Subject: Re: IDL and 24 Bits--help + added question
Posted by grunes on Tue, 21 Jun 1994 14:32:07 GMT
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In article <PWALKER.94Jun20165914@jean-luc.ncsa.uiuc.edu> pwalker@ncsa.uiuc.edu (Paul Walker) writes:
> I've just got a 24 bit display, and am trying to use IDL more
> productively than I used it on my old 8=bit display I've read the
> users guide chapter 16, but still have some questions.. My display
> (attached to a personal Iris), will only come up in TrueColor mode,
> which doesn't seem to have writable color tables. xdpyinfo tells me I
> can't get direct color.
  ...

I don't really understand this, but I got it to work by using
  DEVICE,PSEUDO=8
This must come before any other use of your graphics screen--otherwise
it seems to have no effect (on the SGI)!

If you really want 256 colors, then you should also use an explicit WINDOW
command, with a colors switch.
 WINDOW ... ,colors=256.

----------NOW FOR MY QUESTION----------

Actually, I have been trying to find a way to simulate 24 bit color for
TV commands on 8 bit color displays (e.g., Sun, VGA...I think it could
be done with some fancy dithering, but I don't want to do it). Does
anyone have (or know of) a routine to do it?
  Mitchell R Grunes (grunes@imsy1.nrl.navy.mil)
  Allied-Signal Technical Services
  c/o Code 7230 Naval Research Lab

Subject: Re: IDL and 24 Bits--help + added question
Posted by velt on Tue, 21 Jun 1994 17:07:07 GMT
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In article 772209127@imsy1.nrl.navy.mil, grunes@imsy1.nrl.navy.mil (Mitchell R Grunes) writes:
> In article <PWALKER.94Jun20165914@jean-luc.ncsa.uiuc.edu> pwalker@ncsa.uiuc.edu (Paul Walker) writes:
  <stuff on pseudo-color on true-color visual deleted>
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> Mitchell R Grunes (grunes@imsy1.nrl.navy.mil)
> Allied-Signal Technical Services
> c/o Code 7230 Naval Research Lab
>

I don't think there are ready-made programs in IDL to do it. In the documentation for John Bradley's xv there is mention of
"... ppmquant, written by Jef Poskanzer. This algorithm also uses a version of Heckbert's median cut algorithm, but is capable of picking 'better' colors, and it doesn't dither."
This may be an algorithm you want to look into.

Good Luck,
Robert Velthuizen
Digital Medical Imaging Program of the
H. Lee Moffitt Cancer Center and Research Institute at the
University of South Florida.

Subject: Re: IDL and 24 Bits--help + added question
Posted by thompson on Wed, 22 Jun 1994 13:04:43 GMT

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grunes@imsy1.nrl.navy.mil (Mitchell R Grunes) writes:

> Actually, I have been trying to find a way to simulate 24 bit color for
> TV commands on 8 bit color displays (e.g., Sun, VGA...I think it could
> be done with some fancy dithering, but I don't want to do it). Does
> anyone have (or know of) a routine to do it?

Look at the documentation for the IDL built-in routine COLOR_QUAN. This takes pictures separated into red, green, and blue images (i.e. 24 bit color) and combines them together into a single 8 bit image that can be displayed with an appropriate color table to simulate a true-color image. If you use it with the /CUBE qualifier you can then use the same color table for multiple images. Otherwise it generates a separate optimal color table for each image.

Bill Thompson

Subject: Re: IDL and 24 Bits--help + added question
Posted by velt on Wed, 22 Jun 1994 13:22:15 GMT

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In article 45v@mother.usf.edu, velt@rad.usf.edu (Robert Velthuizen) writes:
> In article 772209127@imsy1.nrl.navy.mil, grunes@imsy1.nrl.navy.mil (Mitchell R Grunes) writes:

>> In article <PWALKER.94Jun20165914@jean-luc.ncsa.uiuc.edu> pwalker@ncsa.uiuc.edu (Paul Walker) writes:
> <stuff on pseudo-color on true-color visual deleted>
>> ----------NOW FOR MY QUESTION----------
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>> Mitchell R Grunes (grunes@imsy1.nrl.navy.mil)
>> Allied-Signal Technical Services
>> c/o Code 7230 Naval Research Lab
>>
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> This may be an algorithm you want to look into.
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> Good Luck,
> Robert Velthuizen
> Digital Medical Imaging Program of the
> H. Lee Moffitt Cancer Center and Research Institute at the
> University of South Florida.
>

I received a reply from David Stern of RSI:
>> Bob:
>>
>> Try the COLOR_QUAN function. It does a very good of quantizing 24
>> bit image into pseudocolor images of <= 256 colors. It will also do
>> optional dithering etc. Often, the images look just as good as their
>> 24 bit counterpart. You can also use it to combine data sets.
>>
>> Hope this helps,
>> David
>>

Subject: Re: IDL and 24 Bits--help + added question
Posted by grunes on Wed, 22 Jun 1994 15:16:46 GMT

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RSI's David Stern pointed out to me and others than IDL has a built in function (COLOR_QUAN) that allows the display of 24 bit color on 8 bit color displays.

One minor warning: it was a recent addition to IDL.

That means that PV-Wave does not possess it. At least not in the versions we use--perhaps it has been added?

I try to keep my code portable between IDL and PV-Wave because I primarally use IDL/PV-Wave as a semi-portable graphics and image interface among PC's and a variety of Unix boxes, which have various IDL or PV-Wave versions installed.

Of course, I could always install the free trial version of IDL, but its limitations (no file output, except stuff like postscript, no SPAWNs, 7 minute limit) are a nuisance.

For those without that problem, this, along with support for more image file formats, and the fancy widget stuff, is one of a number of clear advantages of IDL over PV-Wave for those interested in image work. I can't figure out why PV-Wave is more expensive. Especially since, if you exceed the license, IDL reverts to free trial mode, whereas PV-Wave won't let you in at all. Any thoughts on this?

Mitchell R Grunes (grunes@imsy1.nrl.navy.mil)
Allied-Signal Technical Services
c/o Code 7230 Naval Research Lab

Subject: Re: IDL and 24 Bits--help + added question
Posted by rmm on Fri, 24 Jun 1994 15:30:40 GMT
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I belive the COLOR_QUAN function in IDL will generate pseudo 24 bit color for an 8 bit display.

Robert Moss
Texaco Inc.
rmmoss@texaco.com
