

SDRMemory6k

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Users Guide

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INTRODUCTION

SDRMemory6K is a memory management utility for use with FLEX-6000 series radios running **SmartSDR™**. It provides enhanced memory management features. It also allows scanning of stored memories.

SDRMemory6k communicates directly with the radio over the local network using the **FlexLib™** API. It does not use CAT and therefore no serial ports are required.

Memories are assigned to groups and are sorted by frequency for easier access.

SYSTEM REQUIREMENTS

SDRMemory6k requires Windows Vista or later. It is a 32-bit application, and therefore will run on a computer with either a 32-bit or a 64-bit processor.

Adobe Acrobat Reader® or similar program capable of displaying .pdf files is required to view the program documentation.

INSTALLATION

Run the installation package file, **SDRMemory6KSetup.exe**. This will install **SDRMemory6K.exe** and all required supporting files on your computer. The installer will suggest a default location for the program file. You may change the location or leave it at the default, it does not matter. The files containing setup data, your personalized settings, and your memories will be placed in your **%APPDATA%** folder.

NOTE: The **SmartSDR** client must be running before you start **SDRMemory6K**. On startup, **SDRMemory6K.exe** checks to see if the client is running. If it is not, a warning message is displayed and you are given the choice of closing the program or trying again after you have started the **SmartSDR** client.

NOTE: Make certain that the *SmartSDR* client is running before you start *SDRMemory6K*. If the client is not running, then a message box will be displayed instructing you to start the *SmartSDR* client before proceeding.

When the program starts, the window shown in Figure 1 will be displayed. This window will contain a list of available FLEX-6000 series radios for you to choose between. Connect to the desired radio by clicking on it in the list and then click on the "Connect" button. If you click on the "Cancel" button, the program will close.

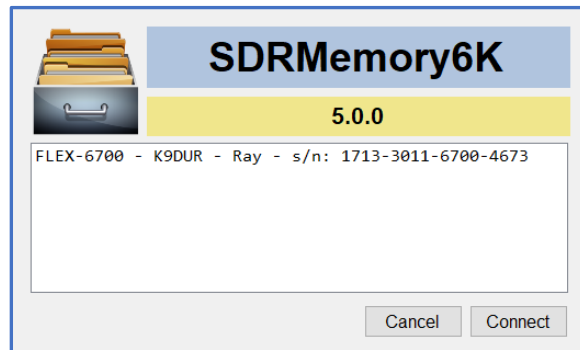


Figure 1 -- Radio Connection Window

If you have set *SDRMemory6k* to automatically connect to the radio, then the Radio Connection Window will automatically close after the program has found a radio and connected to it. If no radio is discovered after 15 seconds, then the program will close with an error message.

After you have connected to the radio, the main window, shown in Figure 2, will be displayed.

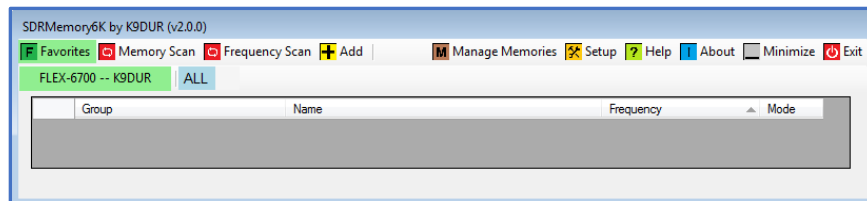


Figure 2 -- Main Window (No Memories)

Next you need to enter some memories. Please see the section titled "Adding New Memories" for instructions on how to add memories.

Figure 3 shows a sample screen after a few memories have been entered.

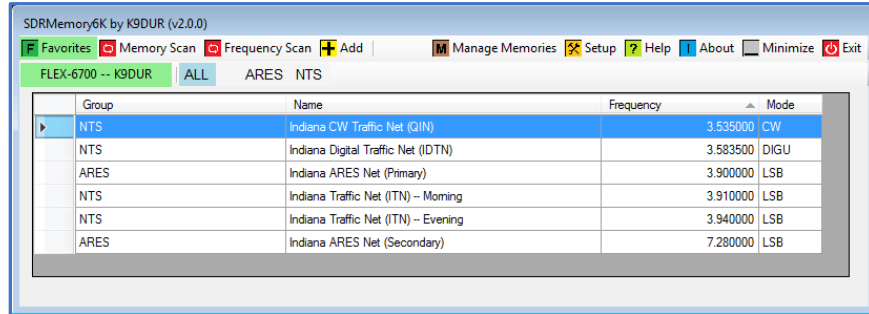


Figure 3 – Main Window (With Memories)

To select a memory, simply left-click anywhere on the row that contains the desired memory, or pressing the "Enter" key will select the memory that is currently highlighted.

Initially, the memories are displayed in increasing frequency order. You may click on the heading of any column to sort the list by that column.

Each memory can be assigned to a group. Use the buttons on the second row of the toolbar to display only the memories assigned to a single group. **NOTE:** Only the first ten characters of the group name are displayed on the toolbar buttons. However, if you hover over a button with the mouse, the full group name will pop up.

ADDING NEW MEMORIES

To add a new memory click on the "Add" button on the toolbar.

This will display the form shown in **Figure 4**.

SDRMemory6k -- Add New Memory

Group

Name

Freq (MHz) 3.912000

Power (Watts) 50 Panadapter Width (kHz) (005) 39.36 kHz Scan Lockout

Mode

LSB USB CW

DIGL DIGU RTTY

AM SAM

FM NFM DFM

Receive Filter

1.8K 2.1K 2.4K 2.7K

2.9K 3.3K 4.0K 6.0K

Custom

Low Limit (Hz) -1900

High Limit (Hz) -100

Save Changes Cancel

Figure 4 -- Add New Memory Form

When the form first opens the Group and the Name will be blank. The remainder of the data will match the current settings for the active slice in **SmartSDR**.

You may either select an existing group from the list, or type in a new group name. Then type in a name for the memory, for example: "Maritime Mobile Service Net", or any other wording that will allow you to recognize the memory.

Finally, change the other settings as needed.

Clicking on "Save Changes" will save the new memory and close the form. Clicking on "Cancel" will close the form without saving the new memory.

EDITING/DELETING EXISTING MEMORIES

To edit or delete an existing memory, right-click anywhere on the row containing the memory you wish to edit or delete. The form shown in **Figure 5** will be displayed.

SDRMemory6k -- Edit Memory

Group: FT8

Name: 80m Freq (MHz): 3.573000

Power (Watts): 100 Panadapter Width (kHz): (004) 19.68 kHz Scan Lockout:

Mode: LSB, USB, CW, DIGL, DIGU, RTTY, AM, SAM, FM, NFM, DFM

Digital Settings: DIGL Offset: Hz, DIGU Offset: Hz

Receive Filter: 100, 300, 600, 1.0K, 1.5K, 2.0K, 3.0K, 6.0K, Custom

Low Limit (Hz): 0 High Limit (Hz): 3000

Buttons: Save Changes, Delete, Cancel

Figure 5 -- Edit/Delete Memory Form

Make any desired changes & click on "Save Changes" to save them and close the form.

Click on "Delete" to delete the memory being edited & close the form.

Click on "Cancel" to close the form without saving any changes.

FAVORITE MEMORY CHANNELS

SDRMemory6k allows you select up to 100 memories as "favorites" which can be accessed by clicking on a single button. Clicking on the "Favorites" button on the task bar toggles this function on or off. When on, the form shown in **Figure 6** is displayed.



Figure 6 -- Favorites Window

To assign a memory channel to a button, right-click on the button. This will display the window shown in **Figure 7**.

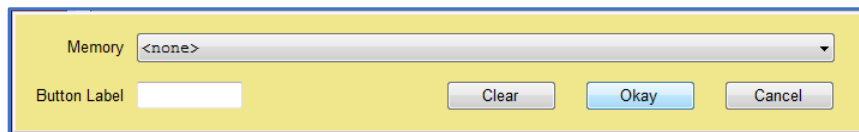


Figure 7 -- Setup Favorites Window

Select the desired memory from the drop-down list and enter a label for the button. The label can be a maximum of 8 characters long.

Click on "Okay" to save your changes & close the window.

Click on "Cancel" to discard your changes & close the window.

Click on "Clear" to unassign the button from any memory.

Figure 8 shows the favorites window after a few buttons have been assigned to memories.

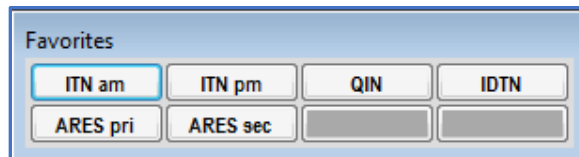
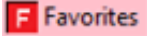
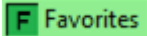
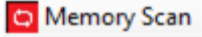
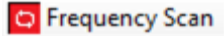

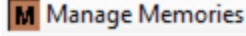
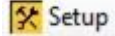
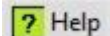
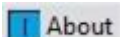
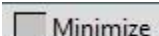
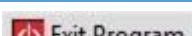


Figure 8 -- Favorites Window w/Memories

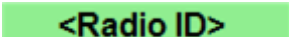
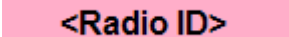


Note that the windows in Figures 6 & 8 have different numbers of buttons displayed. The number of buttons and the number of buttons per row can be configured on the "Setup" screen as described below.

TOOLBAR

The first row of the toolbar contains the following buttons & controls (left-to-right):

| | |
|---|---|
|  Favorites | Clicking on this button will turn the favorites function on or off. |
|  Favorites | |
|  Memory Scan | Clicking on this button will turn the memory scan function on. |
|  Frequency Scan | Clicking on this button will turn the frequency scan function on. |
|  Add | This button allows you to add a new memory. |
|  Manage Memories | Clicking on this button will open the memory management dialog. |
|  Setup | Clicking on this button will open the Setup dialog. |
|  Help | Clicking on this button will display this document. |
|  About | Clicking on this button will display basic information about the program. |
|  Minimize | Clicking on this button will minimize the main window. |
|  Exit Program | Clicking on this button will close the program. |

The second row of the toolbar contains the following buttons & controls (left-to-right):

| | |
|--|---|
|  <Radio ID> | This box displays the currently connected radio along with the connection status. |
|  <Radio ID> | If the connection to the radio is lost, the box will turn red. Clicking on the box will attempt to re-establish the connection to the radio. |
|  ALL | Clicking on this button will cause all memories to be displayed. |
|  Nets | As memories are added, additional buttons will be displayed, one button for each group. The button text will be the first 10 characters of the group name. Clicking on a button will cause only the memories in the selected group to be displayed. |

MANAGING MEMORIES

Clicking on the “Manage Memories” button on the toolbar will display the dialog shown in **Figure 9**. Not all of the items on the dialog will be visible when it first opens. When you select an action, the items required for that action will be displayed.

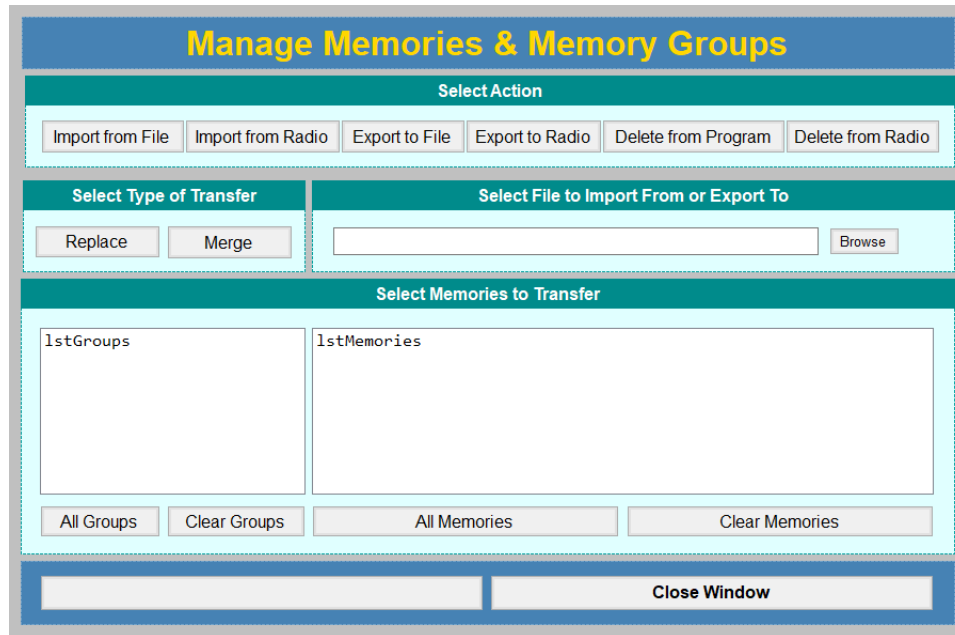


Figure 9 - Memory Management Dialog

The memory management actions that are available are described in detail below and are accessed by clicking on their corresponding button.

SELECTING MEMORIES

Each of the memory management actions available requires you to select the memories included in the action. Detailed instructions for selecting/deselecting memories are:

- To select all memories, click on the “All Memories” button.
- To deselect all memories, click on the “Clear Memories” button.
- To select a memory, click on it. This will deselect all other memories.
- To select multiple memories, hold the “Ctrl” key down while you click on each memory you wish to select.
- To select blocks of memories, select the first memory in the block, and then hold the “Shift” key down and click on the last memory in the block.
- To select all memories in a group, click on a group.
- To select multiple groups, hold the “Ctrl” key down while you click on each group you wish to select.
- To select blocks of groups, select the first group in the block, and then hold the “Shift” key down and click on the last group in the block.

IMPORT FROM FILE

Import from File allows you to import memories from a comma-delimited text file (.csv file). This is the same format file that is created when you use the Import/Export Configuration facility in **SmartSDR**. Therefore, you can save any memories you have created in **SmartSDR** to a disk file & import them into SDRMemory6k.

To import memories from a file:

- Click on the "Import from File" button.
- Click on "Browse" and select the file containing the memories to be imported. Once you have selected the file:
 - The remaining items will be displayed.
 - The group list box will contain a list of the groups contained in the file.
 - The memories list box will contain a list of the memories contained in the file.
- Select the type of transfer desired:
 - Replace Memories -- All existing memories stored in **SDRMemory6k** will be deleted before importing the new memories.
 - Merge Memories -- Memories in the file will be added to any memories already stored in **SDRMemory6k**. If a memory in the file has the same Group, Name, Frequency, & Mode as an existing memory, it will not be added.
- Select the memories that you wish to import. (See section on selecting memories above.)
- Click on the "Import Memories from File" button to complete the import.

IMPORT FROM RADIO

Import from Radio allows you to import memories directly from your radio without using an intermediate .csv file.

To import memories from the radio:

- Click on the "Import from Radio" button.
 - The remaining items will be displayed.
 - The group list box will contain a list of the groups contained in the file.
 - The memories list box will contain a list of the memories contained in the file.
- Select the type of transfer desired:
 - Replace Memories -- All existing memories stored in **SDRMemory6k** will be deleted before importing the new memories.
 - Merge Memories -- Memories in the radio will be added to any memories already in **SDRMemory6k**. If a memory in the file has the same Group, Name, Frequency, & Mode as an existing memory, it will not be added.
- Select the memories that you wish to import. (See section on selecting memories above.)
- Click on the "Import Memories from Radio" button to complete the import.

EXPORT TO FILE

Export to File allows you to export memories to a comma-delimited text file (.csv file). This is the same format file that is created when you use the Import/Export Configuration facility in **SmartSDR**. Therefore, you can export your memories from SDRMemory6k & import them into your radio.

To export memories to a file:

- Click on the "Export to File" button.
- Click on "Browse" and select the file containing the memories to be imported. If you select an existing file, you will be asked if you want to replace the existing file. Once you have selected the file:
 - The remaining items will be displayed.
 - The group list box will show a list of the groups stored in **SDRMemory6k**.
 - The memories list box will show a list of the memories stored in **SDRMemory6k**.
- Select the memories that you wish to export. (See section on selecting memories above.)
- Click on the "Export Memories to File" button to complete the export.

EXPORT TO RADIO

Export to Radio allows you to export memories stored in **SDRMemory6k** directly to your radio.

To export memories to the radio:

- Click on the "Export to Radio" button.
 - The remaining items will be displayed.
 - The group list box will contain a list of the groups stored in **SDRMemory6k**.
 - The memories list box will contain a list of the memories stored in **SDRMemory6k**.
- Select the memories that you wish to export. (See section on selecting memories above.)
- Click on the "Export Memories to Radio" button to complete the export.

DELETE FROM PROGRAM

Delete from Program allows you to delete memories stored in **SDRMemory6k**.

To delete memories stored in **SDRMemory6k**:

- Click on the "Delete from Program" button.
 - The remaining items will be displayed.
 - The group list box will contain a list of the groups stored in **SDRMemory6k**.
 - The memories list box will contain a list of the memories stored in **SDRMemory6k**.
- Select the memories that you wish to delete. (See section on selecting memories above.)
- Click on the "Delete Memories from SDRMemory6k" button to delete the groups.

DELETE FROM RADIO

Delete from Radio allows you to delete groups of memories from your radio.

To delete memories from the radio:

- Click on the "Delete from Radio" button.
 - The remaining items will be displayed.
 - The group list box will contain a list of the groups stored in your radio.
 - The memories list box will contain a list of the memories stored in your radio.
- Select the memories that you wish to delete. (See section on selecting memories above.)
- Click on the "Delete Memories from Radio" button to delete the groups. A message box will be displayed asking you to confirm that you really want to delete memories from your radio. Click on "Yes" to complete the delete action. Click on "No" to cancel the delete.

CHANGING PROGRAM SETTINGS

To Clicking on the "Setup" button on the toolbar will display the form shown in **Figure 10**.

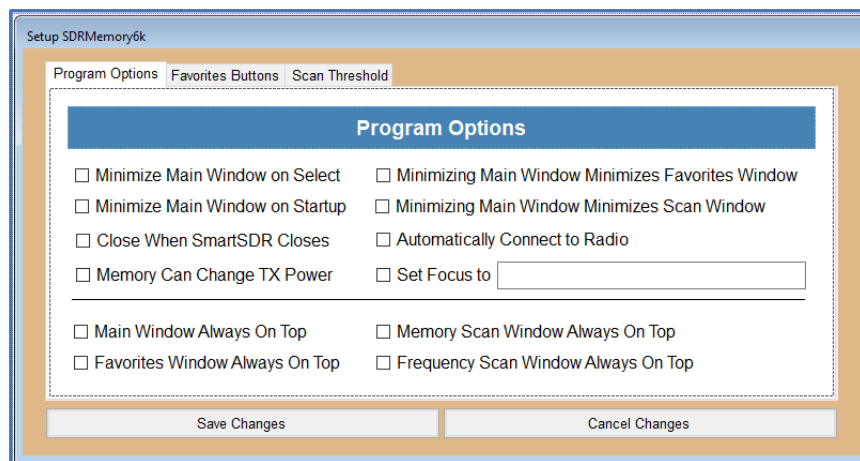


Figure 10 – Setup Form (Program Options Tab)

PROGRAM OPTIONS

These check boxes allow you to set the following program options:

- **Minimize Main Window on Select** -- If this box is checked, the main window will minimize itself when you select a memory.
- **Minimize Main Window on Startup** -- If this box is checked, the main window will be minimized when the program starts. This option allows you to start the program with only the favorites window showing.
- **Minimizing Main Window Minimizes Favorites Window** -- If this box is checked, the favorites window will be minimized if you minimize the main window.
- **Minimizing Main Window Minimizes Scan Window** -- If this box is checked, the scan window will be minimized if you minimize the main window.

- **Close When SmartSDR Closes** -- If this box is checked, then **SDRMemory6K** will close automatically when you close the **SmartSDR** client.
- **Automatically Connect to Radio** -- If this box is checked, then **SDRMemory6K** will automatically connect to the first radio that it finds on startup.
- **Set Focus to** -- If this box is checked, then **SDRMemory6K** will automatically change the focus to the program specified in the text box whenever a memory is selected.
- **Memory Can Change TX Power** – If this box is checked, then selecting a memory will change the radio transmitter power to the value set in the memory.
- **Main Window Always on Top** – If this box is checked, the main program will always be displayed on top of any other open windows.
- **Favorites Window Always on Top** – If this box is checked, the favorites window will always be displayed on top of any other open windows.
- **Memory Scan Window Always on Top** – If this box is checked, the memory scan window will always be displayed on top of any other open windows.
- **Frequency Scan Window Always on Top** – If this box is checked, the frequency scan window will always be displayed on top of any other open windows.

FAVORITES BUTTONS SETTINGS

Selecting the "Favorites Buttons" tab will display the form shown in Figure 11 and allow you to select the arrangement of the buttons in the Favorites window.

The screenshot shows a window titled "Setup SDRMemory6k" with three tabs: "Program Options", "Favorites Buttons", and "Scan Threshold". The "Favorites Buttons" tab is active, displaying a section titled "Favorites Buttons Arrangement". Within this section, there are two spinners: "Number of Buttons" with a value of 6, and "Buttons per Row" with a value of 2. At the bottom of the dialog, there are two buttons: "Save Changes" and "Cancel Changes".

Figure 11 – Setup Form (Favorites Buttons Tab)

The upper up/down scroll box sets the total number of favorites buttons to be displayed. The number of buttons can be set to any value between 1 and 100.

The lower up/down scroll box sets the maximum number of buttons in each row. This value can also be set to any value between 1 and 100.

It is possible to set these two values to a combination where the favorites window would be too wide or too tall to fit on your screen. When such a combination is selected, a warning message is displayed as shown in **Figure 12**.

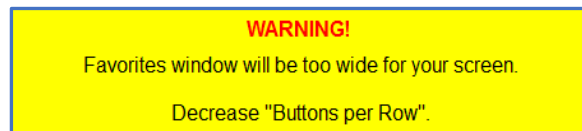
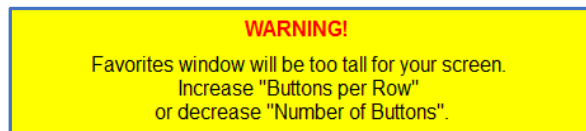


Figure 12 -- Favorites Buttons Warning Messages

These are only warning messages. You can still save the selected combination, but, of course, the resulting favorites window will not fit on your screen.

Click on the "OK" button to save your settings and return to normal operation.

Click on the "Cancel" button to discard any changes to your settings and return to normal operation.

SCAN THRESHOLD SETTINGS

Selecting the "Scan Threshold" tab will display the form shown in Figure 13 and allow you to adjust the sensitivity of the scan threshold sliders on the Frequency Scan and Memory Scan windows.

A screenshot of a software window titled "Setup SDRMemory6k". The window has three tabs: "Program Options", "Favorites Buttons", and "Scan Threshold". The "Scan Threshold" tab is active. Below the tabs is a blue header "Scan Signal Level Threshold Sensitivity Settings". Underneath is a text box explaining that these values determine the range of scan threshold adjustment sliders, ranging from S0 to S9+40dB. Below this are two slider controls: "Minimum Threshold" set to "S2dB (-115dBm)" and "Maximum Threshold" set to "S9dB (-73dBm)". At the bottom are two buttons: "Save Changes" and "Cancel Changes".

Figure 13 – Setup Form (Scan Threshold Tab)

The scan threshold is the signal level at which scanning stops. The scan threshold adjustment sliders on the Memory Scan and Frequency Scan set the signal level at which a signal is deemed to be present and scanning is paused.

Normally, the threshold level can be set to any value between S0 (-126 dBm) and S9+40dB (-33 dBm). You can decrease this range and make it easier to adjust the threshold to a specific level by adjusting the "Minimum Threshold" and "Maximum Threshold" values.

ABOUT THE AUTHOR

SDRMemory6k was written by Ray Andrews, K9DUR.

Ray holds an Amateur Extra class license and was first licensed in April 1960. He currently resides in West Terre Haute, IN, and is a retired electronic design engineer and software developer. He operates a small custom software consulting business just to keep him out of mischief between camping trips.

For more information, visit Ray's web page:

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REVISION HISTORY

- 5.3.1 – Jul 25, 2022 – Added code to ensure slice is on screen after memory selection. Upgraded API to latest version.
- 5.3.0 – Dec 12, 2020 – Added feature to automatically set focus to a specified program when a memory is selected.
- 5.2.1 – May 5, 2020 – Fixed bug causing colors of the RX filter buttons on the “Edit Memory” dialog to not be displayed correctly.
- 5.2.0 – May 3, 2020 – Added option to allow selecting a memory to change the radio transmit power or not.
- 5.1.1 – Aug 30, 2019 – Fixed bug causing crash if user did not select a radio on startup.
- 5.1.0 – Jul 2, 2019 – Added Transmit Profile & Mic Profile to settings stored in memory.
- 5.0.1 – May 3, 2019 – Lengthened version check file download time out. Eliminated error message box if the version check fails. Moved setup files from “RNA Software” directory to “K9DUR Software” directory.
- 5.0.0 – Dec 19, 2018 – All methods of memory transfer are now fully functional. Added panadapter bandwidth to the data stored in a memory.
- 4.0.0 – Sep 27, 2018 – Added RTTY to supported modes. Added automatic check for new program version.
- 3.2.1 – Oct14, 2017 – Corrected donation page URL.
- 3.2.0 – Oct 31, 2015 -- Added ability to automatically connect to radio on startup.
- 3.1.0 – Sep 20, 2015 -- Added ability to add frequencies utilizing transverters. Fixed bug causing CTCSS tone frequency not to be sent to radio.
- 3.0.2 – Sep 20, 2015 -- Fixed bug causing power level not to be stored.
- 3.0.1 – Sep 17, 2015 -- Fixed bug causing fatal error on start-up if no memories already entered.
- 3.0.0 – Sep 15, 2015 -- Added memory scan & frequency scan capability. Made changes to prevent user from clicking on "Connect" before radio is listed. Cleaned up the way the program reacts to loss of connection to radio.
- 2.1.0 – May 19, 2015 -- Added ability to press "Enter" to select the highlighted memory. Corrected some typographical errors.
- 2.0.0 – Apr 25, 2015 -- Initial Release.