

SDRMemory6k

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Users Guide

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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 categories and are sorted by frequency for easier access.

NOTE: This is a preliminary release of **SDRMemory6K** and not all features are implemented yet. Specifically, the ability to transfer memories to/from the radio is not yet available.

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.

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.

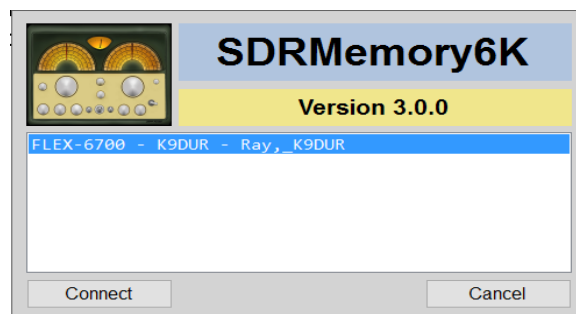


Figure 1 -- Radio Connection Window

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.

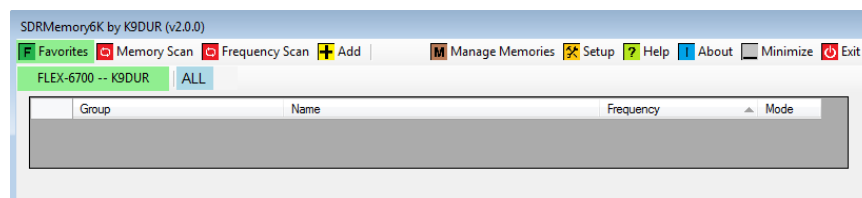


Figure 2 - Main Window (No Memories)

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.

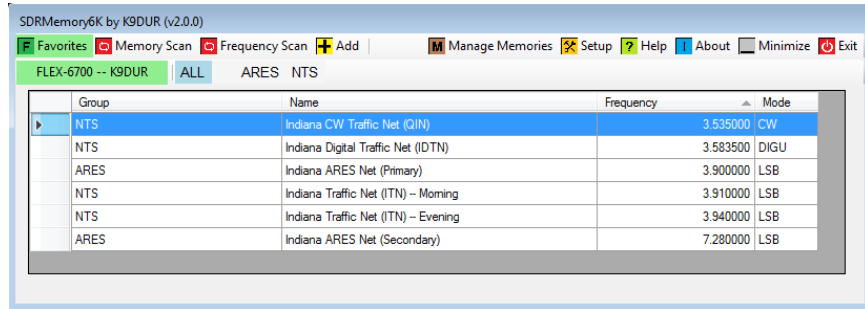


Figure 3 – Main Window (With Memories)

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 is 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.

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

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

SDRMemory -- Add New Memory

Group

Name

Frequency (MHz) 3.583500 RF Power (Watts) 100 Scan Lock Out

Mode

LSB USB CW

DIGL DIGU

AM SAM

FM NFM DFM

Receive Filter

100 300 600 1.0K Low Limit (Hz) 1000

1.5K 2.0K 3.0K 5.0K High Limit (Hz) 2000

Custom

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.

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.

SDRMemory -- Edit Memory

Group: NTS

Name: Indiana CW Net (QIN)

Frequency (MHz): 3.535000 RF Power (Watts): 100 Scan Lock Out:

Mode:

LSB USB CW DIGL DIGU AM SAM FM NFM DFM

Receive Filter:

50 100 250 400 500 1.0K 1.5K 3.0K Custom

Low Limit (Hz): -200 High Limit (Hz): 200

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.

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.

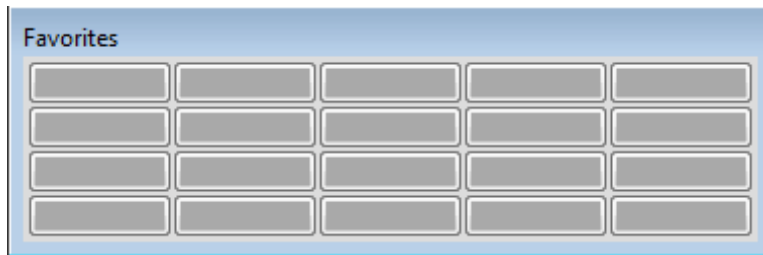


Figure 6 -- Favorites Window

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

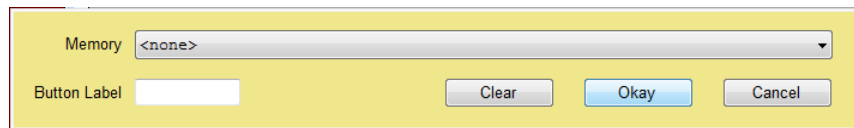


Figure 7 -- Setup Favorites Window

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.

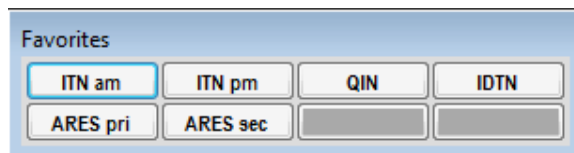


Figure 8 -- Favorites Window w/Memories

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.

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

	Clicking on this button will turn the favorites function on or off.
	Clicking on this button will turn the memory scan function on.
	Clicking on this button will turn the frequency scan function on.
	This button allows you to add a new memory.
	Clicking on this button will open the memory management dialog.
	Clicking on this button will open the Setup dialog.
	Clicking on this button will display this document.
	Clicking on this button will display basic information about the program.
	Clicking on this button will minimize the main window.
	Clicking on this button will close the program.

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

	This box displays the currently connected radio along with the connection status.
	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.
	Clicking on this button will cause all memories to be displayed.
	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.

To Clicking on the “Manage Memories” button on the toolbar will display the dialog shown in **Figure 9**.

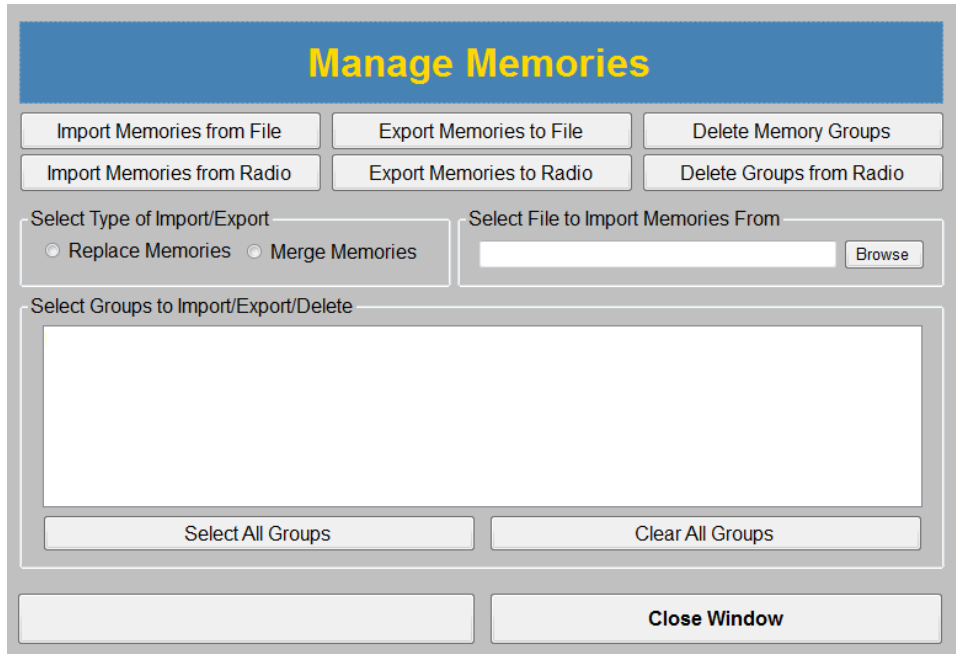


Figure 9 - Memory Management Dialog

The memory management functions provided by this dialog are all organized around groups. That is, you can limit the memory import/export/delete to one or more selected groups, or you can select all groups.

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

IMPORT MEMORIES FROM FILE

Import Memories from File allows you to import memories from a .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 Memories from File" button.
- Select the type of transfer desired:
 - Replace Memories -- All existing memories in SDRMemory6k will be deleted before importing the new memories.
 - Merge Memories -- Memories in the file 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.
- Click on "Browse" and select the file containing the memories to be imported.
- The group list box will be populated with a list of the groups contained in the file.
- Select the group or groups of memories that you wish to import. You can select multiple groups by holding down the control key (Ctrl) while clicking on groups.
- Click on the "Import Memories" button to complete the import.

IMPORT MEMORIES FROM RADIO

Import Memories 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 Memories from Radio" button.
- The group list box will be populated with a list of the groups in the radio.
- Select the type of transfer desired:
 - Replace Memories -- All existing memories 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 group or groups of memories that you wish to import. You can select multiple groups by holding down the control key (Ctrl) while clicking on groups.
- Click on the "Import Memories" button to complete the import.

EXPORT MEMORIES TO FILE

Export Memories to File allows you to export memories to a ,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 SmartSDR.

To export memories to a file:

- Click on the "Export Memories to File" button.
- The group list box will be populated with a list of the groups in SDRMemory6k.
- Click on "Browse" and select the file you wish to export the memories to.
- Select the group or groups of memories that you wish to export. You can select multiple groups by holding down the control key (Ctrl) while clicking on groups.
- Click on the "Export Memories" button to complete the export.

EXPORT MEMORIES TO RADIO

In the future, *Export Memories to Radio* will allow you to export memories directly to your radio. However, due to an unresolved software issue, this feature is not currently available.

DELETE MEMORY GROUPS

Delete Memory Groups allows you to delete groups of memories from SDRMemory6k.

To delete memories from SDRMemory6k:

- Click on the "Delete Memory Groups" button.
- The group list box will be populated with a list of the groups in SDRMemory6k.
- Select the group or groups of memories that you wish to delete. You can select multiple groups by holding down the control key (Ctrl) while clicking on groups.
- Click on the "Delete Groups" button to delete the groups.

DELETE GROUPS FROM RADIO

Delete Groups from Radio allows you to delete groups of memories from SmartSDR.

To delete memories from the radio:

- Click on the "Delete Groups from Radio" button.
- The group list box will be populated with a list of the groups in the radio.
- Select the group or groups of memories that you wish to delete. You can select multiple groups by holding down the control key (Ctrl) while clicking on groups.
- Click on the "Delete Groups" button to delete the groups.

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

The screenshot shows a dialog box titled "Setup SDRMemory6k" with three tabs: "Program Options", "Favorites Buttons", and "Scan Threshold". The "Program Options" tab is active and contains a blue header with the text "Program Options". Below the header are several checkboxes arranged in two columns. The first column contains: Minimize Main Window on Select, Minimize Main Window on Startup, Close When SmartSDR Closes, Main Window Always On Top, and Favorites Window Always On Top. The second column contains: Minimizing Main Window Minimizes Favorites Window, Minimizing Main Window Minimizes Scan Window, Automatically Connect to Radio, Memory Scan Window Always On Top, and Frequency Scan Window Always On Top. At the bottom of the dialog are two buttons: "Save Changes" and "Cancel Changes".

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.
- **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.

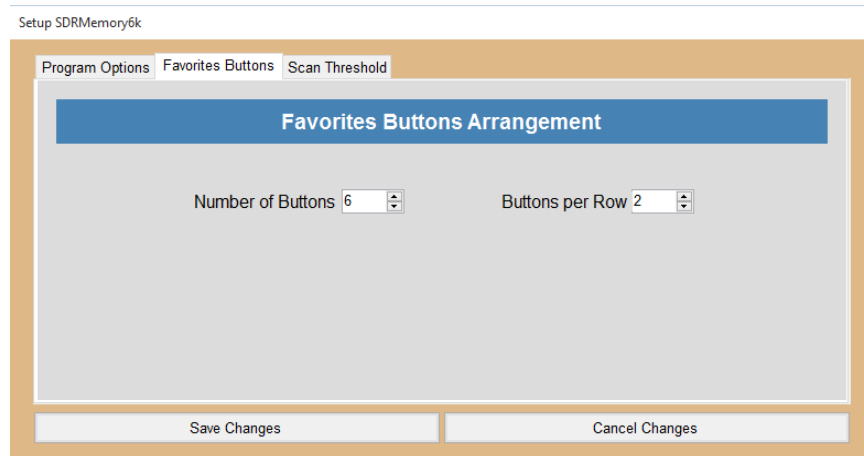


Figure 11 – Setup Form (Favorites Buttons Tab)

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.

Setup SDRMemory6k

Program Options Favorites Buttons Scan Threshold

Scan Signal Level Threshold Sensitivity Settings

These values determine the range of the scan threshold adjustment sliders. They can be set for signal strengths ranging from S0 to S9+40dB. The closer together these settings are, the more accurately can the scan thresholds be set at the cost of adjustment range.

Minimum Threshold

S2dB (-115dBm)

Maximum Threshold

S9dB (-73dBm)

Save Changes 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.

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:

<http://k9dur.info>

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- 3.2.1 – October 14, 2017 – Corrected donation page URL.
 - 3.2.0 – October 31, 2015 -- Added ability to automatically connect to radio on startup.
 - 3.1.0 – September 20, 2015 -- Added ability to add frequencies utilizing transverters. Fixed bug causing CTCSS tone frequency not to be sent to radio.
 - 3.0.2 – September 20, 2015 -- Fixed bug causing power level not to be stored.
 - 3.0.1 – September 17, 2015 -- Fixed bug causing fatal error on start-up if no memories already entered.
 - 3.0.0 – September 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 – April 25, 2015 -- Initial Release.