Radio Programming with CHIRP

RMHAM University
Tech Talks

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Your Host

Chris Keller, K0SWE. Active in RMHAM and Colorado ARES R1D6, as well as software development for amateur radio

What is CHIRP?

CHIRP

"CHIRP is a **free, open-source** tool for **programming** your amateur radio. It supports a **large number of manufacturers and models**, as well as provides a way to interface with **multiple data sources and formats**."

https://chirp.danplanet.com/projects/chirp/wiki/Home

Capabilities

What can it program?

- Dozens of manufacturers, hundreds of radios

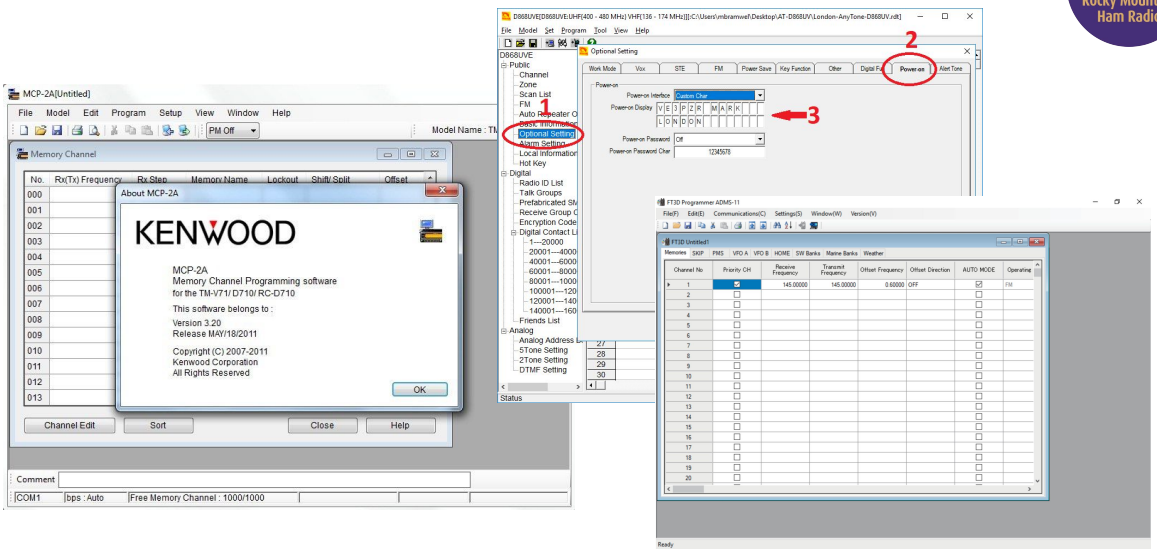
What doesn't it do?

- DMR, D-Star, C4FM
- Motorola

Some radios with digital modes are supported, but digital channels are not. Some radios (particularly DMR) are not supported at all.

Not sure if lack of Motorola support is because of a technical blocker or because nobody has gotten around to it.

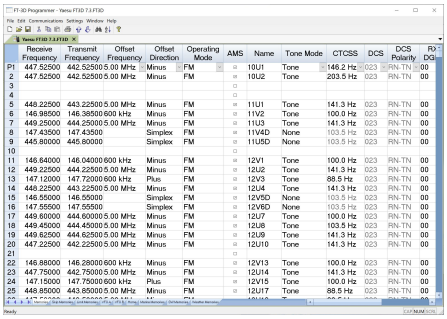
vs Manufacturer CPS?



The nice thing about manufacturer-built programming software is that they cover every feature they intend you to use. Downsides include:

- Needing a separate program for each radio
- Not always free
- Usually Windows only

vs RT Systems?



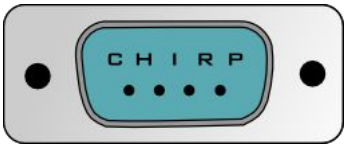
	Receive Frequency	Transmit Frequency	Offset Frequency	Offset Direction	Operating Mode	AMS	Name	Tone Mode	CTCSS	DCS	DCS Polarity	RX
P1	447.52500	442.52500	5.00 MHz	Minus	FM		10U1	Tone	146.2 Hz	023	RN-TN	00
2	447.52500	442.52500	5.00 MHz	Minus	FM		10U2	Tone	203.5 Hz	023	RN-TN	00
3												
4												
5	448.22500	443.22500	5.00 MHz	Minus	FM		11U1	Tone	141.3 Hz	023	RN-TN	00
6	146.98500	146.38500	600 kHz	Minus	FM		11V2	Tone	100.0 Hz	023	RN-TN	00
7	449.25000	444.25000	5.00 MHz	Minus	FM		11U3	Tone	141.3 Hz	023	RN-TN	00
8	147.43500	147.43500		Simplex	FM		11V4D	None	103.5 Hz	023	RN-TN	00
9	445.80000	445.80000		Simplex	FM		11U5D	None	103.5 Hz	023	RN-TN	00
10												
11	146.64000	146.04000	600 kHz	Minus	FM		12V1	Tone	100.0 Hz	023	RN-TN	00
12	449.22500	444.22500	5.00 MHz	Minus	FM		12U2	Tone	141.3 Hz	023	RN-TN	00
13	147.12000	147.72000	600 kHz	Plus	FM		12V3	Tone	88.5 Hz	023	RN-TN	00
14	448.22500	443.22500	5.00 MHz	Minus	FM		12U4	Tone	141.3 Hz	023	RN-TN	00
15	146.55000	146.55000		Simplex	FM		12V5D	None	103.5 Hz	023	RN-TN	00
16	147.55500	147.55500		Simplex	FM		12V6D	None	103.5 Hz	023	RN-TN	00
17	449.60000	444.60000	5.00 MHz	Minus	FM		12U7	Tone	100.0 Hz	023	RN-TN	00
18	449.45000	444.45000	5.00 MHz	Minus	FM		12U8	Tone	103.5 Hz	023	RN-TN	00
19	449.62500	444.62500	5.00 MHz	Minus	FM		12U9	Tone	141.3 Hz	023	RN-TN	00
20	447.22500	442.22500	5.00 MHz	Minus	FM		12U10	Tone	141.3 Hz	023	RN-TN	00
21												
22	146.88000	146.28000	600 kHz	Minus	FM		12V13	Tone	100.0 Hz	023	RN-TN	00
23	447.75000	442.75000	5.00 MHz	Minus	FM		12U14	Tone	141.3 Hz	023	RN-TN	00
24	147.15000	147.75000	600 kHz	Plus	FM		12V15	Tone	100.0 Hz	023	RN-TN	00
25	448.85000	443.85000	5.00 MHz	Minus	FM		12U17	Tone	88.5 Hz	023	RN-TN	00

Rocky Mountain Ham Radio

rt SYSTEMS
RADIO PROGRAMMING MADE EASY

RT Systems is a high-quality ecosystem. CHIRP vs RT Systems is sort of a time vs money dichotomy. RT Systems is reliable and offers support, but it's expensive. CHIRP is free and supports a lot of radios in one program, but it's rough around the edges and relies on community for tech support.

Analogy



Manufacturer CPS

Another analogy is multitool vs handcrafted tool set. Chirp is a single tool that can get you a long way in a lot of situations, but isn't appropriate for every job. RT Systems is handcrafted to make the experience with each radio as seamless as possible, and that high quality comes at a price. Manufacturer CPS' reach every nook and cranny of the radio but are not as elegant or integrated as RT Systems. Each has their place, and they're all good to have in your arsenal.

Building a Generic Codeplug

Generic Codeplug Methods

- Manual entry
- Online databases
  - RadioReference
  - RepeaterBook
  - RFinder
- CSV (next slide)

RT Systems supports most of the same online sources.

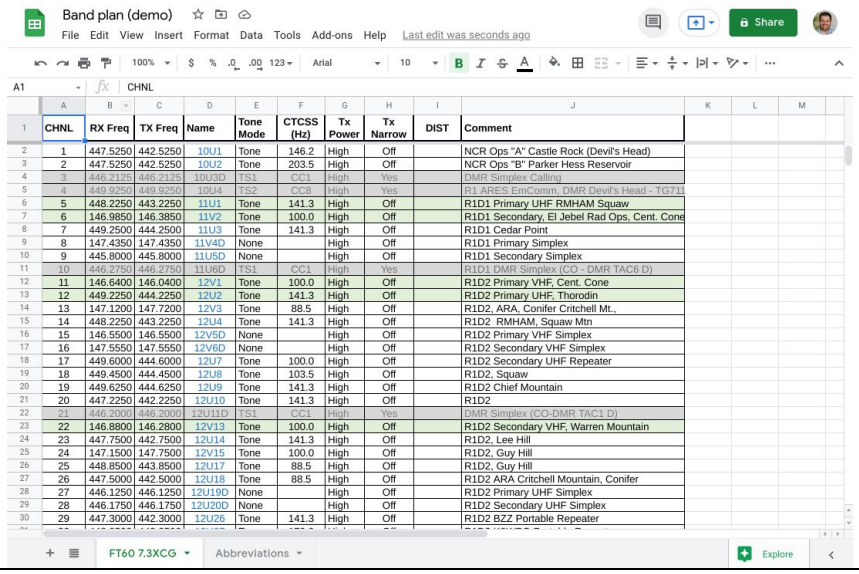
Power User: Spreadsheet to CSV

- No import wizard like RT Systems
- Not too hard to transform our own CSV to fit CHIRP's "shape"
- Docs at https://chirp.danplanet.com/projects/chirp/wiki/CSV_HowTo

Transforming from an RT Systems CSV to a CHIRP CSV should be very scriptable. (Maybe I should get around to that?)

Spreadsheet "Gymnastics"

Starting band plan



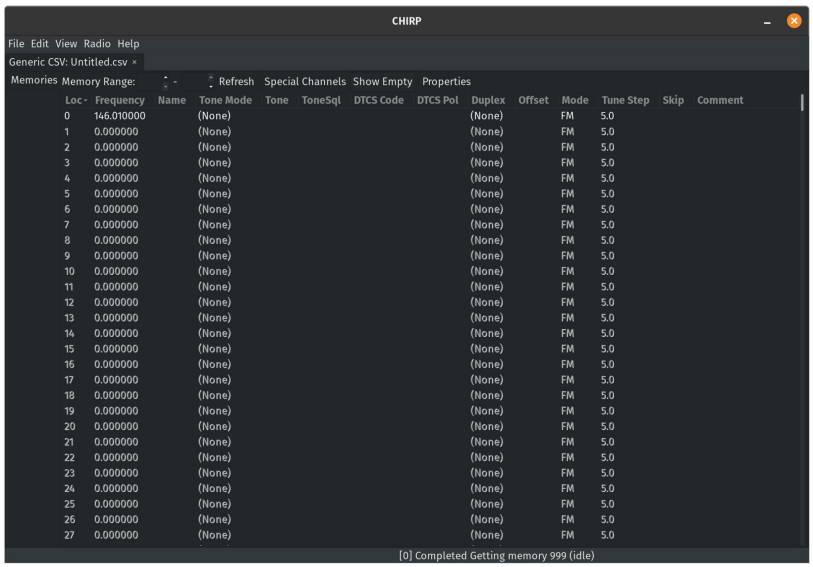
Band plan (demo)

CHNL	RX Freq	TX Freq	Name	Tone Mode	CTCSS (Hz)	Tx Power	Tx Narrow	DIST	Comment
1	447.5250	442.5250	10U1	Tone	146.2	High	Off		NCR Ops "A" Castle Rock (Devil's Head)
2	447.5250	442.5250	10U2	Tone	203.5	High	Off		NCR Ops "B" Parker Hess Reservoir
3	446.2125	446.2125	10U3D	TS1	CC1	High	Yes		DMR Simplex Calling
4	449.9250	449.9250	10U4	TS2	CC8	High	Yes		R1 ARES EmComm, DMR Devil's Head - TG711
5	448.2250	443.2250	11U1	Tone	141.3	High	Off		R1D1 Primary UHF RMHAM Squaw
6	146.9850	146.3850	11V2	Tone	100.0	High	Off		R1D1 Secondary, El Jebel Rad Ops, Cent. Cone
7	449.2500	444.2500	11U3	Tone	141.3	High	Off		R1D1 Cedar Point
8	147.4350	147.4350	11V4D	None		High	Off		R1D1 Primary Simplex
9	445.8000	445.8000	11U5D	None		High	Off		R1D1 Secondary Simplex
10	446.2750	446.2750	11U6D	TS1	CC1	High	Yes		R1D1 DMR Simplex (CO - DMR TAC6 D)
11	146.6400	146.0400	12V1	Tone	100.0	High	Off		R1D2 Primary VHF, Cent. Cone
12	449.2250	444.2250	12U2	Tone	141.3	High	Off		R1D2 Primary UHF, Thorodin
13	147.1200	147.7200	12V3	Tone	88.5	High	Off		R1D2, ARA, Conifer Critchell Mt.,
14	448.2250	443.2250	12U4	Tone	141.3	High	Off		R1D2 RMHAM, Squaw Mtn
15	146.5500	146.5500	12V5D	None		High	Off		R1D2 Primary VHF Simplex
16	147.5550	147.5550	12V6D	None		High	Off		R1D2 Secondary VHF Simplex
17	449.6000	444.6000	12U7	Tone	100.0	High	Off		R1D2 Secondary UHF Repeater
18	449.4500	444.4500	12U8	Tone	103.5	High	Off		R1D2, Squaw
19	449.6250	444.6250	12U9	Tone	141.3	High	Off		R1D2 Chief Mountain
20	447.2250	442.2250	12U10	Tone	141.3	High	Off		R1D2
21	446.2000	446.2000	12U11D	TS1	CC1	High	Yes		DMR Simplex (CO-DMR TAC1 D)
22	146.8800	146.2800	12V13	Tone	100.0	High	Off		R1D2 Secondary VHF, Warren Mountain
23	447.7500	442.7500	12U14	Tone	141.3	High	Off		R1D2, Lee Hill
24	147.1500	147.7500	12V15	Tone	100.0	High	Off		R1D2, Guy Hill
25	448.8500	443.8500	12U17	Tone	88.5	High	Off		R1D2, Guy Hill
26	447.5000	442.5000	12U18	Tone	88.5	High	Off		R1D2 ARA Critchell Mountain, Conifer
27	446.1250	446.1250	12U19D	None		High	Off		R1D2 Primary UHF Simplex
28	446.1750	446.1750	12U20D	None		High	Off		R1D2 Secondary UHF Simplex
29	447.3000	442.3000	12U26	Tone	141.3	High	Off		R1D2 BZZ Portable Repeater

Choice of spreadsheet software isn't too important, we'll be using all common features.

This band plan happens to be published by my ARES team.

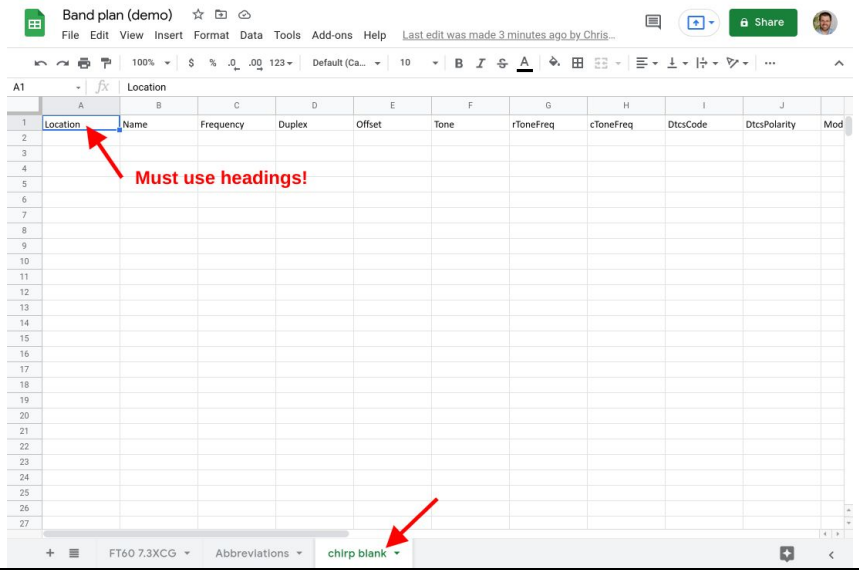
Blank Chirp Doc



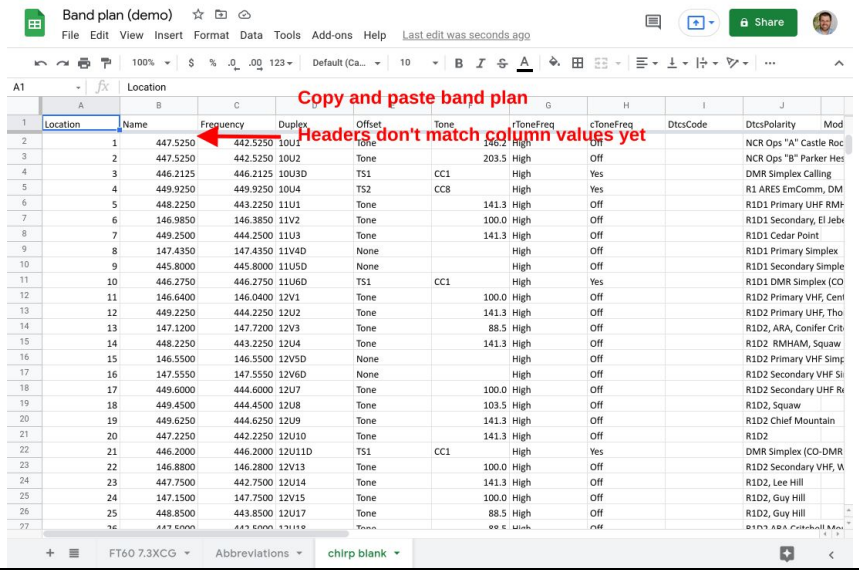
Loc	Frequency	Name	Tone Mode	Tone	ToneSql	DTCS Code	DTCS Pol	Duplex	Offset	Mode	Tune Step	Skip	Comment
0	146.010000		(None)					(None)		FM	5.0		
1	0.000000		(None)					(None)		FM	5.0		
2	0.000000		(None)					(None)		FM	5.0		
3	0.000000		(None)					(None)		FM	5.0		
4	0.000000		(None)					(None)		FM	5.0		
5	0.000000		(None)					(None)		FM	5.0		
6	0.000000		(None)					(None)		FM	5.0		
7	0.000000		(None)					(None)		FM	5.0		
8	0.000000		(None)					(None)		FM	5.0		
9	0.000000		(None)					(None)		FM	5.0		
10	0.000000		(None)					(None)		FM	5.0		
11	0.000000		(None)					(None)		FM	5.0		
12	0.000000		(None)					(None)		FM	5.0		
13	0.000000		(None)					(None)		FM	5.0		
14	0.000000		(None)					(None)		FM	5.0		
15	0.000000		(None)					(None)		FM	5.0		
16	0.000000		(None)					(None)		FM	5.0		
17	0.000000		(None)					(None)		FM	5.0		
18	0.000000		(None)					(None)		FM	5.0		
19	0.000000		(None)					(None)		FM	5.0		
20	0.000000		(None)					(None)		FM	5.0		
21	0.000000		(None)					(None)		FM	5.0		
22	0.000000		(None)					(None)		FM	5.0		
23	0.000000		(None)					(None)		FM	5.0		
24	0.000000		(None)					(None)		FM	5.0		
25	0.000000		(None)					(None)		FM	5.0		
26	0.000000		(None)					(None)		FM	5.0		
27	0.000000		(None)					(None)		FM	5.0		

All we need are the here are the headings. Save CSV As...

Import Chirp CSV as new sheet



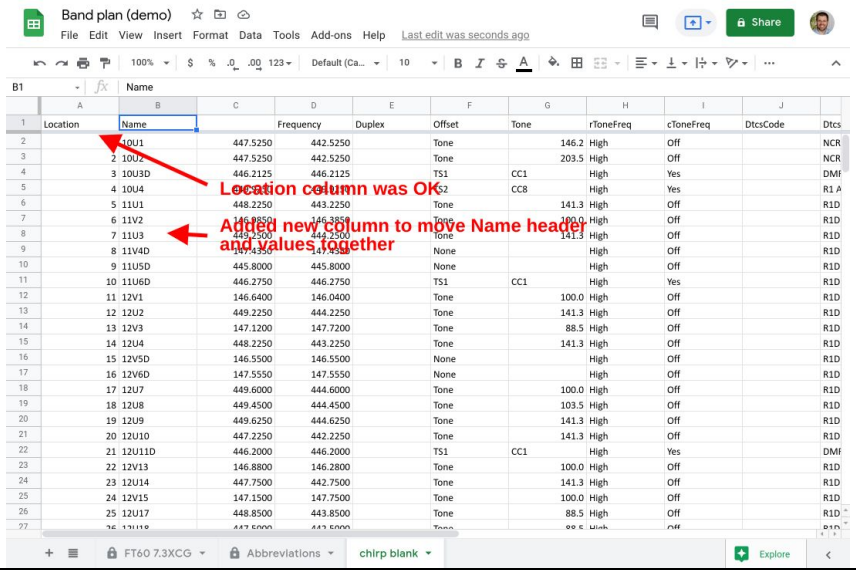
Copy band plan to Chirp sheet



Location	Name	Frequency	Duplex	Offset	Tone	rToneFreq	cToneFreq	DtcsCode	DtcsPolarity	Mod
1	447.5250	442.5250	10U1	Tone	146.2	High	Off		NCR Ops "A" Castle Roc	
2	447.5250	442.5250	10U2	Tone	203.5	High	Off		NCR Ops "B" Parker Hes	
3	446.2125	446.2125	10U3D	TS1	CC1	High	Yes		DMR Simplex Calling	
4	449.9250	449.9250	10U4	TS2	CC8	High	Yes		R1 ARES EmComm, DM	
5	448.2250	443.2250	11U1	Tone	141.3	High	Off		R1D1 Primary UHF RMH	
6	146.9850	146.3850	11V2	Tone	100.0	High	Off		R1D1 Secondary, El Jeb	
7	449.2500	444.2500	11U3	Tone	141.3	High	Off		R1D1 Cedar Point	
8	147.4350	147.4350	11V4D	None		High	Off		R1D1 Primary Simplex	
9	445.8000	445.8000	11U5D	None		High	Off		R1D1 Secondary Simple	
10	446.2750	446.2750	11U6D	TS1	CC1	High	Yes		R1D1 DMR Simplex (CO	
11	146.6400	146.0400	12V1	Tone	100.0	High	Off		R1D2 Primary VHF, Cent	
12	449.2250	444.2250	12U2	Tone	141.3	High	Off		R1D2 Primary UHF, Tho	
13	147.1200	147.7200	12V3	Tone	88.5	High	Off		R1D2, ARA, Conifer Crit	
14	448.2250	443.2250	12U4	Tone	141.3	High	Off		R1D2 RMHAM, Squaw	
15	146.5500	146.5500	12V5D	None		High	Off		R1D2 Primary VHF Simp	
16	147.5550	147.5550	12V6D	None		High	Off		R1D2 Secondary VHF Si	
17	449.6000	444.6000	12U7	Tone	100.0	High	Off		R1D2 Secondary UHF Re	
18	449.4500	444.4500	12U8	Tone	103.5	High	Off		R1D2, Squaw	
19	449.6250	444.6250	12U9	Tone	141.3	High	Off		R1D2 Chief Mountain	
20	447.2250	442.2250	12U10	Tone	141.3	High	Off		R1D2	
21	446.2000	446.2000	12U11D	TS1	CC1	High	Yes		DMR Simplex (CO-DMR	
22	146.8800	146.2800	12V13	Tone	100.0	High	Off		R1D2 Secondary VHF, W	
23	447.7500	442.7500	12U14	Tone	141.3	High	Off		R1D2, Lee Hill	
24	147.1500	147.7500	12V15	Tone	100.0	High	Off		R1D2, Guy Hill	
25	448.8500	443.8500	12U17	Tone	88.5	High	Off		R1D2, Guy Hill	

I prefer to remove colors and other formatting here

Start aligning headers with columns



	A	B	C	D	E	F	G	H	I	J	
1	Location	Name		Frequency	Duplex	Offset	Tone	rToneFreq	cToneFreq	DtcsCode	Dtcs
2		10U1	447.5250	442.5250		Tone	146.2	High	Off		NCR
3	2	10U2	447.5250	442.5250		Tone	203.5	High	Off		NCR
4	3	10U3D	446.2125	446.2125		TS1	CC1	High	Yes		DMF
5	4	10U4	[illegible]	[illegible]		[illegible]52	CC8	High	Yes		R1 A
6	5	11U1	448.2250	443.2250		Tone	141.3	High	Off		R1D
7	6	11V2	146.8850	146.3850		Tone	180.0	High	Off		R1D
8	7	11U3	445.2500	444.2500		Tone	141.3	High	Off		R1D
9	8	11V4D	147.4350	147.4350		None		High	Off		R1D
10	9	11U5D	445.8000	445.8000		None		High	Off		R1D
11	10	11U6D	446.2750	446.2750		TS1	CC1	High	Yes		R1D
12	11	12V1	146.6400	146.0400		Tone	100.0	High	Off		R1D
13	12	12U2	449.2250	444.2250		Tone	141.3	High	Off		R1D
14	13	12V3	147.1200	147.7200		Tone	88.5	High	Off		R1D
15	14	12U4	448.2250	443.2250		Tone	141.3	High	Off		R1D
16	15	12V5D	146.5500	146.5500		None		High	Off		R1D
17	16	12V6D	147.5550	147.5550		None		High	Off		R1D
18	17	12U7	449.6000	444.6000		Tone	100.0	High	Off		R1D
19	18	12U8	449.4500	444.4500		Tone	103.5	High	Off		R1D
20	19	12U9	449.6250	444.6250		Tone	141.3	High	Off		R1D
21	20	12U10	447.2250	442.2250		Tone	141.3	High	Off		R1D
22	21	12U11D	446.2000	446.2000		TS1	CC1	High	Yes		DMF
23	22	12V13	146.8800	146.2800		Tone	100.0	High	Off		R1D
24	23	12U14	447.7500	442.7500		Tone	141.3	High	Off		R1D
25	24	12V15	147.1500	147.7500		Tone	100.0	High	Off		R1D
26	25	12U17	448.8500	443.8500		Tone	88.5	High	Off		R1D

Make liberal use of Add and Delete columns, and cutting and pasting things around

Frequencies

Band plan (demo)

File Edit View Insert Format Data Tools Add-ons Help Last edit was seconds ago

Share

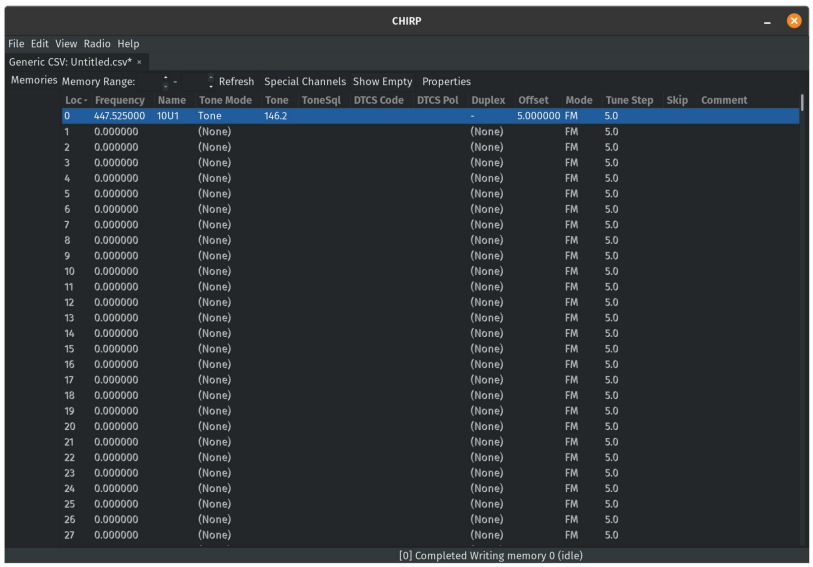
C1:F1 Frequency

	A	B	C	D	E	F	G	H	I	J	
1	Location	Name	Frequency	(TX Freq)	Duplex	Offset		Tone	rToneFreq	cToneFreq	Dtcs
2	1	10U1	447.5250	442.5250			Tone	146.2	High	Off	
3	2	10U2	447.5250	442.5250			Tone	203.5	High	Off	
4	3	10U3D	446.2125	446.2125			TS1	CC1	High	Yes	
5	4	10U4	449.9250	449.9250			TS2	CC8	High	Yes	
6	5	11U1	448.2250	443.2250			Tone	141.3	High	Off	
7	6	11V2	146.9850	146.3850			Tone	100.0	High	Off	
8	7	11U3	449.2500	444.2500			Tone	141.3	High	Off	
9	8	11V4D	147.4350	147.4350			None		High	Off	
10	9	11U5D	445.8000	445.8000			None		High	Off	
11	10	11U6D	446.2750	446.2750			TS1	CC1	High	Yes	
12	11	12V1	146.6400	146.0400			Tone	100.0	High	Off	
13	12	12U2	449.2250	444.2250			Tone	141.3	High	Off	
14	13	12V3	147.1200	147.7200			Tone	88.5	High	Off	
15	14	12U4	448.2250	443.2250			Tone	141.3	High	Off	
16	15	12V5D	146.5500	146.5500			None		High	Off	
17	16	12V6D	147.5550	147.5550			None		High	Off	
18	17	12U7	449.6000	444.6000			Tone	100.0	High	Off	
19	18	12U8	449.4500	444.4500			Tone	103.5	High	Off	
20	19	12U9	449.6250	444.6250			Tone	141.3	High	Off	
21	20	12U10	447.2250	442.2250			Tone	141.3	High	Off	
22	21	12U11D	446.2000	446.2000			TS1	CC1	High	Yes	
23	22	12V13	146.8800	146.2800			Tone	100.0	High	Off	
24	23	12U14	447.7500	442.7500			Tone	141.3	High	Off	
25	24	12V15	147.1500	147.7500			Tone	100.0	High	Off	
26	25	12U17	448.8500	443.8500			Tone	88.5	High	Off	

Band plan gave me RX and TX freq, but Chirp wants Offset

FT60 7.3XCG | Abbreviations | chirp blank | Count: 4 | Explore

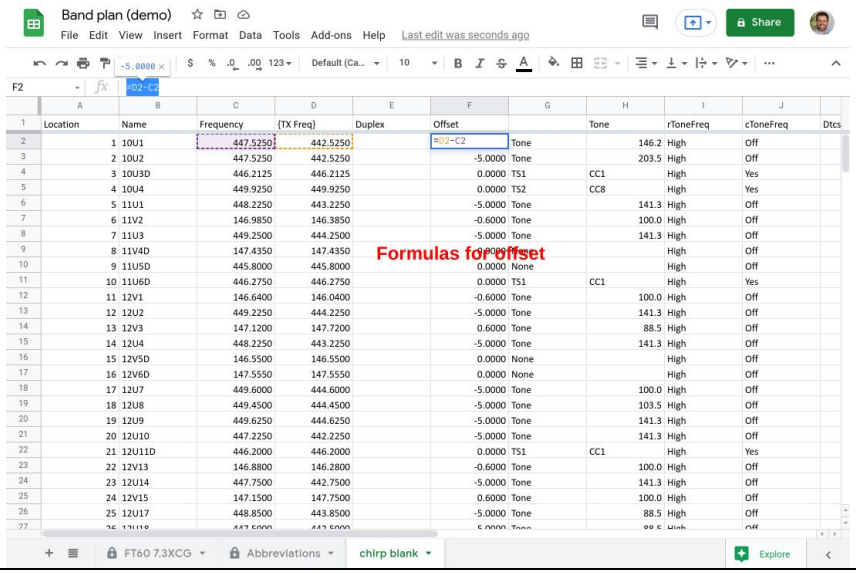
What should it look like?



Loc	Frequency	Name	Tone Mode	Tone	ToneSql	DTCS Code	DTCS Pol	Duplex	Offset	Mode	Tune Step	Skip	Comment
0	447.525000	10U1	Tone	146.2				-	5.000000	FM	5.0		
1	0.000000		(None)					(None)		FM	5.0		
2	0.000000		(None)					(None)		FM	5.0		
3	0.000000		(None)					(None)		FM	5.0		
4	0.000000		(None)					(None)		FM	5.0		
5	0.000000		(None)					(None)		FM	5.0		
6	0.000000		(None)					(None)		FM	5.0		
7	0.000000		(None)					(None)		FM	5.0		
8	0.000000		(None)					(None)		FM	5.0		
9	0.000000		(None)					(None)		FM	5.0		
10	0.000000		(None)					(None)		FM	5.0		
11	0.000000		(None)					(None)		FM	5.0		
12	0.000000		(None)					(None)		FM	5.0		
13	0.000000		(None)					(None)		FM	5.0		
14	0.000000		(None)					(None)		FM	5.0		
15	0.000000		(None)					(None)		FM	5.0		
16	0.000000		(None)					(None)		FM	5.0		
17	0.000000		(None)					(None)		FM	5.0		
18	0.000000		(None)					(None)		FM	5.0		
19	0.000000		(None)					(None)		FM	5.0		
20	0.000000		(None)					(None)		FM	5.0		
21	0.000000		(None)					(None)		FM	5.0		
22	0.000000		(None)					(None)		FM	5.0		
23	0.000000		(None)					(None)		FM	5.0		
24	0.000000		(None)					(None)		FM	5.0		
25	0.000000		(None)					(None)		FM	5.0		
26	0.000000		(None)					(None)		FM	5.0		
27	0.000000		(None)					(None)		FM	5.0		

Tmode has possible values of “Tone”, “TSQL”, “DTCS”, “DTCS-R”, “TSQL-R”, “Cross” or blank
Duplex has possible values of “+”, “-”, “split”,“off” or blank

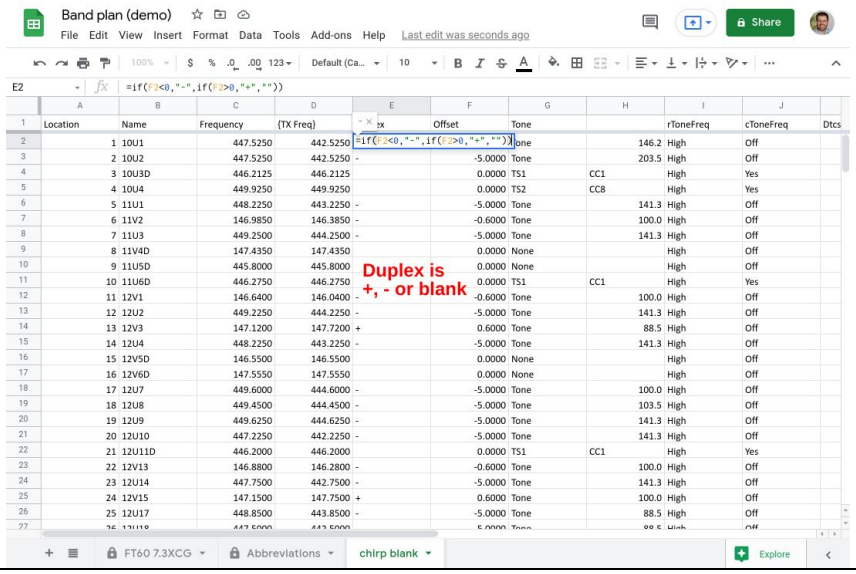
RX and TX to offset



	A	B	C	D	E	F	G	H	I	J	
1	Location	Name	Frequency	(TX Freq)	Duplex	Offset		Tone	rToneFreq	cToneFreq	Dtcs
2	1	10U1	447.5250	442.5250		=D2-C2	Tone	146.2	High	Off	
3	2	10U2	447.5250	442.5250		-5.0000	Tone	203.5	High	Off	
4	3	10U3D	446.2125	446.2125		0.0000	TS1	CC1	High	Yes	
5	4	10U4	449.9250	449.9250		0.0000	TS2	CC8	High	Yes	
6	5	11U1	448.2250	443.2250		-5.0000	Tone	141.3	High	Off	
7	6	11V2	146.9850	146.3850		-0.6000	Tone	100.0	High	Off	
8	7	11U3	449.2500	444.2500		-5.0000	Tone	141.3	High	Off	
9	8	11V4D	147.4350	147.4350		0.0000	None		High	Off	
10	9	11U5D	445.8000	445.8000		0.0000	None		High	Off	
11	10	11U6D	446.2750	446.2750		0.0000	TS1	CC1	High	Yes	
12	11	12V1	146.6400	146.0400		-0.6000	Tone	100.0	High	Off	
13	12	12U2	449.2250	444.2250		-5.0000	Tone	141.3	High	Off	
14	13	12V3	147.1200	147.7200		0.6000	Tone	88.5	High	Off	
15	14	12U4	448.2250	443.2250		-5.0000	Tone	141.3	High	Off	
16	15	12V5D	146.5500	146.5500		0.0000	None		High	Off	
17	16	12V6D	147.5550	147.5550		0.0000	None		High	Off	
18	17	12U7	449.6000	444.6000		-5.0000	Tone	100.0	High	Off	
19	18	12U8	449.4500	444.4500		-5.0000	Tone	103.5	High	Off	
20	19	12U9	449.6250	444.6250		-5.0000	Tone	141.3	High	Off	
21	20	12U10	447.2250	442.2250		-5.0000	Tone	141.3	High	Off	
22	21	12U11D	446.2000	446.2000		0.0000	TS1	CC1	High	Yes	
23	22	12V13	146.8800	146.2800		-0.6000	Tone	100.0	High	Off	
24	23	12U14	447.7500	442.7500		-5.0000	Tone	141.3	High	Off	
25	24	12V15	147.1500	147.7500		0.6000	Tone	100.0	High	Off	
26	25	12U17	448.8500	443.8500		-5.0000	Tone	88.5	High	Off	

(F2)=D2-C2

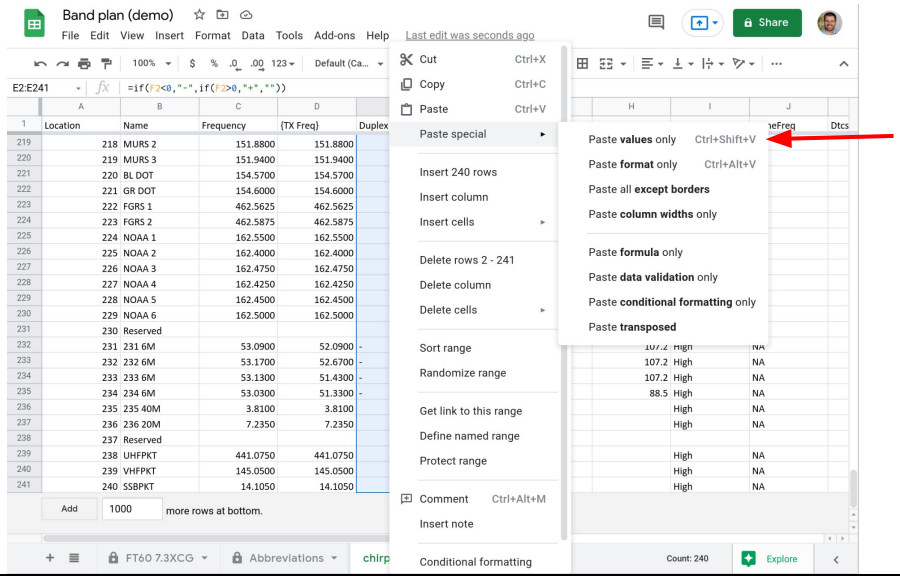
Duplex



	Location	Name	Frequency	(TX Freq)	Dx	Offset	Tone			rToneFreq	cToneFreq	Dtcs
2	1	10U1	447.5250	442.5250	=if(F2<0,"-",if(F2>0,"+","")))		one		146.2	High	Off	
3	2	10U2	447.5250	442.5250	-	-5.0000	Tone		203.5	High	Off	
4	3	10U3D	446.2125	446.2125		0.0000	TS1	CC1		High	Yes	
5	4	10U4	449.9250	449.9250		0.0000	TS2	CC8		High	Yes	
6	5	11U1	448.2250	443.2250	-	-5.0000	Tone		141.3	High	Off	
7	6	11V2	146.9850	146.3850	-	-0.6000	Tone		100.0	High	Off	
8	7	11U3	449.2500	444.2500	-	-5.0000	Tone		141.3	High	Off	
9	8	11V4D	147.4350	147.4350		0.0000	None			High	Off	
10	9	11U5D	445.8000	445.8000		0.0000	None			High	Off	
11	10	11U6D	446.2750	446.2750		0.0000	TS1	CC1		High	Yes	
12	11	12V1	146.6400	146.0400	-	-0.6000	Tone		100.0	High	Off	
13	12	12U2	449.2250	444.2250	-	-5.0000	Tone		141.3	High	Off	
14	13	12V3	147.1200	147.7200	+	0.6000	Tone		88.5	High	Off	
15	14	12U4	448.2250	443.2250	-	-5.0000	Tone		141.3	High	Off	
16	15	12V5D	146.5500	146.5500		0.0000	None			High	Off	
17	16	12V6D	147.5550	147.5550		0.0000	None			High	Off	
18	17	12U7	449.6000	444.6000	-	-5.0000	Tone		100.0	High	Off	
19	18	12U8	449.4500	444.4500	-	-5.0000	Tone		103.5	High	Off	
20	19	12U9	449.6250	444.6250	-	-5.0000	Tone		141.3	High	Off	
21	20	12U10	447.2250	442.2250	-	-5.0000	Tone		141.3	High	Off	
22	21	12U11D	446.2000	446.2000		0.0000	TS1	CC1		High	Yes	
23	22	12V13	146.8800	146.2800	-	-0.6000	Tone		100.0	High	Off	
24	23	12U14	447.7500	442.7500	-	-5.0000	Tone		141.3	High	Off	
25	24	12V15	147.1500	147.7500	+	0.6000	Tone		100.0	High	Off	
26	25	12U17	448.8500	443.8500	-	-5.0000	Tone		88.5	High	Off	

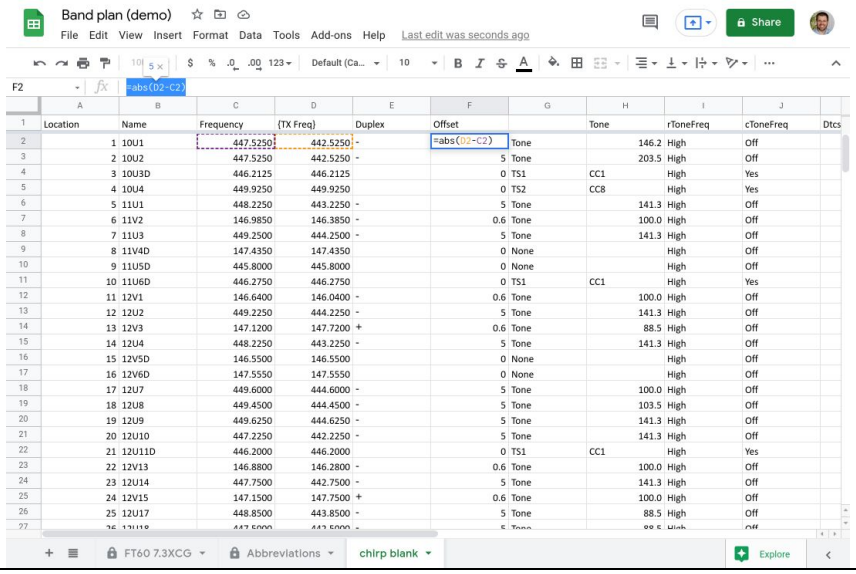
(E2)=if(F2<0,"-",if(F2>0,"'+","'"))
"If offset is less than zero, Duplex should be a minus sign; if it's greater than 0, it should be a plus sign (with escape char); if it's equal, it should be blank"

Copy Duplex and “Paste as Value”



We’re about to edit the Offset with an absolute value, but Duplex is based on whether it’s negative or positive. Freeze Duplex values by pasting the current values, replacing the formulas

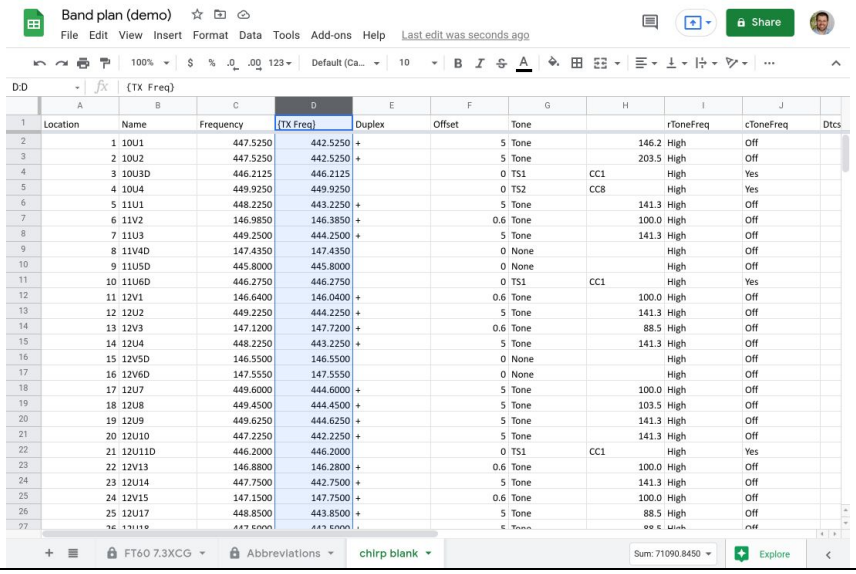
Fix offset to be positive



	A	B	C	D	E	F	G	H	I	J	
1	Location	Name	Frequency	(TX Freq)	Duplex	Offset		Tone	rToneFreq	cToneFreq	Dtcs
2	1	10U1	447.5250	442.5250	-	=abs(D2-C2)	Tone	146.2	High	Off	
3	2	10U2	447.5250	442.5250	-	5	Tone	203.5	High	Off	
4	3	10U3D	446.2125	446.2125		0	TS1	CC1	High	Yes	
5	4	10U4	449.9250	449.9250		0	TS2	CC8	High	Yes	
6	5	11U1	448.2250	443.2250	-	5	Tone	141.3	High	Off	
7	6	11V2	146.9850	146.3850	-	0.6	Tone	100.0	High	Off	
8	7	11U3	449.2500	444.2500	-	5	Tone	141.3	High	Off	
9	8	11V4D	147.4350	147.4350		0	None		High	Off	
10	9	11U5D	445.8000	445.8000		0	None		High	Off	
11	10	11U6D	446.2750	446.2750		0	TS1	CC1	High	Yes	
12	11	12V1	146.6400	146.0400	-	0.6	Tone	100.0	High	Off	
13	12	12U2	449.2250	444.2250	-	5	Tone	141.3	High	Off	
14	13	12V3	147.1200	147.7200	+	0.6	Tone	88.5	High	Off	
15	14	12U4	448.2250	443.2250	-	5	Tone	141.3	High	Off	
16	15	12V5D	146.5500	146.5500		0	None		High	Off	
17	16	12V6D	147.5550	147.5550		0	None		High	Off	
18	17	12U7	449.6000	444.6000	-	5	Tone	100.0	High	Off	
19	18	12U8	449.4500	444.4500	-	5	Tone	103.5	High	Off	
20	19	12U9	449.6250	444.6250	-	5	Tone	141.3	High	Off	
21	20	12U10	447.2250	442.2250	-	5	Tone	141.3	High	Off	
22	21	12U11D	446.2000	446.2000		0	TS1	CC1	High	Yes	
23	22	12V13	146.8800	146.2800	-	0.6	Tone	100.0	High	Off	
24	23	12U14	447.7500	442.7500	-	5	Tone	141.3	High	Off	
25	24	12V15	147.1500	147.7500	+	0.6	Tone	100.0	High	Off	
26	25	12U17	448.8500	443.8500	-	5	Tone	88.5	High	Off	

To the offset column, add ABS() to transform negatives into positives; copy the new formula down the column

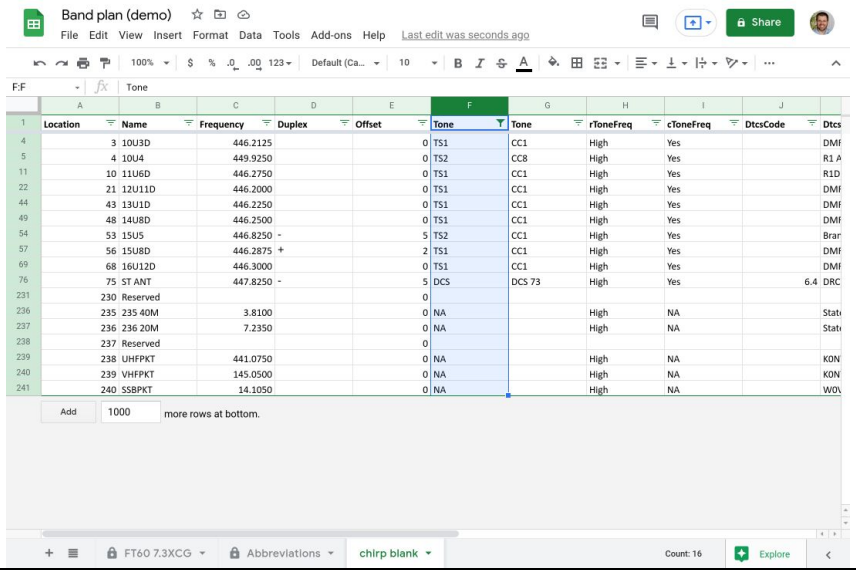
Remove TX Freq



	A	B	C	D	E	F	G	H	I	J	
1	Location	Name	Frequency	{TX Freq}	Duplex	Offset	Tone		rToneFreq	cToneFreq	Dtcs
2	1	10U1	447.5250	442.5250	+	5	Tone	146.2	High	Off	
3	2	10U2	447.5250	442.5250	+	5	Tone	203.5	High	Off	
4	3	10U3D	446.2125	446.2125		0	TS1	CC1	High	Yes	
5	4	10U4	449.9250	449.9250		0	TS2	CC8	High	Yes	
6	5	11U1	448.2250	443.2250	+	5	Tone	141.3	High	Off	
7	6	11V2	146.9850	146.3850	+	0.6	Tone	100.0	High	Off	
8	7	11U3	449.2500	444.2500	+	5	Tone	141.3	High	Off	
9	8	11V4D	147.4350	147.4350		0	None		High	Off	
10	9	11U5D	445.8000	445.8000		0	None		High	Off	
11	10	11U6D	446.2750	446.2750		0	TS1	CC1	High	Yes	
12	11	12V1	146.6400	146.0400	+	0.6	Tone	100.0	High	Off	
13	12	12U2	449.2250	444.2250	+	5	Tone	141.3	High	Off	
14	13	12V3	147.1200	147.7200	+	0.6	Tone	88.5	High	Off	
15	14	12U4	448.2250	443.2250	+	5	Tone	141.3	High	Off	
16	15	12V5D	146.5500	146.5500		0	None		High	Off	
17	16	12V6D	147.5550	147.5550		0	None		High	Off	
18	17	12U7	449.6000	444.6000	+	5	Tone	100.0	High	Off	
19	18	12U8	449.4500	444.4500	+	5	Tone	103.5	High	Off	
20	19	12U9	449.6250	444.6250	+	5	Tone	141.3	High	Off	
21	20	12U10	447.2250	442.2250	+	5	Tone	141.3	High	Off	
22	21	12U11D	446.2000	446.2000		0	TS1	CC1	High	Yes	
23	22	12V13	146.8800	146.2800	+	0.6	Tone	100.0	High	Off	
24	23	12U14	447.7500	442.7500	+	5	Tone	141.3	High	Off	
25	24	12V15	147.1500	147.7500	+	0.6	Tone	100.0	High	Off	
26	25	12U17	448.8500	443.8500	+	5	Tone	88.5	High	Off	

Chirp doesn’t care about TX Freq column and we’re ready to remove it. Offset is still based on TX Freq, so first copy and “paste as value” on Offset. Then you can delete TX Freq column.

Tone



	Location	Name	Frequency	Duplex	Offset	Tone	Tone	rToneFreq	cToneFreq	DtcsCode	Dtcs
4	3	10U3D	446.2125		0	TS1	CC1	High	Yes		DMF
5	4	10U4	449.9250		0	TS2	CC8	High	Yes		R1 A
11	10	11U6D	446.2750		0	TS1	CC1	High	Yes		R1D
22	21	12U11D	446.2000		0	TS1	CC1	High	Yes		DMF
44	43	13U1D	446.2250		0	TS1	CC1	High	Yes		DMF
49	48	14U8D	446.2500		0	TS1	CC1	High	Yes		DMF
54	53	15U5	446.8250	-	5	TS2	CC1	High	Yes		Bran
57	56	15U8D	446.2875	+	2	TS1	CC1	High	Yes		DMF
69	68	16U12D	446.3000		0	TS1	CC1	High	Yes		DMF
76	75	ST ANT	447.8250	-	5	DCS	DCS 73	High	Yes	6.4	DRC
231	230	Reserved			0						
236	235	235 40M	3.8100		0	NA		High	NA		Stat
237	236	236 20M	7.2350		0	NA		High	NA		Stat
238	237	Reserved			0						
239	238	UHFPKT	441.0750		0	NA		High	NA		K0N
240	239	VHFPKT	145.0500		0	NA		High	NA		K0N
241	240	SSBPKT	14.1050		0	NA		High	NA		W0V

Start filtering, and ignore Tones with “Tone” or “None” because I probably want to keep those.

Delete DMR Channels and “Reserved”

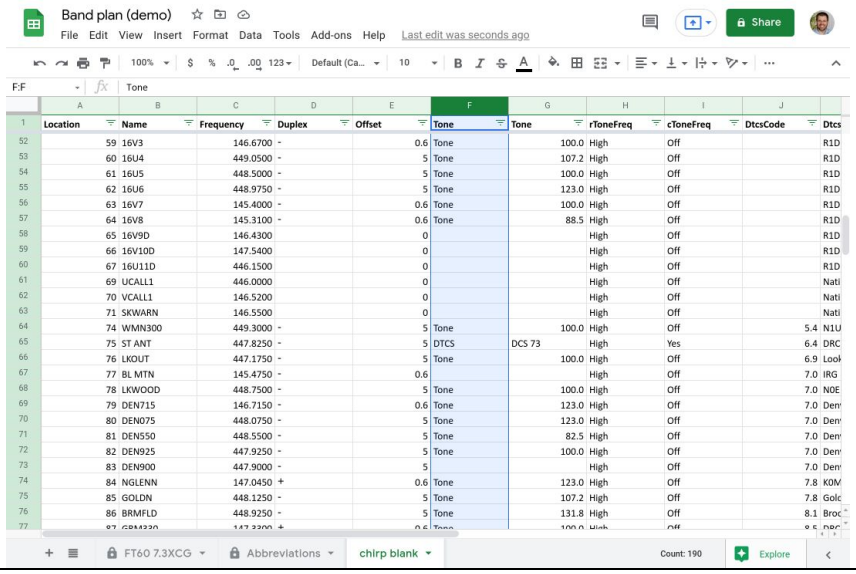
Band plan (demo)

Location	Name	Frequency	Duplex	Offset	Tone	Tone	rToneFreq	cToneFreq	DtcsCode	Dtcs
3	10U3D	446.2125		0	TS1	CC1	High	Yes		DMI
4	10U4	449.9250		0	TS2	CC8	High	Yes		R1 A
10	11U6D	446.2750		0	TS1	CC1	High	Yes		R1D
21	12U11D	446.2000		0	TS1	CC1	High	Yes		DMI
43	13U1D	446.2250		0	TS1	CC1	High	Yes		DMI
48	14U8D	446.2500		0	TS1	CC1	High	Yes		DMI
53	15U5	446.8250	-	5	TS2	CC1	High	Yes		Bran
56	15U8D	446.2875	+	2	TS1	CC1	High	Yes		DMI
68	16U12D	446.3000		0	TS1	CC1	High	Yes		DMI
75	ST ANT	447.8250	-	5	DCS	DCS 73	High	Yes	6.4	DRC
230	Reserved			0						
235	235 40M	3.8100		0	NA		High	NA		Stat
236	236 20M	7.2350		0	NA		High	NA		Stat
237	Reserved			0						
238	UHFPKT	441.0750		0	NA		High	NA		KON
239	VHFPKT	145.0500		0	NA		High	NA		KON
240	SSBPKT	14.1050		0	NA		High	NA		WOV

Add 1000 more rows at bottom.

Chirp will vomit if we try to import them

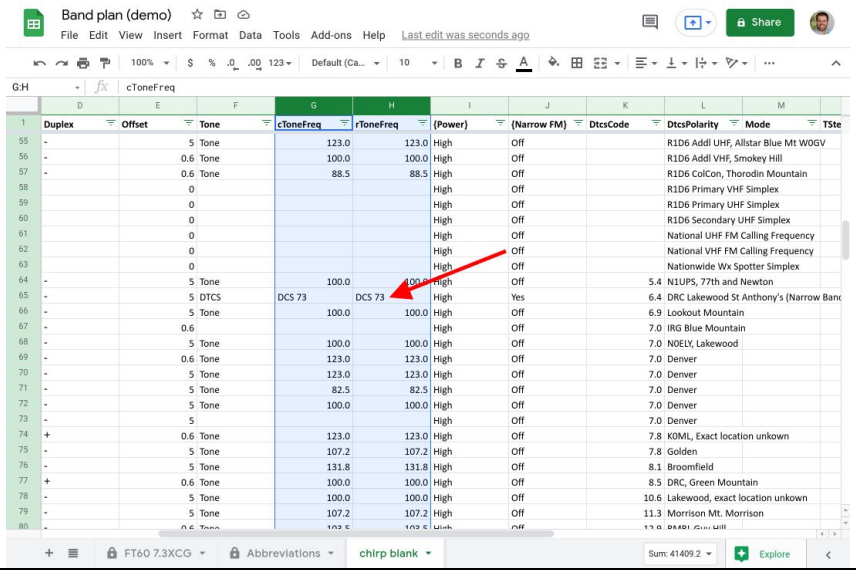
More Tone data cleansing



	Location	Name	Frequency	Duplex	Offset	Tone	Tone	rToneFreq	cToneFreq	DtcsCode	Dtcs
52	59	16V3	146.6700	-	0.6	Tone	100.0	High	Off		R1D
53	60	16U4	449.0500	-	5	Tone	107.2	High	Off		R1D
54	61	16U5	448.5000	-	5	Tone	100.0	High	Off		R1D
55	62	16U6	448.9750	-	5	Tone	123.0	High	Off		R1D
56	63	16V7	145.4000	-	0.6	Tone	100.0	High	Off		R1D
57	64	16V8	145.3100	-	0.6	Tone	88.5	High	Off		R1D
58	65	16V9D	146.4300		0			High	Off		R1D
59	66	16V10D	147.5400		0			High	Off		R1D
60	67	16U11D	446.1500		0			High	Off		R1D
61	69	UCALL1	446.0000		0			High	Off		Nati
62	70	VCALL1	146.5200		0			High	Off		Nati
63	71	SKWARN	146.5500		0			High	Off		Nati
64	74	WMN300	449.3000	-	5	Tone	100.0	High	Off	5.4	N1U
65	75	ST ANT	447.8250	-	5	DTCS	DCS 73	High	Yes	6.4	DRC
66	76	LKOUT	447.1750	-	5	Tone	100.0	High	Off	6.9	Look
67	77	BL MTN	145.4750	-	0.6			High	Off	7.0	IRG
68	78	LKWOOD	448.7500	-	5	Tone	100.0	High	Off	7.0	N0E
69	79	DEN715	146.7150	-	0.6	Tone	123.0	High	Off	7.0	Den
70	80	DEN075	448.0750	-	5	Tone	123.0	High	Off	7.0	Den
71	81	DEN550	448.5500	-	5	Tone	82.5	High	Off	7.0	Den
72	82	DEN925	447.9250	-	5	Tone	100.0	High	Off	7.0	Den
73	83	DEN900	447.9000	-	5			High	Off	7.0	Den
74	84	NGLENN	147.0450	+	0.6	Tone	123.0	High	Off	7.8	K0M
75	85	GOLDN	448.1250	-	5	Tone	107.2	High	Off	7.8	Golc
76	86	BRMFLD	448.9250	-	5	Tone	131.8	High	Off	8.1	Broc

"Tone" can stay
"None" changes to blank
"NA" changes to blank
"DCS" changes to "DTCS"

Tone Frequency

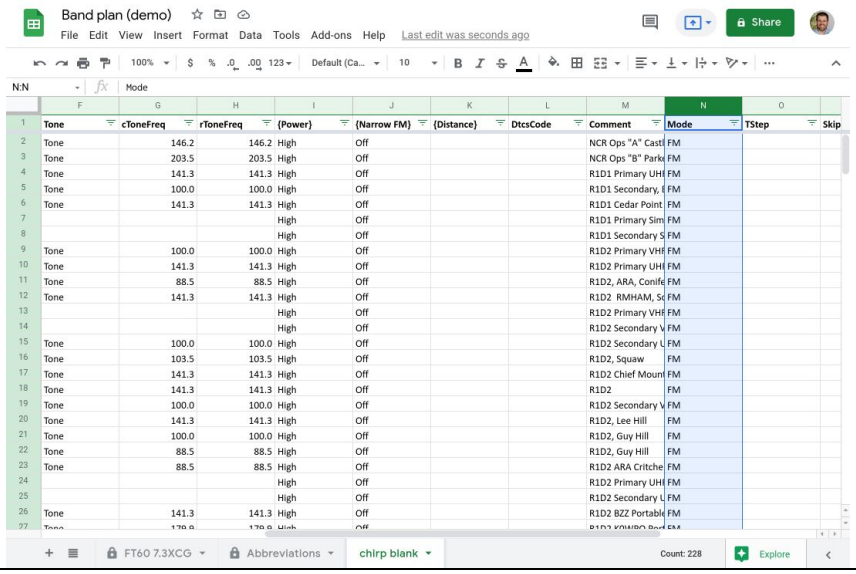


	D	E	F	G	H	I	J	K	L	M
1	Duplex	Offset	Tone	cToneFreq	rToneFreq	{Power}	{Narrow FM}	DtcsCode	DtcsPolarity	Mode
55	-	5	Tone	123.0	123.0	High	Off		R1D6 Addl UHF, Allstar Blue Mt W0GV	
56	-	0.6	Tone	100.0	100.0	High	Off		R1D6 Addl VHF, Smokey Hill	
57	-	0.6	Tone	88.5	88.5	High	Off		R1D6 ColCon, Thorodin Mountain	
58		0				High	Off		R1D6 Primary VHF Simplex	
59		0				High	Off		R1D6 Primary UHF Simplex	
60		0				High	Off		R1D6 Secondary UHF Simplex	
61		0				High	Off		National UHF FM Calling Frequency	
62		0				High	Off		National VHF FM Calling Frequency	
63		0				High	Off		Nationwide Wx Spotter Simplex	
64	-	5	Tone	100.0	100.0	High	Off	5.4	N1UPS, 77th and Newton	
65	-	5	DTCS	DCS 73	DCS 73	High	Yes	6.4	DRC Lakewood St Anthony's (Narrow Banc	
66	-	5	Tone	100.0	100.0	High	Off	6.9	Lookout Mountain	
67	-	0.6				High	Off	7.0	IRG Blue Mountain	
68	-	5	Tone	100.0	100.0	High	Off	7.0	N0ELY, Lakewood	
69	-	0.6	Tone	123.0	123.0	High	Off	7.0	Denver	
70	-	5	Tone	123.0	123.0	High	Off	7.0	Denver	
71	-	5	Tone	82.5	82.5	High	Off	7.0	Denver	
72	-	5	Tone	100.0	100.0	High	Off	7.0	Denver	
73	-	5				High	Off	7.0	Denver	
74	+	0.6	Tone	123.0	123.0	High	Off	7.8	K0ML, Exact location unkown	
75	-	5	Tone	107.2	107.2	High	Off	7.8	Golden	
76	-	5	Tone	131.8	131.8	High	Off	8.1	Broomfield	
77	+	0.6	Tone	100.0	100.0	High	Off	8.5	DRC, Green Mountain	
78	-	5	Tone	100.0	100.0	High	Off	10.6	Lakewood, exact location unkown	
79	-	5	Tone	107.2	107.2	High	Off	11.3	Morrison Mt. Morrison	

I'm assuming cToneFreq is for TX and rToneFreq is for receive. However, all of these channels are set to "Tone" and not "TSQL", so the rToneFreq will be ignored. I arbitrarily copied the values from cToneFreq into rToneFreq.

Notice that the band plan had put a DCS tone in this column. Chirp is not going to like that, so move that to its own DtcsCode column and clear the values here.

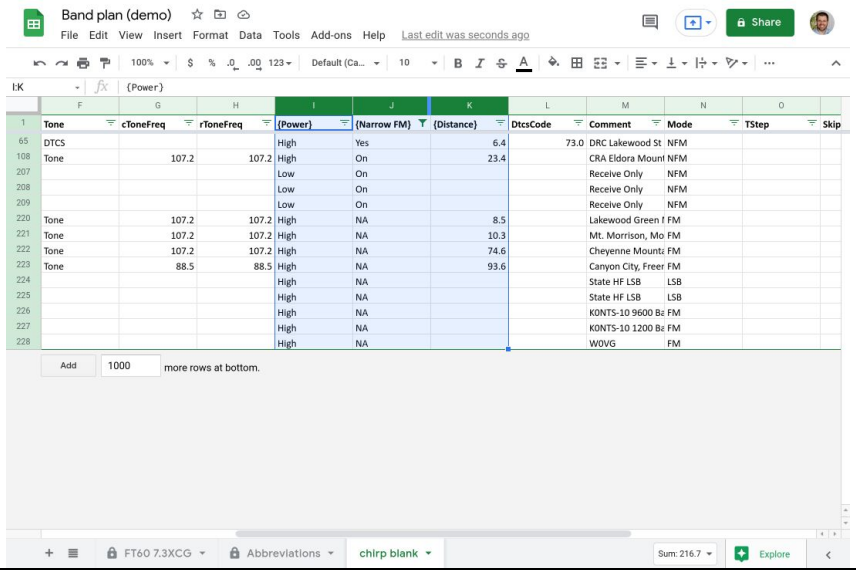
Fill In Mode



	F	G	H	I	J	K	L	M	N	O
1	Tone	cToneFreq	rToneFreq	{Power}	{Narrow FM}	{Distance}	DtcsCode	Comment	Mode	TStep	Skip
2	Tone	146.2	146.2	High	Off			NCR Ops "A" Cast	FM		
3	Tone	203.5	203.5	High	Off			NCR Ops "B" Park	FM		
4	Tone	141.3	141.3	High	Off			R1D1 Primary UH	FM		
5	Tone	100.0	100.0	High	Off			R1D1 Secondary,	FM		
6	Tone	141.3	141.3	High	Off			R1D1 Cedar Point	FM		
7				High	Off			R1D1 Primary Sim	FM		
8				High	Off			R1D1 Secondary S	FM		
9	Tone	100.0	100.0	High	Off			R1D2 Primary VHF	FM		
10	Tone	141.3	141.3	High	Off			R1D2 Primary UH	FM		
11	Tone	88.5	88.5	High	Off			R1D2, ARA, Conife	FM		
12	Tone	141.3	141.3	High	Off			R1D2 RMHAM, S	FM		
13				High	Off			R1D2 Primary VHF	FM		
14				High	Off			R1D2 Secondary V	FM		
15	Tone	100.0	100.0	High	Off			R1D2 Secondary U	FM		
16	Tone	103.5	103.5	High	Off			R1D2, Squaw	FM		
17	Tone	141.3	141.3	High	Off			R1D2 Chief Mount	FM		
18	Tone	141.3	141.3	High	Off			R1D2	FM		
19	Tone	100.0	100.0	High	Off			R1D2 Secondary V	FM		
20	Tone	141.3	141.3	High	Off			R1D2, Lee Hill	FM		
21	Tone	100.0	100.0	High	Off			R1D2, Guy Hill	FM		
22	Tone	88.5	88.5	High	Off			R1D2, Guy Hill	FM		
23	Tone	88.5	88.5	High	Off			R1D2 ARA Critche	FM		
24				High	Off			R1D2 Primary UH	FM		
25				High	Off			R1D2 Secondary U	FM		
26	Tone	141.3	141.3	High	Off			R1D2 BZZ Portable	FM		

Vast majority of these are implicitly “FM” (at least in my case)

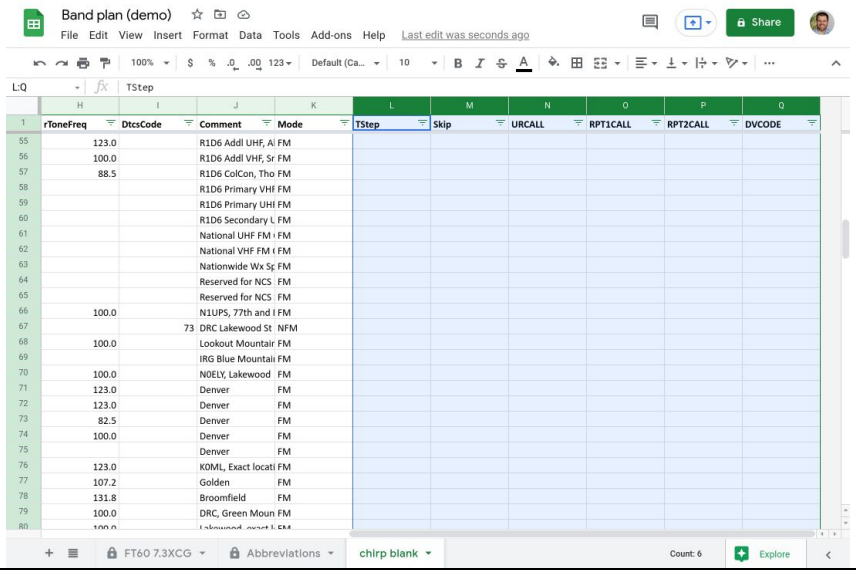
Irrelevant columns



	F	G	H	I	J	K	L	M	N	O	
1	Tone	cToneFreq	rToneFreq	{Power}	{Narrow FM}	{Distance}	DtcsCode	Comment	Mode	TStep	Skip
65	DTCS			High	Yes	6.4	73.0	DRC Lakewood St	NFM		
108	Tone	107.2	107.2	High	On	23.4		CRA Eldora Mount	NFM		
207				Low	On			Receive Only	NFM		
208				Low	On			Receive Only	NFM		
209				Low	On			Receive Only	NFM		
220	Tone	107.2	107.2	High	NA	8.5		Lakewood Green I	FM		
221	Tone	107.2	107.2	High	NA	10.3		Mt. Morrison, Mo	FM		
222	Tone	107.2	107.2	High	NA	74.6		Cheyenne Mountz	FM		
223	Tone	88.5	88.5	High	NA	93.6		Canyon City, Freer	FM		
224				High	NA			State HF LSB	LSB		
225				High	NA			State HF LSB	LSB		
226				High	NA			K0NTS-10 9600 Ba	FM		
227				High	NA			K0NTS-10 1200 Ba	FM		
228				High	NA			W0VG	FM		

These columns from the band plan are TX Power, Narrow FM and Distance. TX Power and Distance are not relevant at all to Chirp. Narrow FM is part of the mode, so we'll change those rows from "FM" to "NFM". Then we can delete those columns completely.

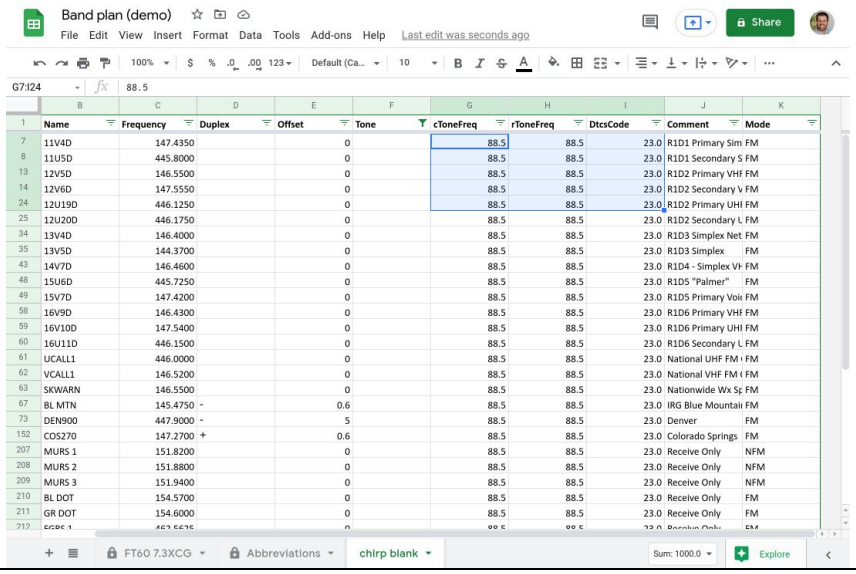
Optional Fields



	H	I	J	K	L	M	N	O	P	Q
1	rToneFreq	DtcsCode	Comment	Mode	TStep	Skip	URCALL	RPT1CALL	RPT2CALL	DVCODE
55	123.0		R1D6 Addl UHF, A	FM						
56	100.0		R1D6 Addl VHF, Sr	FM						
57	88.5		R1D6 ColCon, Tho	FM						
58			R1D6 Primary VHF	FM						
59			R1D6 Primary UHI	FM						
60			R1D6 Secondary L	FM						
61			National UHF FM	FM						
62			National VHF FM	FM						
63			Nationwide Wx Sp	FM						
64			Reserved for NCS	FM						
65			Reserved for NCS	FM						
66	100.0		N1UPS, 77th and I	FM						
67		73	DRC Lakewood St	NFM						
68	100.0		Lookout Mountair	FM						
69			IRG Blue Mountai	FM						
70	100.0		N0ELY, Lakewood	FM						
71	123.0		Denver	FM						
72	123.0		Denver	FM						
73	82.5		Denver	FM						
74	100.0		Denver	FM						
75			Denver	FM						
76	123.0		K0ML, Exact locati	FM						
77	107.2		Golden	FM						
78	131.8		Broomfield	FM						
79	100.0		DRC, Green Moun	FM						

Some fields are optional, and our band plan gave us no information to put in them. So just delete those.

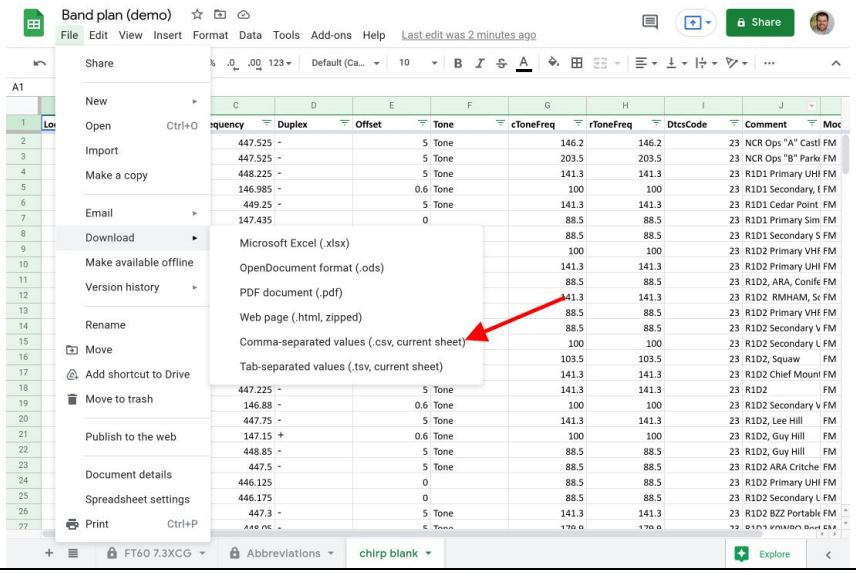
Filling in blanks



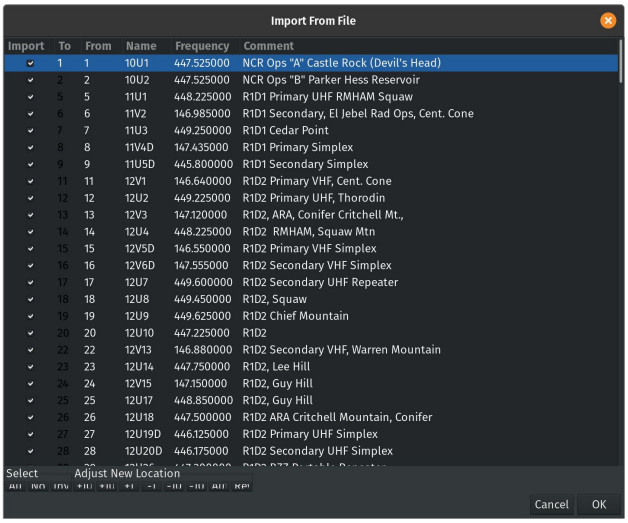
	B	C	D	E	F	G	H	I	J	K
1	Name	Frequency	Duplex	Offset	Tone	cToneFreq	rToneFreq	DtcsCode	Comment	Mode
7	11V4D	147.4350		0		88.5	88.5	23.0	R1D1 Primary Sim	FM
8	11U5D	445.8000		0		88.5	88.5	23.0	R1D1 Secondary S	FM
13	12V5D	146.5500		0		88.5	88.5	23.0	R1D2 Primary VHF	FM
14	12V6D	147.5550		0		88.5	88.5	23.0	R1D2 Secondary V	FM
24	12U19D	446.1250		0		88.5	88.5	23.0	R1D2 Primary UHI	FM
25	12U20D	446.1750		0		88.5	88.5	23.0	R1D2 Secondary L	FM
34	13V4D	146.4000		0		88.5	88.5	23.0	R1D3 Simplex Net	FM
35	13V5D	144.3700		0		88.5	88.5	23.0	R1D3 Simplex	FM
43	14V7D	146.4600		0		88.5	88.5	23.0	R1D4 - Simplex VH	FM
48	15U6D	445.7250		0		88.5	88.5	23.0	R1D5 "Palmer"	FM
49	15V7D	147.4200		0		88.5	88.5	23.0	R1D5 Primary Voi	FM
58	16V9D	146.4300		0		88.5	88.5	23.0	R1D6 Primary VHF	FM
59	16V10D	147.5400		0		88.5	88.5	23.0	R1D6 Primary UHI	FM
60	16U11D	446.1500		0		88.5	88.5	23.0	R1D6 Secondary L	FM
61	UCALL1	446.0000		0		88.5	88.5	23.0	National UHF FM	FM
62	VCALL1	146.5200		0		88.5	88.5	23.0	National VHF FM	FM
63	SKWARN	146.5500		0		88.5	88.5	23.0	Nationwide Wx Sp	FM
67	BL MTN	145.4750	-	0.6		88.5	88.5	23.0	IRG Blue Mountai	FM
73	DEN900	447.9000	-	5		88.5	88.5	23.0	Denver	FM
152	COS270	147.2700	+	0.6		88.5	88.5	23.0	Colorado Springs	FM
207	MURS 1	151.8200		0		88.5	88.5	23.0	Receive Only	NFM
208	MURS 2	151.8800		0		88.5	88.5	23.0	Receive Only	NFM
209	MURS 3	151.9400		0		88.5	88.5	23.0	Receive Only	NFM
210	BL DOT	154.5700		0		88.5	88.5	23.0	Receive Only	FM
211	GR DOT	154.6000		0		88.5	88.5	23.0	Receive Only	FM

Some values are allowed to be blank, but unfortunately, cToneFreq, rToneFreq, and DtcsCode must have some value even when they're not relevant. Backfill those with something like 88.5 for CTCSS tones and 023 for DCS tones. Maybe this bug will be fixed someday?

Export CSV

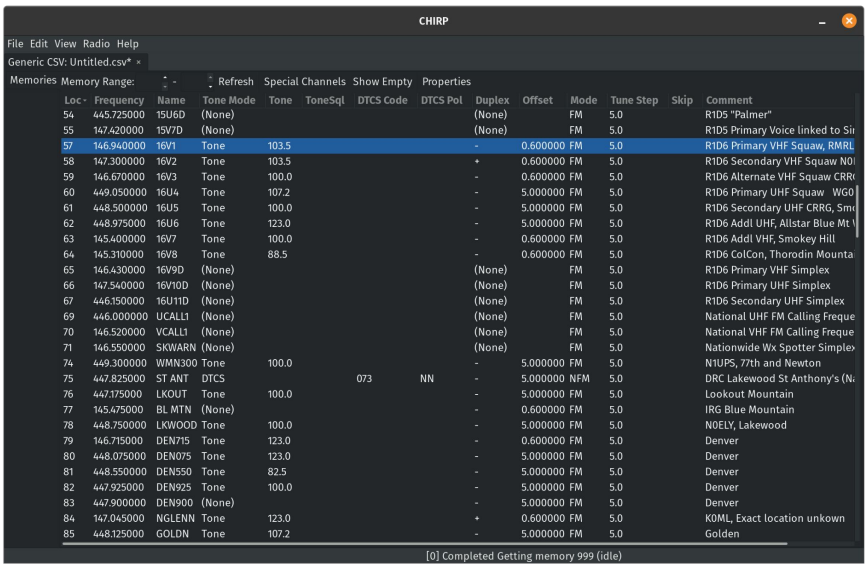

Band plan (demo)
File Edit View Insert Format Data Tools Add-ons Help
Last edit was 2 minutes ago
Share
New
Open Ctrl+O
Import
Make a copy
Email
Download
Make available offline
Version history
Rename
Move
Add shortcut to Drive
Move to trash
Publish to the web
Document details
Spreadsheet settings
Print Ctrl+P
Microsoft Excel (.xlsx)
OpenDocument format (.ods)
PDF document (.pdf)
Web page (.html, zipped)
Comma-separated values (.csv, current sheet)
Tab-separated values (.tsv, current sheet)
FT60 7.3XCG
Abbreviations
chirp blank
Explore

Import into Chirp



Opportunity here to move channels around if needed

Hooray!



Loc	Frequency	Name	Tone Mode	Tone	ToneSql	DTCS Code	DTCS Pol	Duplex	Offset	Mode	Tune Step	Skip	Comment
54	445.725000	15U6D	(None)					(None)		FM	5.0		R1D5 "Palmer"
55	147.420000	15V7D	(None)					(None)		FM	5.0		R1D5 Primary Voice linked to Si
57	146.940000	16V1	Tone	103.5				-	0.600000	FM	5.0		R1D6 Primary VHF Squaw, RMRL
58	147.300000	16V2	Tone	103.5				+	0.600000	FM	5.0		R1D6 Secondary VHF Squaw N0
59	146.670000	16V3	Tone	100.0				-	0.600000	FM	5.0		R1D6 Alternate VHF Squaw CRR
60	449.050000	16U4	Tone	107.2				-	5.000000	FM	5.0		R1D6 Primary UHF Squaw WG0
61	448.500000	16U5	Tone	100.0				-	5.000000	FM	5.0		R1D6 Secondary UHF CRRG, Sm
62	448.975000	16U6	Tone	123.0				-	5.000000	FM	5.0		R1D6 Addl UHF, Allstar Blue Mt
63	145.400000	16V7	Tone	100.0				-	0.600000	FM	5.0		R1D6 Addl VHF, Smokey Hill
64	145.310000	16V8	Tone	88.5				-	0.600000	FM	5.0		R1D6 ColCon, Thorodin Mounta
65	146.430000	16V9D	(None)					(None)		FM	5.0		R1D6 Primary VHF Simplex
66	147.540000	16V10D	(None)					(None)		FM	5.0		R1D6 Primary UHF Simplex
67	446.150000	16U11D	(None)					(None)		FM	5.0		R1D6 Secondary UHF Simplex
69	446.000000	UCALL1	(None)					(None)		FM	5.0		National UHF FM Calling Freque
70	146.520000	VCALL1	(None)					(None)		FM	5.0		National VHF FM Calling Freque
71	146.550000	SKWARN	(None)					(None)		FM	5.0		Nationwide Wx Spotter Simplex
74	449.300000	WMN300	Tone	100.0				-	5.000000	FM	5.0		N1UPS, 77th and Newton
75	447.825000	ST ANT	DTCS			073	NN	-	5.000000	NFM	5.0		DRC Lakewood St Anthony's (N
76	447.175000	LKOUT	Tone	100.0				-	5.000000	FM	5.0		Lookout Mountain
77	145.475000	BL MTN	(None)					-	0.600000	FM	5.0		IRG Blue Mountain
78	448.750000	LKWOOD	Tone	100.0				-	5.000000	FM	5.0		N0ELY, Lakewood
79	146.715000	DEN715	Tone	123.0				-	0.600000	FM	5.0		Denver
80	448.075000	DEN075	Tone	123.0				-	5.000000	FM	5.0		Denver
81	448.550000	DEN550	Tone	82.5				-	5.000000	FM	5.0		Denver
82	447.925000	DEN925	Tone	100.0				-	5.000000	FM	5.0		Denver
83	447.900000	DEN900	(None)					-	5.000000	FM	5.0		Denver
84	147.045000	NGLENN	Tone	123.0				+	0.600000	FM	5.0		K0ML, Exact location unkown
85	448.125000	GOLDN	Tone	107.2				-	5.000000	FM	5.0		Golden

Generic band plan contains channels from any band, and even non-ham frequencies that we can program as RX only. Only when we get to a particular radio do bands start to matter.

Transferring to Radios

General Process

1. Read from radio
2. Copy from generic (CSV) codeplug into radio-specific one
3. Write to radio

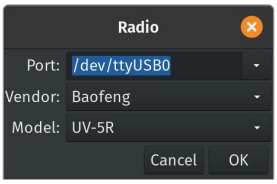
Need a cable

E.g. Baofeng UV-5R (https://www.ebay.com/itm/161278275352) and Yaesu FT3D (https://www.ebay.com/itm/164160958139)

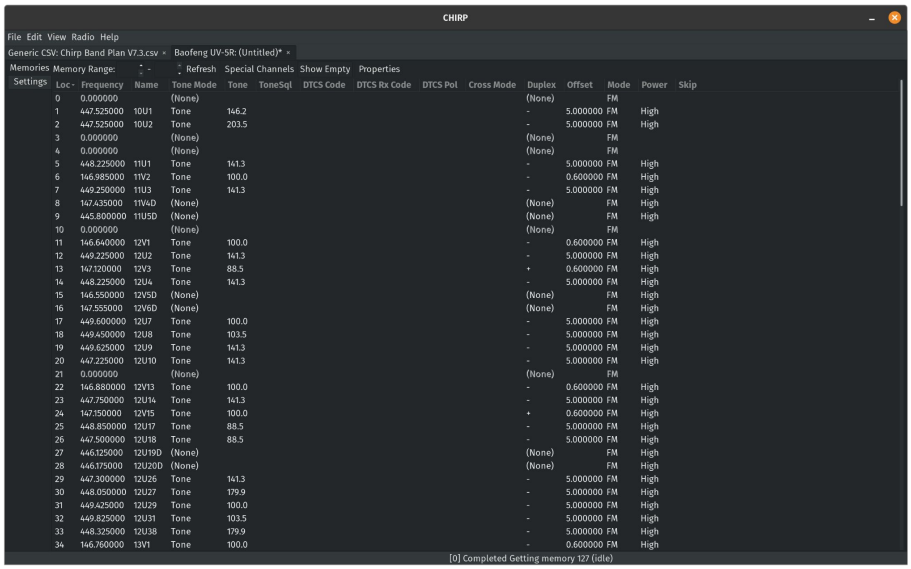
Baofeng UV-5R

- Clone mode
- Only 127 channels, so might have to cut/paste some things around

Download from Radio



Copy/Paste Codeplug

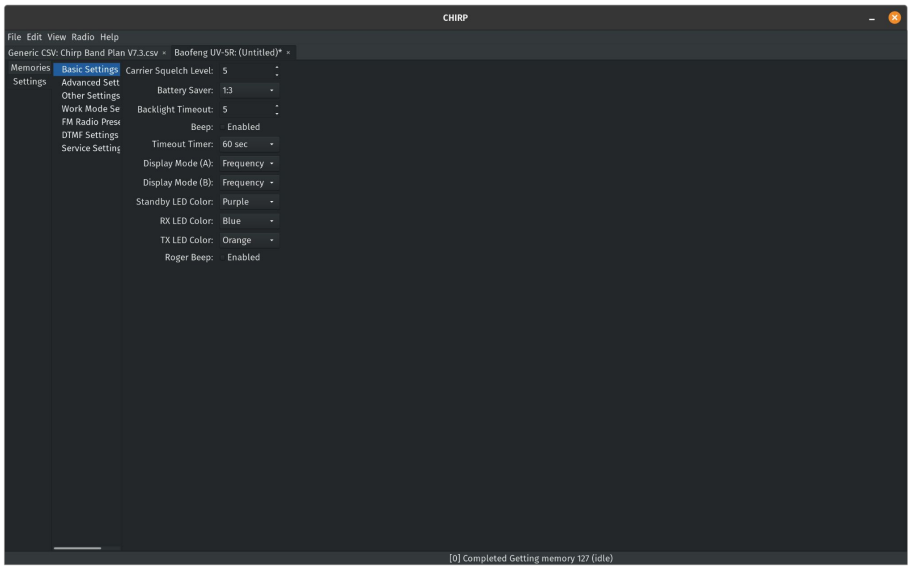


Loc	Frequency	Name	Tone Mode	Tone	ToneSql	DTCS Code	DTCS Rx Code	DTCS Pol	Cross Mode	Duplex	Offset	Mode	Power	Skip
0	0.000000		(None)							(None)		FM		
1	447.525000	10U1	Tone	146.2						-	5.000000	FM	High	
2	447.525000	10U2	Tone	203.5						-	5.000000	FM	High	
3	0.000000		(None)							(None)		FM		
4	0.000000		(None)							(None)		FM		
5	448.225000	11U1	Tone	141.3						-	5.000000	FM	High	
6	146.985000	11V2	Tone	100.0						-	0.600000	FM	High	
7	449.250000	11U3	Tone	141.3						-	5.000000	FM	High	
8	147.435000	11V4D	(None)							(None)		FM	High	
9	445.800000	11U5D	(None)							(None)		FM	High	
10	0.000000		(None)							(None)		FM		
11	146.640000	12V1	Tone	100.0						-	0.600000	FM	High	
12	449.225000	12U2	Tone	141.3						-	5.000000	FM	High	
13	147.120000	12V3	Tone	88.5						+	0.600000	FM	High	
14	448.225000	12U4	Tone	141.3						-	5.000000	FM	High	
15	146.550000	12V5D	(None)							(None)		FM	High	
16	147.555000	12V6D	(None)							(None)		FM	High	
17	449.600000	12U7	Tone	100.0						-	5.000000	FM	High	
18	449.450000	12U8	Tone	103.5						-	5.000000	FM	High	
19	449.625000	12U9	Tone	141.3						-	5.000000	FM	High	
20	447.225000	12U10	Tone	141.3						-	5.000000	FM	High	
21	0.000000		(None)							(None)		FM		
22	146.880000	12V13	Tone	100.0						-	0.600000	FM	High	
23	447.750000	12U14	Tone	141.3						-	5.000000	FM	High	
24	147.150000	12V15	Tone	100.0						+	0.600000	FM	High	
25	448.850000	12U17	Tone	88.5						-	5.000000	FM	High	
26	447.500000	12U18	Tone	88.5						-	5.000000	FM	High	
27	446.125000	12U19D	(None)							(None)		FM	High	
28	446.175000	12U20D	(None)							(None)		FM	High	
29	447.300000	12U26	Tone	141.3						-	5.000000	FM	High	
30	448.050000	12U27	Tone	179.9						-	5.000000	FM	High	
31	449.425000	12U29	Tone	100.0						-	5.000000	FM	High	
32	449.825000	12U31	Tone	103.5						-	5.000000	FM	High	
33	448.325000	12U38	Tone	179.9						-	5.000000	FM	High	
34	146.760000	13V1	Tone	100.0						-	0.600000	FM	High	

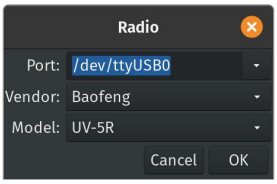
Radio only has 128 channels and our generic codeplug has up to 241; have to pick and choose which channels to copy

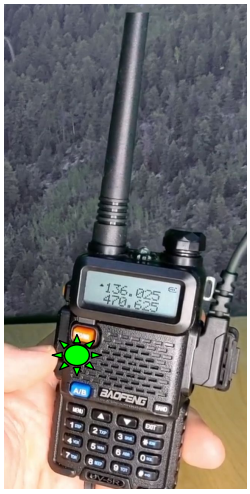
Careful of “Show Empty” setting if channel numbers are important

Settings


CHIRP
File Edit View Radio Help
Generic CSV: Chirp Band Plan V7.3.csv
Baofeng UV-5R: (Untitled)*
Memories
Settings
Basic Settings
Advanced Sett
Other Settings
Work Mode Se
FM Radio Prese
DTMF Settings
Service Setting
Carrier Squelch Level: 5
Battery Saver: 1:3
Backlight Timeout: 5
Beep: Enabled
Timeout Timer: 60 sec
Display Mode (A): Frequency
Display Mode (B): Frequency
Standby LED Color: Purple
RX LED Color: Blue
TX LED Color: Orange
Roger Beep: Enabled
[0] Completed Getting memory 127 (idle)

Upload to Radio



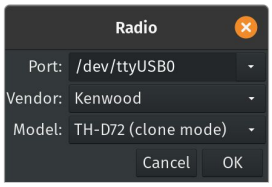


Done!

Kenwood TH-D72

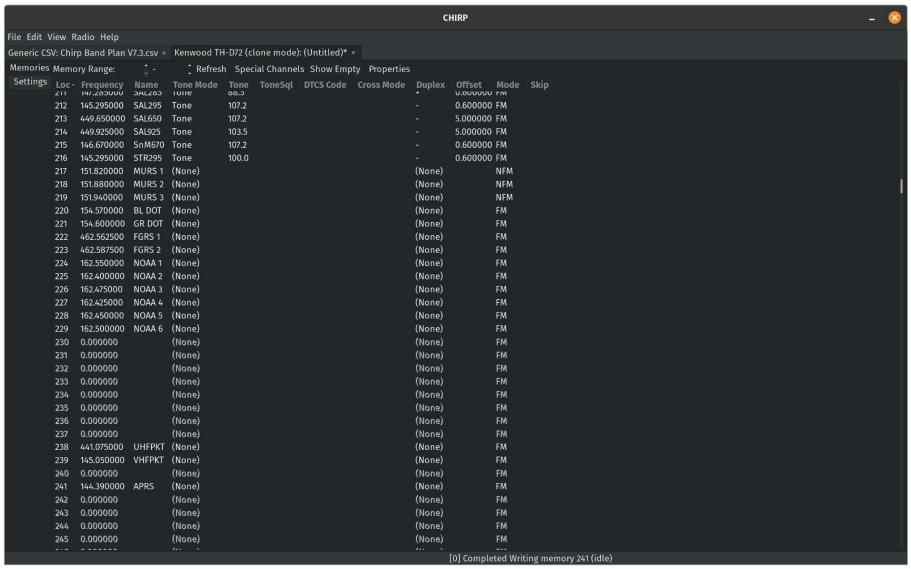
- Clone mode or Live mode

Download from Radio



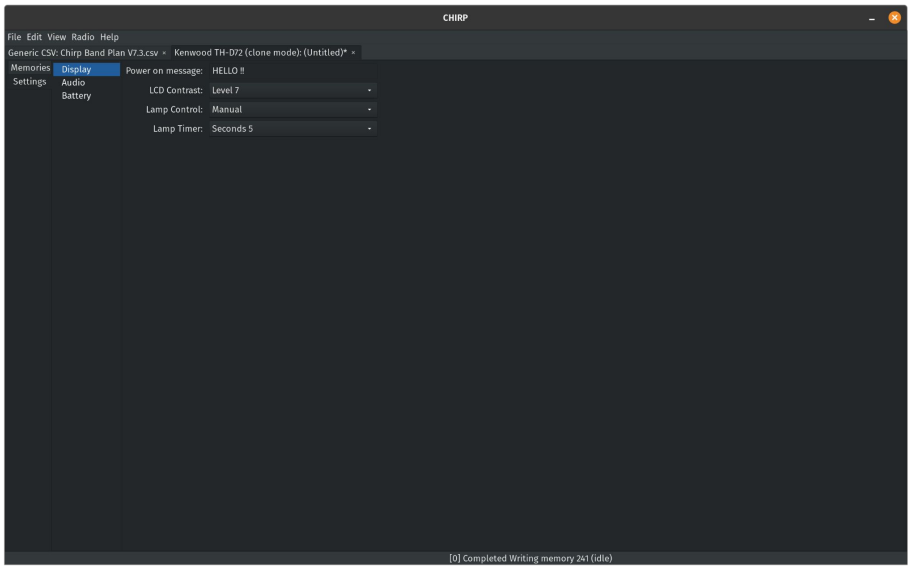
No Instructions
Needed!

Copy/Paste Codeplug



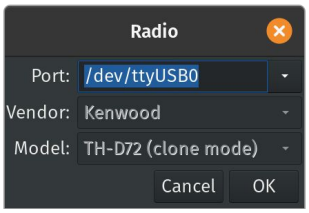
Loc	Frequency	Name	Tone Mode	Tone	ToneSql	DTCS Code	Cross Mode	Duplex	Offset	Mode	Skip
211	147.420000	SAL295	Tone	88.5				+	0.600000	FM	
212	145.295000	SAL295	Tone	107.2				-	0.600000	FM	
213	449.650000	SAL650	Tone	107.2				-	5.000000	FM	
214	449.925000	SAL925	Tone	103.5				-	5.000000	FM	
215	146.670000	SnM670	Tone	107.2				-	0.600000	FM	
216	145.295000	STR295	Tone	100.0				-	0.600000	FM	
217	151.820000	MURS 1	(None)					(None)		NFM	
218	151.880000	MURS 2	(None)					(None)		NFM	
219	151.940000	MURS 3	(None)					(None)		NFM	
220	154.570000	BL DOT	(None)					(None)		FM	
221	154.600000	GR DOT	(None)					(None)		FM	
222	462.562500	FGRS 1	(None)					(None)		FM	
223	462.587500	FGRS 2	(None)					(None)		FM	
224	162.550000	NOAA 1	(None)					(None)		FM	
225	162.400000	NOAA 2	(None)					(None)		FM	
226	162.475000	NOAA 3	(None)					(None)		FM	
227	162.425000	NOAA 4	(None)					(None)		FM	
228	162.450000	NOAA 5	(None)					(None)		FM	
229	162.500000	NOAA 6	(None)					(None)		FM	
230	0.000000		(None)					(None)		FM	
231	0.000000		(None)					(None)		FM	
232	0.000000		(None)					(None)		FM	
233	0.000000		(None)					(None)		FM	
234	0.000000		(None)					(None)		FM	
235	0.000000		(None)					(None)		FM	
236	0.000000		(None)					(None)		FM	
237	0.000000		(None)					(None)		FM	
238	441.075000	UHFPKT	(None)					(None)		FM	
239	145.050000	VHFPKT	(None)					(None)		FM	
240	0.000000		(None)					(None)		FM	
241	144.390000	APRS	(None)					(None)		FM	
242	0.000000		(None)					(None)		FM	
243	0.000000		(None)					(None)		FM	
244	0.000000		(None)					(None)		FM	
245	0.000000		(None)					(None)		FM	

Settings



This particular radio only exposes a few

Upload to Radio



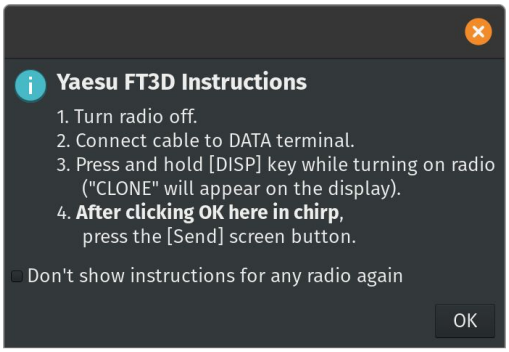
No Instructions
Needed!

Done!

Yaesu FT3D

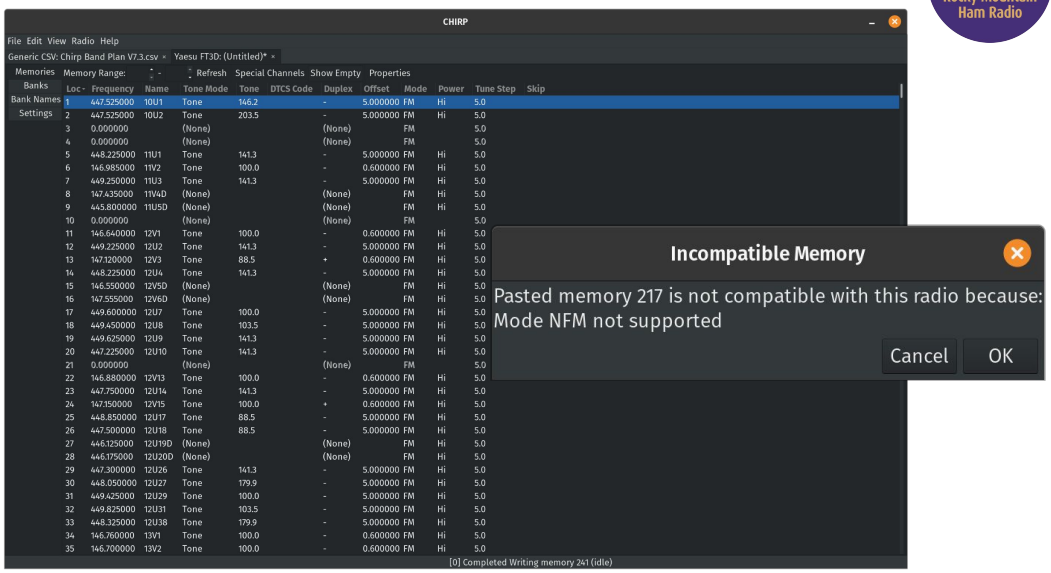
- CHIRP doesn't support SD card
- What happens to C4FM channels?

Download from Radio



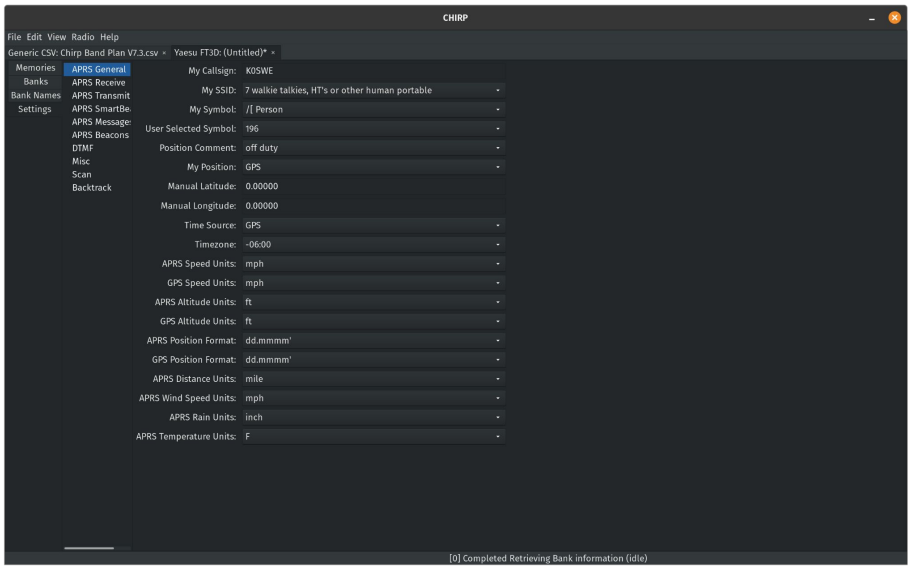
This one takes a while, over a minute

Copy/Paste Codeplug

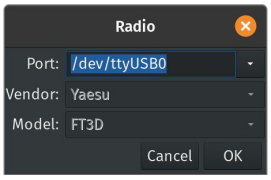


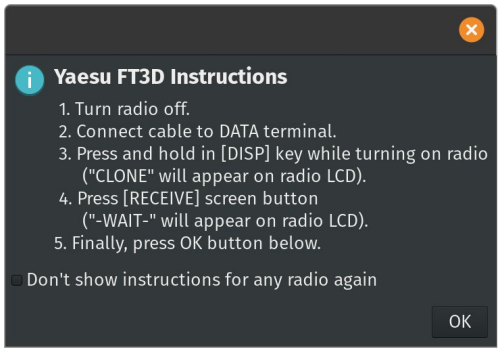
Loc	Frequency	Name	Tone Mode	Tone	DTCS Code	Duplex	Offset	Mode	Power	Tune Step	Skip
1	447.525000	10U1	Tone	146.2		-	5.000000	FM	Hi	5.0	
2	447.525000	10U2	Tone	203.5		-	5.000000	FM	Hi	5.0	
3	0.000000		(None)			(None)		FM		5.0	
4	0.000000		(None)			(None)		FM		5.0	
5	448.225000	11U1	Tone	141.3		-	5.000000	FM	Hi	5.0	
6	146.985000	11V2	Tone	100.0		-	0.600000	FM	Hi	5.0	
7	449.250000	11U3	Tone	141.3		-	5.000000	FM	Hi	5.0	
8	147.435000	11V4D	(None)			(None)		FM	Hi	5.0	
9	445.800000	11U5D	(None)			(None)		FM	Hi	5.0	
10	0.000000		(None)			(None)		FM		5.0	
11	146.640000	12V1	Tone	100.0		-	0.600000	FM	Hi	5.0	
12	449.225000	12U2	Tone	141.3		-	5.000000	FM	Hi	5.0	
13	147.120000	12V3	Tone	88.5		+	0.600000	FM	Hi	5.0	
14	448.225000	12U4	Tone	141.3		-	5.000000	FM	Hi	5.0	
15	146.550000	12V5D	(None)			(None)		FM	Hi	5.0	
16	147.555000	12V6D	(None)			(None)		FM	Hi	5.0	
17	449.600000	12U7	Tone	100.0		-	5.000000	FM	Hi	5.0	
18	449.450000	12U8	Tone	103.5		-	5.000000	FM	Hi	5.0	
19	449.625000	12U9	Tone	141.3		-	5.000000	FM	Hi	5.0	
20	447.225000	12U10	Tone	141.3		-	5.000000	FM	Hi	5.0	
21	0.000000		(None)			(None)		FM		5.0	
22	146.880000	12V13	Tone	100.0		-	0.600000	FM	Hi	5.0	
23	447.750000	12U14	Tone	141.3		-	5.000000	FM	Hi	5.0	
24	147.150000	12V15	Tone	100.0		+	0.600000	FM	Hi	5.0	
25	448.850000	12U17	Tone	88.5		-	5.000000	FM	Hi	5.0	
26	447.500000	12U18	Tone	88.5		-	5.000000	FM	Hi	5.0	
27	446.125000	12U19D	(None)			(None)		FM	Hi	5.0	
28	446.175000	12U20D	(None)			(None)		FM	Hi	5.0	
29	447.300000	12U26	Tone	141.3		-	5.000000	FM	Hi	5.0	
30	448.050000	12U27	Tone	179.9		-	5.000000	FM	Hi	5.0	
31	449.425000	12U29	Tone	100.0		-	5.000000	FM	Hi	5.0	
32	449.825000	12U31	Tone	103.5		-	5.000000	FM	Hi	5.0	
33	448.325000	12U38	Tone	179.9		-	5.000000	FM	Hi	5.0	
34	146.760000	13V1	Tone	100.0		-	0.600000	FM	Hi	5.0	
35	146.700000	13V2	Tone	100.0		-	0.600000	FM	Hi	5.0	

Settings


CHIRP
File Edit View Radio Help
Generic CSV: Chirp Band Plan V7.3.csv
Yaesu FT3D: (Untitled)*
Memories
Banks
Bank Names
Settings
APRS General
APRS Receive
APRS Transmit
APRS SmartBe
APRS Message
APRS Beacons
DTMF
Misc
Scan
Backtrack
My Callsign: K0SWE
My SSID: 7 walkie talkies, HT's or other human portable
My Symbol: /[Person
User Selected Symbol: 196
Position Comment: off duty
My Position: GPS
Manual Latitude: 0.00000
Manual Longitude: 0.00000
Time Source: GPS
Timezone: -06:00
APRS Speed Units: mph
GPS Speed Units: mph
APRS Altitude Units: ft
GPS Altitude Units: ft
APRS Position Format: dd.mmmm'
GPS Position Format: dd.mmmm'
APRS Distance Units: mile
APRS Wind Speed Units: mph
APRS Rain Units: inch
APRS Temperature Units: F
[0] Completed Retrieving Bank information (idle)

Upload to Radio





Again, takes a while

Done!

Contact Me

k0swe@arrl.net