Subject: Re: 10 bit packed as 8 bit unpacking
Posted by dmarshall on Wed, 20 Jun 2001 13:37:14 GMT
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This worked beautifully "right out of the box".
Thanks,

Dave.

In article <onpuc07be3.fsf@cow.physics.wisc.edu>, Craig Markwardt
<craigmnet@cow.physics.wisc.edu> writes:
>
> dmarshall@ivory.trentu.ca writes:
>
>> I would like to get the raw information from a 1280 by 960 image that has
>> 10 bit resolution. I can get at a dumped version that comes out in 8 bit
>> chunks.
>>
>> Could I read the image into a bytarr and "simply" reformat it as 10 bit?
>
> This question comes up now and then. I think the answer, "simply," is
> sort of. You will probably use the ISHFT function to shift bits into
> place. However, IDL does not have a 10-bit data type, so you will
> have to load it into a 16-bit INT or UINT.
>
> However, I do have a suggestion that might help: remember that every
> group of five bytes contains four data values. Thus, for speed, you
> can reformat the original array into quintuples of bytes, and then
> read out the interleaved array values with appropriate choices if
> ISHFT and bitwise AND.
>
> n = 1280L & m = 960L
> rawimg = bytarr(n*m*5/4) ;; 10-bit is 20% more than 8-bit
> readdatafromdisk, rawimg ;; Read data however you do it
>
> rawimg = reform(rawimg, 5, n*m/4) ;; Reform into quintuples
> outimg = intarr(4, n*m/4) ;; Make new output image of quadruples
> ii = lindgen(n*m/4) ;; Indices for interleaved access
>
> ;; Interleave the bytes together
> outimg(0,ii) = ishft(rawimg(0,jj) AND 'ff'x,2) + ishft(rawimg(1,jj) AND 'c0'x,-6)
> outimg(1,ii) = ishft(rawimg(1,jj) AND '3f'x,4) + ishft(rawimg(2,jj) AND 'f0'x,-4)
> outimg(2,ii) = ishft(rawimg(2,jj) AND '0f'x,6) + ishft(rawimg(3,jj) AND 'fc'x,-2)
> outimg(3,ii) = ishft(rawimg(3,jj) AND '03'x,8) + ishft(rawimg(4,jj) AND 'ff'x, 0)
>
> outimg = reform(outimg, n, m) ;; Convert back to an NxM array
>
> This will require some tweaking, but it is probably the best way to

> go.  Check it out at least.  The final result will be a 16-bit 2-d
> array suitable for manipulation in IDL.
>
> Craig
>
> --
>  ------------------------------------------------------------- --------------
> Craig B. Markwardt, Ph.D.  EMAIL:  craigmnet@cow.physics.wisc.edu
> Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
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