TekColor Editor Region Layout

This section presents the detailed description of the TekColor Editor's region layout and the information displayed in those regions. It also shows the ways one can undertake various operations within each region. With the exception of the menu bar which is discussed in detail in Section 3.

This version of the TekColor Editor has been implemented using the Athena Widget Set - C Language Interface to the X Window System, X Version 11, Release 5. It thus should operate like the many other clients that have been developed under this toolkit. The differences are negligible and result of the need for an interface specifically adapted for use as a color editor.

The TekColor Editor's main window has been divided up into six regions. Each region serves a specific function. The actual displayed contents of a particular region will reflect the functionality. The areas for the purposes of discussion have been given the following labels: ***menu bar***, ***color coordinates***, ***color patch***, ***colormap scale***, ***hue bar***, and ***hue leaf***. The regions are shown in Figure 2-1.

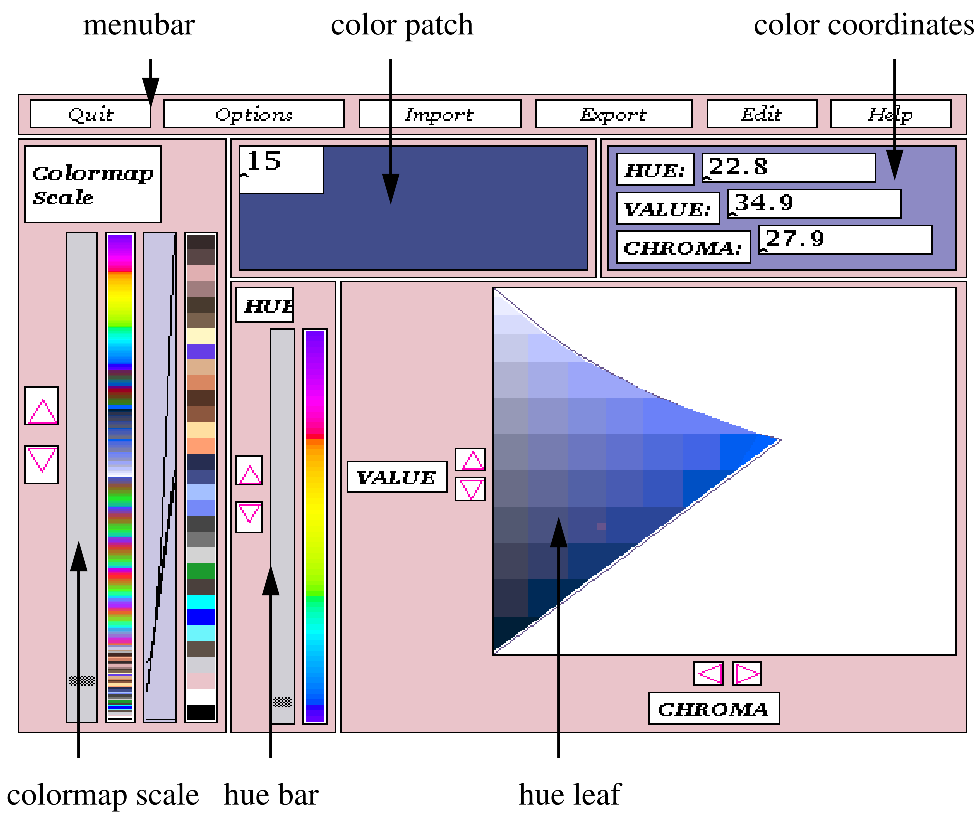

Figure 2-1. Layout of TekColor Editor Main Window.

Color Coordinates Region

The Color Coordinates region contains numeric values for the current pixel in the color patch. The color coordinates displayed can be either TekHVC, RGB(device coordinates), or CIE u'v'Y. A sample TekHVC display is shown in Figure 2-2. A numeric entry can be changed by typing a new value any of the text entry regions. The change will take place once the cursor is moved outside the color coordinates region. Changes in values made in this area can affect other regions of the editor and vice-a-versa. The text entry regions were implemented with unmodified Athena Text widgets and thus should operate like other text widgets in other clients.

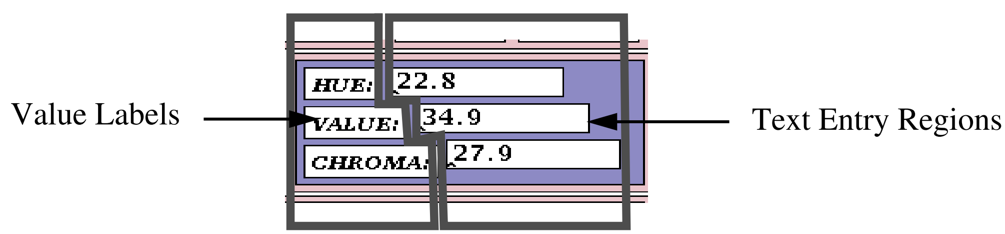

Figure 2-2. Color Coordinates.

Color Patch Region

The Color Patch shows the current pixel value (color index) and the color for that pixel, see Figure 2-3. It is important to remember that in the X Window System each color is specified by an index into a colormap, the pixel value, and the RGB triplet in the colormap(s). Thus the color patch shows the numeric pixel value and the color specified in the colormap visually. Since many pseudo color systems only have one hardware colormap the color displayed in the color patch will correspond to the color displayed in other areas of the screen when the editor's colormap is installed. Colormap installation of the editors is usually result of moving the pointer into the editor's main window in point-to-focus systems or moving the pointer into the editor's main window and selecting the editor in click-to-focus systems.

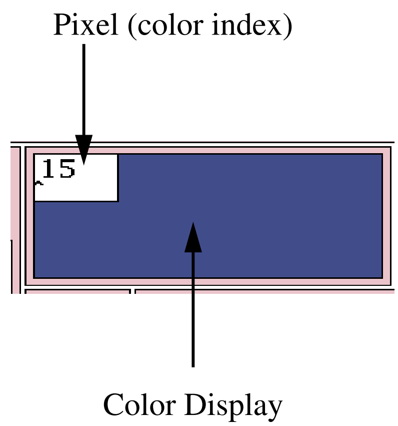

Figure 2-3. Color Patch.

The pixel value can be changed by typing a new value in the rectangle containing the pixel value, i.e. the text widget. The color in the display patch will change once the pointer is moved out of the color patch region and the user responds positively to the prompt. In addition, the color patch is updated by the other elements of the editor such as the colormap scale, the hue bar and hue leaf as needed.

When the editor's colormap value for the current pixel is different than the colormap value of another client and the other client's colormap is installed, the color display area will contain the color of the other colormap and not the color specified by the TekColor Editor. This so-called "technicolor" behavior can be minimized by sharing color values between clients.

Colormap Scale Region

The Colormap Scale is a representation of the colormap used by the TekColor Editor. It shows the colors in the colormap of the editor, see Figure 2-4. Since the colormap begins by loading its colormap with the colors defined in the default colormap of the screen these colors will be the ones that are used by many applications. Once the user changes the colors in the editors colormap that may not be true.

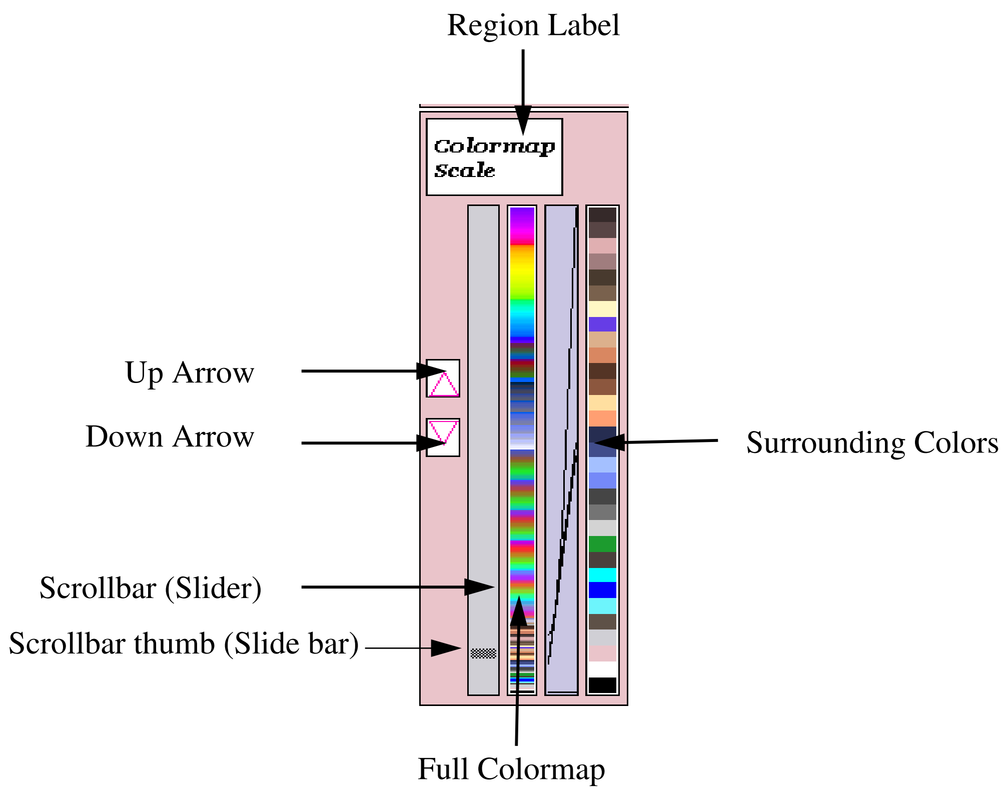

Figure 2-4. Colormap Scale

The colormap scale displays the full colormap in the bar next to the slider. Since each colormap entry is only a few pixels in height it can be difficult to pinpoint an exact pixel value using this scale. Thus the region on the right shows several pixel values surrounding the current pixel in the color patch. The lines in the region in between the two scales shows where the surrounding colors are placed in the colormap.

This region has two buttons which are used to increment and decrement the colormap index in the color patch by one for each click of the button. In addition these buttons have an autorepeat mode. When the arrow button is held down the colormap index value will continue to change until the button is released. The slider can be used to move the colormap index by dragging the slider to a new location. The slider is a standard athena scrollbar widget and as such has all the functionality of this type of widget. Also you can click in either the colormap scale showing the entire range of the colormap or the scale showing the surrounding indices.

Hue Bar Region

The Hue Bar provides a means to display a set of sample hues and change the hue for the current color in the color patch. Typically, the process of selecting a color starts by selecting the hue desired. This can be done in several ways. If the numeric value for the hue is known, it can be entered in the color coordinates region. Otherwise the hue region can be used to select a hue. The Hue Bar provides a point and click type interface and should help in testing various hues, see Figure 2-5.

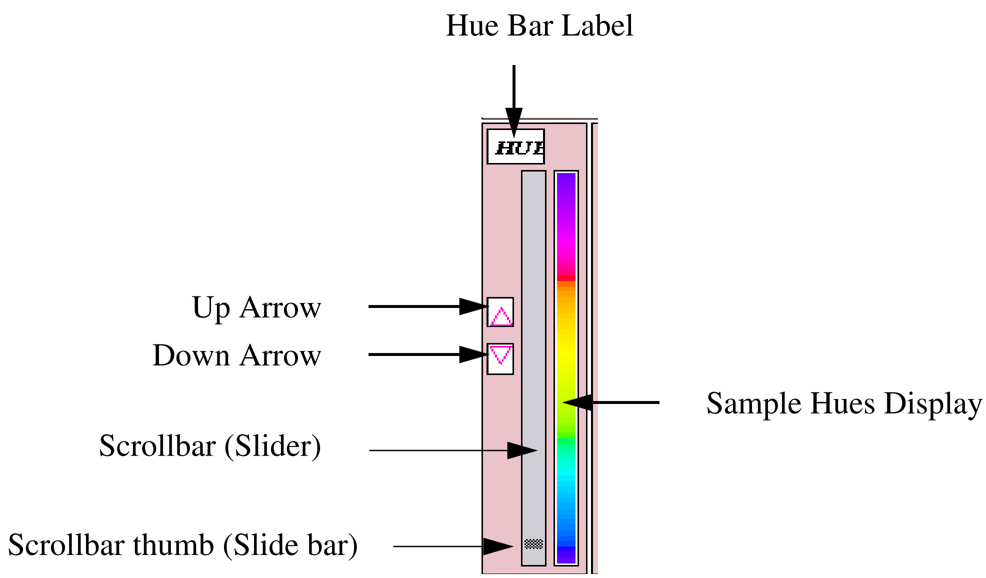

Figure 2-5. Hue Bar.

The Hue Bar can be either filled, or not filled using the Fill Hue Bar selection on the Options Menu. When filled the hue bar region displays a sample of the maximum value/chroma points for the current display. The slider, and arrow buttons are used to change the current hue. The approximate location of the hue in relationship to other hues is shown by the scrollbar thumb. A hue can also be selected by clicking the first mouse button in the sample hues display. The numeric value for the hue will be displayed in the color coordinates region. The operation of the slider and arrow buttons is exactly the same as their operation in the Colormap Scale.

Hue Leaf Region

The Hue Leaf provides a region to display the device gamut outline(s), a sample set of value/chroma pairs and the hue leaf cursor, see Figure 2-6. The hue leaf cursor shows the relative value to chroma position of the current color in the color patch. This provides visual information about the color being displayed. The area inside the device gamut outline can be either filled or unfilled. The options menu item Fill Leaf is used to turn filling on and off. When the hue leaf is filled a sample of the possible value/chroma pairs is provided. If the exact value or chroma is known, it can be entered in the color coordinates region. Otherwise this region can be used to change the current value and chroma. This region again presents the user with a point and click interface for fast easy manipulation of values.

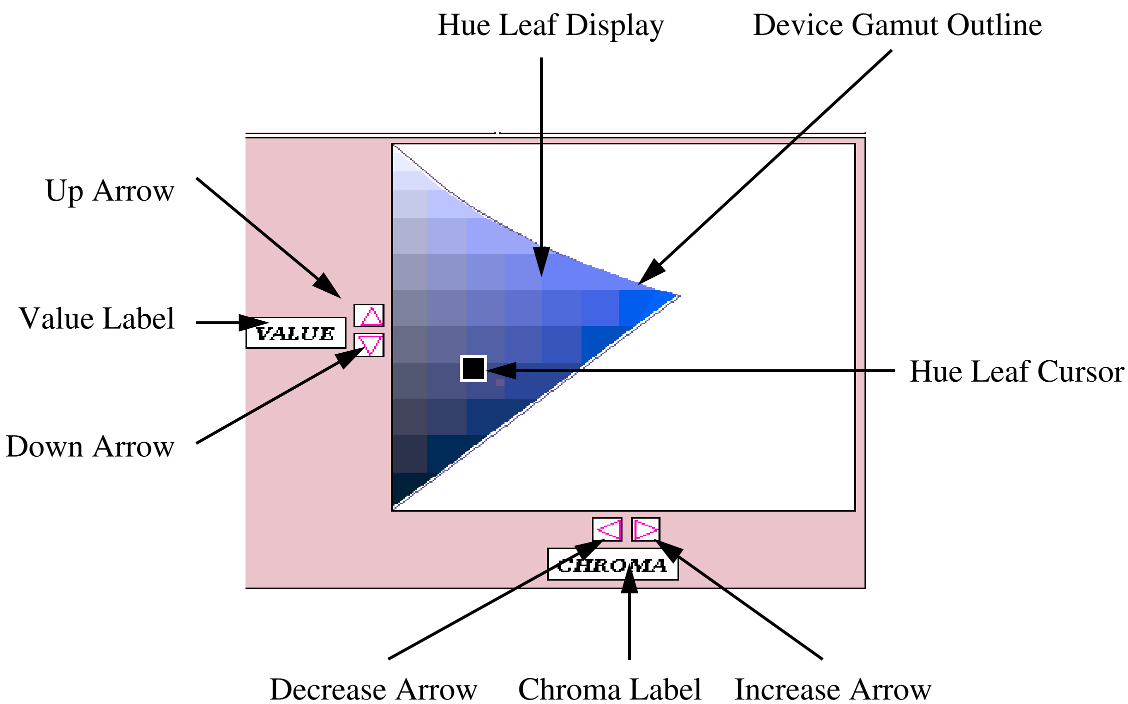

Figure 2-6. Hue Leaf.

The triangle-like outline shows the reachable colors for the display device. All colors inside the outline are displayable, i.e. reachable for this device. Colors outside the outline are unreachable for the current hue. The hue leaf cursor shows the relative value and chroma position of the current color. If the hue leaf cursor is outside the displayable value and chroma outline then the color patch will display a color that has a reduced amount of chroma from the chroma selected. When constrain chroma option in the Options menu is on the hue leaf cursor will not be allowed to be moved outside the device gamut outline. The value and chroma is also reported in the color coordinates display. The current value and chroma can be changed by either pressing the value or the chroma buttons or by dragging the hue leaf cursor when in the hue leaf.