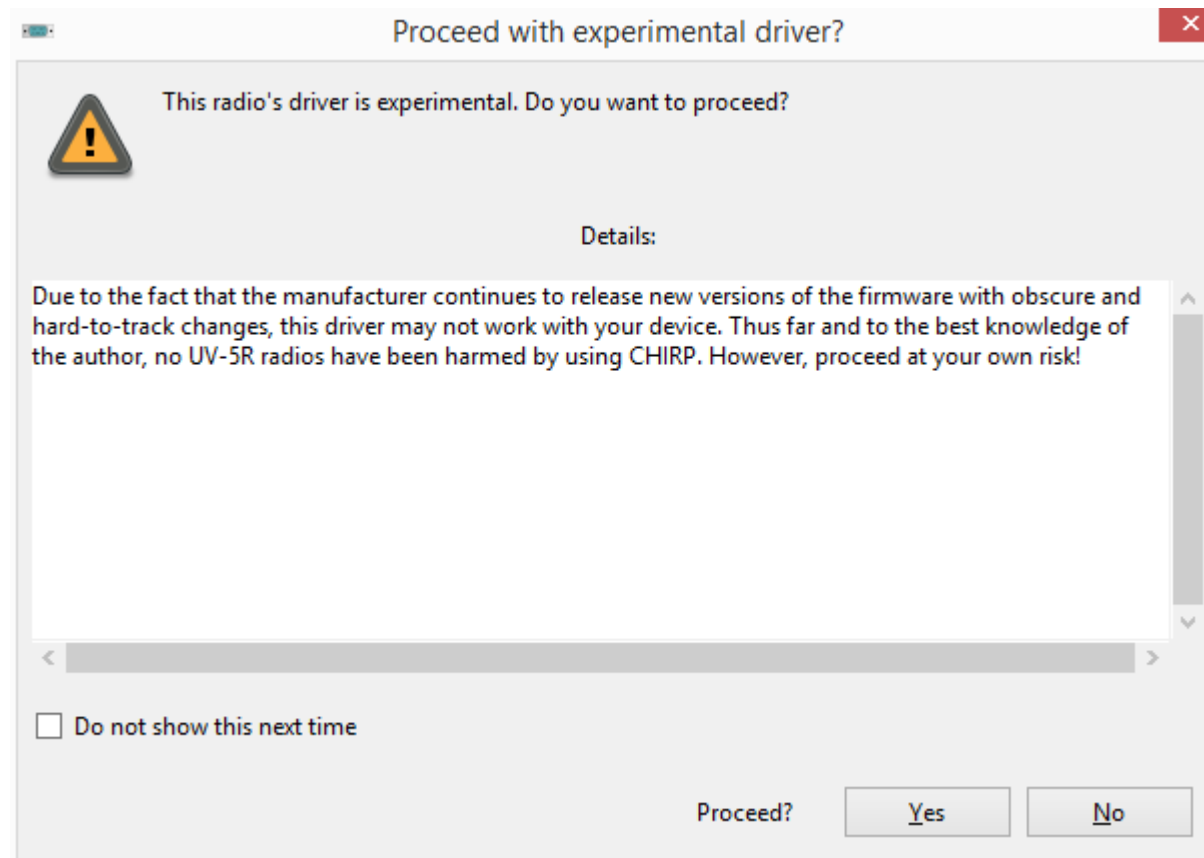


The image shows a screenshot of the 'Radio' dialog box in the CHIRP software. The dialog box has a title bar with the text 'Radio' and a red close button on the right. Below the title bar, there are three dropdown menus for selecting radio settings. The first dropdown is labeled 'Port' and is set to 'COM3'. The second dropdown is labeled 'Vendor' and is set to 'Baofeng'. The third dropdown is labeled 'Model' and is set to 'UV-5R'. At the bottom of the dialog box, there are two buttons: 'Cancel' and 'OK'.

Field	Value
Port	COM3
Vendor	Baofeng
Model	UV-5R

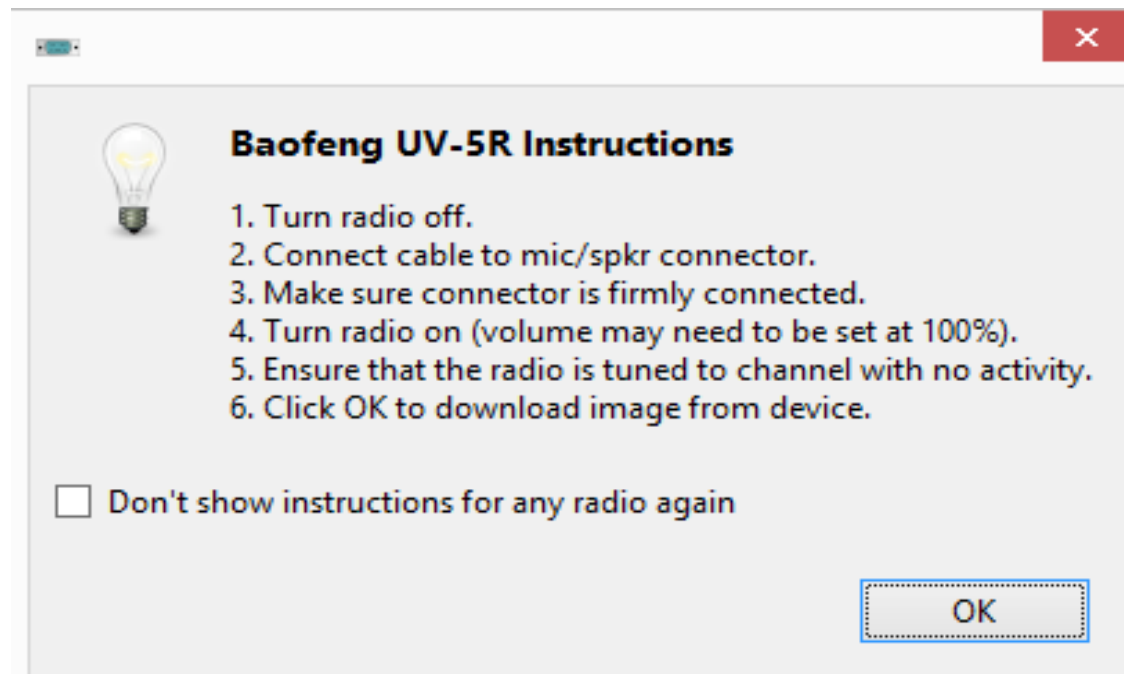
CHIRP

there will be a disclaimer . . .



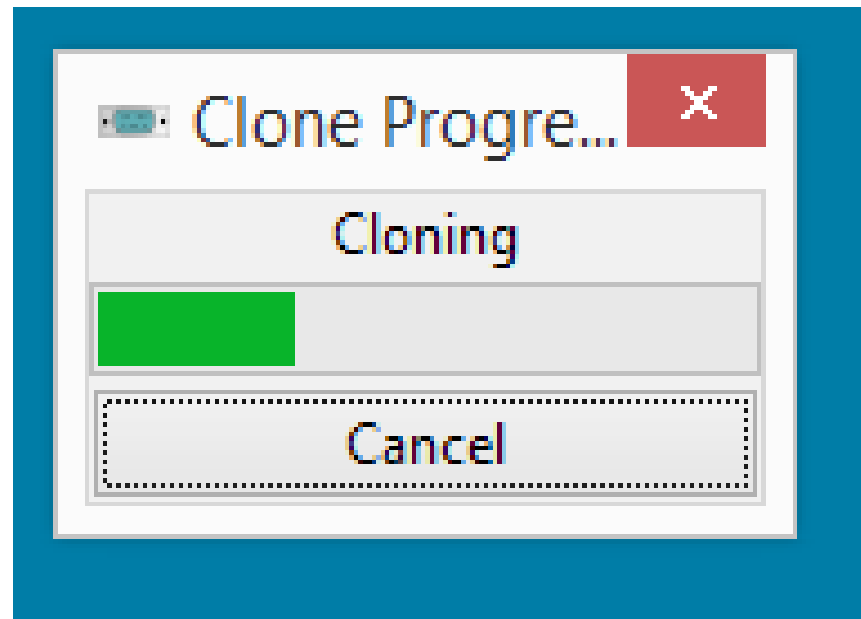
CHIRP

then specific instructions for your radio . . .



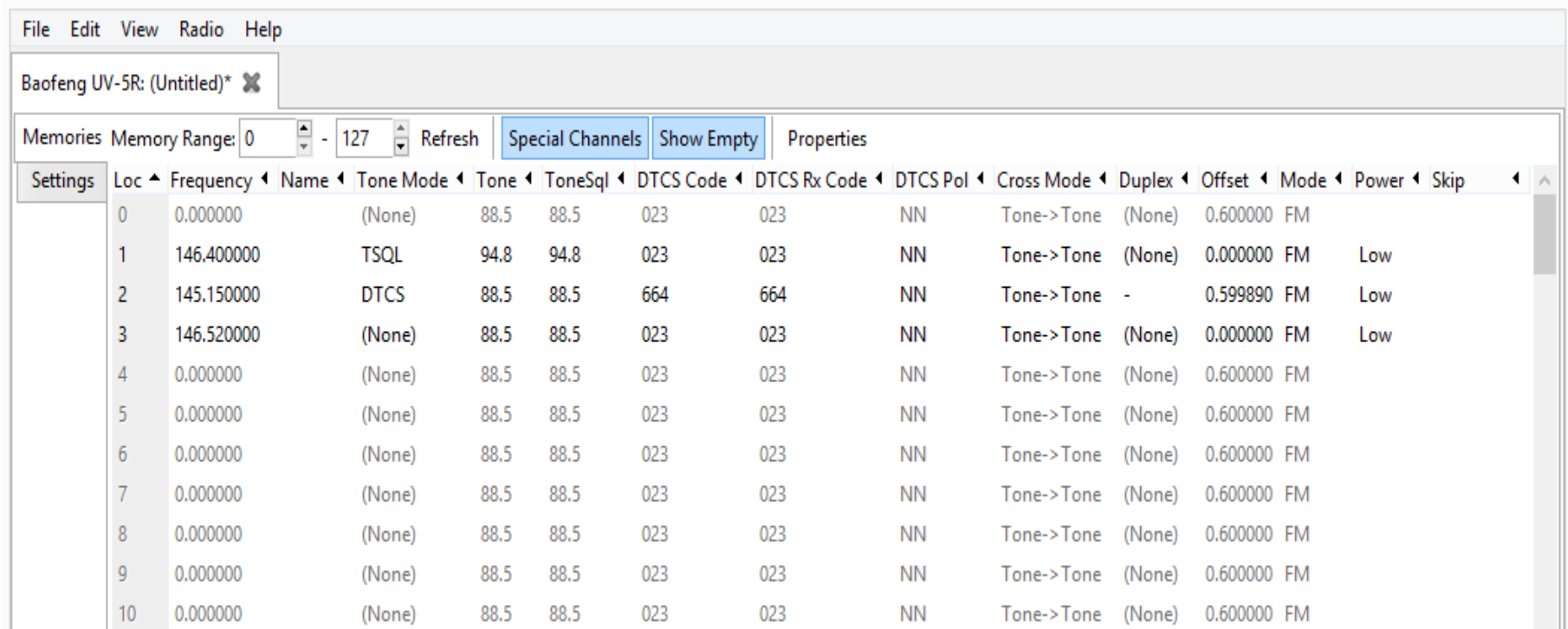
CHIRP

then the radio image downloads to CHIRP.



CHIRP

The result looks and acts like a spreadsheet.



The screenshot shows the CHIRP software interface for a Baofeng UV-5R. The main window displays a table of memory settings. The table has columns for Loc, Frequency, Name, Tone Mode, Tone, ToneSql, DTCS Code, DTCS Rx Code, DTCS Pol, Cross Mode, Duplex, Offset, Mode, Power, and Skip. The data is as follows:

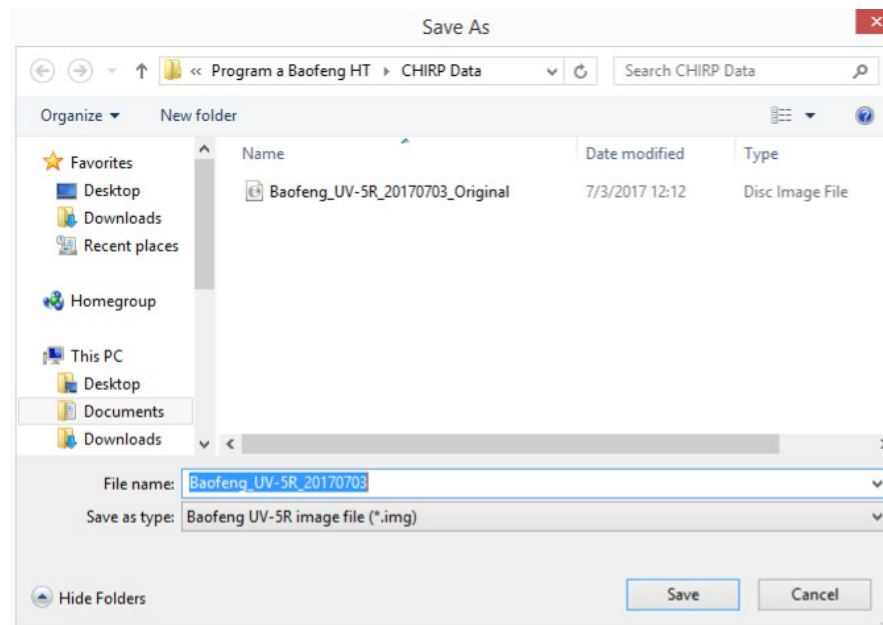
Loc	Frequency	Name	Tone Mode	Tone	ToneSql	DTCS Code	DTCS Rx Code	DTCS Pol	Cross Mode	Duplex	Offset	Mode	Power	Skip
0	0.000000		(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)	0.600000	FM		
1	146.400000	TSQL	TSQL	94.8	94.8	023	023	NN	Tone->Tone	(None)	0.000000	FM	Low	
2	145.150000	DTCS	DTCS	88.5	88.5	664	664	NN	Tone->Tone	-	0.599890	FM	Low	
3	146.520000		(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)	0.000000	FM	Low	
4	0.000000		(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)	0.600000	FM		
5	0.000000		(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)	0.600000	FM		
6	0.000000		(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)	0.600000	FM		
7	0.000000		(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)	0.600000	FM		
8	0.000000		(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)	0.600000	FM		
9	0.000000		(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)	0.600000	FM		
10	0.000000		(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)	0.600000	FM		

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CHIRP

Save this .img file before you continue.

- This is your checkpoint.



CHIRP

Now you can make changes.

- Add labels . . .

Baofeng UV-5R: Baofeng_UV-5R_20170703.img* X

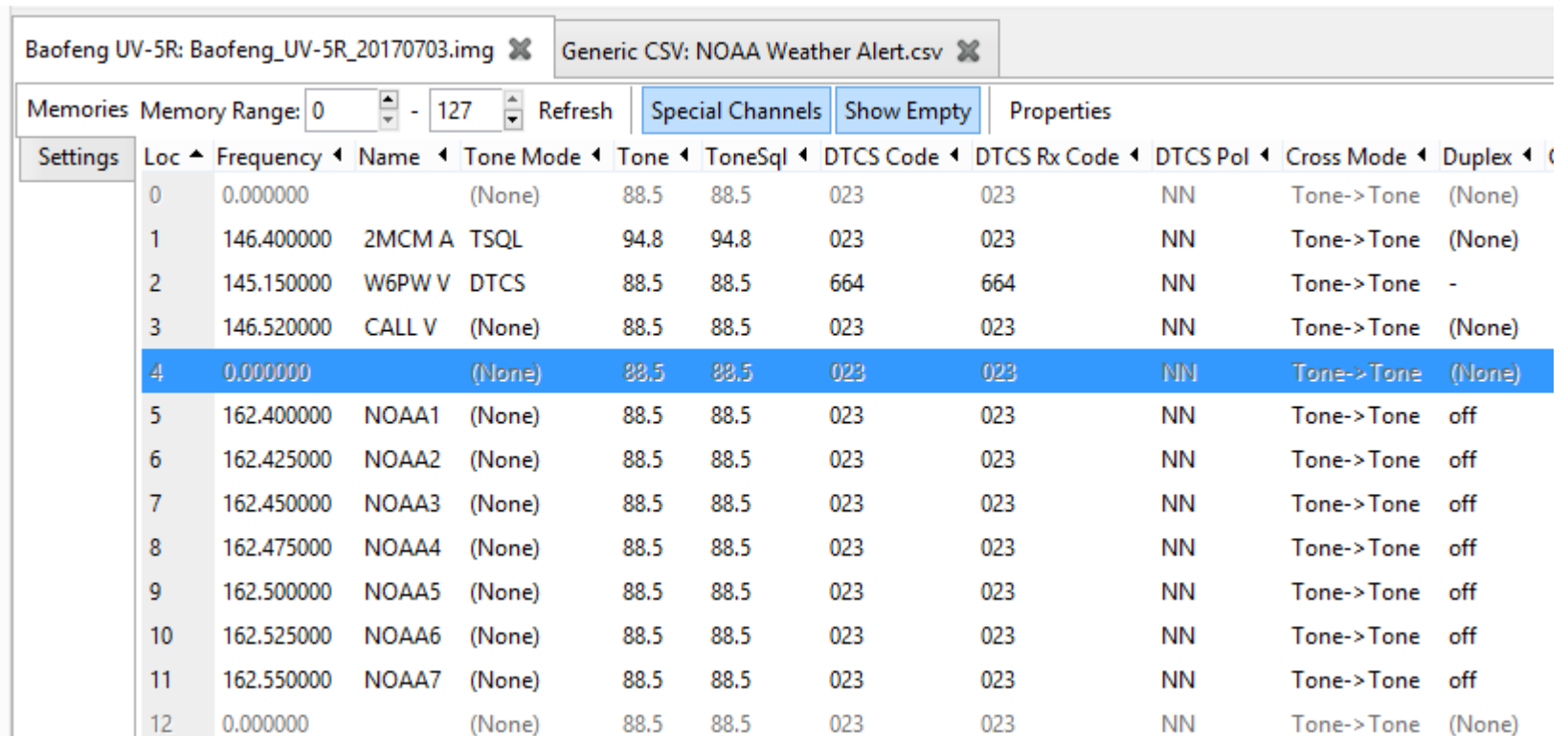
Memories Memory Range: 0 - 127 Refresh Special Channels Show Empty Proper

Settings	Loc	Frequency	Name	Tone Mode	Tone	ToneSql	DTCS Code	DTCS Rx C
	0	0.000000		(None)	88.5	88.5	023	023
	1	146.400000	2MCM A	TSQL	94.8	94.8	023	023
	2	145.150000	W6PW V	DTCS	88.5	88.5	664	664
	3	146.520000	V CALL	(None)	88.5	88.5	023	023
	4	0.000000		(None)	88.5	88.5	023	023
	5	0.000000		(None)	88.5	88.5	023	023
	6	0.000000		(None)	88.5	88.5	023	023
	7	0.000000		(None)	88.5	88.5	023	023

CHIRP

Now you can make changes.

- copy and modify new frequency plans . . .



The screenshot shows the CHIRP software interface. At the top, there are two tabs: "Baofeng UV-5R: Baofeng_UV-5R_20170703.img" and "Generic CSV: NOAA Weather Alert.csv". Below the tabs, there are controls for "Memories" (Memory Range: 0 - 127) and buttons for "Refresh", "Special Channels", "Show Empty", and "Properties". A "Settings" tab is selected, showing a table of memory channels. The table has columns for Loc, Frequency, Name, Tone Mode, Tone, ToneSql, DTCS Code, DTCS Rx Code, DTCS Pol, Cross Mode, and Duplex. Row 4 is highlighted in blue.

Loc	Frequency	Name	Tone Mode	Tone	ToneSql	DTCS Code	DTCS Rx Code	DTCS Pol	Cross Mode	Duplex
0	0.000000		(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)
1	146.400000	2MCM A	TSQ	94.8	94.8	023	023	NN	Tone->Tone	(None)
2	145.150000	W6PW V	DTCS	88.5	88.5	664	664	NN	Tone->Tone	-
3	146.520000	CALL V	(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)
4	0.000000		(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)
5	162.400000	NOAA1	(None)	88.5	88.5	023	023	NN	Tone->Tone	off
6	162.425000	NOAA2	(None)	88.5	88.5	023	023	NN	Tone->Tone	off
7	162.450000	NOAA3	(None)	88.5	88.5	023	023	NN	Tone->Tone	off
8	162.475000	NOAA4	(None)	88.5	88.5	023	023	NN	Tone->Tone	off
9	162.500000	NOAA5	(None)	88.5	88.5	023	023	NN	Tone->Tone	off
10	162.525000	NOAA6	(None)	88.5	88.5	023	023	NN	Tone->Tone	off
11	162.550000	NOAA7	(None)	88.5	88.5	023	023	NN	Tone->Tone	off
12	0.000000		(None)	88.5	88.5	023	023	NN	Tone->Tone	(None)

CHIRP

Now you can make changes.

- . . . change how your radio behaves.

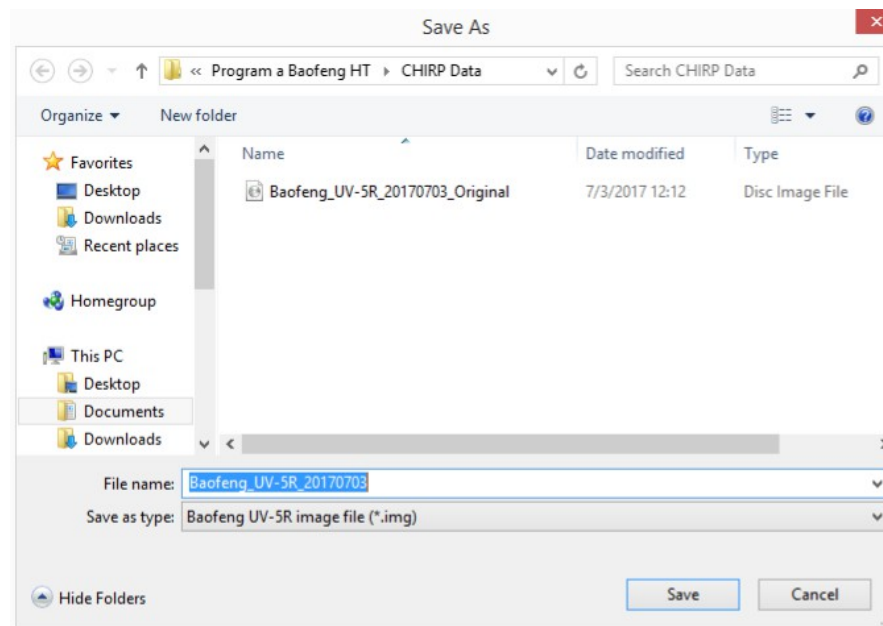
The screenshot shows the CHIRP software interface for a Baofeng UV-5R radio. The window title is "Baofeng UV-5R: Baofeng_UV-5R_20170703.img* x" and "Generic CSV: NOAA Weather Alert.csv x". The left sidebar shows "Memories" and "Settings" tabs. Under "Settings", the following options are listed: "Basic Settings", "Advanced Settings", "Other Settings" (highlighted), "Work Mode Settings", "FM Radio Preset", "DTMF Settings", and "Service Settings". The main area displays various settings for the radio, with several fields highlighted in yellow:

Firmware Message 1:	N5R-20
Firmware Message 2:	BFB297
6+Power-On Message 1:	140525N
6+Power-On Message 2:	
Power-On Message 1:	KK6JKC
Power-On Message 2:	DAVID
Power-On Message:	Message
VHF Lower Limit (MHz):	130
VHF Upper Limit (MHz):	176
VHF TX Enabled:	<input checked="" type="checkbox"/> Enabled

CHIRP

Save the file again.

- You have a new checkpoint.
- tip: use a new file name.



CHIRP

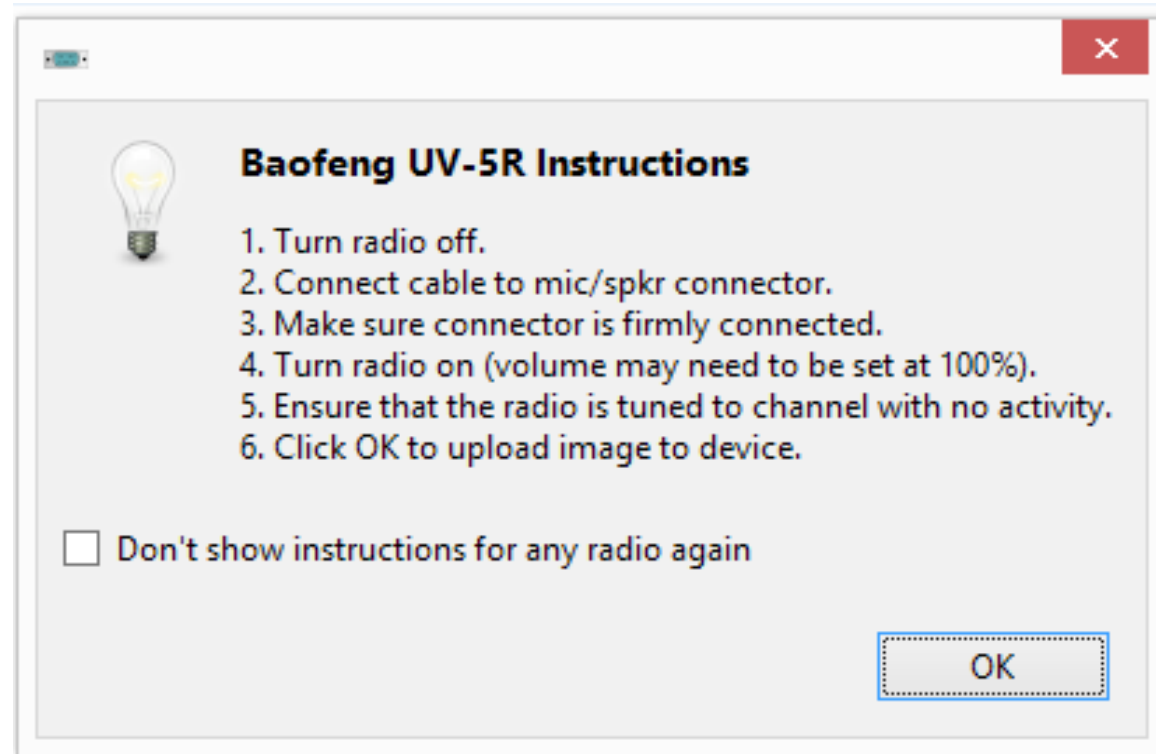
Upload the image to your radio.

The screenshot shows the CHIRP software interface. The 'Radio' menu is open, displaying options: 'Download From Radio' (Alt+D), 'Upload To Radio' (Alt+U), 'Import from data source', 'Query data source', 'Import from stock config', 'Channel defaults', and 'Stop' (Escape). The background shows a table of radio channels with columns for frequency, name, mode, and other parameters. Channel 4 is highlighted in blue.

Loc	Frequency	Mode	DTCS Code	DTCS Rx Code
0				
1				
2				
3	146.520000	CALL V	(None)	88.5
4	0.000000	(None)	88.5	88.5
5	162.400000	NOAA1	(None)	88.5
6	162.425000	NOAA2	(None)	88.5
7	162.450000	NOAA3	(None)	88.5
8	162.475000	NOAA4	(None)	88.5
9	162.500000	NOAA5	(None)	88.5

CHIRP

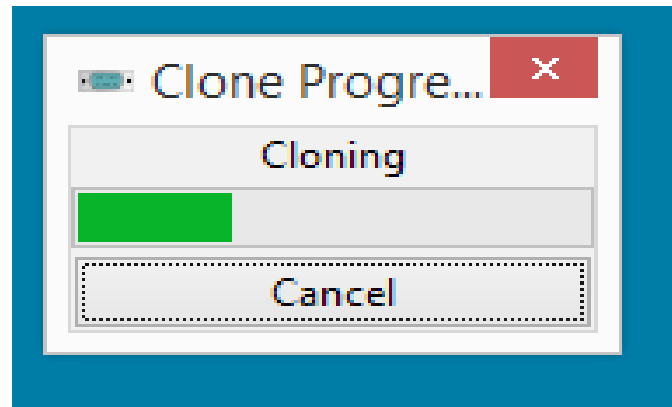
Upload steps are similar to download steps.



CHIRP

Wash, rinse, repeat.

- Enjoy your custom settings!



Credits

- VHF/UHF FM TRANSCEIVER USER'S MANUAL, Baofeng, undated
- The (Chinese) Radio Documentation Project, Lennart Lidberg, 2012, <http://radiodoc.github.com>
- <http://chirp.danplanet.com/projects/chirp>

Resources

- <http://www.miklor.com/>
- https://groups.yahoo.com/neo/groups/baofeng_uv5r/info

This is a GREAT radio with a garbage manual. If you take the time to read, you can check out the resources below and have few problems. Else, you are almost guaranteed to be frustrated.

- <http://www.daviddull.com/program-a-baofeng-ht.pdf>

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