

D-Star Cross Banding:

Requirements:

- D-Star capable HT. (ID-91, ID-92, ID-31 or ID-51 HTs for example)
- FM Cross band capable radio (not tested on anything other than the ID-5100 as of 5.6.2017) Your mileage may vary.

Advantages:

- You can reduce the power output used on the D-Star HT and take advantage of the better antenna and power of the rig that is cross banding.
- Multiple D-Star HTs in range of your cross bander can use the cross bander.

Disadvantage:

- The HTs must be D-Star. This does not allow a analog FM only radio to get onto D-Star.
- Programming the ID-51 in the field without a laptop is difficult but should not be impossible. The cloning software makes most chores trivial via SD card.

Setup for this document:

- ID-5100 (not the ID-5100A)
- ID-51 Anniversary edition
 - Icom CS-51Plus program
 - SD card and reader

ID-5100 Settings

1. Set both bands to FM mode. Do not use FM-Narrow or DV mode.
2. Band A set the frequency and duplex for the D-Star repeater.
3. Set band B to your simplex frequency.
4. Press Menu, others, repeater mode and start your cross banding.

ID-51 Settings:

I recommend that you get the software for your HT that allows you to do memory management. It is a challenge on the radio. Using memory banks is probably the best

route to go. Icom makes cloning software available for free on their web site:
<http://www.icom.co.jp/world/support/download/firm/>

Below is an example of how I setup the memory channels using CS-51Plus to program a ID-51 50th Anniversary HT.

211	147.450000	+DUP	0.000000	5k DV	W5NGU T			94.8	94.8	023	Both N		00	CQCCQ	W5NGU B	W5NGU G	G	0
212	147.450000	+DUP	0.000000	5k DV	W5NGU E		Skip	94.8	94.8	023	Both N		00	E	W5NGU B	W5NGU G	G	1
213	147.450000	+DUP	0.000000	5k DV	W5NGU I		Skip	94.8	94.8	023	Both N		00	I	W5NGU B	W5NGU G	G	2
214	147.450000	+DUP	0.000000	5k DV	W5NGU U		Skip	94.8	94.8	023	Both N		00	U	W5NGU B	W5NGU G	G	3
215	147.450000	+DUP	0.000000	5k DV	REF004CL		Skip	94.8	94.8	023	Both N		00	REF004CL	W5NGU B	W5NGU G	G	4

The +DUP is irrelevant but either + or – must be selected from what I have found. If you do not have it set then the R1 and R2 settings you need will not be there. Remember to zero out the offset.

If you use copy/paste from another memory setting(s) pay attention to the Group and Ch fields. If there is a duplicate you will see a red X on each entry. If you do not correct this, you will have trouble saving the file and the radio will not be happy.

Results:

After programming the memories and putting it on the ID51, I had full capabilities. I was able to test via echo, get repeater information, link/unlink, and had several QSOs. The ID-51 in its lowest power setting, my ID-5100 on low on both bands (W5NGU-B is less than 5 miles from my QTH).

The ID-5100 is being a simple FM cross bander. I have not tested using my FTM-400 or TM-710 yet. If the audio band pass on either rig is not a problem, I do not see why it would not work.

Notes:

- The ID-31 series was UHF only. You can cross band to a D-Star repeater that on VHF only.
- None of the information I found online had all the pieces put together. There were magic steps or assumptions made. I hope this document avoids that. All the sites I found said how to put the ID-5100 in crossband mode but did not explain how the HT fits into the puzzle or how to program it.

Your mileage may vary but I hope this helps gets your head wrapped about how this process works. I do not know if the ID-5100A can cross band FM to DV.

Good luck and 73

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