

The screenshot shows the WCS-D5100 Programmer software interface. A table lists memory channels with columns for Receive Frequency, Transmit Frequency, Offset Frequency, Offset Direction, Operating Mode, Name, Tone Mode, CTCSS, Rx CTCSS, DCS, DCS Polarity, Skip, Step, Digital Squelch, Digital Code, Your Callsign, Rpt-1 Callsign, Rpt-2 Callsign, Bank, Bank Channel Number, and Comment. A callout box titled 'Memory Channel Functions (left to right)' lists the following parameters: Receive Frequency, Transmit Frequency, Offset Frequency, Offset Direction, Operating Mode, Name, Tone Mode, CTCSS, Rx CTCSS, DCS, DCS Polarity, Skip, Step, Digital Squelch, Digital Code, Your Callsign, Rpt-1 Callsign, Rpt-2 Callsign, Bank, Bank Channel Number, and Comment. Another callout box titled 'Memory Types (left to right)' lists: Memories, Limit Memories, DR Memories, Call Channels, and GPS Memories.

The WCS-D5100 Programmer is designed to give you the ease and convenience of programming the memories and set menu options of your radio from your PC.

Memory Channels Include:

- 1,000 Memory Channels
- 25 Limit Memories
- 1,200 DR Memories
- 4 Call Channels
- 200 GPS Memories

Other Menu Item Categories Include:

- Common
- Display and Sounds
- DV and Speech
- GPS
- DTMF and Bluetooth

The Programmer Is for so Much More than Just Memory Management.

With the WCS-D5100 Programmer you can begin a new “factory fresh” file into which frequencies and option settings are entered. Or, you can read from the radio, store these details on your computer and make changes. Then, with minimal button pushing, send the new configuration back to the radio.

The Programmer allows you to create and save as many files as you want for your radio.

Managing all the options of this remarkable radio becomes easy with the Programmer. The cut, copy, paste and insert features of the Programmer make channel management easier than ever.

Open more than one file at a time. Memory channel information including D-STAR details can be copied from one file to another within the Programmer making it really easy to set up a new file.

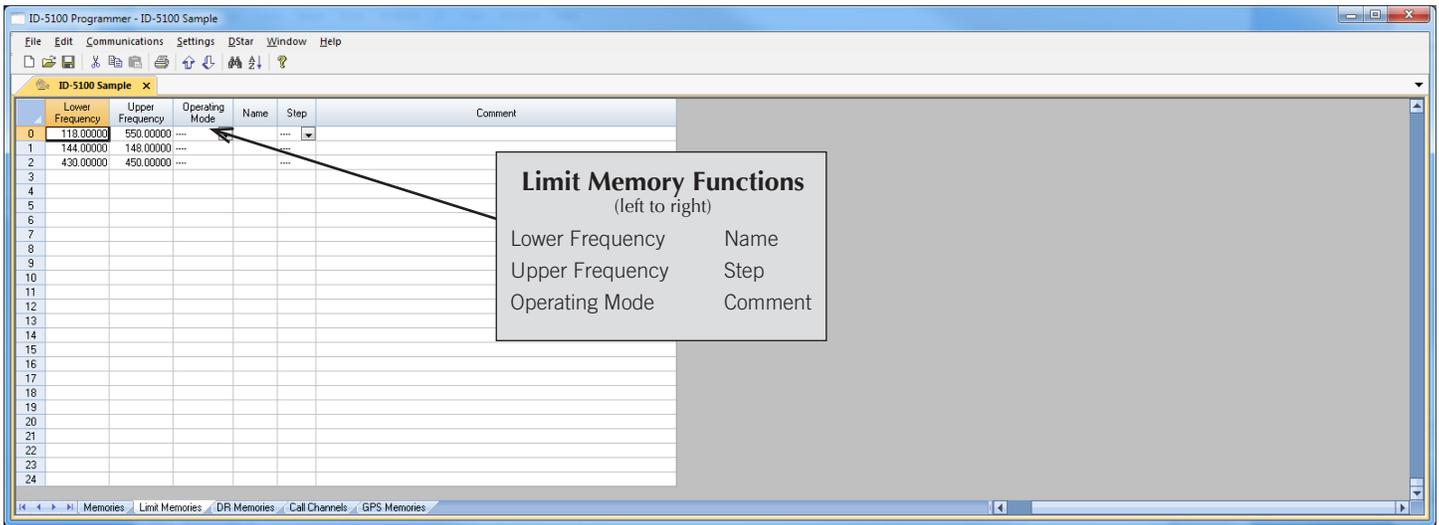
Details can be copied from another RT Systems version 4.50 programmer file. Set up a file for your new radio by starting with the one you have for your other D-STAR radio.



Hardware Requirements:

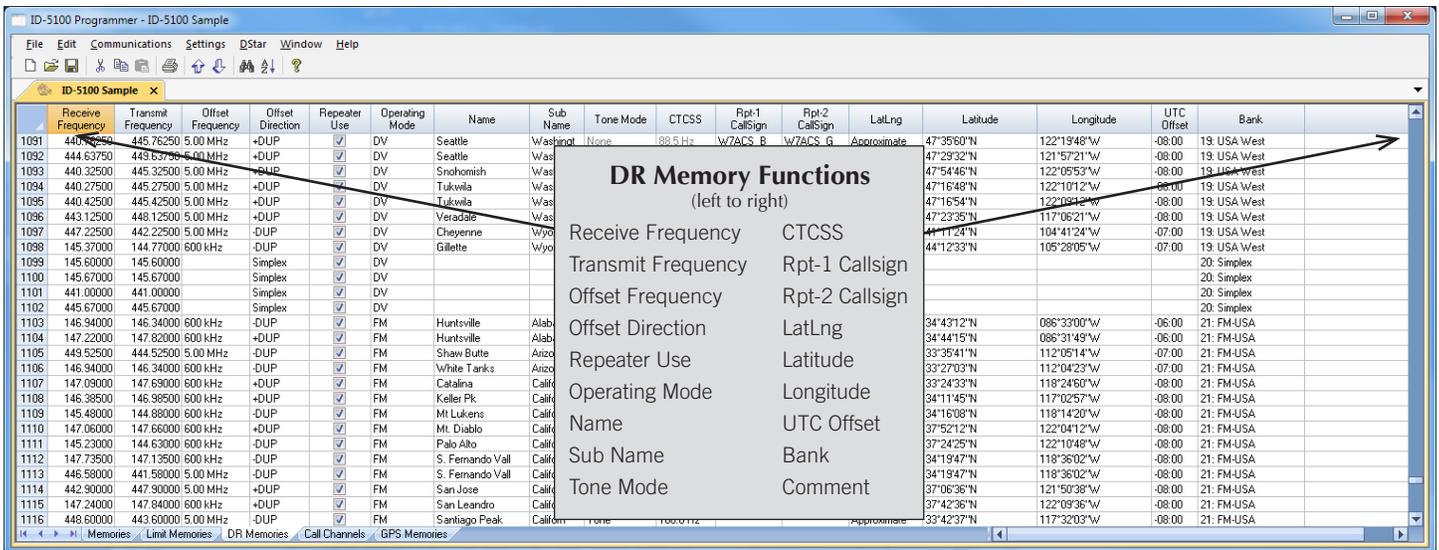
A PC running Windows XP (SP3) thru 8.1 (32 or 64 bit). CD drive for installation. Local USB port and RT Systems USB-29A or USB-RTS05 interface cable. The cable connects the radio to the computer from the USB port on the computer to the Speaker/mic jack or Data jack on the back of the radio.





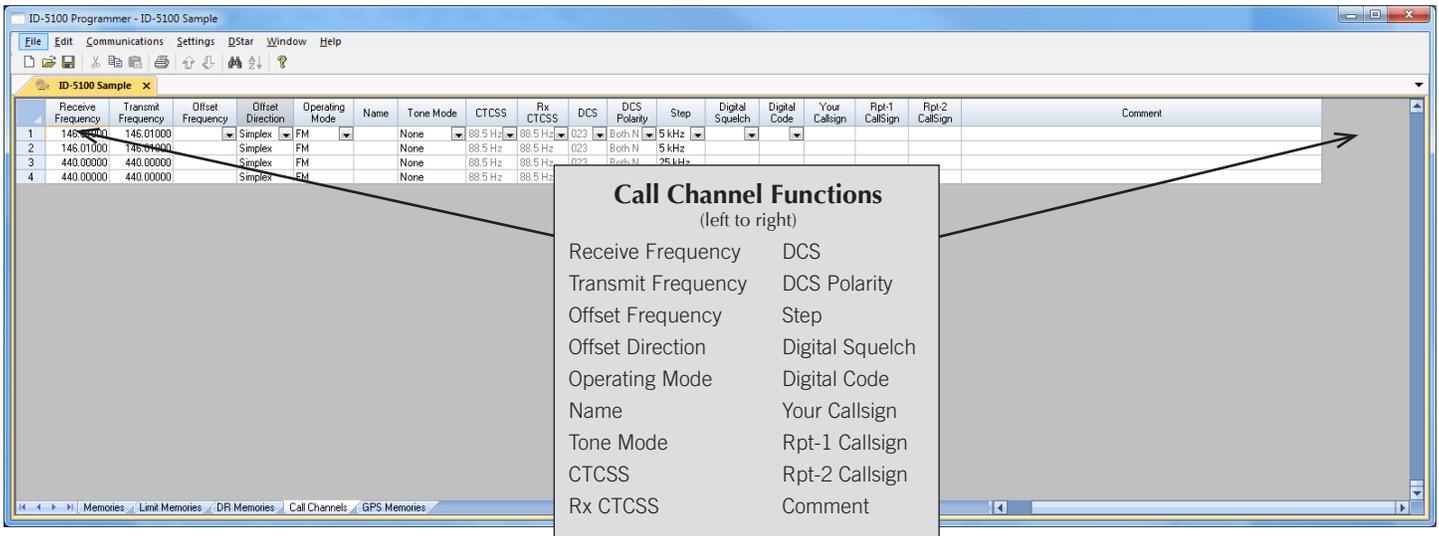
Limit Memories (Scan Edges)

Limit Memories are used by the radio for Program Scan. Program the same details for Limit Memories as for regular memory channels. Many of the Limit Memories are preprogrammed in the radio and while the frequency can be changed to another within the band, they cannot be left blank. Just like in the radio, Operating Mode and Step are available if Lower and Upper frequencies are in the same band.



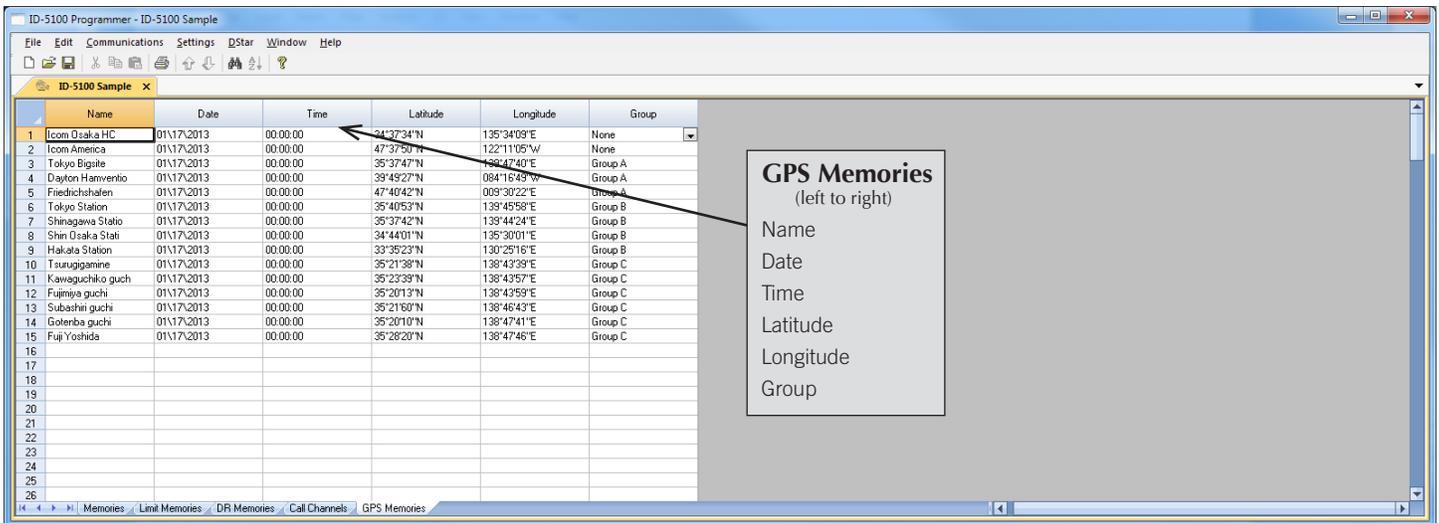
DR Memories

The DR Channels are special memories of the radio used for quick manual D-Star setup from the radio's face. D-Star channels do not have to be programmed here before being saved to memory. Program D-STAR (DV) and FM repeater info to use with the near repeater feature of the radio when Latitude and Longitude are included for that repeater.



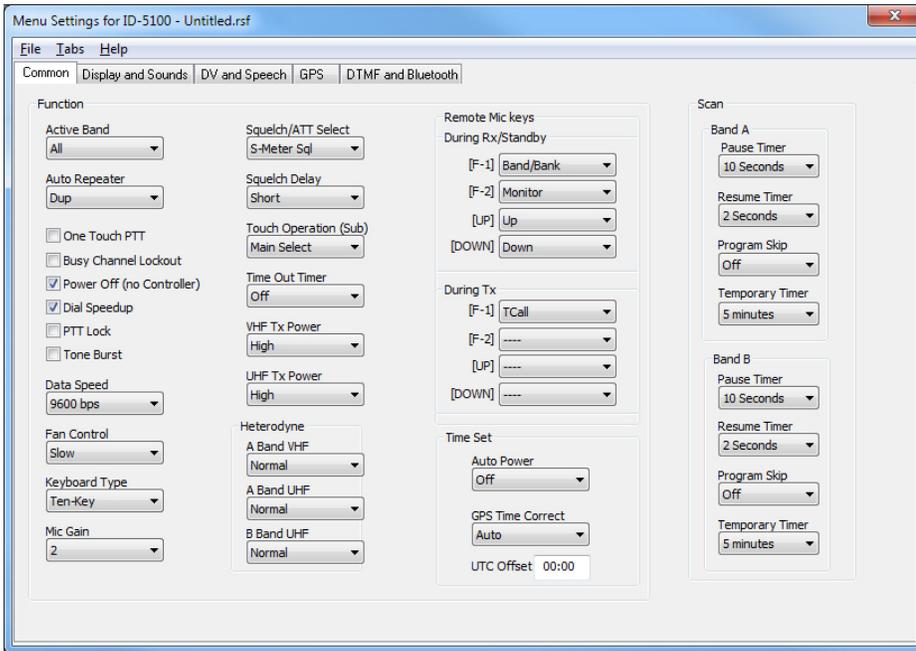
Call Channel

Home/Call channels are special memories accessed through one button recall on the radio. These channels are preprogrammed in the radio and while the frequency can be changed to another within the band, they cannot be left blank.



GPS Memories

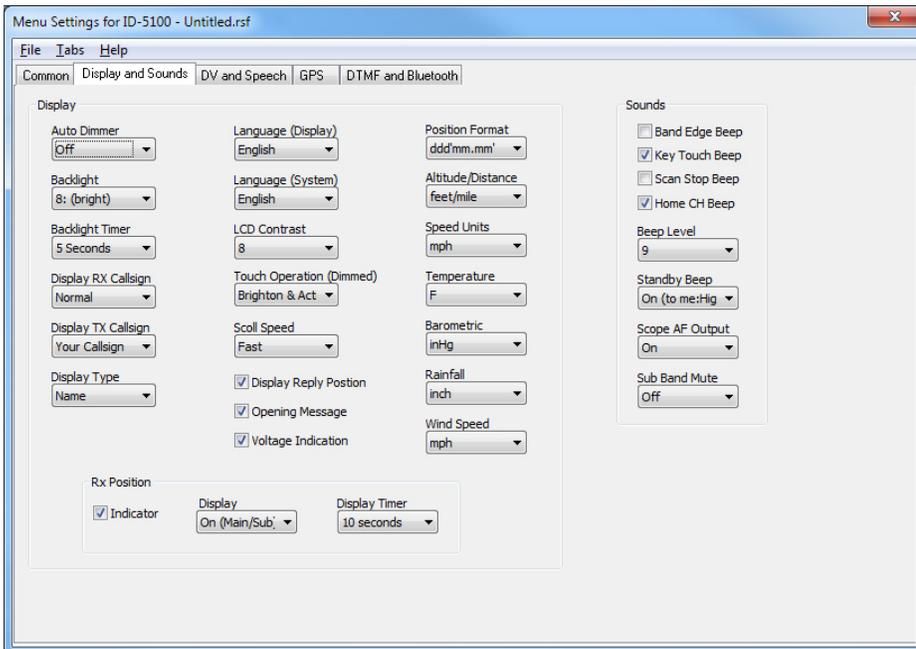
Once stored in the radio during GPS operations, these channels are read from the radio with the other details.



Common

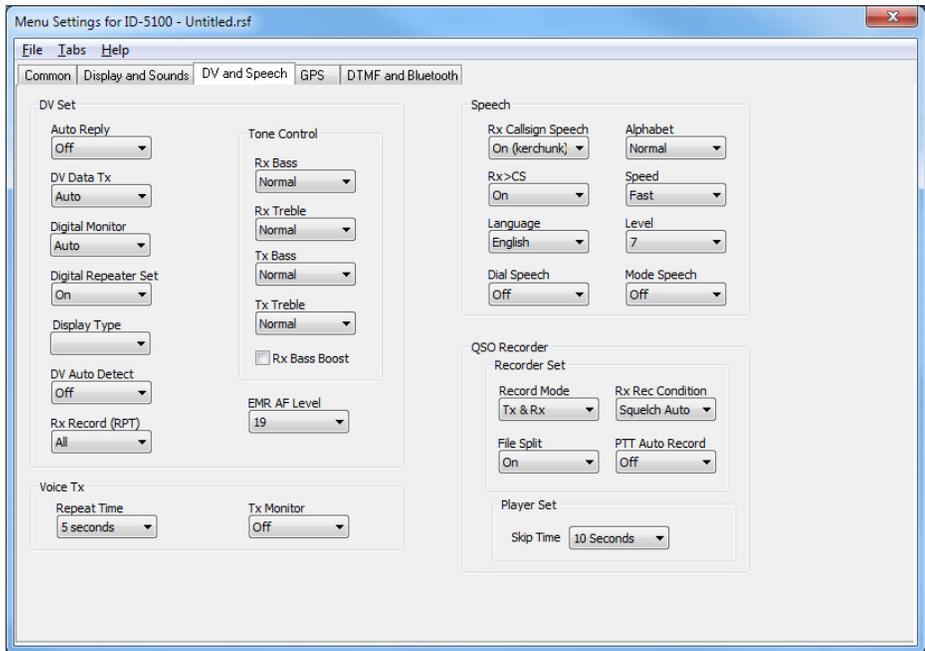
Use these screens to customize other set menu features of the radio. Check boxes toggle features on or off, drop down menus list all selections and blank boxes for personalized entry add to the ease of setting up your radio exactly like you want it.

The entries on the Settings screens are made for you to “Set and Forget”. Once settings are customized, you are prompted to save before exiting. The saved settings will be there every time you create a new frequency file.



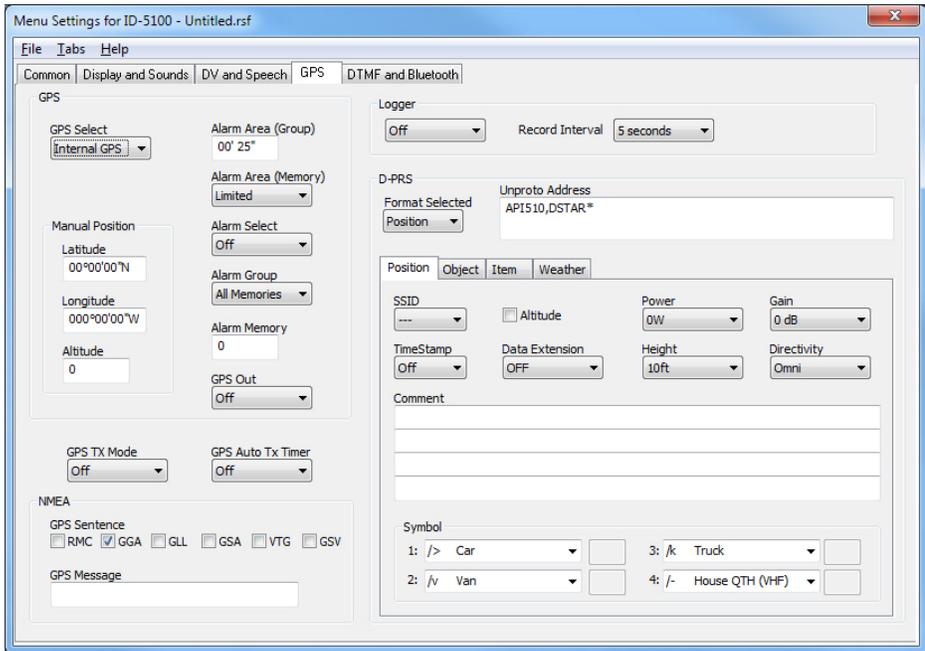
Display and Sounds

Use these settings to control the radio's display and sound functions.



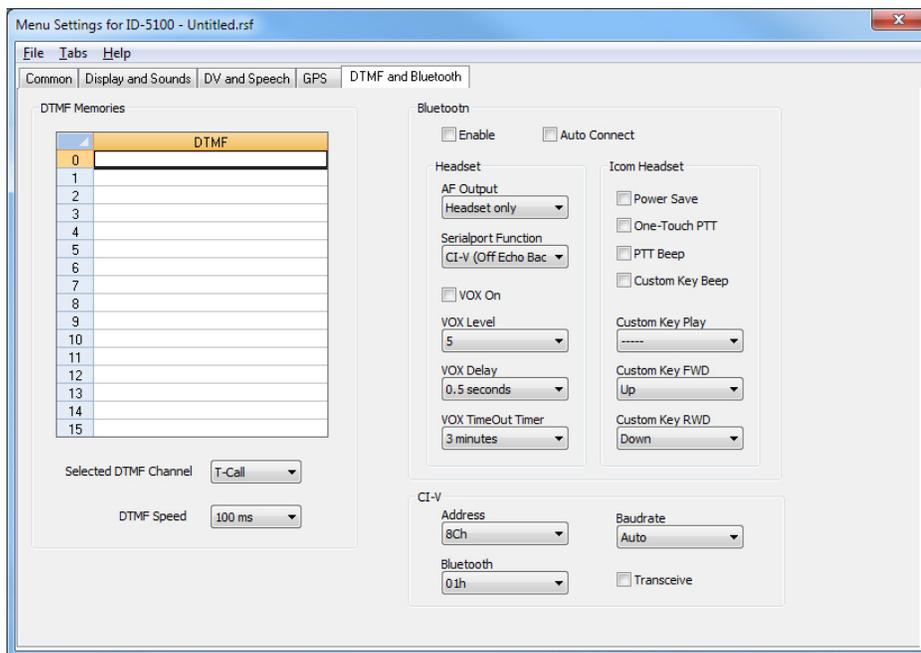
DV and Speech

Customize options used during DV operations, for the radio's announcements the QSO recorder, and for transmission of a message recorded on the SD Card in the radio (Voice TX).



GPS

Configure GPS function settings.



DTMF and Bluetooth

Enter DTMF memory and Bluetooth details to customize options for these functions of the radio.

Bank Names and Linking

Active Bank Selection:

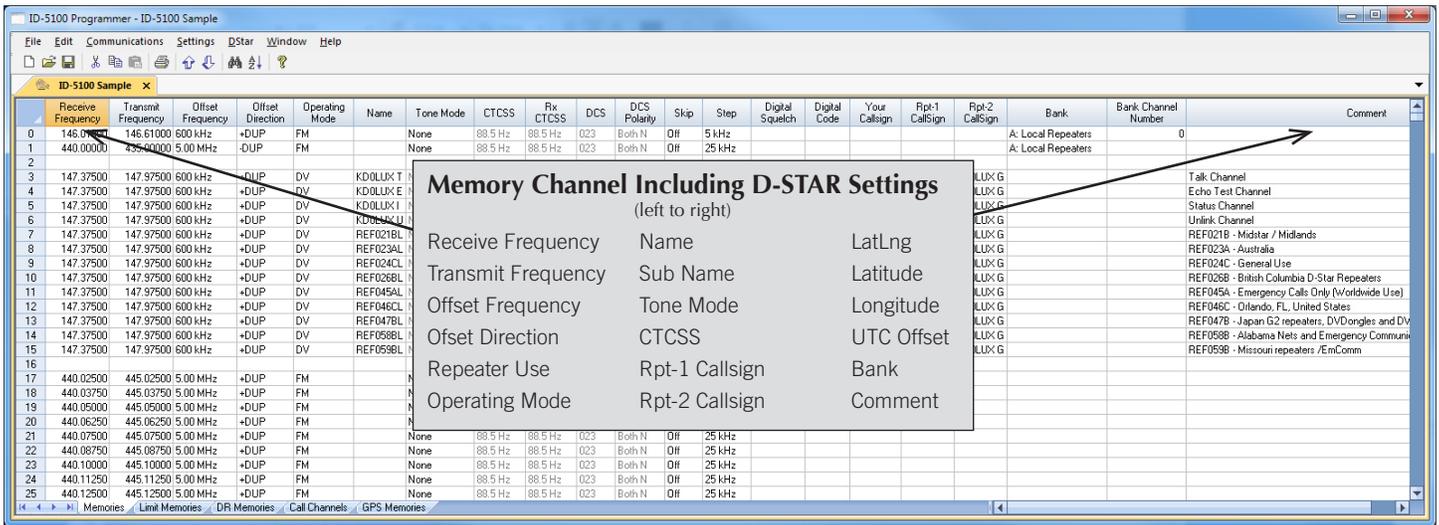
Memory Channel Banks				GPS Memory Banks		DR Memory Banks	
	Bank	A-Link	B-Link		Bank		Bank
A		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A	ICOM	1	Africa
B		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	B	HAM festa	2	Asia
C		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	C	Railroad	3	Australia
D		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	D	Mt.Fuji	4	Canada
E		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	E		5	Europe Eastern
F		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	F		6	Europe Northern
G		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	G		7	Europe Southern
H		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	H		8	Europe Western
I		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	I		9	Germany
J		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	J		10	Italy
K		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	K		11	Japan
L		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	L		12	Latin America
M		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	M		13	Netherlands
N		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N		14	Oceania
O		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	O		15	United Kingdom
P		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	P		16	USA Midwest
Q		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Q		17	USA Northeast
R		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	R		18	USA Southeast
S		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	S		19	USA West
T		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	T		20	Simplex
U		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	U		21	
V		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	V		22	
W		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	W		23	
X		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X		24	
Y		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y		25	
Z		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Z		26	

OK Cancel

Bank Names and Linking

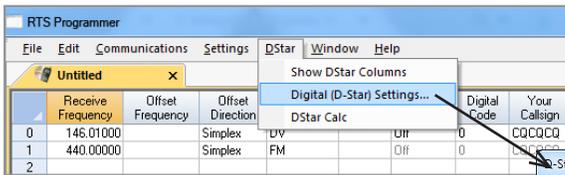
Enter a name for quickly referencing the Memory Channel, GPS Memory or DR Memory Banks. These names are used when making selection in bank mode. Any that are preprogrammed can be changed or left blank.

Set up A-Link and B-Link combinations for Bank scanning. All banks are included by default.



Memories and D-STAR Columns

The ID-5100 handles D-STAR and FM memories in Memories. It is here in the Programmer that the D-STAR specifics for each channel are entered. The D-STAR columns become active once Operating Mode is set to DV. Use the D-STAR Calculator in the program to set up channels with simple selections. Or, import a file from <http://www.dstarinfo.com> automatically.

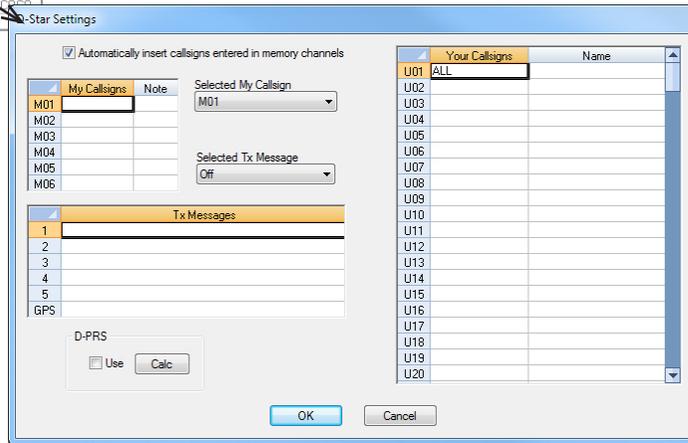


D-STAR Settings

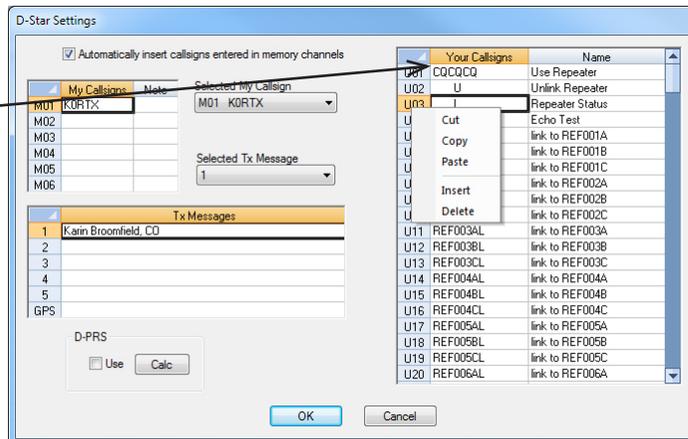
Set "My Callsign" to your FCC issued callsign.

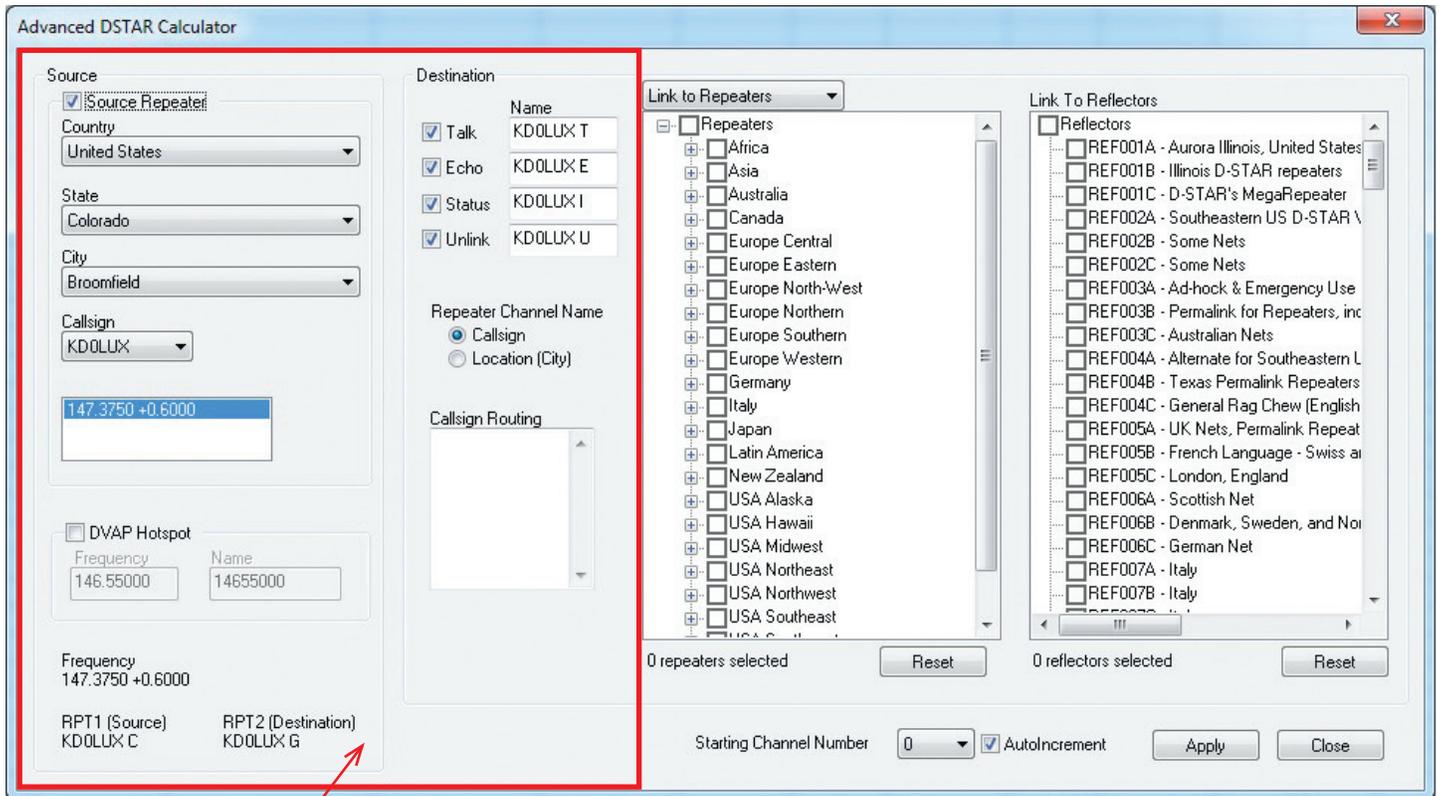
The list of Your Callsigns is just storage. The callsigns used during a transmission are programmed in the memory channel. This list is available to make a selection from; however, the callsign does not need to be entered here first.

Tx messages, name/location/equipment details, etc., scroll on the radio receiving your call. Be sure to turn on the Tx-Message by selecting one.



New to the D-STAR programmers is the ability to cut, copy, paste, insert and delete in your Call-sign list. The ID-5100 comes with this list empty. This new feature lets you copy your customized list from another RT Systems version 4.50 programmer into the new file for the ID-5100. With just a few mouse clicks your list is filled and ready to use with the DR Memories.





Source and Destination:

The D-STAR Calculator automatically sets up the Talk, Echo, Info and Unlink channels for your “Source” repeater. The “Source” is the repeater you access to begin your adventures. Just like with analog repeaters, you must be able to hit the “Source” repeater.

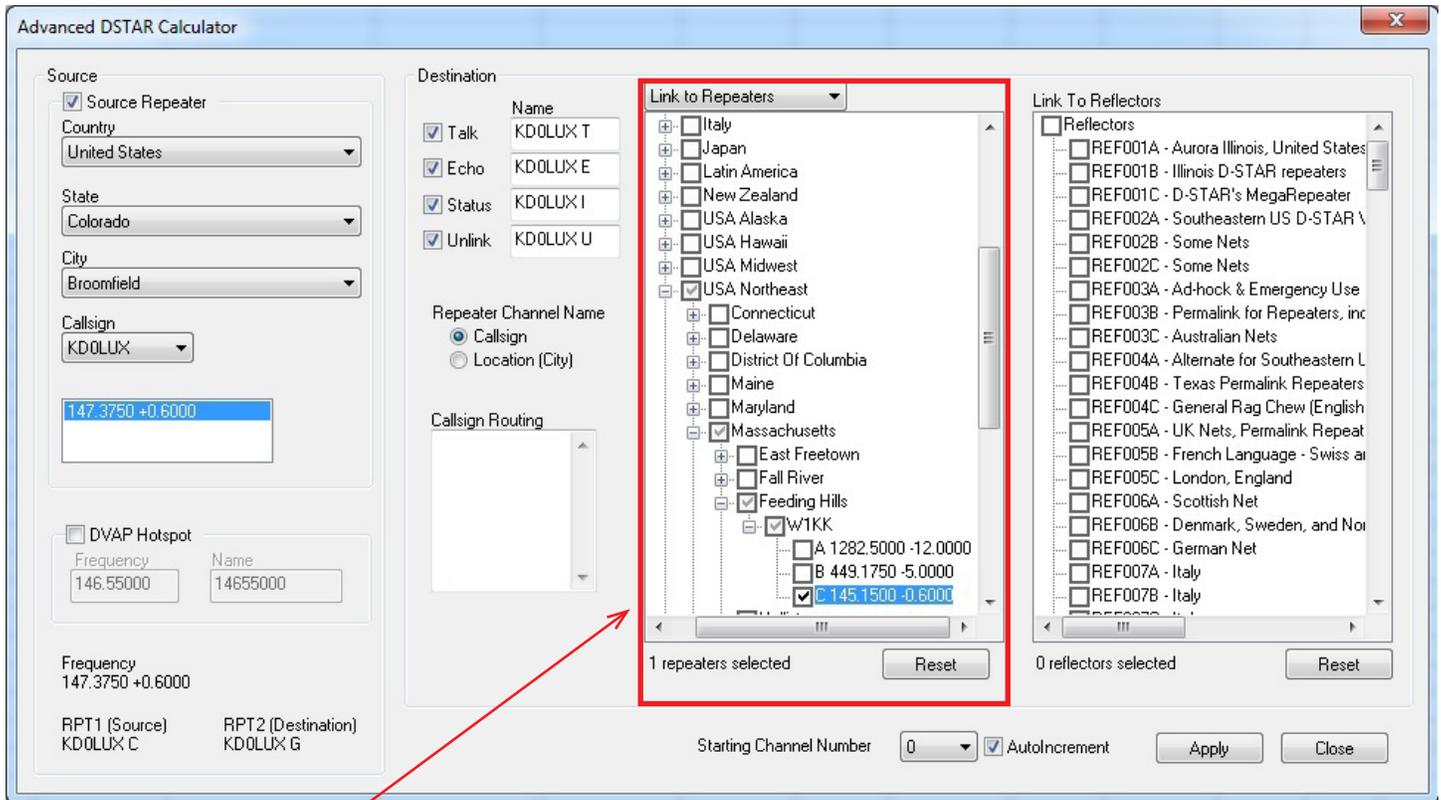
Talk - the CQ channel for talking with others.

Echo - a test function that repeats your transmission back to you. Good for letting you know that you are, or are not, hitting the repeater.

Info - The function that triggers a status response from the repeater (i.e. linked to “where”... not linked)

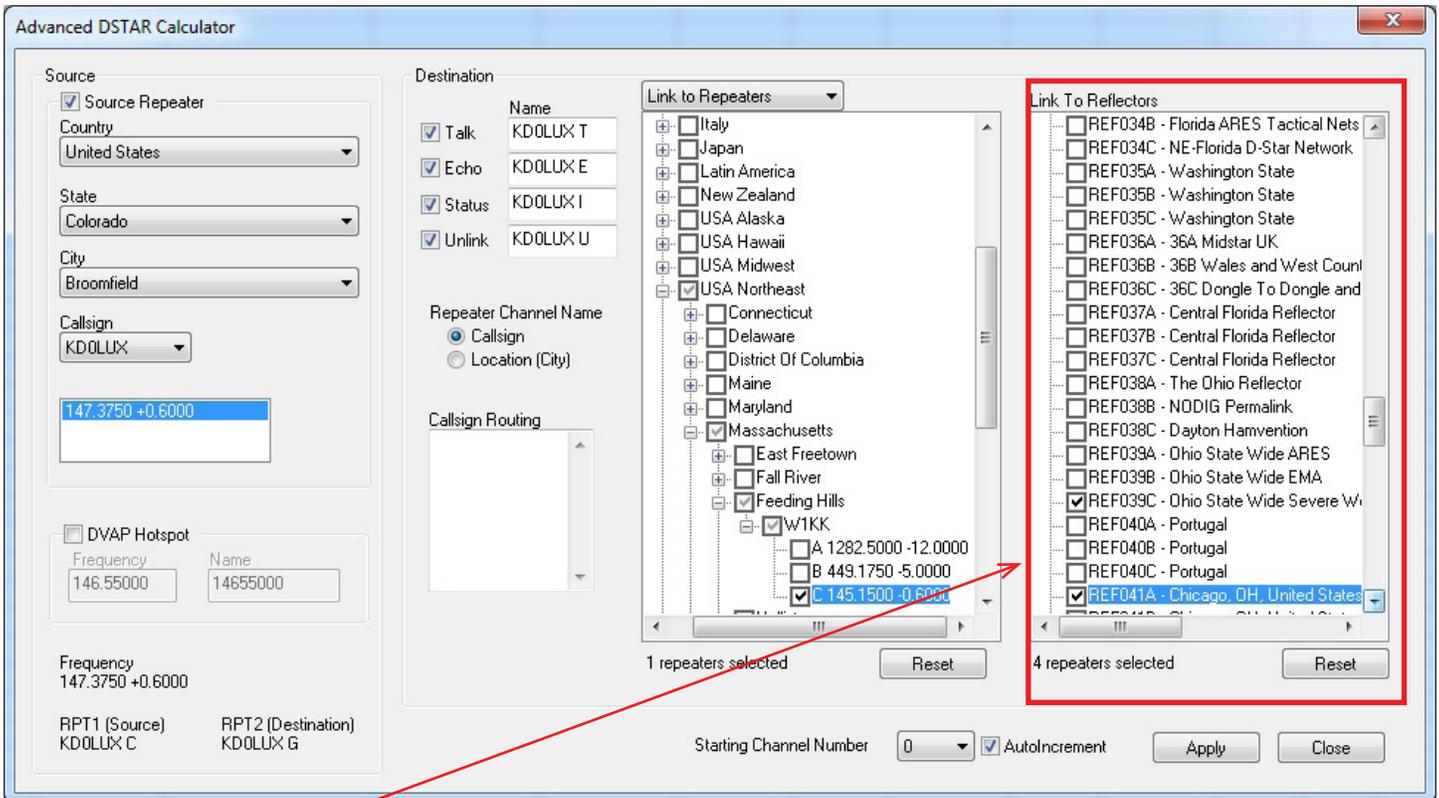
Unlink - Disconnects the current link of the repeater (where allowed). More widely used to disconnect a link you establish. Remember... if you link, it’s always polite to unlink (hang up the phone) when you’re done unless someone has joined you locally. Then you might leave it to them to unlink.

The calculator sets up the same channels for a DVAP hotspot. You enter your frequency only once.



Route/Link to Repeaters:

Now that you identified your “Source”, let’s set up your Destination. In D-STAR you can Link to Repeaters or Route to Repeaters. To set up channels that link or route, use the drop down at the top of the first tree to select your function, then select your repeaters by checking a country, region, state, city or individual repeater. A counter below the list keeps track of how many you have selected.

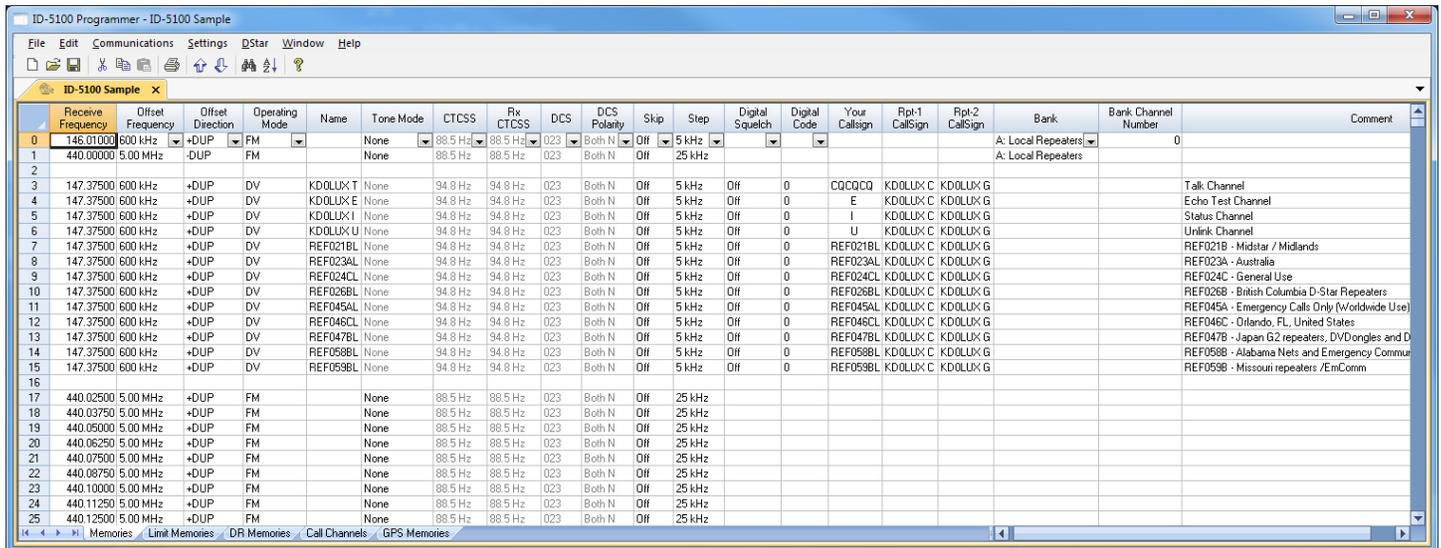


Link to Reflectors:

For even more fun, and a great way for a beginner to get started, Link to Reflectors. D-STAR reflectors are a special type of Internet connected gateway that rebroadcasts each signal to all the other linked nodes or repeaters. Remember... EVERYBODY is listening... but that's what makes it fun. You have a whole world to talk to through your local repeater, "Source", when linked to a reflector. To set up a channel that links your repeater to a reflector, check the box for that reflector in the Link to Reflector tree.

Click **Apply** once to set up all these channels for the radio.

New to the Calculator, your selection of reflectors or repeaters is not cleared when you click Apply. When you want to use the same list for another "Source" repeater, simply change the source and click Apply.



	Receive Frequency	Offset Frequency	Offset Direction	Operating Mode	Name	Tone Mode	CTCSS	Rx CTCSS	DCS	DCS Polarity	Skip	Step	Digital Squelch	Digital Code	Your Callsign	Rpt-1 CallSign	Rpt-2 CallSign	Bank	Bank Channel Number	Comment
0	146.01000	600 kHz	+DUP	FM		None	88.5 Hz	88.5 Hz	023	Both N	Off	5 kHz						A: Local Repeaters	0	
1	440.00000	5.00 MHz	-DUP	FM		None	88.5 Hz	88.5 Hz	023	Both N	Off	25 kHz						A: Local Repeaters		
2																				
3	147.37500	600 kHz	+DUP	DV	KDOLUX I	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	CQCQCQ	KDOLUX C	KDOLUX G			Talk Channel
4	147.37500	600 kHz	+DUP	DV	KDOLUX E	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	E	KDOLUX C	KDOLUX G			Echo Test Channel
5	147.37500	600 kHz	+DUP	DV	KDOLUX I	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	I	KDOLUX C	KDOLUX G			Status Channel
6	147.37500	600 kHz	+DUP	DV	KDOLUX U	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	U	KDOLUX C	KDOLUX G			Unlink Channel
7	147.37500	600 kHz	+DUP	DV	REF021BL	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	REF021BL	KDOLUX C	KDOLUX G			REF021B - Midstar / Midlands
8	147.37500	600 kHz	+DUP	DV	REF023AL	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	REF023AL	KDOLUX C	KDOLUX G			REF023A - Australia
9	147.37500	600 kHz	+DUP	DV	REF024CL	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	REF024CL	KDOLUX C	KDOLUX G			REF024C - General Use
10	147.37500	600 kHz	+DUP	DV	REF026BL	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	REF026BL	KDOLUX C	KDOLUX G			REF026B - British Columbia D-Star Repeaters
11	147.37500	600 kHz	+DUP	DV	REF045AL	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	REF045AL	KDOLUX C	KDOLUX G			REF045A - Emergency Calls Only (Worldwide Use)
12	147.37500	600 kHz	+DUP	DV	REF046CL	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	REF046CL	KDOLUX C	KDOLUX G			REF046C - Orlando, FL, United States
13	147.37500	600 kHz	+DUP	DV	REF047BL	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	REF047BL	KDOLUX C	KDOLUX G			REF047B - Japan G2 repeaters, DV/Dongles and D
14	147.37500	600 kHz	+DUP	DV	REF058BL	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	REF058BL	KDOLUX C	KDOLUX G			REF058B - Alabama Nets and Emergency Commu
15	147.37500	600 kHz	+DUP	DV	REF059BL	None	94.8 Hz	94.8 Hz	023	Both N	Off	5 kHz	Off	0	REF059BL	KDOLUX C	KDOLUX G			REF059B - Missouri repeaters / EmComm
16																				
17	440.02500	5.00 MHz	+DUP	FM		None	88.5 Hz	88.5 Hz	023	Both N	Off	25 kHz								
18	440.03750	5.00 MHz	+DUP	FM		None	88.5 Hz	88.5 Hz	023	Both N	Off	25 kHz								
19	440.05000	5.00 MHz	+DUP	FM		None	88.5 Hz	88.5 Hz	023	Both N	Off	25 kHz								
20	440.06250	5.00 MHz	+DUP	FM		None	88.5 Hz	88.5 Hz	023	Both N	Off	25 kHz								
21	440.07500	5.00 MHz	+DUP	FM		None	88.5 Hz	88.5 Hz	023	Both N	Off	25 kHz								
22	440.08750	5.00 MHz	+DUP	FM		None	88.5 Hz	88.5 Hz	023	Both N	Off	25 kHz								
23	440.10000	5.00 MHz	+DUP	FM		None	88.5 Hz	88.5 Hz	023	Both N	Off	25 kHz								
24	440.11250	5.00 MHz	+DUP	FM		None	88.5 Hz	88.5 Hz	023	Both N	Off	25 kHz								
25	440.12500	5.00 MHz	+DUP	FM		None	88.5 Hz	88.5 Hz	023	Both N	Off	25 kHz								

The resulting channels are set up and ready to go.

Your callsign, Rpt 1 Callsign and Rpt 2 Callsign are set automatically... No wondering which suffix goes where, of if it is positioned correctly. That is all done for you.

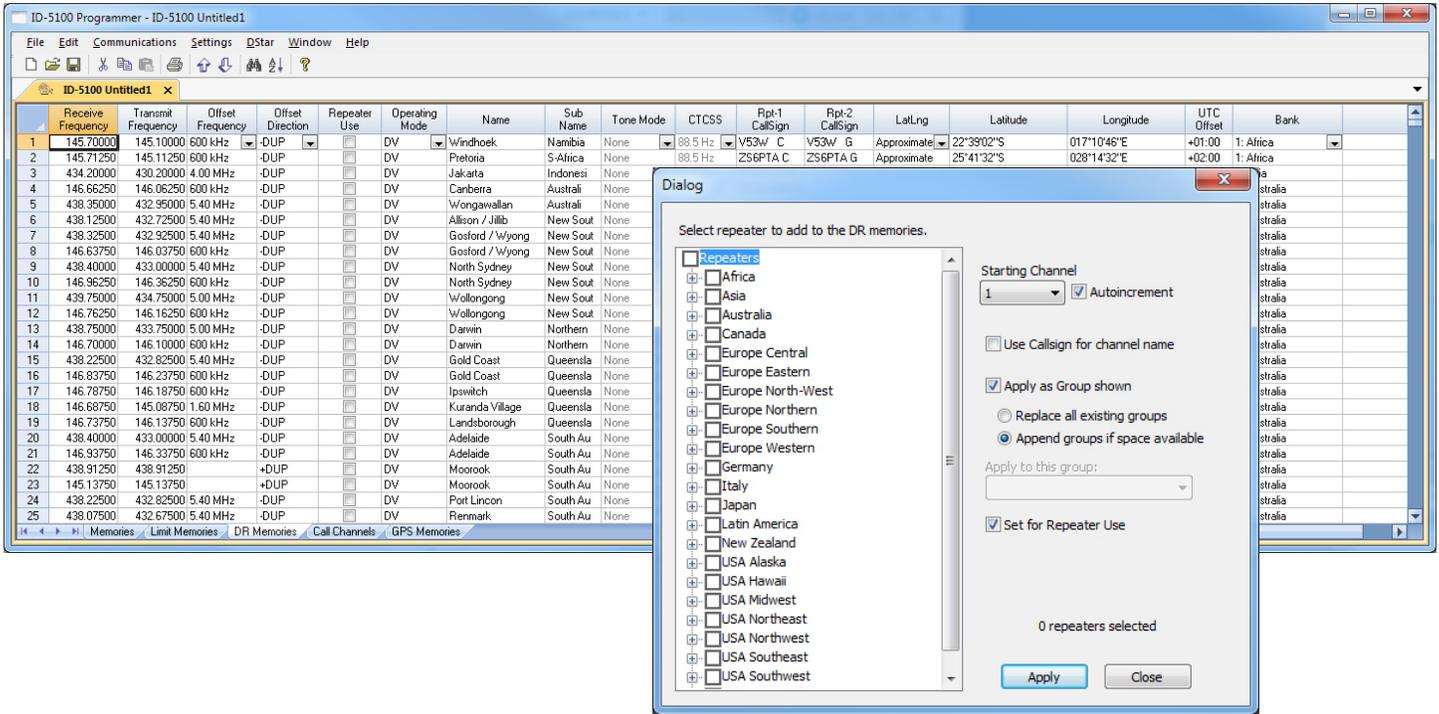
Name can be edited here to better identify the station. Name is what you see on the radio. It is not part of the D-STAR commands for use of the system. It may be all you have to identify the function of a channel. (Notice the frequency is the same for ALL these channels although they each do something different on the D-STAR network.) Make the Name something you understand.

Note: On the ID-5100, the name and frequency are displayed for a memory channel. There is no other option that must be changed for name display.

To Use these Settings for D-STAR Fun:

- Save and send the file to the radio.
- Listen on the talk channel.
- Be sure your call sign is registered on the system.
- Check repeater status on info channel.
- Check your connection to repeater on Echo channel.
- Link repeater to a connection of your choice.
- Talk on Talk channel.

Have Fun!



D-STAR Calculator for DR Memories

D-STAR Calculator for DR Memories lists repeaters worldwide for you to update or customize the list in the radio. Easily customize this list for places you plan to travel or places you want to work using a DR memory as your RPT2 repeater.

All repeater nodes are listed. Those the radio can use to transmit will be set automatically for "Repeater Use".

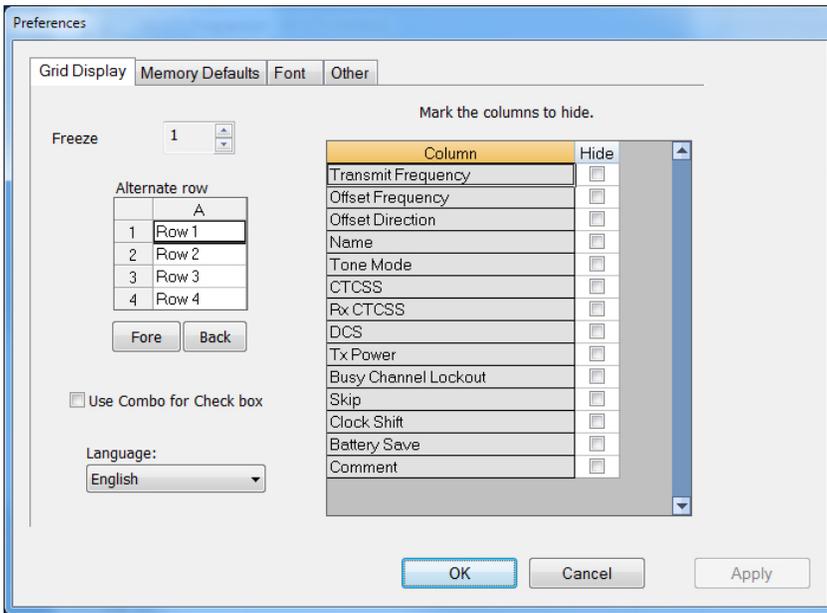
Latitude and Longitude are included where that info is available from the source and the repeater is marked for use.

Click a country, region, state, city or individual repeater.

Use starting channel to replace or carefully add to your list.

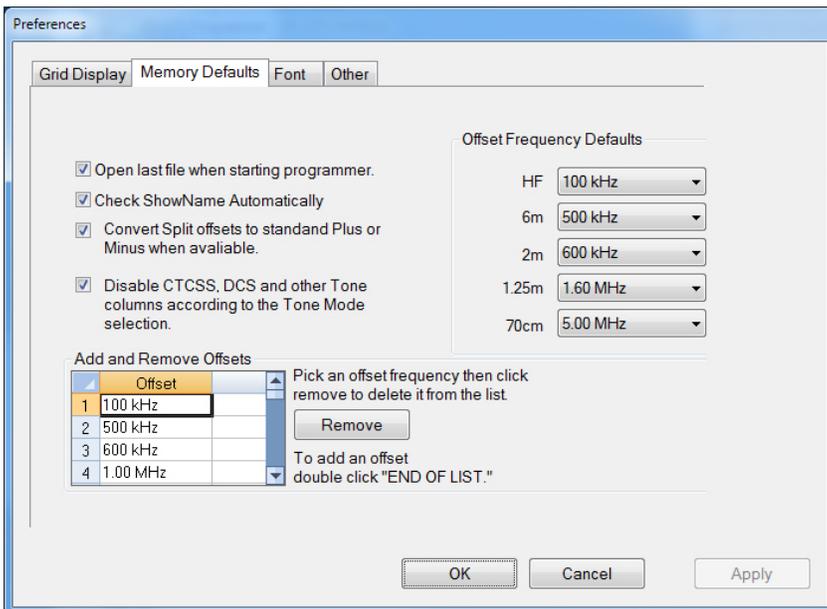
No searching for data, it's all right in the RT Systems Programmer.

The D-STAR calculator is updated automatically with the program. Just "Check for Updates" periodically to be sure you have the latest list.



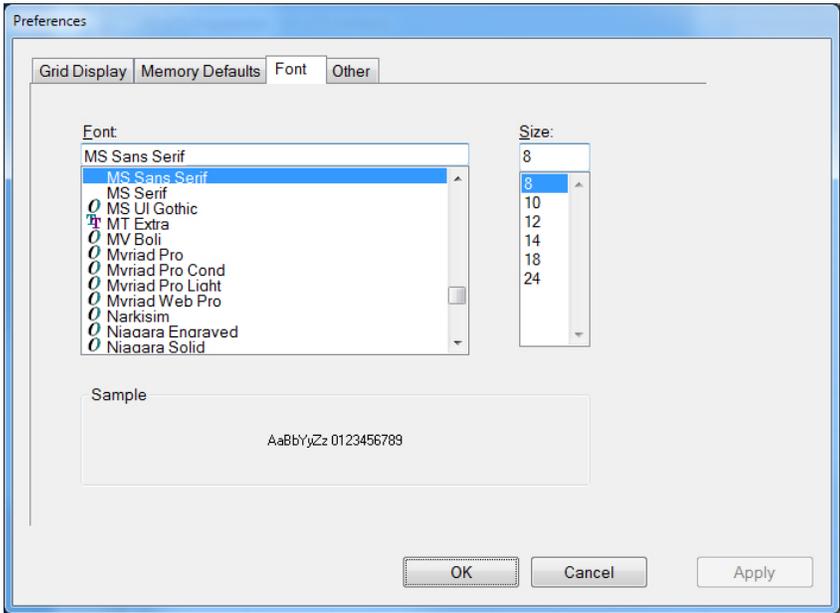
Grid Display

- RT Systems now available in English, French, German, Italian, Spanish, Portuguese and Japanese.
- Set colors for text (Fore) or background (Back) of alternate rows for easier viewing across the columns.
- Freeze columns to keep information on the screen as you scroll to the right of the page.
- Hide columns you don't use. Customize your print-out: hidden columns do not print.
- Use Combo for Check boxes – changes the grid to eliminate check box selections that are disabled on some systems.



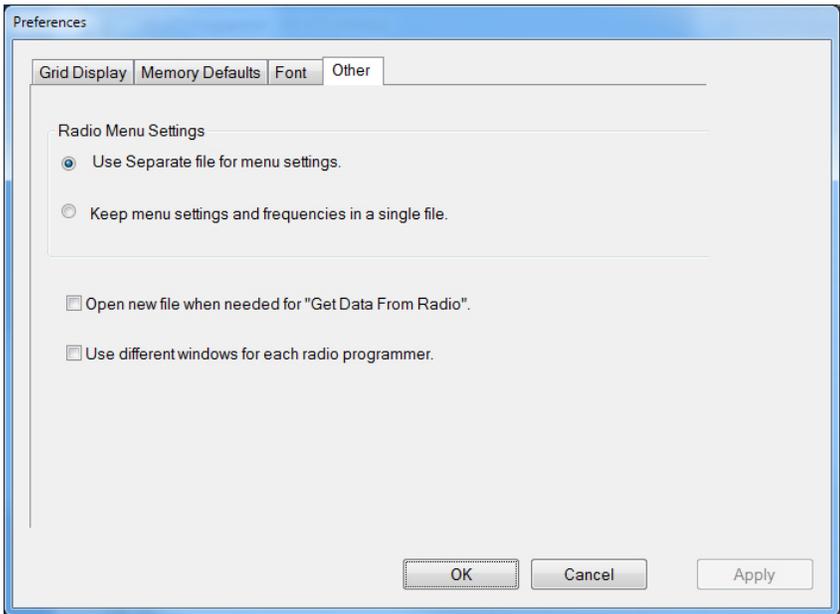
Memory Defaults

- Set options to control auto fill information for memory channel entries.



Font

- Set options to control the font in the column headers of the channel entry screens. Select any font and font size available on your computer.



Other

- Set options to control how the programmer handles the global Radio Menu Settings file.
 - Separate (default) handles the global settings of the radio in a “set and forget” fashion. Once you set these up and save the file you won’t have to reset them for a new frequency file.
 - “Single file” gives you the ability to create files that are complete with frequencies and customized global settings. In this mode, each file begins with factory defaults for every option of the radio.
- Check “Get data from Radio” new file option to prevent data loss when you read from your radio into the programmer.
- Check “different window” option to make the programmer for a different radio run in completely separate window rather than in a separate tab of the same window.

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