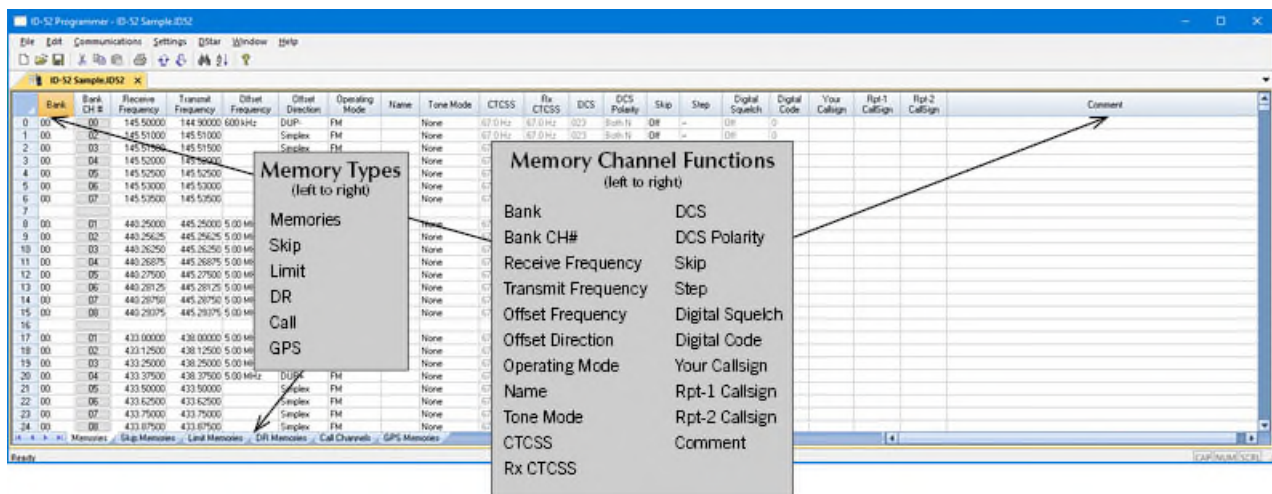rt SYSTEMS

RADIO PROGRAMMING MADE EASY

(/)

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ID-52 RADIO PROGRAMMING SOFTWARE

The WCS-D52 Radio Programming Software is designed to make it easier to program your radio. Details of memory channels and other set menu options of your radio are in the program to access and study at your pace. No more "function key frustration" from trying to set options from the face of the radio.

Memory Channels Include:

- 1,000 Memory Channels
- 100 Skip Memories
- 24 Limit Memories (12 pair)
- 2,500 DR Memories
- 2,500 Call Channels
- 300 GPS Memories

Other Menu Item Categories Include:

- Common 1

The programming process begins by first installing the program then installing (and allowing) the drivers for the cable. Be sure to complete both of these steps.

Next, make all the connections between the radio and the computer and complete Communications | Get data from radio. This "syncs" the radio and computer. Even if the radio is not yet set up with memory channels, there are details that the programmer needs to get from the

- Common 2
- DV and Sounds
- GPS
- DTMF and Broadcast

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

radio.

Start setting up details for your radio in a "factory fresh" file (File|New) or in the file that was created when you did Communications | Get data from the radio. Begin by entering a receive frequency (that will be the frequency published for the repeater). When you press Enter or Tab to leave the Receive frequency field, the program will complete details for the channel. Then customize Name and Tone to match the details you have for that local repeaters.

Use the links to external data sources (File | External data) built right into the programmer to access repeater details for your area or for a location you plan to visit. Then with just a few button clicks, you have a file with hundreds of entries and all you typed was your location (i.e., zip code or city).

Save your file as you work. This is a computer, after all, and you would hate to lose your work should the system fail. Actually, create and save as many files as you want or need. You could have one file for home, a different one for the vacation house, another for the trip to your son's house, another for the yearly 3K run and picnic where you help direct traffic and want the radio to be programmed with only the frequencies for that event. Remember, radio programming is an overwrite process. Everything in the radio is replaced by everything in the file.
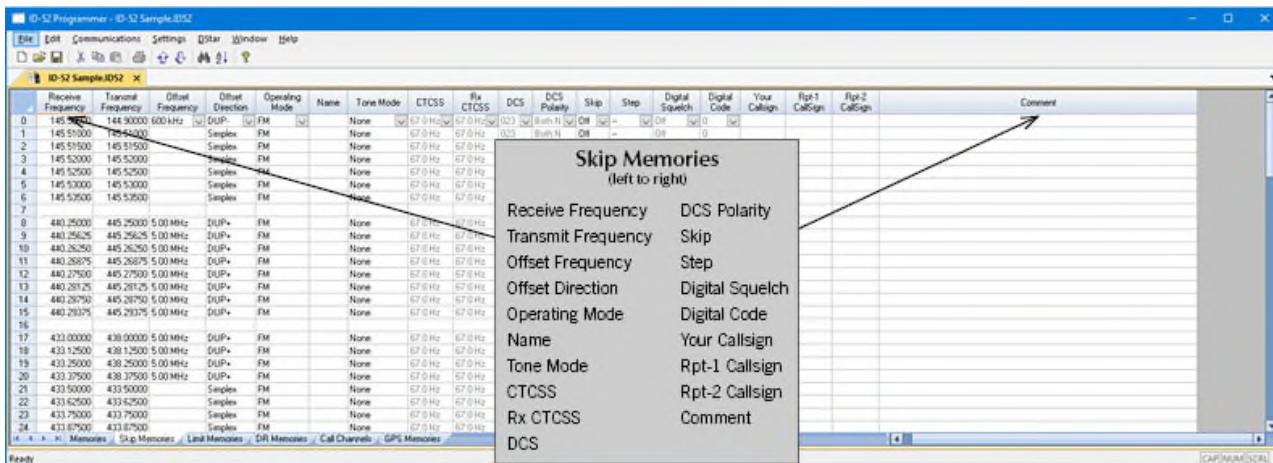
Skip Memories

Skip frequencies are skipped during VFO scanning, Programmed scan, File Programmed scan and Auto Write Memory scan. While these channels could be used as additional memories, remember, they are skipped during scanning.
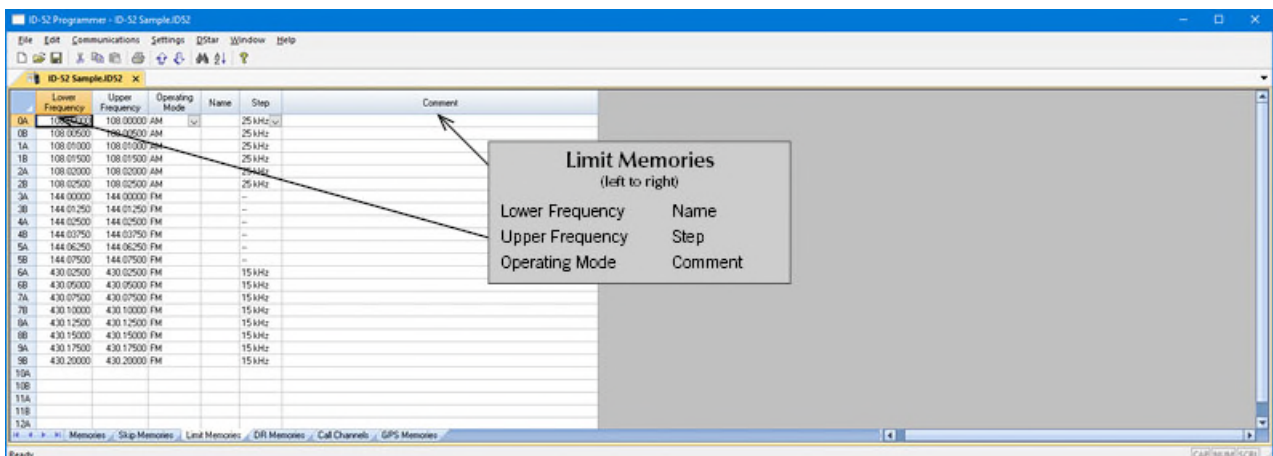

Limit Memories

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.
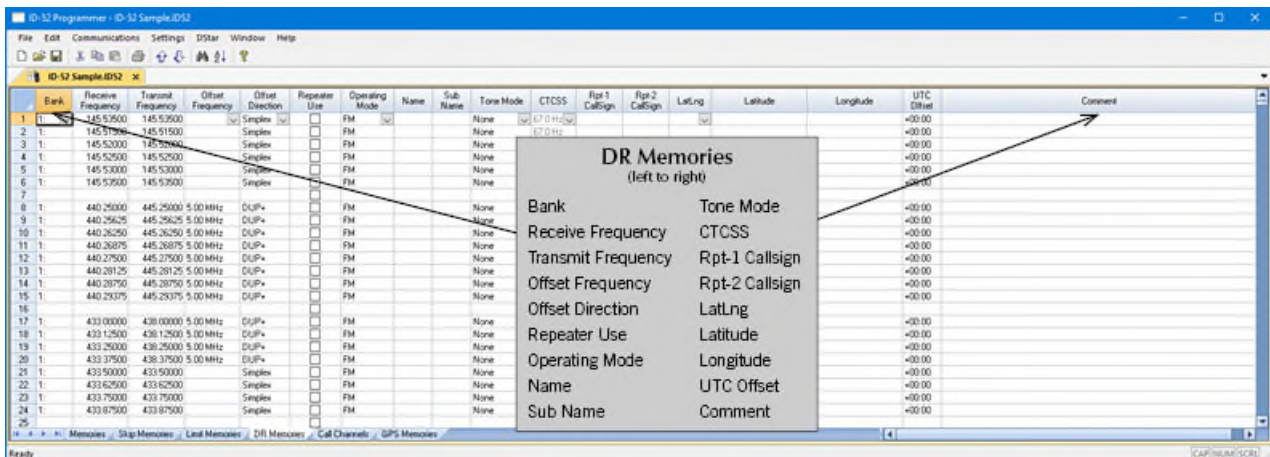
DR Memories

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.
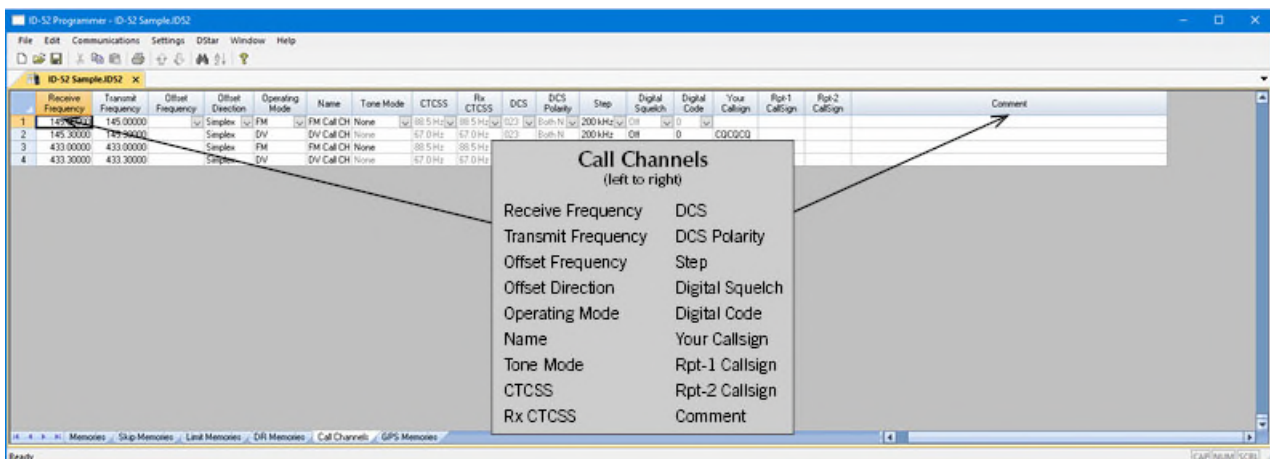
Call Channels

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.

D-Star Calculator Advanced

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 File:

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.
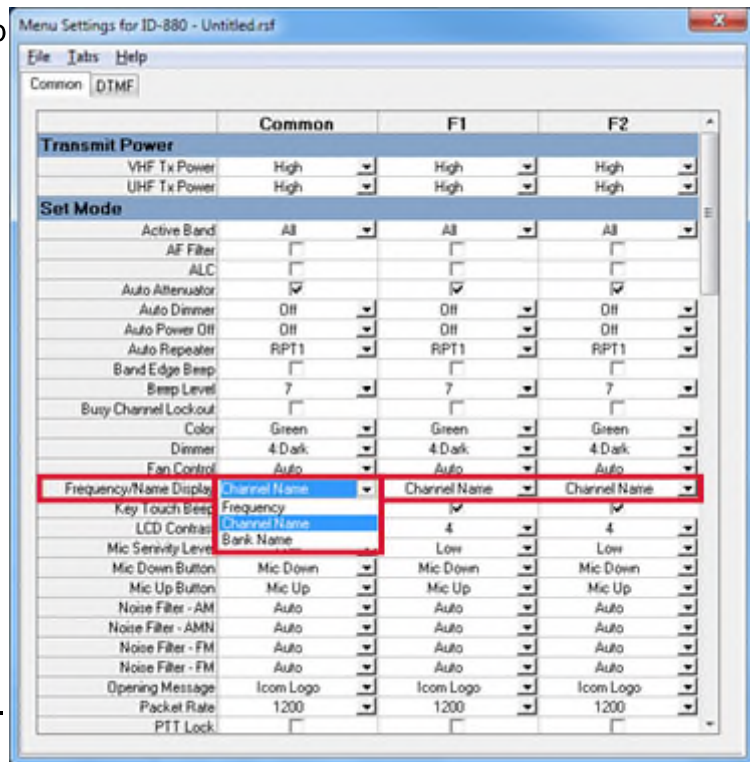
Note: Be sure to turn ON the name display for the radio to use what you enter in the name field.

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!
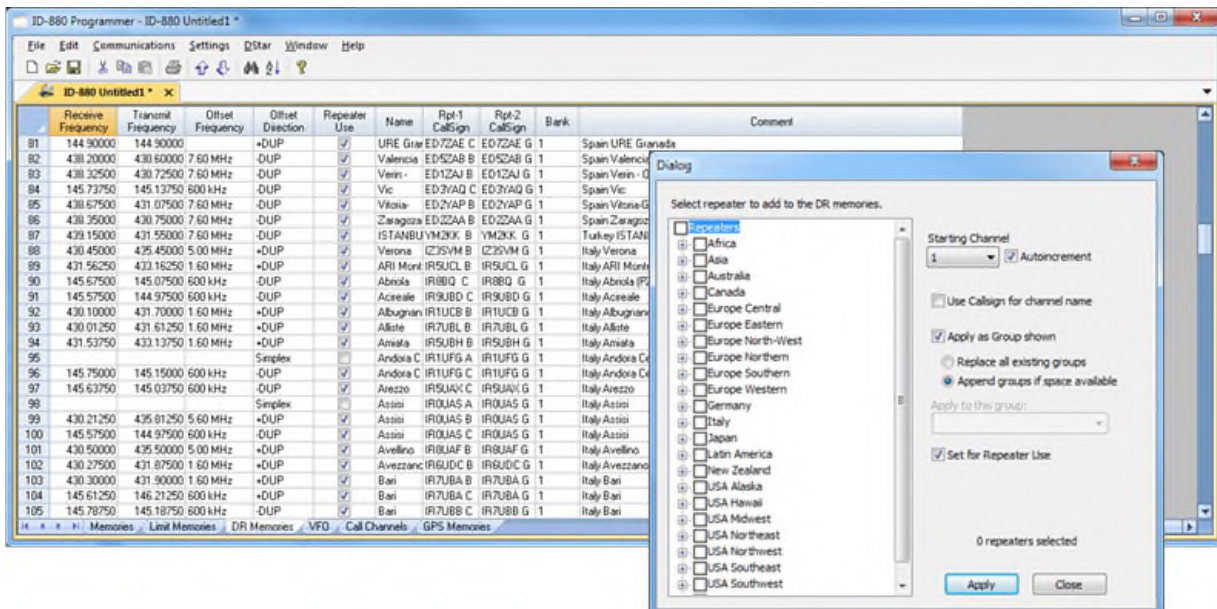
D-STAR Calculator for DR Memories:

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.

Radio Menu Settings

Use these screens to customize many set menu features of the radio. Check boxes toggle features on or off, use 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.
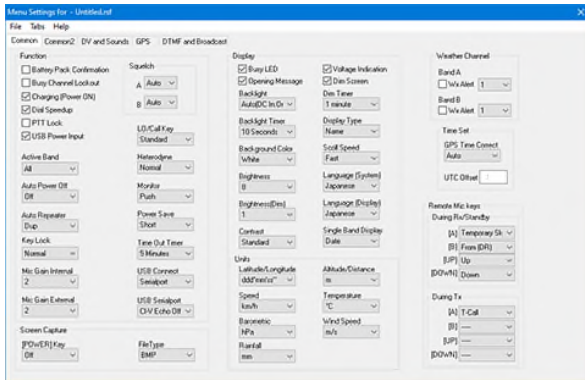
Common 1 and Common 2

Use this screen 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.
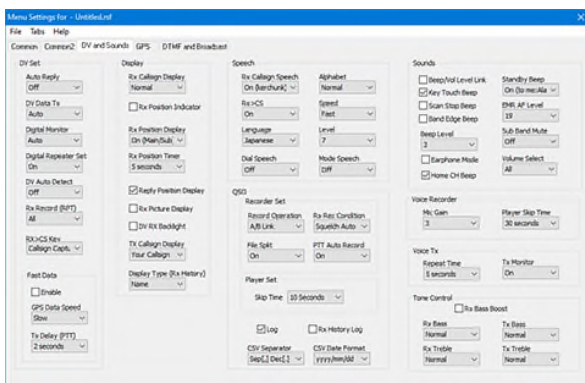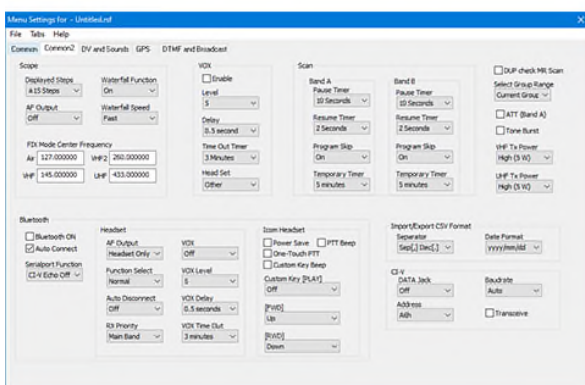
DV and Sounds

Set up options for Digital Speech, Voice and Sound operations.
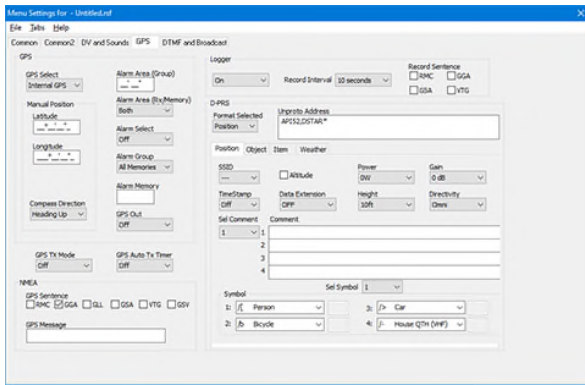
GPS

GPS memories are saved weigh point locations used in GPS and APRS activities. Set option for GPS functionality. Remember, this screen has more options than those shown. Be sure to click on each of the Position, Object, Item and Weather tabs to set options for each of those D-PRS operations.
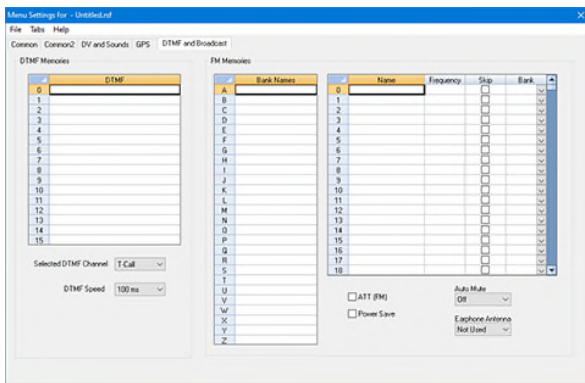
DTMF and Broadcast

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

External Data
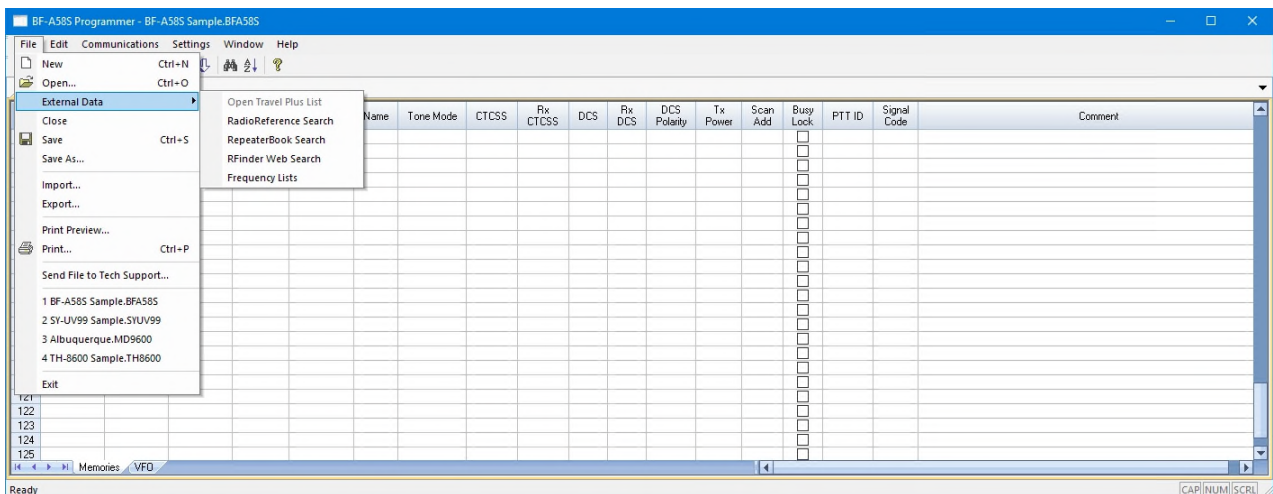
RT Systems Programmers interface with four sources of data to make it easy for you to find repeater information. Some of these sources even include information for repeaters outside the US. Your existing subscription to a service (where required) works in the programmer.
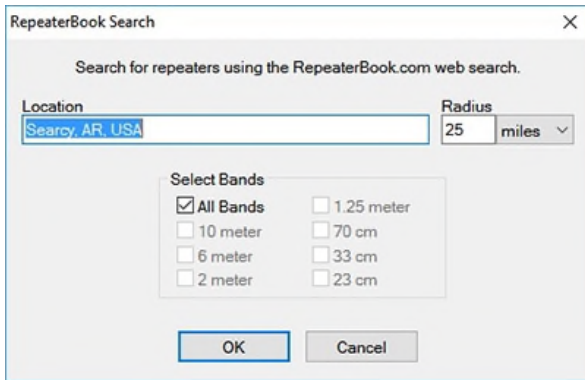
- **Open Travel Plus List** – This is a great source for those of you who still have the TravelPlus CDs (now discontinued) from ARRL since it does not require an Internet connection. Use it with TravelPlus from 2009 to 2015. For more details about using TravelPlus <u>see our video.</u> <u>(https://www.youtube.com/watch?v=92WSt_x1xLg)</u>

- **RadioReference Search** – This database has commercial and amateur repeaters. A subscription through RadioReference is required to access this data.

- **RepeaterBook Search** – This database contains domestic and international repeater listings. It is free to use from within the programmer.

- **RFinder Web Search** – This database has both domestic and international repeater listings. RFinder offers the best search abilities with single location or routing options. A subscription through RFinder is required to access this data.


Radio Reference Search

An internet connection and subscription to the service are required for this search.

Enter the user e-mail and Password that you established when you purchased your subscription from RadioReference Then select the **State**– Select the state from the list and **County**– Select the state from the list to get repeaters for that area. Click OK.

Repeater Book Search

An Internet connection is required for this search.

Location – Enter City, State, Country (if not in the US).

Radius – Enter how many miles (up to 90 maximum) around this location.

Select Bands – This is not terribly important since it can be done on the next screen; however, you might want to limit the selection to reduce the number of repeaters in the results. Uncheck All Bands to make the individual bands active. Click OK.

RFinder Search

An internet connection and subscription to the service are required for this search.

Enter the User E-mail and Password that you established when you purchased your subscription from RFinder.

Location - Search around a specific city. Enter City, State and Country (if not US). Enter Radius up to 90 miles.

Route - Search along the route of a trip you're planning. Enter the Start and End cities, a width (remember to limit this since you can't hear repeaters that are too far away), and waypoints (other cities along the way). The search will travel along major interstate highways between the two cities. If the result is not along the route you plan to take, enter other waypoints on your route.

Map Route – Use this option to see the route the search will take. Close the map to return to the search screen.

Click OK.

The information is returned on a screen that is not yet ready for radio programming, this screen lets you examine the data to see if the results are about what you expected. You might find that you spelled the city name wrong which resulted in nothing being returned; or that you want to pull repeaters from further away; or you want to get repeaters for different bands.

	Output Frequency	Input Frequency	Offset Direction	Callsign (Name)	CTCSS	DCS	City	State	Region	Repeater Notes (Comment)	Sponsor
1	145.11000		Minus	WC8OH	67.0		Dayton	OHIO	MONTGOMERY	o 67.0 (CA)ek	WCOAR
2	146.64000		Minus	K8MCA			Dayton	OHIO	MONTGOMERY	oaeWX	MoCoAR
3	146.82000		Minus	WA8PLZ	77.0		Dayton	OHIO	MONTGOMERY	o 77.0e	MWA
4	146.94000		Minus	W8BI	123.0		Dayton	OHIO	MONTGOMERY	o 123.0a	DARA
5	146.98500		Minus	WF8M	123.0		Dayton	OHIO	MONTGOMERY	o 123.0l	MVRFG
6	147.13500		Plus	WB8SMC			Dayton	OHIO	MONTGOMERY	o(CA)z	FaroutAR
7	147.36000		Plus	WA8PLZ	77.0		Dayton	OHIO	MONTGOMERY	o 77.0e	MWA
8	145.33000		Minus	W8DYY			Miamisburg	OHIO	MONTGOMERY	o(CA)e	MoundA
9	146.77500		Minus	W6CDR	77.0		Miamisburg	OHIO	MONTGOMERY	o 77.0	W6CDR
10	147.01500		Plus	W8NCI	77.0		Miamisburg	OHIO	MONTGOMERY	o 77.0	W8NCI
11	147.07500		Plus	W8KMC	67.0		Miamisburg	OHIO	MONTGOMERY	o 67.0	KMCN
12	147.19500		Plus	W8DYY			Miamisburg	OHIO	MONTGOMERY	o(CA)eWX	MoundA
13	146.91000		Minus	W8GCA			Bellbrook	OHIO	GREENE	oae	GCARES
14	147.04500		Plus	W8DGN			Bellbrook	OHIO	GREENE	oe	BARC
15	145.43000		Minus	WB8ART	88.5		Clearcreek Twp	OHIO	WARREN	o 88.5ez	CtrvlARS
16	145.41000		Minus	K8FBN	118.8		Fairborn	OHIO	GREENE	o 118.8e	UpVlyAR
17	145.29000		Minus	WB8ZVL	118.8		Franklin	OHIO	WARREN	o 118.8 (CA)r	WB8ZVL
18	145.49000		Minus	W8CYE	77.0		Springboro	OHIO	WARREN	o 77.0el	DRAKE
19	147.24000		Plus	KD8KJD			Tipp Cty	OHIO	MIAMI	o	84/24FM
20	147.16500		Plus	N8JFA			Xenia	OHIO	GREENE	o(CA)e	XeniaAR
21	146.61000		Minus	W8BLV	77.0		Middletown	OHIO	BUTLER	o 77.0 TTel	Dial ARC
22	147.31500		Plus	W8JEU	77.0		Middletown	OHIO	BUTLER	o 77.0 TTel	Dial ARC
23	146.86500		Minus	WC8EMA	118.8		Lebanon	OHIO	WARREN	o 118.8a(CA)elr	WarrenE

Make selections for Name and Comment

Select what the radio uses as the Name display. You can select the Callsign (default), City, State, Region, Repeater Notes or Sponsor. Notice that each of these categories is a column of information in the grid. You will see those names at the top of the screen. You are selecting the information in that column for the Programmer to set up for the Name field. NOTE: The radio will truncate (cut off) the information in the field at the maximum number of characters it can use for the Alpha/numeric display. You might end up with only the first four or six characters of the information in the column. Consider this when selecting the information.

Select what the Programmer will use in the Comment field. This information does not go to the radio but can be very helpful for identifying a channel as you work with it on the spreadsheet. You can print this information along with other details for the channels to have it on hand as you travel. Again, select Callsign, City, State, Region, Repeater Notes or Sponsor.
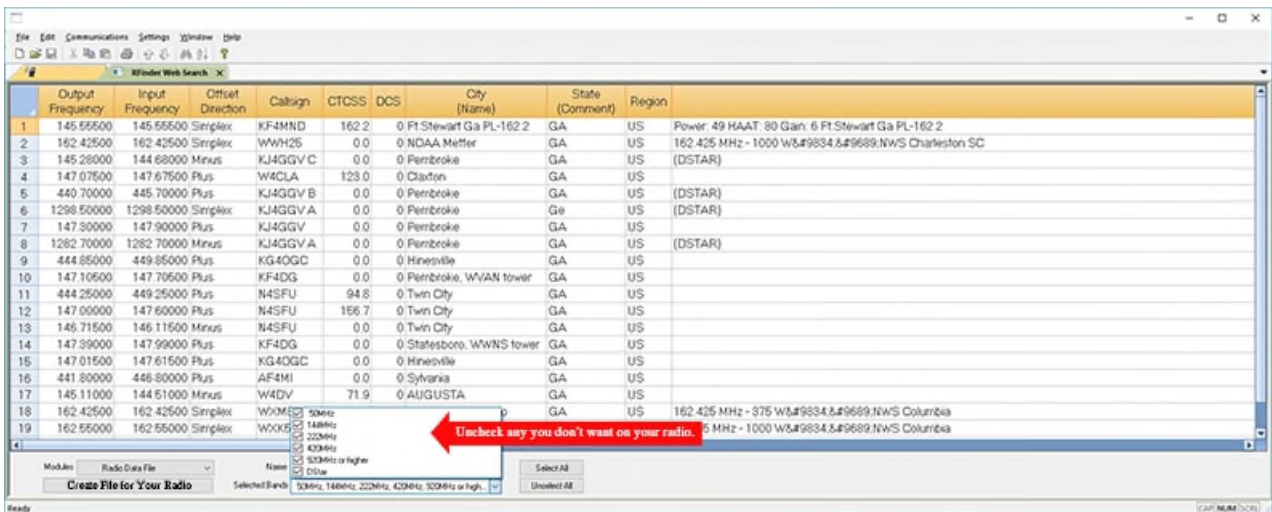
Sorting Return Data

The screen that opens after you click OK for one of the external data searches gives you the ability to remove repeater information that your radio cannot use. You might have a radio that does not do DMR, DStar or Yaesu Fusion. Simply uncheck these in the list. The channels are removed from the list automatically.

Once you finish eliminating frequencies or modes your radio cannot use, select your radio from **Modules** and then click **Create file for (your radio).**
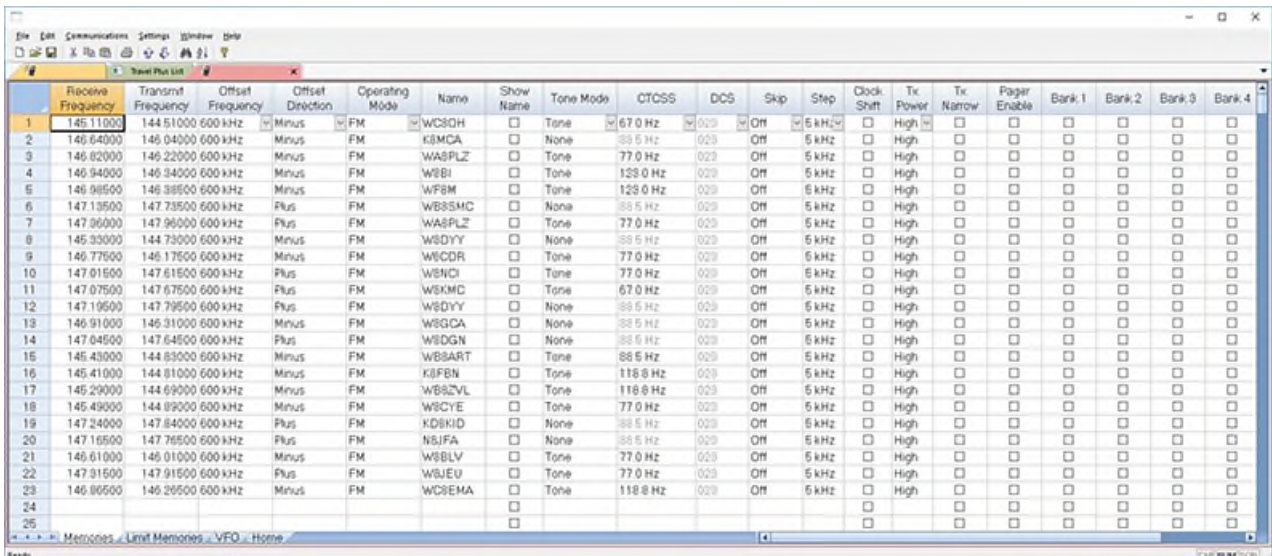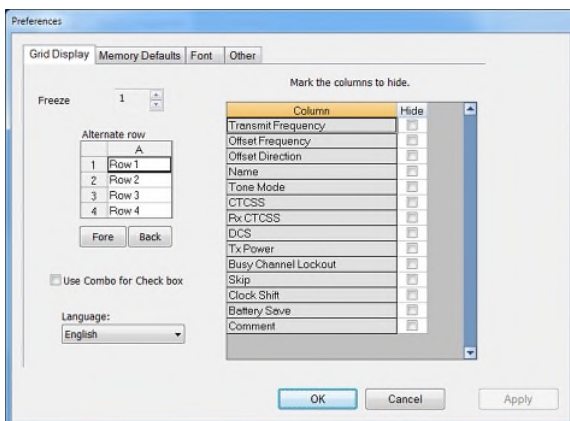
Resulting File

After clicking Create File for (Your radio) the programmer creates the file that you use to program your radio. Notice that all the Tones are set up with the tone frequencies. All done automatically.

What a list and all you did was enter a location!

Preferences Customize the Programmer


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 printout: hidden columns do not print.
- Use Combo for Check boxes – changes the grid to eliminate check box selections that are disabled on some systems.
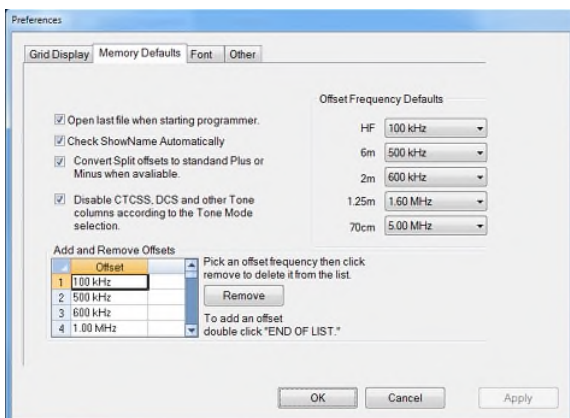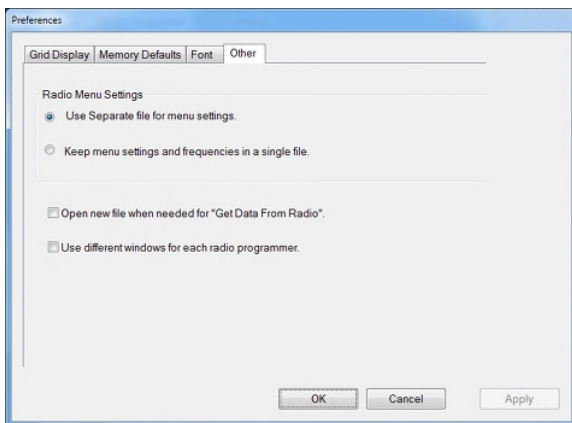

Memory Defaults

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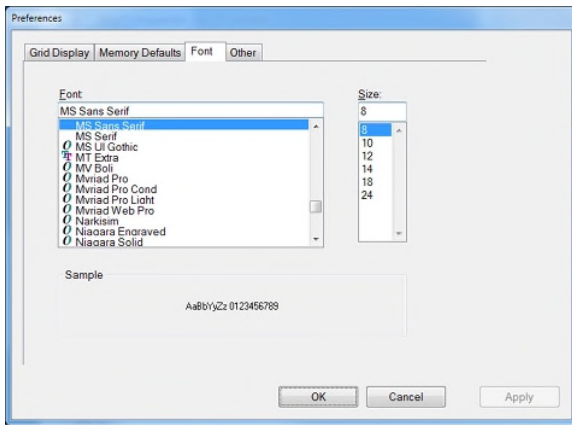
Font

- 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 a completely separate window rather than in a separate tab of the same window.

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