

*****DRAFT*****

Testing Latest OPENJPEG
Upgraded V2.3.1
07/31/20

*****DRAFT*****

```
{Global constants}
const
{Version constants}
ULTIBO_RELEASE_DATE      = '29 September 2019';
ULTIBO_RELEASE_NAME      = 'Beetroot';
ULTIBO_RELEASE_VERSION   = '2.0.745';
ULTIBO_RELEASE_VERSION_MAJOR = 2;
ULTIBO_RELEASE_VERSION_MINOR = 0;
ULTIBO_RELEASE_VERSION_REVISION = 745;
```

A major upgrade to v2.3.1

The libopenjp2.a is created from 30 C files and 35 header files.

deleted: raw.c

deleted: raw.h

new file: sparse_array.c

new file: sparse_array.h

modified 12 C files and 13 header files.

Updated /home/devel/Ultibo_Projects/jpeg2000/src from

commit 57096325457f96d8cd07bd3af04fe81d7a2ba788 (HEAD, tag: v2.3.1)

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Date: Tue Apr 2 14:45:15 2019 +0200

update token for appveyor auto release

2 files were removed and 2 new files.

25 of the C & header files were modified.

~/Ultibo_Projects/jpeg2000/src \$./compile_ultibo.sh

The word count here should be 22

the word count in /home/pi/jpeg-2000-test/bare-metal/openjp

when ./libbuild.sh is executed should be 22

22 22 182 libopenjp2_obj.txt

~/Ultibo_Projects/jpeg2000/RPi2 \$./libbuild.sh

dwtlift.c: In function 'decompress':

dwtlift.c:658:3: warning: implicit declaration of function 'octave_write_byte'; did you mean
'opj_write_tile'? [-Wimplicit-function-declaration]

```
    octave_write_byte(r_decompress_fn,r_decompress,da_x1*da_y1);
```

```
    ^~~~~~
```

```
    opj_write_tile
```

when ./libbuild.sh is executed should be 23

23 23 192 libdwtlift_obj.txt

With Lazarus IDE (Ultibo Edition) DWT_LIFT_RPi2.lpi Run/Clean up and Build.
md5sum kernel7.img
27b9a8da3189bf5d94611cfd2cc2b4cf kernel7.img
-rwxr-xr-x 1 devel devel 3225052 Jul 31 05:09 kernel7.img

```
~/firmwar_for_ultibo/jpeg2000 $ tftp 192.168.1.245
tftp> binary
tftp> put lena_rgb_1024.bmp MyBitmap.bmp
Sent 3145850 bytes in 8.3 seconds
tftp> put 1024com testfile
Sent 24 bytes in 0.0 seconds
tftp> quit
```

```
~/Ultibo_Projects/jpeg2000/ultibo $ ~/tmp/openjpeg/build/bin/opj_compress -r 80,40,20,10,1 -i
test_wr.bmp -o tt.j2k
```

```
[INFO] tile number 1 / 1
[INFO] Generated outfile tt.j2k
encode time: 3253 ms
```

```
~/tmp/openjpeg/build/bin/opj_decompress -l 1 -i tt.j2k -o test_wr80.bmp
```

```
[INFO] Start to read j2k main header (0).
[INFO] Main header has been correctly decoded.
[INFO] No decoded area parameters, set the decoded area to the whole image
[INFO] Header of tile 1 / 1 has been read.
[INFO] Generated Outfile test_wr80.bmp
decode time: 785 ms
```

```
~/tmp/openjpeg/build/bin/opj_decompress -l 2 -i tt.j2k -o test_wr60.bmp
```

```
[INFO] Start to read j2k main header (0).
[INFO] Main header has been correctly decoded.
[INFO] No decoded area parameters, set the decoded area to the whole image
[INFO] Header of tile 1 / 1 has been read.
[INFO] Generated Outfile test_wr60.bmp
decode time: 812 ms
```

```
~/tmp/openjpeg/build/bin/opj_decompress -l 5 -i tt.j2k -o test_wr1.bmp
```

```
[INFO] Start to read j2k main header (0).
[INFO] Main header has been correctly decoded.
[INFO] No decoded area parameters, set the decoded area to the whole image
[INFO] Header of tile 1 / 1 has been read.
[INFO] Generated Outfile test_wr1.bmp
decode time: 1178 ms
```

Below is the 1024x1024 bitmap image tested on Ultibo.



The file test.j2k was decompressed on Raspbian ultibo.bmp. Prior to upgrade the output displayed Errors but the the test.j2k was created.

Ultibo Core (Release: Beetroot Version: 2.0.745 Date: 29 September 2019)

tes remaining in output buffer. 51 needed.

[ERROR] opj_t2_encode_packet(): only 27 bytes remaining in output buffer. 51 needed.

[ERROR] opj_t2_encode_packet(): only 27 bytes remaining in output buffer. 51 needed.

Compression time: 4 seconds 4 useconds 0
11:27:04

TFTP Demo.

writing top right handle1

Local Address 192.168.1.245

TFTP Ready.

Now the output is cleaner.

Ultibo Core (Release: Beetroot Version: 2.0.745 Date: 29 September 2019)

size 3145728 pointer passed 313eee4 4ffb98
width 1024 height 1024

l_nb_tiles 1 l_data_size 3145728
0x7d 0x89 0xe2

In test_tile_encoder creating J2k

Compression time: 0 seconds 0 useconds 0 s
starting openjpeg

[INFO] tile number 1 / 1

Compression time: 3 seconds 3 useconds 0
11:17:02

TFTP Demo.

writing top right handle1

Local Address 192.168.1.245

TFTP Ready.

Decompression

Ultibo Core (Release: Beetroot Version: 2.0.745 Date: 29 September 2019)

file name green data ptr 0xc0200410 size 1
048576
file name blue data ptr 0xc0100410 size 10
48576
WR imagesize = 0x300000
Wr bpp = 24
Wr xresolution = 2835 yresolution 2835
File writes: 16 seconds 16 useconds 0 star
ting openjpeg
11:39:35

TFTP Demo.
writing top right handle1
Local Address 192.168.1.245
TFTP Ready.

Used Lazarus IDE (Ultibo Edition) to compile kernel7.img

devel@mypi3-15:~/Ultibo_Projects/jpeg2000/RPi2 \$ scrot -d 10 -s laz.png

```
1 program DWT_LIFT_RPI2;
.
. ($mode objfpc){$H+}
.
5 uses
. RaspberryPi2, {<-- Change this to suit which model you have!!}
. GlobalConfig,
. GlobalConst,
. GlobalTypes,
10 Platform,
. Threads,
. Console,
. HTTP,
. WebStatus, {Include HTTP and WebStatus so we can see from a web browser what is happening}
. SysUtils, { TimeToStr & Time }
15 { needed by bitmap }
. GraphicsConsole, {Include the GraphicsConsole unit so we can create a graphics window}
. BMPcom, {Include the BMPcom unit from the fpc-image package to give the Bitmap headers}
. Classes,
20 { needed by bitmap }
. { needed to use ultibo-tftp }
. uFTP,
. Winsock2,
. { needed to use ultibo-tftp }
25 { needed for telnet }
. Shell,
. ShellFilesystem,
. ShellUpdate,
. RemoteShell.
```

1: 1 INS /home/devel/Ultibo_Projects/jpeg2000/RPI2/DWT_LIFT_RPI2.lpr

Compile Project US: ultibo, target DWT_LIFT_RPI2: Success, Warnings: 1, Hints: 4

- ▲ DWT_LIFT_RPI2.lpr(202,4) Warning: Comment level 2 found
- ▲ DWT_LIFT_RPI2.lpr(55,2) Note: Local variable "X" not used
- ▲ DWT_LIFT_RPI2.lpr(56,2) Note: Local variable "Y" not used
- ▲ DWT_LIFT_RPI2.lpr(57,2) Note: Local variable "Width" not used
- ▲ DWT_LIFT_RPI2.lpr(58,2) Note: Local variable "Height" not used

```
devel@mypi3-15:~/openjpeg/build/bin $ ./opj_decompress -i test.j2k -o ultibo.bmp
```

[INFO] Start to read j2k main header (0).

[INFO] Main header has been correctly decoded.

[INFO] No decoded area parameters, set the decoded area to the whole image

[INFO] Header of tile 1 / 1 has been read.

[INFO] Generated Outfile ultibo.bmp

decode time: 144 msxx

Ultibo Core (Release: Beetroot Version: 2.0.745 Date: 29 September 2019)

```
ed.  
[ERROR] opj_t2_encode_packet(): only 88 bytes remaining in output buffer. 141 need  
ed.  
[ERROR] opj_t2_encode_packet(): only 88 bytes remaining in output buffer. 141 need  
ed.  
[ERROR] opj_t2_encode_packet(): only 88 bytes remaining in output buffer. 141 need  
ed.  
[ERROR] opj_t2_encode_packet(): only 88 bytes remaining in output buffer. 141 need  
ed.  
[ERROR] opj_t2_encode_packet(): only 88 bytes remaining in output buffer. 141 need  
ed.  
[ERROR] opj_t2_encode_packet(): only 88 bytes remaining in output buffer. 141 need  
ed.  
[ERROR] opj_t2_encode_packet(): only 88 bytes remaining in output buffer. 141 need  
ed.  
[ERROR] opj_t2_encode_packet(): only 88 bytes remaining in output buffer. 141 need  
ed.  
[ERROR] opj_t2_encode_packet(): only 88 bytes remaining in output buffer. 141 need  
ed.  
Compression time: 1 seconds 1 useconds 0  
17:42:15
```

```
TFTP Demo.  
writing top right handle1  
Local Address 192.168.1.245  
TFTP Ready.
```

