rt SYSTEMS
RADIO PROGRAMMING MADE EASY

303-586-6510 | www.rtsystemsinc.com

WCS-7100 Programming Software for the Icom IC-7100

Memory Types (left to right)
- Band A -E Memories
- Limit Memories
- DR Memories
- Call Channel
- VFO
- GPS Memories

Memory Channel Functions (left to right)

Receive Frequency	DCS
Transmit Frequency	DCS Polarity
Offset Frequency	Select Scan
Offset Direction	Digital Squelch
Operating Mode	Digital Code
Filter	Your Callsign
Name	Rpt-1
Tone Mode	Rpt-2
CTCSS	Comment
RX CTCSS	

The WCS-7100 Programmer is designed to give you the ease and convenience of programming the memories and set menu options of your radio from your PC including settings for D-STAR operations. The D-STAR calculator built into the program gives you D-STAR information from all around the world to use. You can easily set up your D-STAR channels with just a few mouse clicks.

Memory Channels Include:
- 99 Each Band A - E Memories with D-STAR Options
- 6 Limit Memories (3 pair)
- 900 DR Memories
- 4 Call Channel Memories
- 4 VFO Settings
- 100 GPS Memories

Other Menu Item Categories Include:
- Common
- Display
- CW/RTTY

D-STAR
- Your Callsign List
- My Callsign List
- Text Message List

With the WCS-7100 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. Files can even be shared between users via email or the Internet. Any RT Systems Version 4.50 program can open a file from any other RT Systems Version 4.50 programmer... even from a different radio.

Managing all the options of this great little 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 can be copied from one file to another within the Programmer making it really easy to set up a new file.

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

Hardware Requirements:
A PC running Windows XP, Vista, Windows 7 (32 or 64 bit) or Windows 8 (desktop version). A CD drive (local or network) for installation. A free USB port. The RT Systems USB-RTS01 interface cable or the USB cable that came with the radio. The USB-RTS01 cable connects the radio to the computer from the USB port on the computer to the remote jack on the radio. The USB cable that comes with the radio connects to the mini B USB jack. Do NOT connect both cables at the same time.
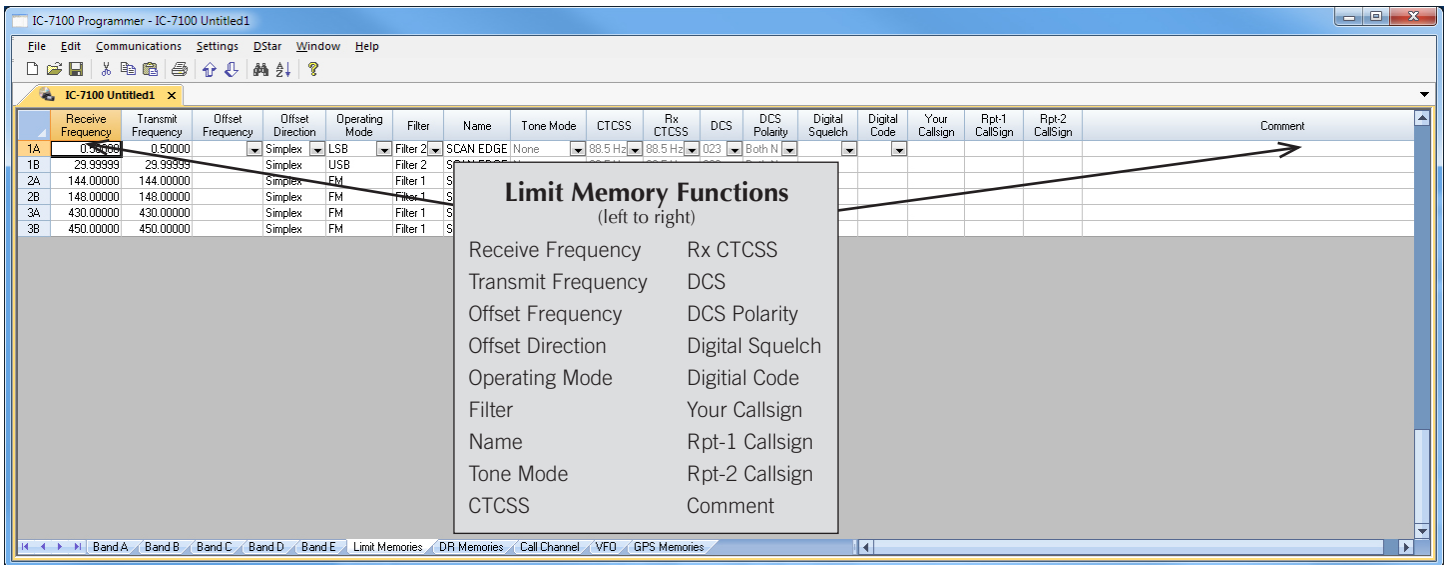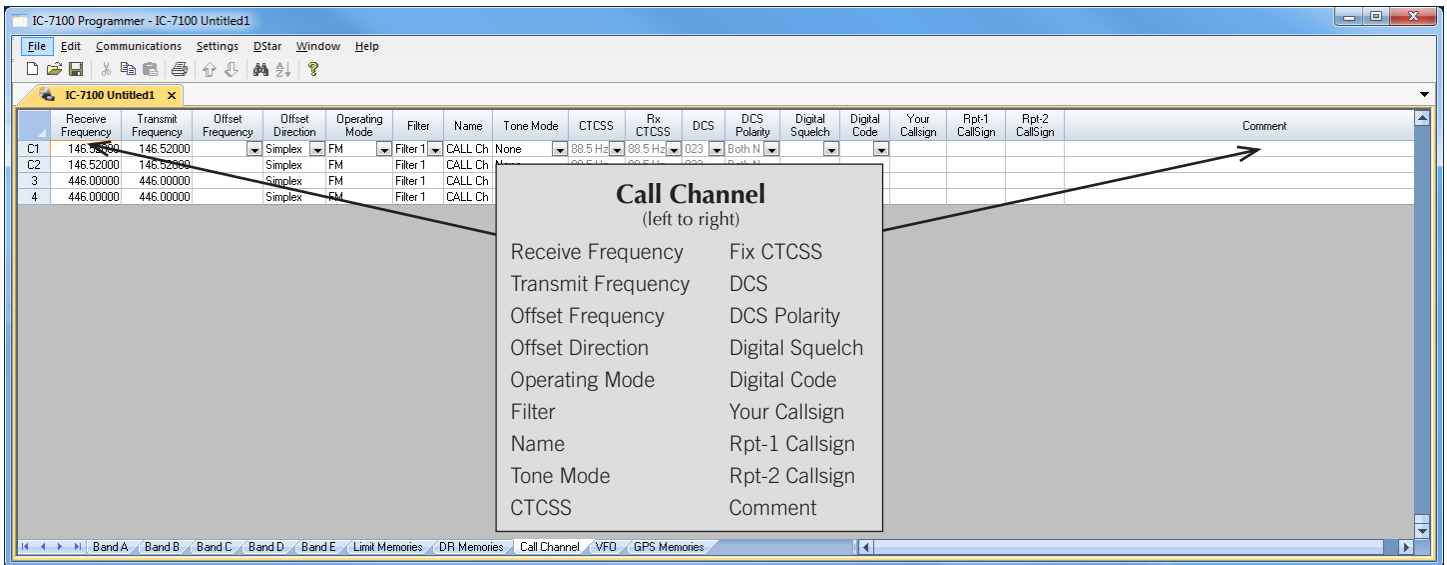
Limit Memories

Limit Memories are used by the radio for Program Scan. Program the same details for Limit Memories as for regular memory channels. The Limit Memories are preprogrammed in the radio and while the frequency can be changed, they cannot be left blank.
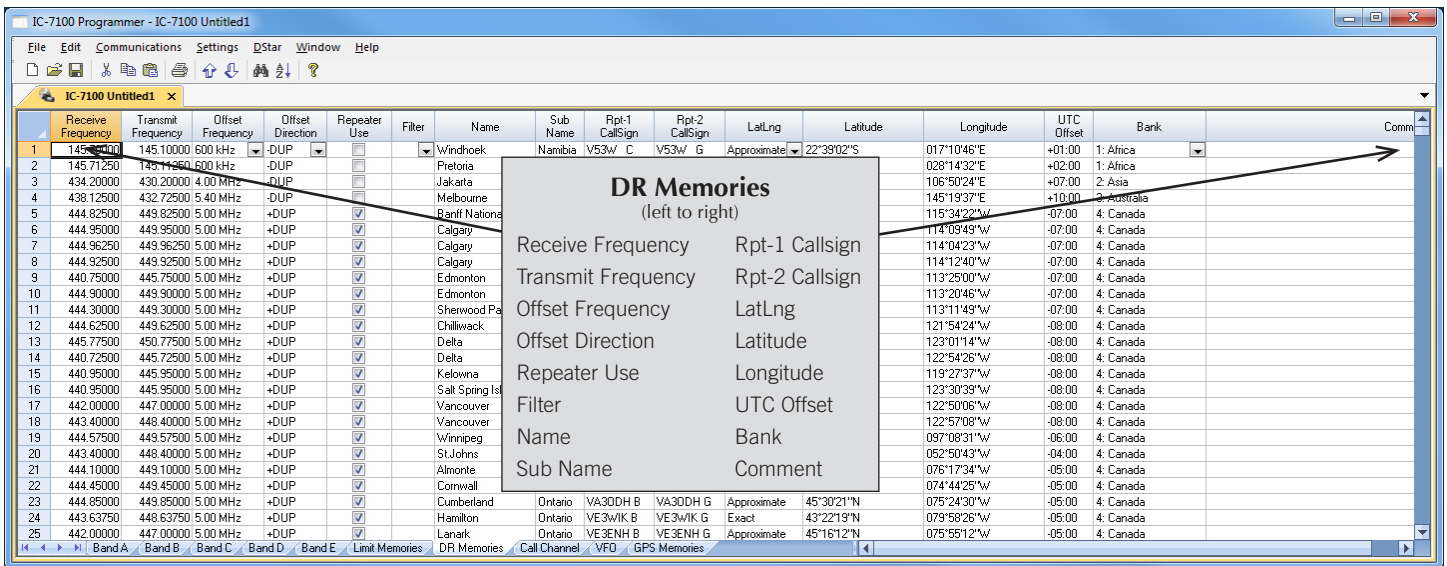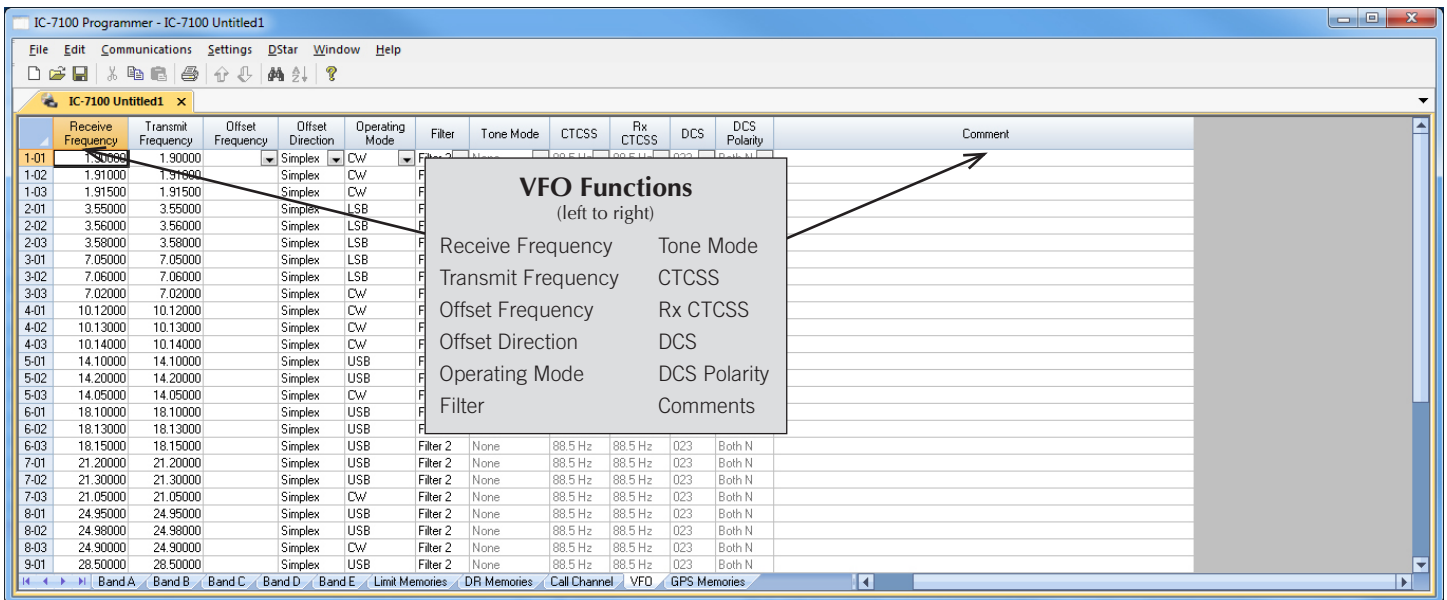

DR Memories

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. Use the information of the special D-STAR Calculator in the Programmer to change the list to include those repeaters you use. It's all built right into the Programmer. Use the Sort function of the Programmer (Edit/Sort) to arrange the list into a more easily used order.

Call Channel
(left to right)

Receive Frequency	Fix CTCSS
Transmit Frequency	DCS
Offset Frequency	DCS Polarity
Offset Direction	Digital Squelch
Operating Mode	Digital Code
Filter	Your Callsign
Name	Rpt-1 Callsign
Tone Mode	Rpt-2 Callsign
CTCSS	Comment
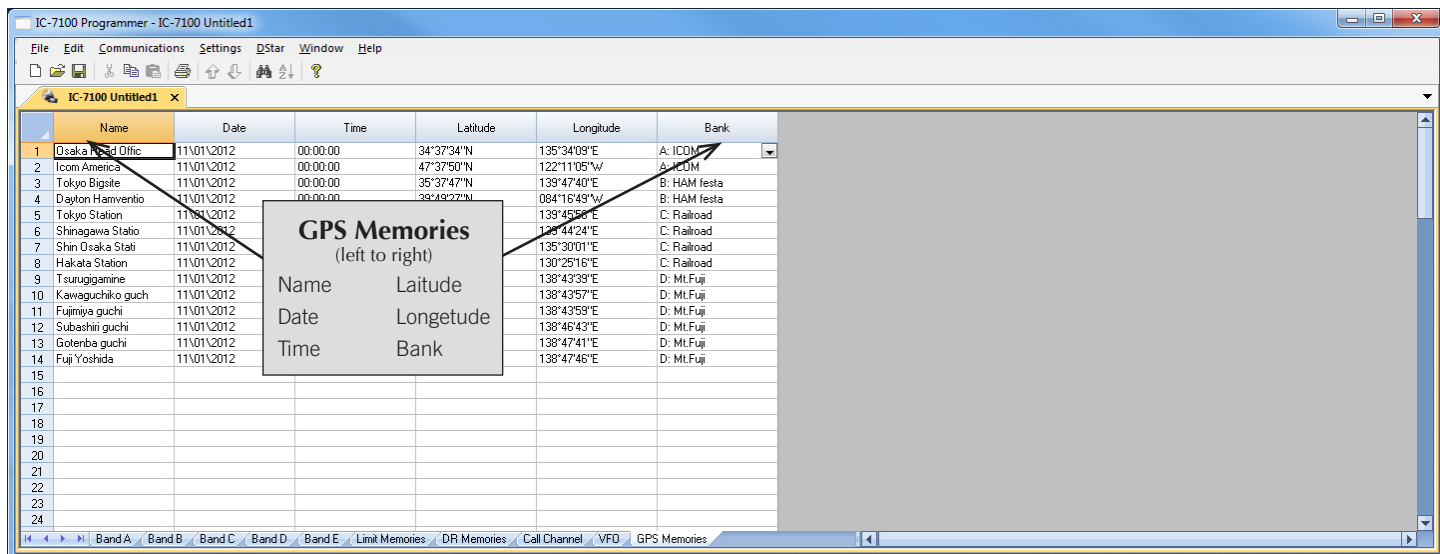
Call Channel

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 in the 2M (C1 & C2) or 440MHz (C3 & C4) bands, they cannot be left blank.

VFO Functions
(left to right)

Receive Frequency	Tone Mode
Transmit Frequency	CTCSS
Offset Frequency	Rx CTCSS
Offset Direction	DCS
Operating Mode	DCS Polarity
Filter	Comments

VFO

The program makes available the Band Stacking Registers providing 3 VFO memories for each band. Remember these are not real memory channels since the details are lost as soon as you tune the radio manually. There is no one button recall for these. You do not need to program into VFO before programming details into a memory channel. These channels are preprogrammed in the radio and while the frequency can be changed to another within the band and other characteristics set, they cannot be left blank.

	Name	Date	Time	Latitude	Longitude	Bank
1	Osaka Road Offic	11\01\2012	00:00:00	34°37'34"N	135°34'09"E	A: ICOM
2	Icom America	11\01\2012	00:00:00	47°37'50"N	122°11'05"W	A: ICOM
3	Tokyo Bigsite	11\01\2012	00:00:00	35°37'47"N	139°47'40"E	B: HAM festa
4	Dayton Hamventio	11\01\2012	00:00:00	39°49'27"N	084°16'49"W	B: HAM festa
5	Tokyo Station	11\01\2012			139°45'56"E	C: Railroad
6	Shinagawa Statio	11\01\2012			139°44'24"E	C: Railroad
7	Shin Osaka Stati	11\01\2012			135°30'01"E	C: Railroad
8	Hakata Station	11\01\2012			130°25'16"E	C: Railroad
9	Tsurugigamine	11\01\2012			138°43'39"E	D: Mt.Fuji
10	Kawaguchiko guch	11\01\2012			138°43'57"E	D: Mt.Fuji
11	Fujimiya guchi	11\01\2012			138°43'59"E	D: Mt.Fuji
12	Subashiri guchi	11\01\2012			138°46'43"E	D: Mt.Fuji
13	Gotenba guchi	11\01\2012			138°47'41"E	D: Mt.Fuji
14	Fuji Yoshida	11\01\2012			138°47'46"E	D: Mt.Fuji

GPS Memories
(left to right)

Name   Laitude

Date   Longetude

Time   Bank

GPS Memory

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

Buy Now
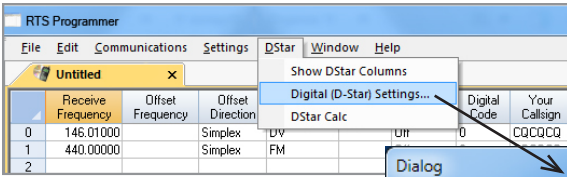
D-STAR Settings

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.
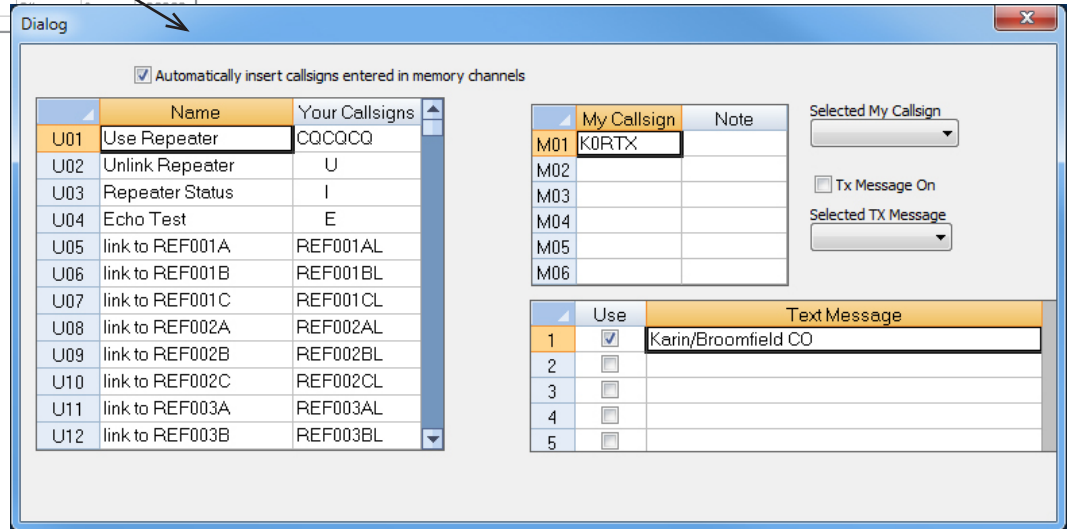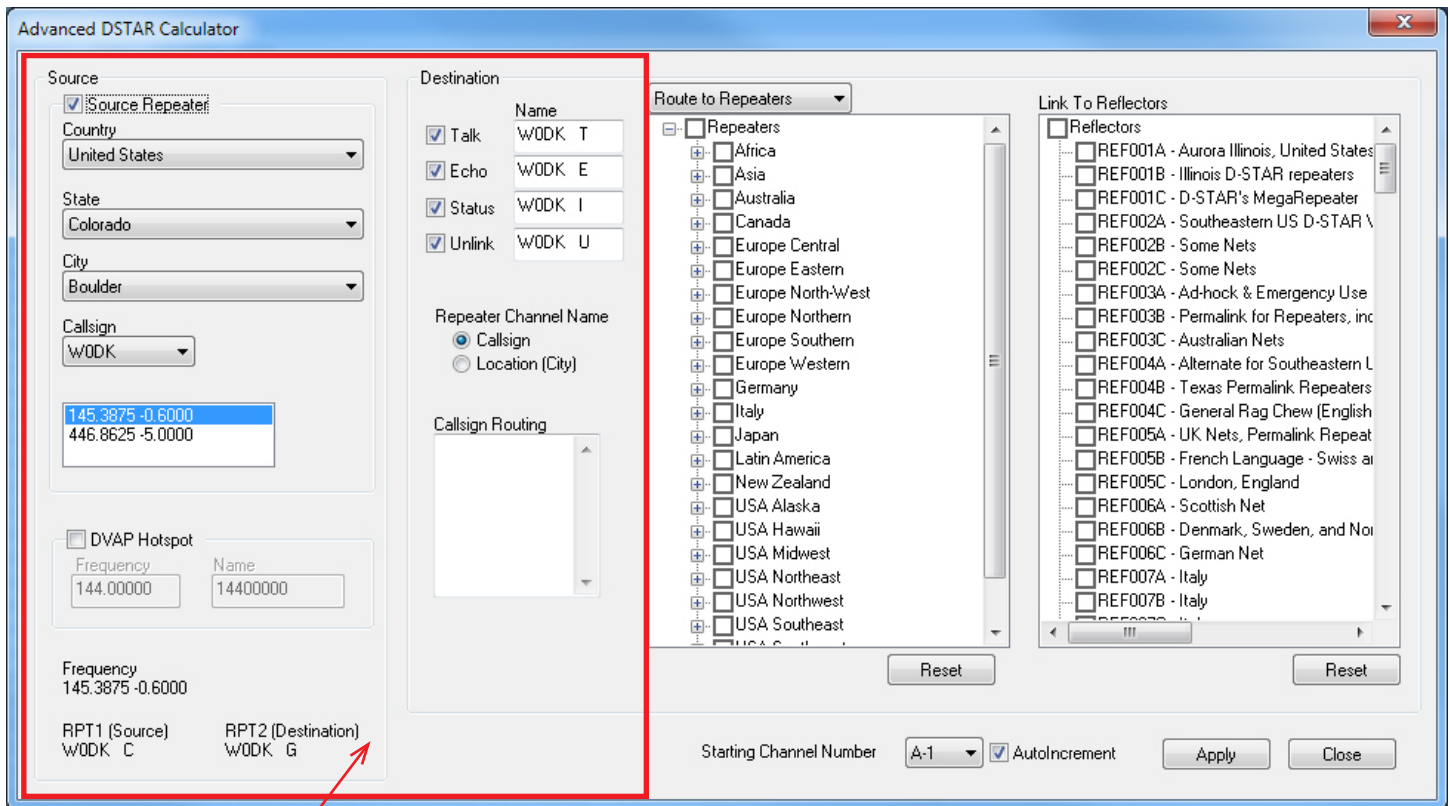
Source and Destination:

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.
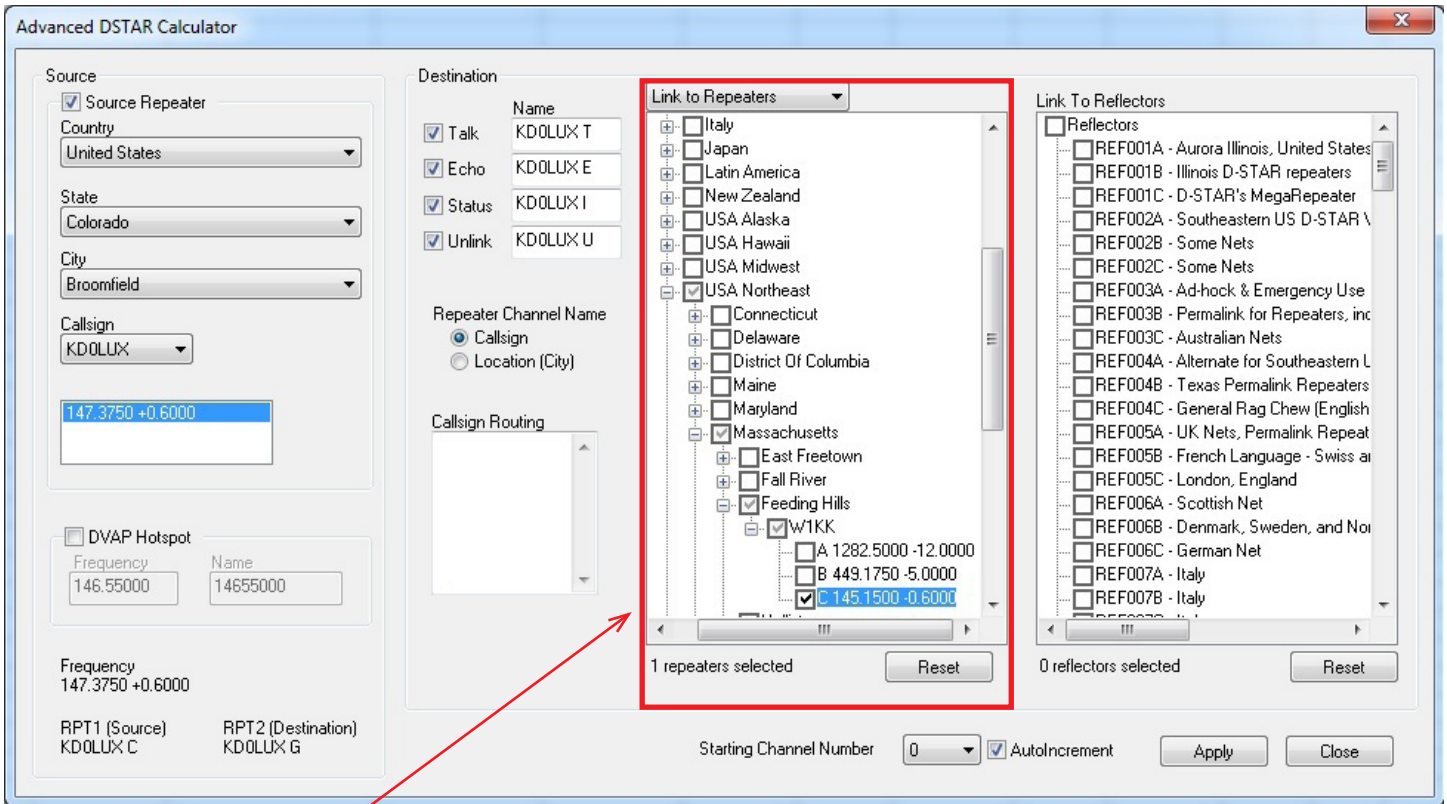
Route/Link to Repeaters:

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.
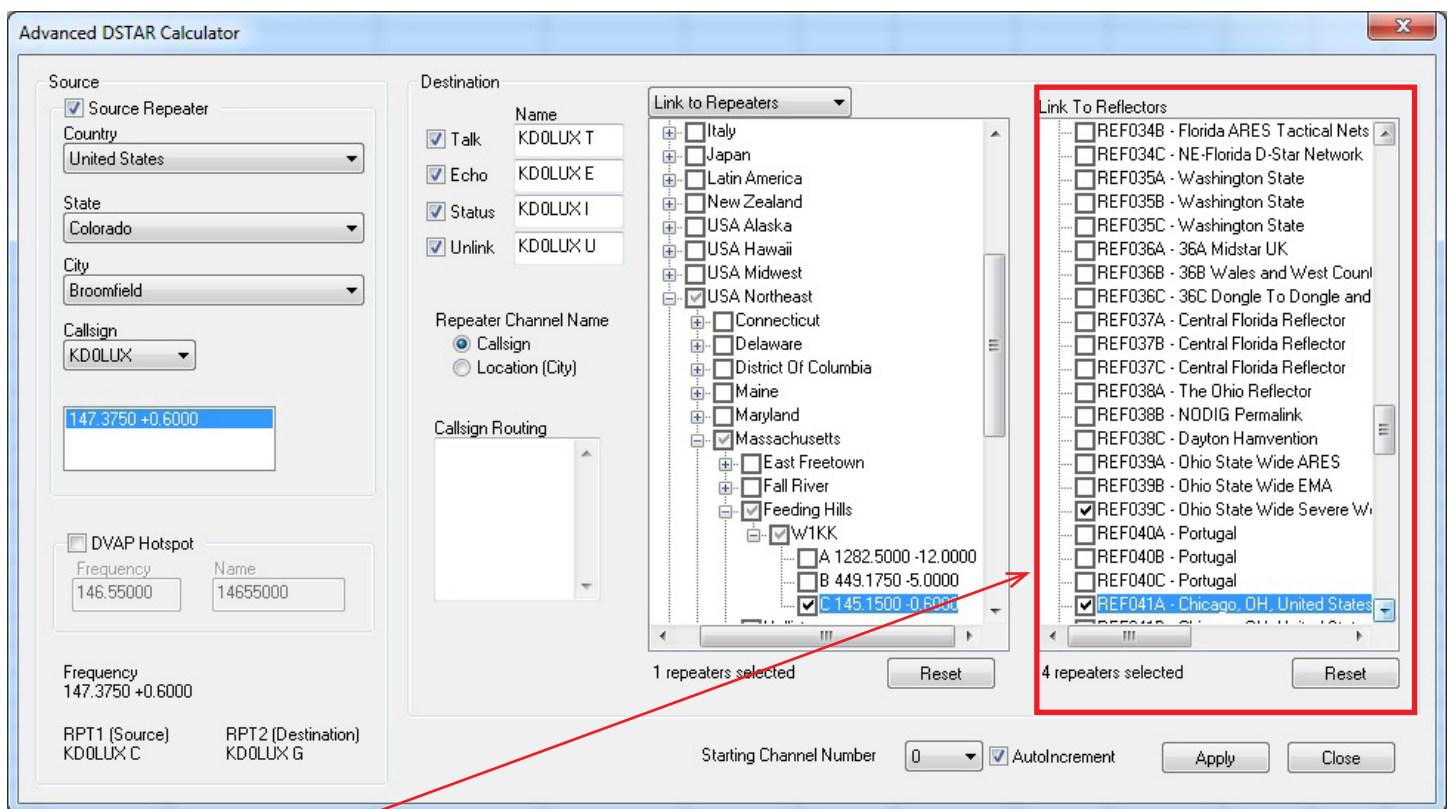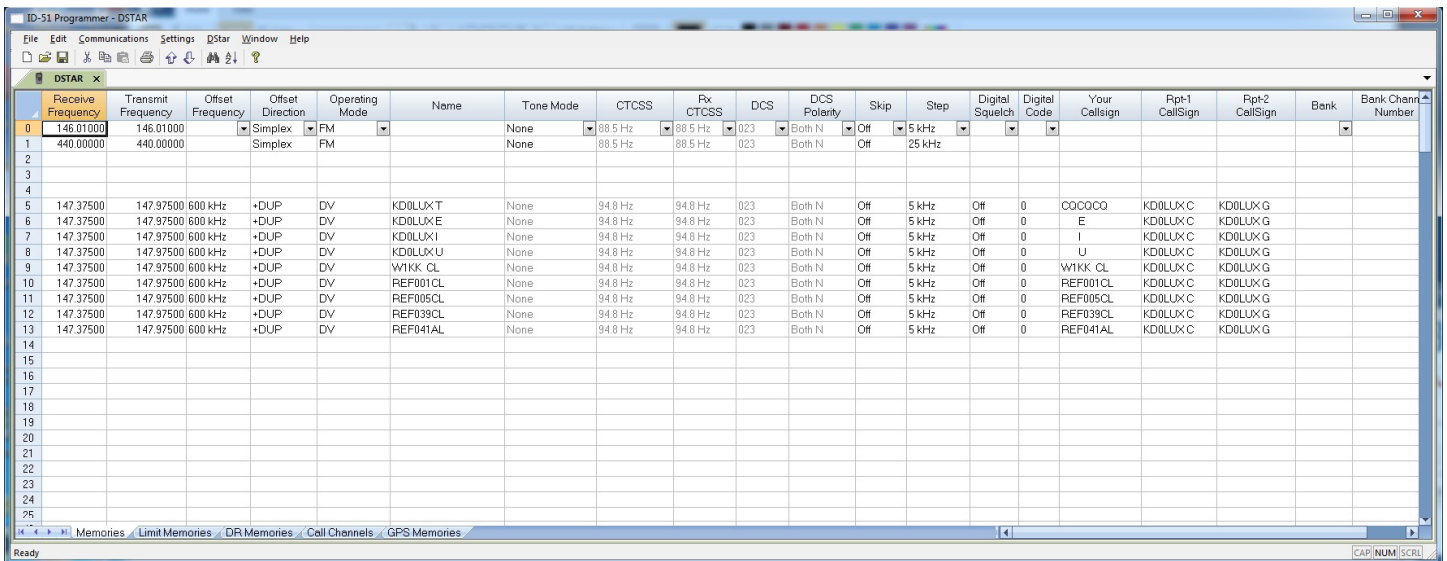
Link to Reflectors:

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", 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.

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, or 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 by 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.

Names are displayed on the radio automatically beneath the frequency.

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!
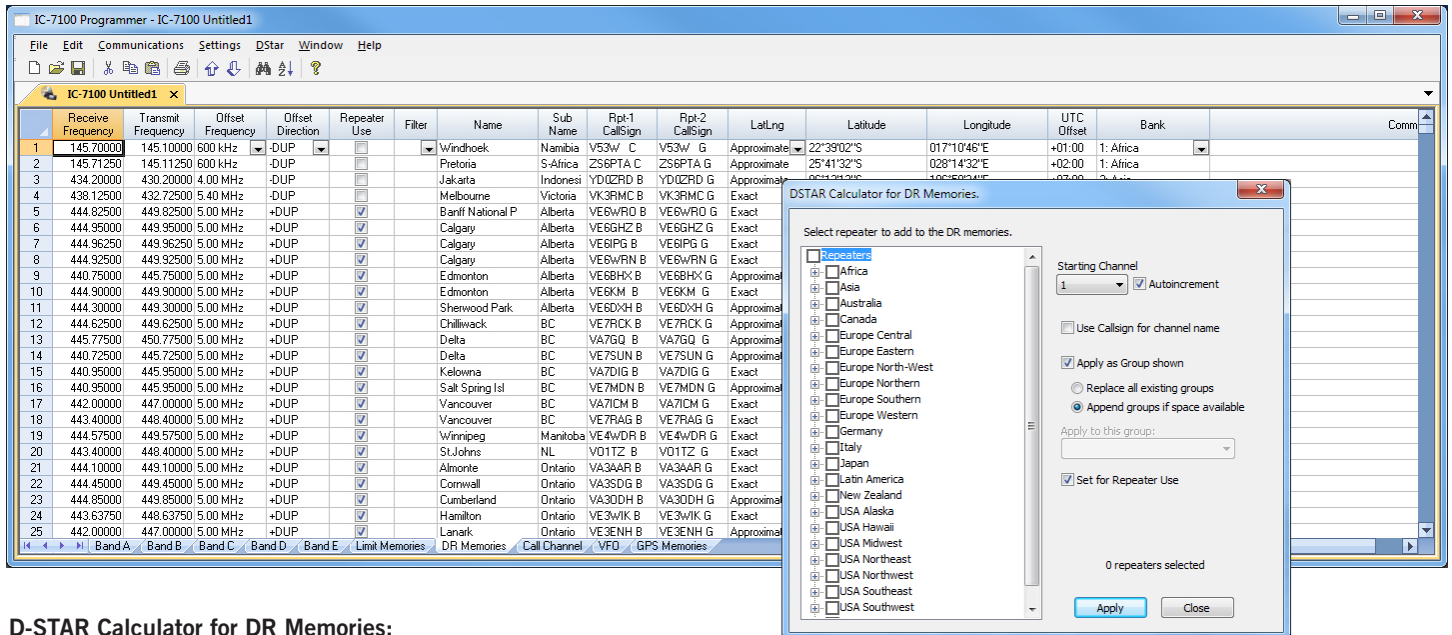
D-STAR Calculator for DR Memories:

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.
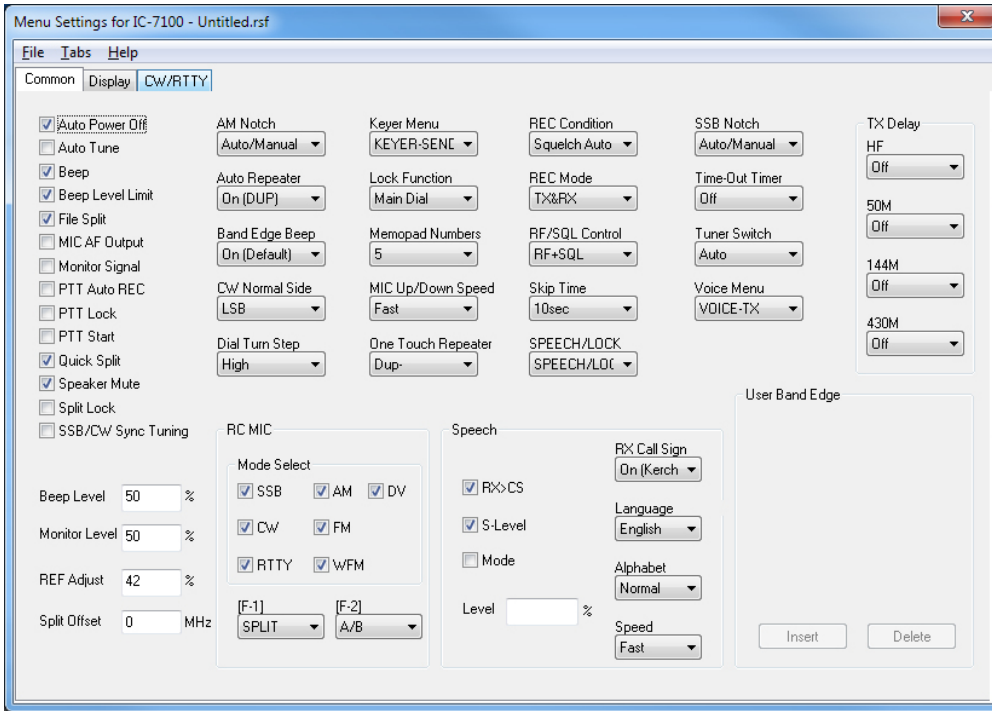
Common

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.
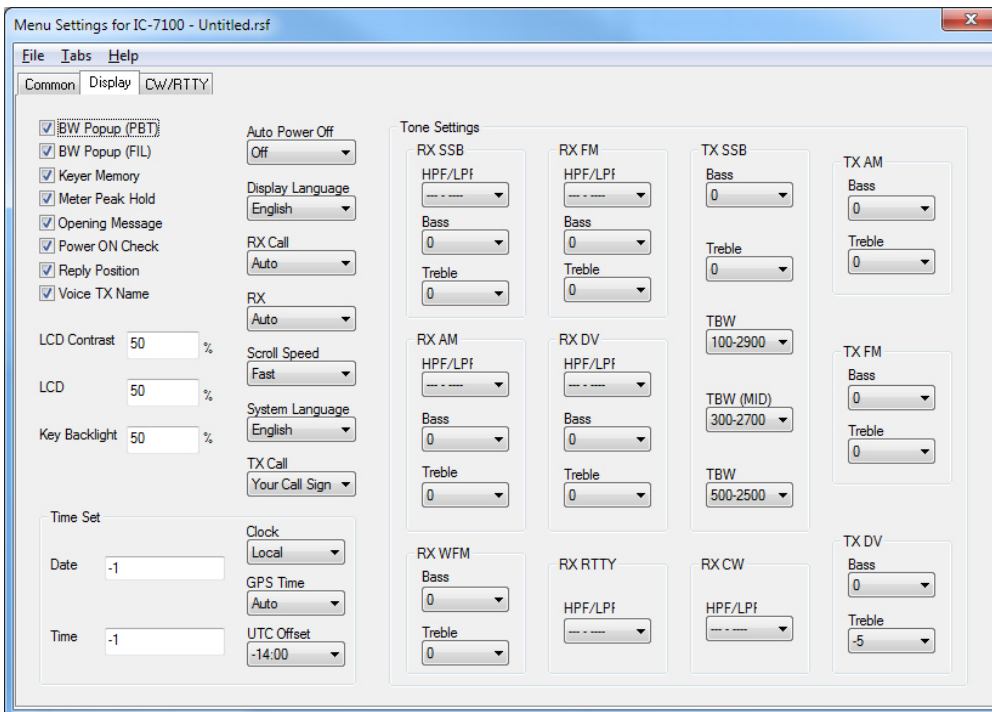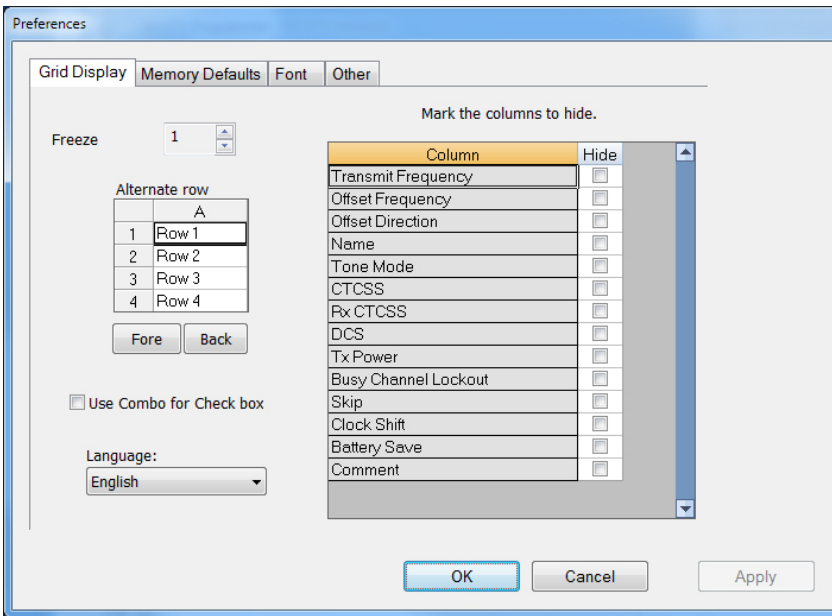

Display

Customize options for these functions of the radio.
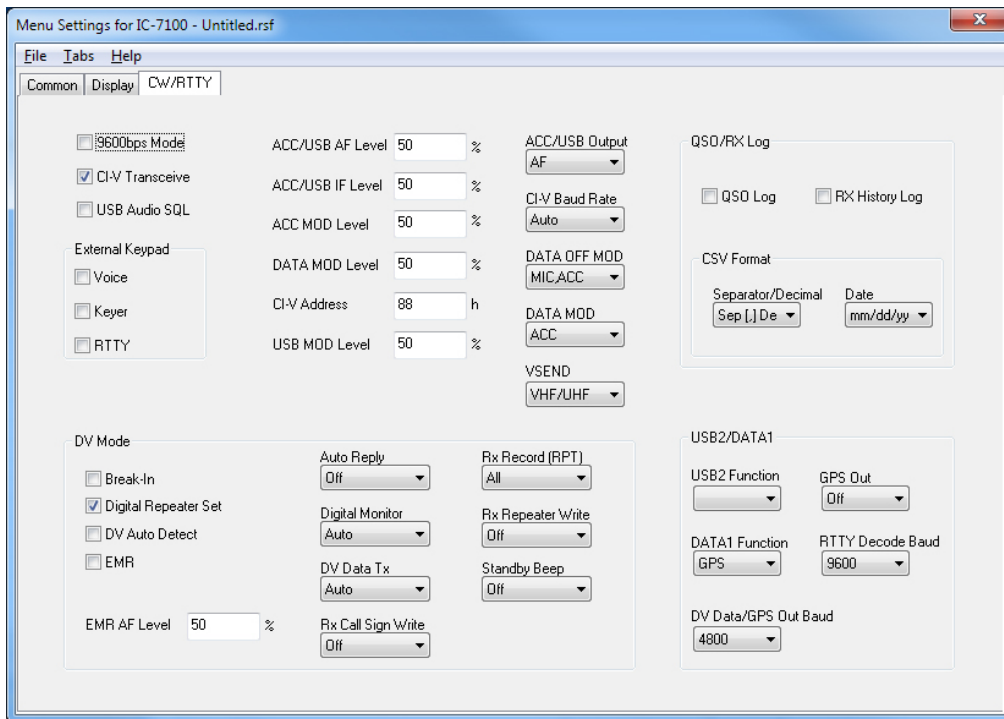
CW/RTTY
Use these settings to adjust the CW and RTTY menu items of the radio.

Use File/Save to record your configuration. You can make changes any time... even set up an entirely new configuration. But, you don't have to. Once saved these settings are sent to the radio with every frequency file you use.

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.
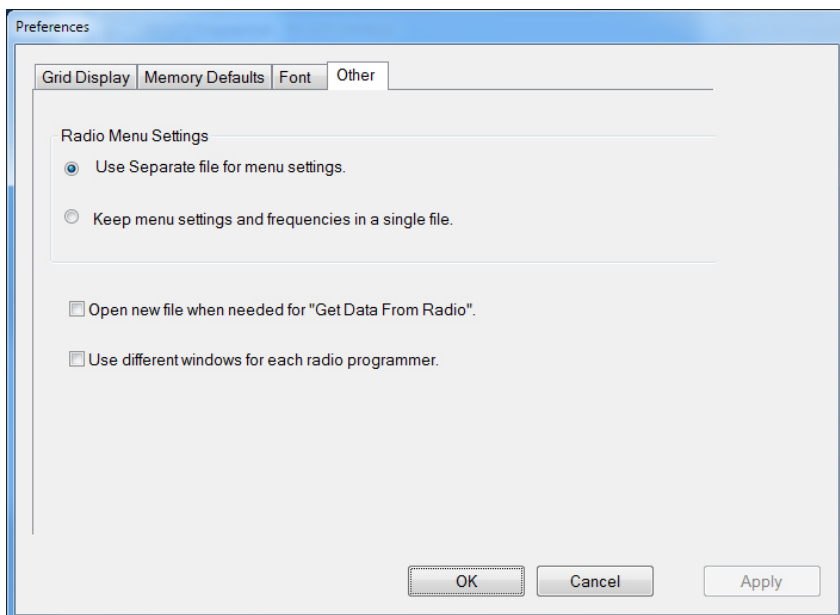- Use Combo for Check boxes – changes the grid to eliminate check box selections that are disabled on some systems.
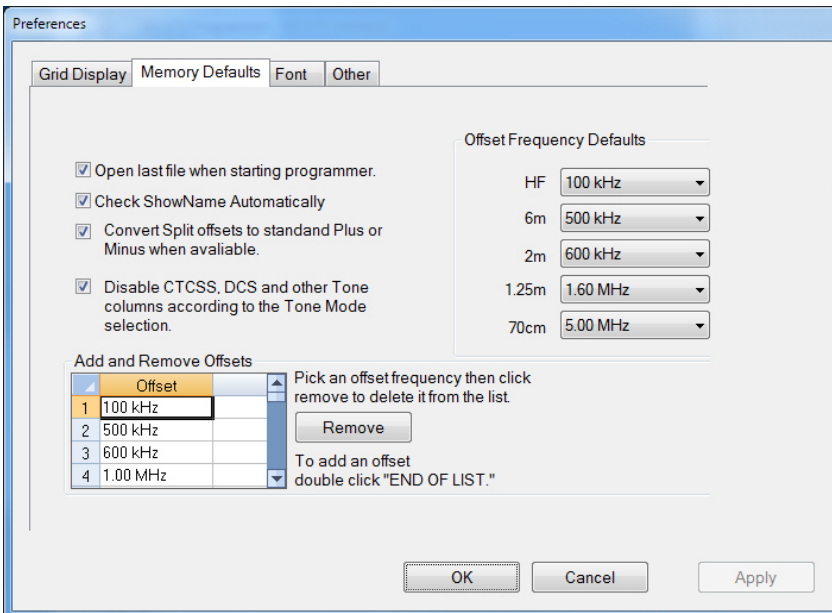
Memory Defaults

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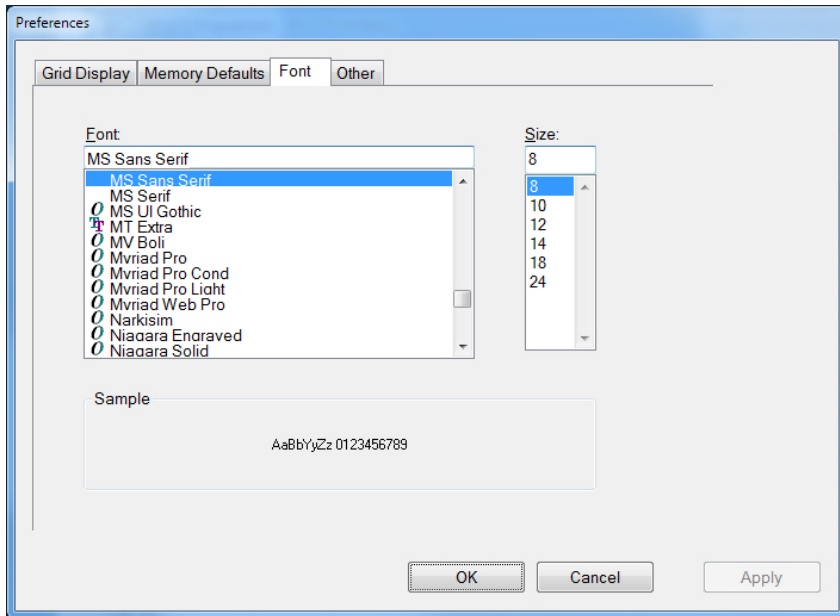
Font

- 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.
  - Together as one 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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Click here to learn more about using Preferences to customize your radio programming experience.