Subject: 24-bit color with writable color maps
Posted by bowman on Fri, 09 Apr 1999 07:00:00 GMT
View Forum Message <> Reply to Message

There have been a number of queries about 24-bit color lately, including the use of writable color maps on systems that support it (24-bit DirectColor visual). I attach for the interested reader a sample program that plots a 24-bit color graph and manipulates the color tables.

The SGI O2 device looks like this:

```
Current graphics device: X
   Server: X11.0, Silicon Graphics, Release 6001
   Display Depth, Size: 24 bits, (1280,1024)
   Visual Class: DirectColor (5)
   Bits Per RGB: 8
   Physical Color Map Entries (Used / Total): 256 / 256
   Colormap: Private, 16777216 colors.  Translation table: Enabled
   Graphics pixels: Decomposed,        Dither Method: Ordered
   Write Mask: 16777215 (decimal) ffffff (hex)
   Graphics Function: 3 (copy)
   Current Font: <default>,    Current TrueType Font: <default>
   Default Backing Store: Req from Server.
```

When you hit the carriage return at the first prompt, the intensities of all colors are reduced by a factor of two, making the plot darker. The second <cr> restores the color tables.

On the O2, only the IDL window is affected by the color table changes. Other open windows are unaffected. I don't know whether IDL is responsible for this or the SGI hardware, but it is certainly the way that you would want this feature to work.

Remember, you cannot print 24-bit graphics (other than bitmaps) to PostScript with the current IDL PostScript device driver.

Ken Bowman

```
PRO TEST24_SGI

HELP, /DEVICE                          ;Show device
characteristics

cr = ' '
n = 1000L                             ;Number of points
x = RANDOMU(seed, n)                        ;X-coordinates
y = RANDOMU(seed, n)                        ;Y-coordinates
```

```
point_r = LONG(255*x)                          ;Red intensity of
each point
point_g = LONG(255*y)                          ;Green intensity of
each point
point_b = REPLICATE(0B, n)                     ;Blue intensity of
each point
point_color = point_r + 256L*(point_g + 256L*point_b) ;24-bit color of
each point

r = BINDGEN(256)
g = BINDGEN(256)
b = BINDGEN(256)
TVLCT, r, g, b                                 ;Initialize color tables
TVLCT, r, g, b, /GET                           ;Get current color tables
PRINT, r, g, b                                 ;Print current color
tables

PLOT, [0,0], [1,1], /NODATA
PLOTS, x, y, PSYM=1, COLOR = point_color       ;Plot 24-bit scatterplot

PRINT, 'Enter <cr> to continue...'
READ, cr
TVLCT, r/2, g/2, b/2                           ;Load new color tables
TVLCT, r, g, b, /GET                           ;Get current color tables
PRINT, r, g, b                                 ;Print current color
tables

PRINT, 'Enter <cr> to continue...'
READ, cr
TVLCT, r, g, b                                 ;Load new color tables
TVLCT, r, g, b, /GET                           ;Get current color tables
PRINT, r, g, b                                 ;Print current color
tables

END
```

--
Dr. Kenneth P. Bowman, Professor 409-862-4060
Department of Meteorology 409-862-4466 fax
Texas A&M University bowmanATcsrp.tamu.edu
College Station, TX 77843-3150 Replace AT with @