

COLOR MIX

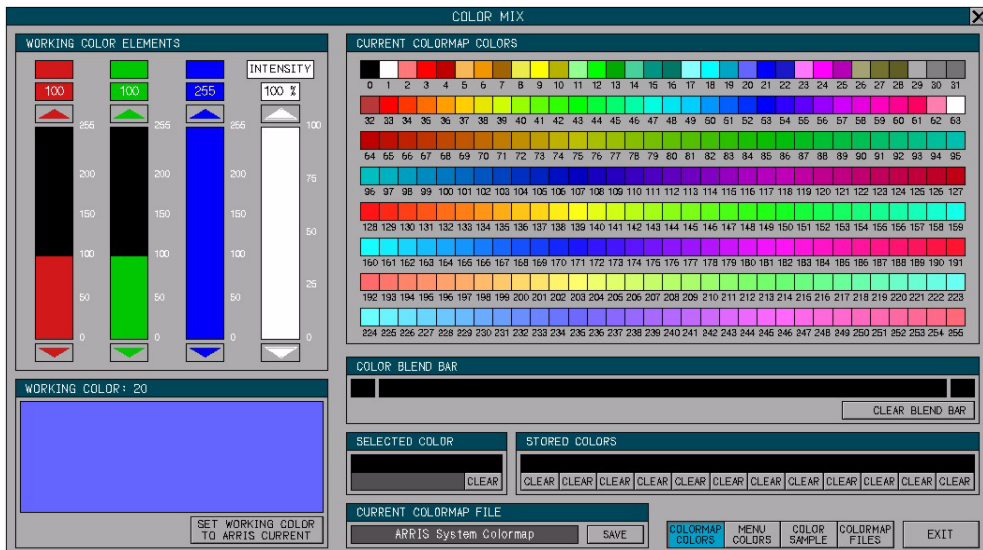


The **ARRIS** Color Mix program is a one stop shop that allows you to define colors in an **ARRIS** colormap, load colormaps, and set colormaps as defaults for the User and for individual drawings.

The **ARRIS** Color Mix program is started by selecting the Color icon on the **DESKTOP** menu, and then the Color Mix button on the **COLOR** Pull-down menu. A secondary startup may be used by right-clicking the Color Mix button on the **COLOR** pull down menu. This variation starts the Color Mix program with the Colormap Files sub-menu displayed instead of the Colormap Colors sub-menu.

Note 1: The **COLOR MIX** Pop-up menu is very large. If your **ARRIS** display is in standard aspect ratio (4x3), the **COLOR MIX** Pop-up menu will cover the Application and Application Sub-menus. If the **ARRIS** display is in Wide-screen mode and/or if the menu size has been reduced, the **COLOR MIX** Pop-up menu will be shifted out to the left and up to be clear of the Application and Application Sub-menus.

The **COLOR MIX** Pop-up menu is divided into several parts. Each is documented below.



General Commands

EXIT: Selection of this button exits the Color Mix program and clears the menu

from the screen.

COLORMAP COLORS: When this button is highlighted, the **CURRENT COLORMAP COLORS** sub-menu is shown on the right side of the **COLOR MIX** menu. This sub-menu displays the 256 colors in the current colormap (numbers 0-255), the Color Blend Bar, the Selected Color display, and the Stored Colors display. Selection of this button displays the Current Colormap Colors. See further documentation below.

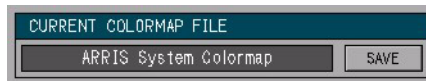
MENU COLORS: When this button is highlighted, the **CURRENT COLOR-MAP MENU COLORS** sub-menu is shown on the right side of the **COLOR MIX** menu. This sub-menu displays the 33 colors in the current colormap used specifically for **ARRIS** menus, the Color Blend Bar, the Selected Color display, and the Stored Colors display. Selection of this button displays the Current Colormap Menu Colors. See further documentation below.

COLOR SAMPLE: When this button is highlighted, the **COLOR SAMPLE CUBE** sub-menu is shown on the right side of the **COLOR MIX** menu. This sub-menu displays a sample of colors which may be used for adding to the colormap, blending, storage, etc. Selection of this button displays the Color Sample Cube. See further documentation below.

COLORMAP FILES: When this button is highlighted, the **COLORMAP FILES** sub-menu is shown on the right side of the **COLOR MIX** menu. This sub-menu displays a list of colormap files for each of the 5 typical locations in **ARRIS** for colormaps. It allows for creation, loading, and deletion of a colormap file, and for setting of user and drawing default colormap files. Selection of this button displays the Colormap Files. See further documentation below.

Current Colormap File

This box is located at the bottom of the **COLOR MIX** menu and displays the name of the currently loaded colormap file.



SAVE COLORMAP: Selection of this button saves the current color configurations as shown in the **COLOR MIX** menu to the current colormap file. Note that **ARRIS** system colormaps may not be altered.

Working Color

The "Working Color" in the Color Mix program is the color that is currently selected to be edited using the RGB Element graph. It is shown on the lower portion of the left side of the **COLOR MIX** menu with a large sample box. The color number (and range for special ranges such as "Menu") are shown in the Working Color title bar. Note that this color is *not* necessarily the current color in **ARRIS** which is used when drawing. If no other color is currently set - such as when starting the Color Mix function for the first time - the **ARRIS** current color is set as the Working Color in Color Mix.

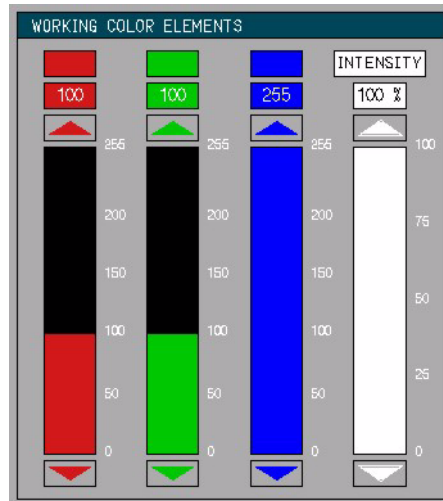


Selection of the Working Color sample box allows you to set the Working Color. Color Mix will prompt for the Working Color which may be entered at the keyboard by number or picked from the Current Colormap Colors or Current Colormap Menu Colors using a left click.

SET WORKING COLOR TO ARRIS CURRENT: Selection of this button sets the working color (number) as the current **ARRIS** color for drawing.

Working Color Elements

In the upper left portion of the **COLOR MIX** menu is the Working Color Elements. This portion of the menu shows the color Red, Green, and Blue (RGB) elements for the current Working Color broken down and displayed in a graph. It also shows the color Intensity which is described as a percentage of the "brightest" a given hue can be.



Working Color Element Values

Above each bar in the Working Color Elements graph is a box which displays the numerical value of each element (RGB). The numerical value of each element is an integer from 0 to 255. The numerical value of the color intensity is a percentage value from 0 to 100. Selection on this box allows you to input the color element/intensity numerical value directly (or select from choices on the Choice menu). When a color element value is changed, the Working Color sample and Working Color Elements bar graph are adjusted accordingly.

Scrolling the mouse scroll wheel up or down while the cursor is over a Working Color Element / Intensity Value box will increment the Working Color Element value or intensity up or down by 1 for each click of the mouse scroll wheel.

Working Color Element Up Arrow

Above each bar in the Working Color Elements graph and below the Element Numerical Value box is a box with an Up arrow. A left click selection of this box adjusts the value of the Working Color Element (or Intensity) up by 1. A right click selection of this box adjusts the value of the Working Color Element selected up by 8 (up by 10 for the Intensity value). When a color element value is changed, the Working Color sample and Working Color Elements bar graph are adjusted accordingly.

Scrolling the mouse scroll wheel up or down while the cursor is over a Color Element Up Arrow box will increment the Working Color Element (or Intensity) up or down by 1 for each click of the mouse scroll wheel.

Working Color Element Down Arrow

Below each bar in the Working Color Elements graph is a box with a Down arrow. A left click selection of this box adjusts the value of the Working Color Element (or Intensity) down by 1. A right click selection of this box adjusts the value of the Working Color Element selected down by 8 (down by 10 for the Intensity value). When a color element value is changed, the Working Color sample and Working Color Elements bar graph are adjusted accordingly.

Scrolling the mouse scroll wheel up or down while the cursor is over a Color Element Down Arrow box will increment the Working Color Element (or Intensity) up or down by 1 for each click of the mouse scroll wheel.

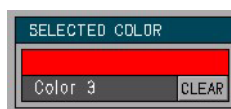
Working Color Graph Bar

The Working Color Element graph bars display graphically the value of the Red, Green, and Blue elements and the Color Intensity of the Working Color. Selection on a Working Color Element Graph Bar allows you to change the numerical value of the selected element similar to selecting the Element Numerical Value box above. When a color element value is changed, the Working Color Sample and Working Color Elements bar graph are adjusted accordingly.

Scrolling the mouse scroll wheel up or down while the cursor is over a Working Color Element graph bar will increment the Working Color Element (or Intensity) up or down by 1 for each click of the mouse scroll wheel.

Selected Color

When either the Colormap Colors button or the Menu Colors button is selected at the bottom of the **COLOR MIX** menu, The Selected Color box is shown on the right side of the **COLOR MIX** menu. When a color is selected in either the Current Colormap Colors, Current Colormap Menu Colors, Color Blend Bar, or Stored Colors section of the menu a sample of the color selected is shown in the Selected Color box and the color number is displayed below it. When a Selected Color is shown, a selection in the Current Colormap Colors, Current Colormap Menu Colors, Color Blend Bar (ends), or Stored Colors will "paste" the selected color to the location selected and the Selected Color will clear. This allows a simple "Copy / Paste" process for manipulating colors within the colormap.



CLEAR: Selection of the Clear button next to the color number in the Selected

Color box will clear the Selected Color.

Current Colormap Colors

When the Colormap Colors button is selected at the bottom of the **COLOR MIX** menu, The Current Colormap Colors box is shown on the right side of the **COLOR MIX** menu. The Current Colormap Colors box shows a sample of all 256 colors in the current **ARRIS** colormap. The color number in the colormap is shown below each color sample.



Selection actions on the Current Colormap Colors sample boxes are as follows:

Left Click - No Selected Color

If there is no color currently selected (shown in the Selected Color box below), a left click selection of a color box will select the color you pick and display a sample and the color number in the Selected Color box.

Left Click - Selected Color Present

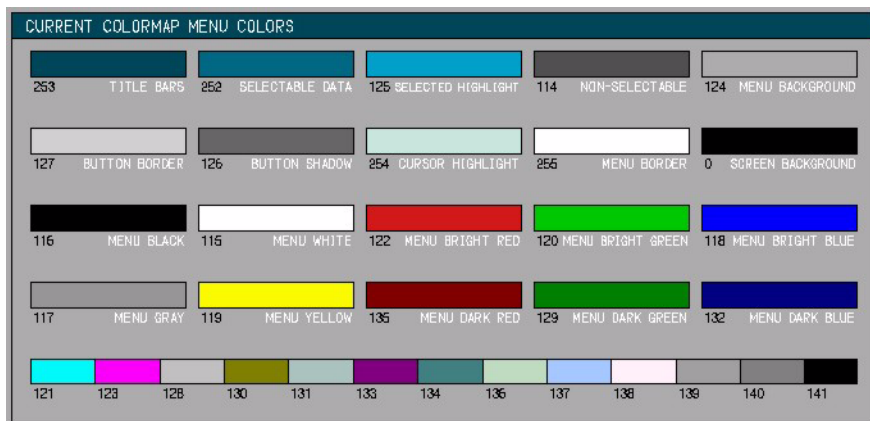
If there a color is currently selected (shown in the Selected Color box below), a left click selection of a color box will "paste" the selected color into the color number in the Current Colormap Colors you pick and clear the Selected Color.

Right Click

This will set the color selected as the Working Color. The Working Color sample and Working Color Elements displays will update and any selected color will clear.

Current Colormap Menu Colors

When the Menu Colors button is selected at the bottom of the **COLOR MIX** menu, The Current Colormap Menu Colors box is shown on the right side of the **COLOR MIX** menu. The Current Colormap Menu Colors box shows a sample of the 33 colors in the current **ARRIS** reserved specifically for use in **ARRIS** menus. The color number in the colormap is shown below each color sample. For those colors that are designated for a specific use in menus, a description is also noted below the color sample. Note that the colors are independent of the 256 colors in the **ARRIS** colormap for general use, even though there are duplicate numbers.



Selection actions on the Current Colormap Menu Colors sample boxes are as follows:

Left Click - No Selected Color

If there is no color currently selected (shown in the Selected Color box below), a left click selection of a color box will select the color you pick and display a sample and the color number in the Selected Color box.

Left Click - Selected Color Present

If there a color is currently selected (shown in the Selected Color box below), a left click selection of a color box will "paste" the selected color into the color number in the Current Colormap Menu Colors you pick and clear the Selected Color.

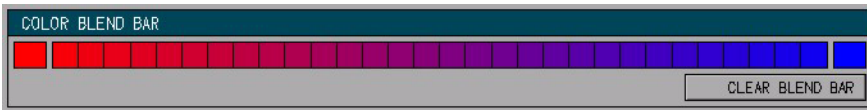
Right Click

This will set the color selected as the Working Color. The Working Color sample and Working Color Elements displays will update and any selected

color will clear.

Color Blend Bar

The Color Blend Bar is displayed when either the Colormap Colors or the Menu Colors buttons are selected at the bottom of the **COLOR MIX** menu. The Color Blend Bar consists of a blend color box at each end of the bar, and the blend bar consisting of 30 blend values in the center. When a selected color is "pasted" into a blend color box at either end of the blend bar by selecting the box with a left click, the two blend colors (one at each end of the bar) are blended and the results are shown in the bar. The blend is created by taking the Red, Green, and Blue elements of each blend color independently and comparing them. As the blend goes from color 1 to color 2, the red in blend slot 1 is 1/30th the difference between the red element of blend color 1 and blend color 2, blend slot 2 is 2/30ths of the difference between the red elements, and so on. Once two colors are blended, the results may be selected along the bar for placement elsewhere in the colormap (or stored) by left clicking on the bar at the blend desired.



CLEAR BLEND BAR: Selection of the Clear Blend Bar button below the Blend Bar will clear both of the blend colors to black and update the Blend Bar display.

Stored Colors

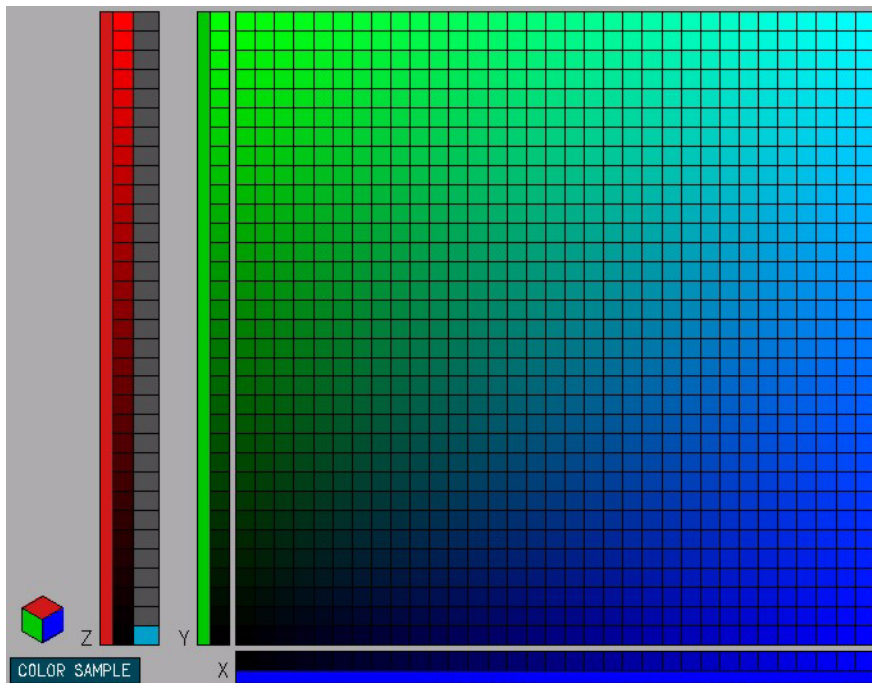
The Stored Colors box is displayed when either the Colormap Colors or the Menu Colors buttons are selected at the bottom of the **COLOR MIX** menu. The Stored Colors box consists of 12 boxes where colors may be stored. When a Selected Color is "pasted" into a Stored color box by left clicking on the box, a sample of the color is displayed. The stored color is not saved anywhere in the current colormap and does not have a color number. The RGB values which make up the color are stored and saved in the Stored Colors for the current **ARRIS** session. A Stored Color may be selected for "pasting" elsewhere in the colormap similar to the Colormap Colors, Colormap Menu Colors, and Color Blend Bar.



CLEAR: Selection of a Clear button below a Stored Color box will clear the color stored in the box above it to black. A right click selection of a Clear box below a Stored Color box will clear all 12 Stored Colors to black.

Color Sample Cube

The Color Sample Cube is displayed when the Color Sample button is selected at the bottom of the **COLOR MIX** menu. The Color Sample Cube is designed as a visual aid to creating a color. It graphically represents the 3 color elements (Red, Green, Blue) allowing easy visual selection of a color hue.



In ARRIS, there are 16,777,216 possible colors - 3 color elements with 256 possible values for each or 256 to the 3rd power.

If you imagine a cube with the 3 color elements Red, Green, and Blue each assigned to an axis (X,Y,Z) of the cube, every possible color could be graphically represented by a point location in the cube. If Blue were assigned to the X axis, Green assigned to the Y axis and Red assigned to the Z axis, a point value of (0,0,0) would be black (RGB 0,0,0). A point value of 255,0,0 would be pure blue, 0,255,0 would be green, 0,0,255 would be red, and 255,255,255 would be pure white.

The Color Sample Cube displays a grid which represents the X and Y axis of the cube. Since an ARRIS menu is a 2 dimensional medium, we can only show 2 of

the axes at a time. The Z axis is represented by a bar to the left of the grid. Next to the Z axis is a highlight box which shows the "level" of the Z color. If our cube were a building, the grid would be a floor plan and the Z axis bar would be a section of the elevator. As the elevator goes higher, the floor plan updates for the "floor" of the Z color. At the bottom setting, the Z color (red in our example) is 0, thus the grid shows a range of colors mixing blue and green. As a higher position is selected on the Z color bar, more of the Z color is added to the mix.

Changing one of the RGB color elements by a value of 1 is a very subtle change. For sample purposes, each element along the X, Y, and Z axis has 33 samples - thus the color element is incremented by a value of 8 for each box in the cube. In this way, the Color Mix Sample Cube gives a uniform sampling of 35,937 colors, shown in the grid 1089 colors at a time.

Selection actions in the Color Sample Cube are as follows:

Left Click on a box in the Z Color Bar

Selection of a box on the Z Color Bar sets the Z color level to the box selected. The grid displaying the X and Y axis is updated accordingly.

Left Click on a box in the X Y Color Grid

Selection of a box in the X Y Color Grid selects the color RGB. The right side of the COLOR MIX menu shifts to the Colormap Colors sub-menu and the selected hue from the Color Sample is shown in the Selected Color box. From here it may be pasted to a Colormap Color, Colormap Menu Color, the Blend Bar, a Stored Color box, or the Working Color.

Right Click on a box in the X Y Color Grid

A right click selection of a box in the X Y Color Grid selects the color RGB and pastes the hue to the current Working Color.

Selection of an Axis Definition Bar

Selection of one of the Axis Definition Bars showing the Red, Green, or Blue solid color assigned to that axis (X,Y,Z) allows you to set the color assigned to the axis in the Color Sample Cube. The selected color will be assigned to the axis, the previous color for that axis will be assigned to the axis vacated by the selected color. The Color Selection Cube grid display will be updated accordingly.

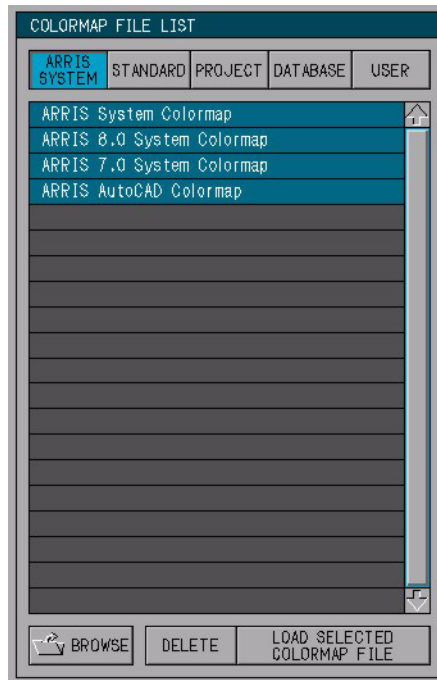
Mouse Scroll Wheel

Scrolling the mouse scroll wheel up or down while the cursor is over the Z

axis bar or the XY Grid in the Color Sample Cube will increment the Z axis color up or down by 1 sample box (element value of 8). The display of the Z axis bar and the XY Grid colors will update accordingly.

Colormap File List

The Colormap Files List is displayed when the Colormap Files button is selected at the bottom of the **COLOR MIX** menu. This list box provides a list of files found in typical disk locations for ARRIS colormaps. The locations are ARRIS System, the Standards Directory, the Current Project Directory, the Current Database directory, and the User Home directory. Each of these locations are represented by a button above the list. The highlighted button indicates the location currently shown on the list.



Selection actions are as follows:

Colormap File List Button

Selection of a button above the Colormap list changes the location and redisplay the list for the selected location.

Colormap File List Selection

Selection of a colormap displayed in a box in the list selects it for further

action. The selected colormap box will be highlighted. A second left click on a selected box will load the selected colormap as if the Load button below had been selected.

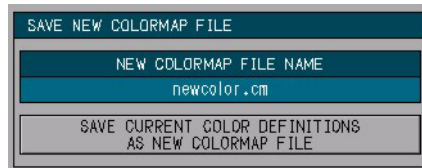
LOAD SELECTED COLORMAP FILE: Selection of this button will load the selected colormap on the list above.

DELETE: Selection of this button will delete the selected colormap on the list above from the disk.

BROWSE: Selection of this button allows you to browse your computer file system for colormaps. The colormap selected in the browse is loaded.

Save New Colormap File

The Save New Colormap File box is displayed when the Colormap Files button is selected at the bottom of the **COLOR MIX** menu. This box displays the name that will be given to a new colormap file that is created.



New Colormap File Selection

Selection of the New Colormap File Name box allows you to set the new colormap file name. The New Colormap File Name must be set before a new colormap may be created.

SAVE CURRENT COLOR DEFINITIONS AS NEW COLORMAP FILE: Selection of this button will save the current color configurations to the new colormap file name shown in the box above. The file will be placed in the directory as set for the Colormap Files list to the right. The Colormap File List will update to show the new colormap file addition.

User Default Colormap File

The User Default Colormap File box is displayed when the Colormap Files button is selected at the bottom of the **COLOR MIX** menu. This box displays the name of a colormap that will be loaded each time a new drawing is loaded in **ARRIS**. If no User Default is specified, the **ARRIS** System Colormap will

be loaded.



User Default Colormap File Selection

Selection of the User Default Colormap File Name box will set the User Default Colormap File name to the colormap file currently selected in the Colormap File List. A colormap must be selected in the Colormap File List first.

LOAD: Selection of this button will load the colormap currently named as the User Default Colormap File. A User Default Colormap File must be defined in order for it to be loaded from this button.

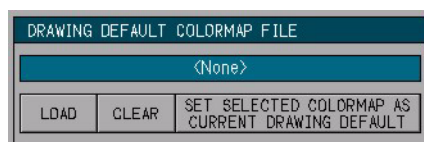
CLEAR: Selection of this button will clear the User Default Colormap File to <None>.

SET SELECTED COLORMAP AS CURRENT USER DEFAULT:

Selection of this button will set the User Default Colormap File name to the colormap file currently selected in the Colormap File List. A colormap must be selected in the Colormap File List first.

Drawing Default Colormap File

The Drawing Default Colormap File box is displayed when the Colormap Files button is selected at the bottom of the **COLOR MIX** menu. This box displays the name of a colormap that will be loaded each time the currently loaded drawing is loaded in **ARRIS**. If no Drawing Default is specified, User Default Colormap File will be loaded.



Drawing Default Colormap File

Selection

Selection of the Drawing Default Colormap File Name box will set the Drawing Default Colormap File name to the colormap file currently selected in the Colormap File List. A colormap must be selected in the Colormap File List first.

LOAD: Selection of this button will load the colormap currently named as the Drawing Default Colormap File. A Drawing Default Colormap File must be defined in order for it to be loaded from this button.

CLEAR: Selection of this button will clear the Drawing Default Colormap File to <None>.

SET SELECTED COLORMAP AS CURRENT DRAWING DEFAULT:

Selection of this button will set the Drawing Default Colormap File name to the colormap file currently selected in the Colormap File List. A colormap must be selected in the Colormap File List first.

See Also

[Color](#), and [Colormap](#).