
Subject: Re: read 12 bit array

Posted by [David Fanning](#) on Thu, 31 Mar 2011 14:18:25 GMT

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Wox writes:

- > Does anyone have an idea how to read a 12bit array from a file (not
- > ASCII, just a binary dump).

Was it written with some kind of 12-bit data type, or is there just 12 bits of information in a 16-bit data type?

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.idlcoyote.com/>

Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: read 12 bit array

Posted by [pgrigis](#) on Thu, 31 Mar 2011 14:54:34 GMT

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On Mar 31, 9:52 am, Wox <s...@nomail.com> wrote:

- > Hi all,
- >
- > Does anyone have an idea how to read a 12bit array from a file (not
- > ASCII, just a binary dump).
- >
- > Thanks,
- >
- > Wout

You can read the bytes one by one with readu and then manually split each set of 2 bytes into it's corresponding 12 bits components following the patter 12+4, 8+8, 4+12 etc.

Ciao,
Paolo

Subject: Re: read 12 bit array

Posted by [lecacheux.alain](#) on Thu, 31 Mar 2011 15:00:38 GMT

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On 31 mar, 15:52, Wox <s...@nomail.com> wrote:

> Hi all,
>
> Does anyone have an idea how to read a 12bit array from a file (not
> ASCII, just a binary dump).
>
> Thanks,
>
> Wout

Read it as [3,N] byte array b, if the file contains an array of 2*N 12 bits words.

Then transform the result to an integer (16 bits) array by `b = fix(b, 0, 3, N)`

Finally concatenate the first and last bytes of each triple with corresponding half parts of the middle byte, that is :

`[ b[0,*] or (ishft(b[1,*] and '0F'x,8), ishft(b[2,*],4) or ishft((b[1,*] and 'F0'x), -4) ]`

You should get your 12 bits array packed in a 16-bits array of same size.

alx.

Subject: Re: read 12 bit array

Posted by [Wout De Nolf](#) on Fri, 01 Apr 2011 10:41:14 GMT

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On Thu, 31 Mar 2011 08:18:25 -0600, David Fanning <news@idlcoyote.com> wrote:

> Wox writes:
>
>> Does anyone have an idea how to read a 12bit array from a file (not
>> ASCII, just a binary dump).
>
> Was it written with some kind of 12-bit data type, or is
> there just 12 bits of information in a 16-bit data type?
>
> Cheers,
>
> David

It is a 12bit tiff file. I got at the point where I needed to read a N*12bit raw datablock.

Subject: Re: read 12 bit array

Posted by [Wout De Nolf](#) on Sat, 02 Apr 2011 18:55:40 GMT

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On Thu, 31 Mar 2011 08:00:38 -0700 (PDT), alx
<lecacheux.alain@wanadoo.fr> wrote:

> Read it as [3,N] byte array b, if the file contains an array of 2*N 12
> bits words.
> Then transform the result to an integer (16 bits) array by b = fix(b,
> 0, 3, N)
> Finally concatenate the first and last bytes of each triple with
> corresponding half parts of the middle byte, that is :
> [b[0,*] or (ishft(b[1,*] and '0F'x,8), ishft(b[2,*],4) or
> ishft((b[1,*] and 'F0'x), -4)]
> You should get your 12 bits array packed in a 16-bits array of same
> size.
> alx.

Thanks. I came up with something like this.

```
; 8bit array with "bigedian" endianness
arr=bindgen(48)
nbytes=n_elements(arr)
nadd=nbytes mod 6
if nadd ne 0 then arr=[arr,bytarr(nadd)]

; convert to 16bit array (endianness of machine)
arr=fix(arr,0,3,nbytes/6)
SWAP_ENDIAN_INPLACE, arr, SWAP_IF_BIG_ENDIAN=~bigendian,
SWAP_IF_LITTLE_ENDIAN=bigendian

; convert to 12bit array
; Each tripple of 16bit numbers: [4 4 4][4 \ 4 4][4 4 \ 4][4 4 4]
arr=[ishft(arr[0,*],-4),$
ishft(arr[0,*] and '000F'x,8) or ishft(arr[1,*] and fix('FF00'x),-8),$
ishft(arr[1,*] and '00FF'x,4) or ishft(arr[2,*] and fix('F000'x),-12),$
arr[2,*] and '0FFF'x]
arr=arr[0:n_elements(arr)-1-nadd*8/12]
```
