

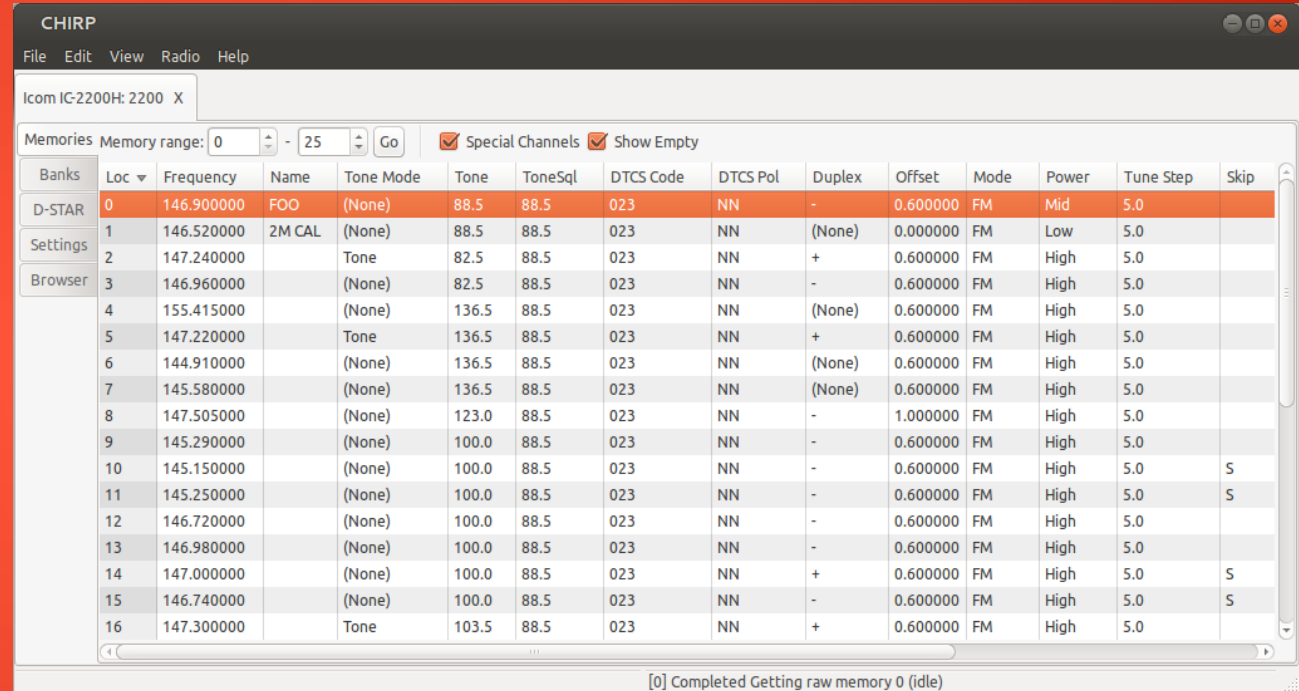
Program all your radios with:



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Outline

- What is CHIRP?
- How is it created?
- What can it do?
- Who is involved?
- How does it work?
- How can I help?



The screenshot shows the CHIRP software interface for an Icom IC-2200H radio. The main window displays a table of memory channels. The table has columns for Banks, Loc, Frequency, Name, Tone Mode, Tone, ToneSql, DTCS Code, DTCS Pol, Duplex, Offset, Mode, Power, Tune Step, and Skip. The table is filtered to show memory range 0 to 25. The first row (Loc 0) is highlighted in orange and represents a D-STAR channel named 'FOO'. The following rows (Loc 1-16) are categorized as 'Settings' and 'Browser' and represent various FM channels with different frequencies, tones, and power levels.

Banks	Loc	Frequency	Name	Tone Mode	Tone	ToneSql	DTCS Code	DTCS Pol	Duplex	Offset	Mode	Power	Tune Step	Skip
D-STAR	0	146.900000	FOO	(None)	88.5	88.5	023	NN	-	0.600000	FM	Mid	5.0	
Settings	1	146.520000	2M CAL	(None)	88.5	88.5	023	NN	(None)	0.000000	FM	Low	5.0	
Settings	2	147.240000		Tone	82.5	88.5	023	NN	+	0.600000	FM	High	5.0	
Browser	3	146.960000		(None)	82.5	88.5	023	NN	-	0.600000	FM	High	5.0	
Browser	4	155.415000		(None)	136.5	88.5	023	NN	(None)	0.600000	FM	High	5.0	
Browser	5	147.220000		Tone	136.5	88.5	023	NN	+	0.600000	FM	High	5.0	
Browser	6	144.910000		(None)	136.5	88.5	023	NN	(None)	0.600000	FM	High	5.0	
Browser	7	145.580000		(None)	136.5	88.5	023	NN	(None)	0.600000	FM	High	5.0	
Browser	8	147.505000		(None)	123.0	88.5	023	NN	-	1.000000	FM	High	5.0	
Browser	9	145.290000		(None)	100.0	88.5	023	NN	-	0.600000	FM	High	5.0	
Browser	10	145.150000		(None)	100.0	88.5	023	NN	-	0.600000	FM	High	5.0	S
Browser	11	145.250000		(None)	100.0	88.5	023	NN	-	0.600000	FM	High	5.0	S
Browser	12	146.720000		(None)	100.0	88.5	023	NN	-	0.600000	FM	High	5.0	
Browser	13	146.980000		(None)	100.0	88.5	023	NN	-	0.600000	FM	High	5.0	
Browser	14	147.000000		(None)	100.0	88.5	023	NN	+	0.600000	FM	High	5.0	S
Browser	15	146.740000		(None)	100.0	88.5	023	NN	-	0.600000	FM	High	5.0	S
Browser	16	147.300000		Tone	103.5	88.5	023	NN	+	0.600000	FM	High	5.0	

[0] Completed Getting raw memory 0 (idle)

What is CHIRP?

- Cross-platform, cross-radio programming tool
- Focused on sharing memories between radios
- Support for general settings on some radios
- Fully reverse-engineered (no help from OEMs)
- Support for 85+ models across 13 vendors
- Used by thousands around the world
- Free to use and Open Source

Supported Models

AnyTone

AT-5888UV

Alinco

DR-03T

DR-06T

DR135T

DR235T

DR435T

DJ596T

DJ175T

Baofeng

F-11

UV-3R

UV-5R

UV-B5

Jetstream

JT220M

Icom

IC-80AD

IC-2820H

ID-800H

ID-880H

IC-208H

IC-2200H

IC-91/92AD

IC-V/U82

ID-RPx000V/RP2x

IC-2100H

IC-2720H

IC-T70

IC-T7H

IC-T8A

IC-Q7A

IC-W32A

IC-746

IC-7200

IC-7000

ID-31A

ID-51A

Kenwood

TH-D7A/G

TH-D72

TH-F6A

TH-F7E

TH-K2

TK-7102/8102/7108/8108

TM-271A/281A

TM-D700

TM-D710

TM-G707

TM-V7A

TM-V71A

Puxing

PX-2R (UHF)

PX-777

TYT

TH-UV3R

TH-UVF1

Yaesu

FT-60R

FT-817/ND

FT-857/D

FT-897

FT-1802M

FT-2800M

FT-7800R

FT-7900R

FT-8800R

FT-8900R

FTM-350R

VX-3R

VX-5R

VX-6R

VX-7R

VX-8R

Wouxun

KG-UVD1P/UV2D/UV3D

KG-UV6D/UV6X

File Formats and Data Sources

- Comma Separated Values (.csv)
- CSV generated by RT Systems
- EVE for Yaesu VX-5
- Kenwood HMK format
- Kenwood commercial ITM format
- Icom Data Files (.icf)
- ARRL TravelPlus (.tpe)
- VX5 Commander Files (.vx5)
- VX7 Commander Files (.vx7)
- RadioReference
- RepeaterBook
- przemienniki.net
- RFinder

How is it created?

- Completely reverse-engineered (no help from OEMs)
- Steps to add a new model:
 - Sniff, decode, and re-implement the cloning protocol
 - Download an image of the radio's memory
 - Change something in the radio and download another
 - Attempt to determine which bits changed
 - Wash, rinse, repeat

Decoding A Radio's Memory

(Icom IC-2200H)

Frequency (146.90 MHz)

Offset (0.60 MHz)

Label (FOO___)

RPT Tone (88.5Hz)

CTCSS Tone (88.5Hz)

DTCS Code (023)

```
theine
File Edit View Search Terminal Help
00000000 c4 72 78 00 46 4f 4f 20 20 20 08 08 00 00 00 00 |.rx.F00 .....|
00000010 00 00 00 00 04 10 00 00 78 72 00 00 32 4d 20 43 |.....xr..2M C|
00000020 71 4e 08 08 00 00 00 00 00 00 00 00 0c 00 00 00 |AL.....|
00000030 08 73 78 00 20 20 20 20 20 20 06 08 00 00 00 00 |.sx. ....|
00000040 00 00 00 00 01 20 00 00 00 72 78 00 20 20 20 20 |.....rx. ....|
00000050 20 20 06 08 00 00 00 00 00 00 00 00 00 10 00 00 |.....|
00000060 60 79 78 00 20 20 20 20 20 20 15 08 00 00 00 00 |kyx. ....|
00000070 00 00 00 00 00 00 00 00 04 73 78 00 20 20 20 20 |.....sx. ....|
00000080 20 20 15 08 00 00 00 00 00 00 00 00 01 20 00 00 |.....|
00000090 36 71 78 00 20 20 20 20 20 20 15 08 00 00 00 00 |6qx. ....|
000000a0 00 00 00 00 00 00 00 00 bc 71 78 00 20 20 20 20 |.....qx. ....|
000000b0 20 20 15 08 00 00 00 00 00 00 00 00 00 00 00 00 |.....|
000000c0 5d 73 78 00 20 20 20 20 20 20 12 08 00 00 00 00 |=s.. ....|
000000d0 00 00 00 00 00 10 00 00 82 71 78 00 20 20 20 20 |.....qx. ....|
000000e0 20 20 0c 08 00 00 00 00 00 00 00 00 00 10 00 00 |.....|
000000f0 66 71 78 00 20 20 20 20 20 20 0c 08 00 00 00 00 |fqx. ....|
00000100 00 00 00 00 00 10 00 00 7a 71 78 00 20 20 20 20 |.....zqx. ....|
00000110 20 20 0c 08 00 00 00 00 00 00 00 00 00 10 00 00 |.....|
00000120 a0 72 78 00 20 20 20 20 20 20 0c 08 00 00 00 00 |.rx. ....|
00000130 00 00 00 00 00 10 00 00 d4 72 78 00 20 20 20 20 |.....rx. ....|
00000140 20 20 0c 08 00 00 00 00 00 00 00 00 00 10 00 00 |.....|
00000150 d8 72 78 00 20 20 20 20 20 20 0c 08 00 00 00 00 |.rx. ....|
00000160 00 00 00 00 00 20 00 00 a4 72 78 00 20 20 20 20 |.....rx. ....|
00000170 20 20 0c 08 00 00 00 00 00 00 00 00 00 10 00 00 |.....|
00000180 14 73 78 00 20 20 20 20 20 20 0d 08 00 00 00 00 |.sx. ....|
00000190 00 00 00 00 01 20 00 00 12 5a 60 00 20 20 20 20 |.....Z` .|
```

What can it do?

- Download, upload, and edit your Radio's memories
- Exchange memories between different radios
- Import from and Export to various interchange formats
- Dynamically query various online databases
- Expand the band limits on some radios
- Help you:
 - Save money on hardware, OSes, and proprietary software
 - Program all your (or your group's) radios with the same plan

Who is involved?

- Primary (active at time of writing) developers:
 - Dan Smith KK7DS
 - Tom Hayward KD7LXL
 - Marco Filippi IZ5FSA
 - Jim Unroe KC9HI
- Patches from 24 contributors
- Thousands of users across the globe
- A mailing list with 1000+ subscribers

How does it work?

- Single radio programming workflow
 - Download an image from the radio
 - Make some changes
 - Upload it back to the radio
- Cloning dissimilar radios
 - Download from Radio A, save as an image file
 - Download from Radio B
 - Import Radio A's image file into Radio B
 - Upload back to Radio B

How does it work?

- Querying online databases
 - Download (or open) an image of the radio
 - Choose the query source in the menu
 - Copy and Paste between the query tab and the radio
 - Upload back to the radio
- Exporting to CSV for external editing
 - Download (or open) an image of the radio
 - Export to CSV in the menu
 - Edit externally with a spreadsheet application
 - Import from CSV in the menu, upload back to radio

How can I help?

- Get it: <http://chirp.danplanet.com>
- Spread the word!
- Use it, provide feedback, register bugs
- Join the mailing list and help answer questions
- Loan your radio for integration
- Equipment donations are common and appreciated
- Monetary donations help a lot

