

- Altera EP1C6 Q240C8N L BCE9S0719A
- Altera EPM3128 ATC100-10N
- Samsung K4S643232H-UC60
- JYEC 80 Mhz
- T61117

File: 0x83b1240 [0, 0]

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EP1C6

Configuration Scheme

```
0 0 AS
1 0 PS
1 1 JTAG
```

Quantus

EP1C needs Quantus II 11 web pack (last supported) in squeeze chroot

```
root@nuc:/nuc# debootstrap --arch i386 squeeze altera-squeeze http://archive.debian.org/debian
$ sudo mount blue:/bluez/FPGA/Altera-x300/11.0sp1_quartus_free_linux /nuc/altera-squeeze/mnt/
```

```
# mount /proc into chroot
# chroot into it
```

```
root@altera:/mnt$ bash setup --help
```

```
apt-get install -y `bash /mnt/setup --help 2>&1 | grep 'cannot open shared object file' | cut -d:
```

if setup dies, look at log in /tmp/ and continue installation of families:

```
140 "/root/altera/11.0spl/quartus/bin/quartus_sh" --qinstall -qda "/mnt/altera_installer/bin/.
141 "/root/altera/11.0spl/quartus/bin/quartus_sh" --qinstall -qda "/mnt/altera_installer/bin/.
```

try to start

```
root@altera:/$ /root/altera/11.0spl/quartus/bin/quartus
quartus: error while loading shared libraries: libpng12.so.0: cannot open shared object file: No
```

or

http://download.altera.com/akdlm/software/acdsinst/13.0sp1/232/ib_installers/cyclone-13.0.1.232.qdz

Quartus II 13.0.1.232 tries to open following device files:

```
dpavlin@blue:/bluez/FPGA/Altera-x300$ grep qdz /tmp/foo
lstat64("/bluez/FPGA/Altera-x300/arria_web-13.0.1.232.qdz", 0xff9b166c) = -1 ENOENT (No such file
lstat64("/bluez/FPGA/Altera-x300/cyclone_web-13.0.1.232.qdz", 0xff9b166c) = -1 ENOENT (No such fi
lstat64("/bluez/FPGA/Altera-x300/cyclonev-13.0.1.232.qdz", 0xff9b166c) = -1 ENOENT (No such file
lstat64("/bluez/FPGA/Altera-x300/max_web-13.0.1.232.qdz", 0xff9b166c) = -1 ENOENT (No such file o
```

pinout

- <https://docs.google.com/spreadsheets/d/1ecJCOOo5Ake2j6uSbuVpluRWHWXim99me3aXbe0EV-o/>

JTAG

openocd

```
pi@picam /nuc/picam/x300-pci $ sudo openocd -f raspberrypi-native.cfg
Open On-Chip Debugger 0.10.0-dev-00024-gd28ab08 (2015-09-12-02:20)
Licensed under GNU GPL v2
For bug reports, read
    http://openocd.org/doc/doxygen/bugs.html
BCM2835 GPIO config: tck = 4, tms = 27, tdi = 22, tdo = 17
BCM2835 GPIO config: trst = 18
trst_only separate trst_push_pull
adapter speed: 100 kHz
jtag
Info : BCM2835 GPIO JTAG/SWD bitbang driver
Info : JTAG only mode enabled (specify swclk and swdio gpio to add SWD mode)
Info : clock speed 100 kHz
Warn : There are no enabled taps. AUTO PROBING MIGHT NOT WORK!!
Info : JTAG tap: auto0.tap tap/device found: 0x171280dd (mfg: 0x06e, part: 0x7128, ver: 0x1)
Warn : AUTO auto0.tap - use "jtag newtap auto0 tap -irlen 2 -expected-id 0x171280dd"
Error: IR capture error at bit 2, saw 0x3FFFFFFFFFFFFFFD55 not 0x...3
Warn : Bypassing JTAG setup events due to errors
Warn : gdb services need one or more targets defined
```

OK, let's try config:

```

# XXX dpavlin x300 pci
bcm2835gpio_jtag_nums 4 27 22 17

# not really used for altera jtag, but we have to define it to make openocd happy
bcm2835gpio_trst_num 18
# reset_config trst_only
reset_config none

adapter_khz 30
transport select jtag

jtag newtap x300pci tap -irlen 10 -expected-id 0x171280dd -irmask 0x3 -ircapture 0x1

```

urjtag bug with gpio pin 4

using urjtag has bug which doesn't allow usage of pin 4 for anything (DUH!)

following patch fixes this problem:

```

--- a/urjtag/src/tap/cable/gpio.c
+++ b/urjtag/src/tap/cable/gpio.c
@@ -45,11 +45,11 @@

/* pin mapping */
enum {
-   GPIO_TDI = 0,
+   GPIO_REQUIRED = 0,
+   GPIO_TDI,
+   GPIO_TCK,
+   GPIO_TMS,
-   GPIO_TDO,
-   GPIO_REQUIRED
+   GPIO_TDO
};

typedef struct {

```

run urjtag

```

pi@picam ~/x300-pci $ sudo jtag

jtag> cable gpio help
Usage: cable gpio tdi=<gpio_tdi> tdo=<gpio_tdo> tck=<gpio_tck> tms=<gpio_tms>

# it seems that tck pin is not accepted!
jtag> cable gpio tck=4 tdo=17 tms=27 tdi=22

```


