

Bunch of references for Altera FPGA

~~http://www.fpga.com~~ [0, 0]

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## JTAG pinout

Figure 1. JTAG header pinout

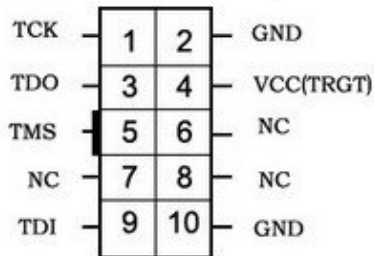


Figure 2. AS header pinout

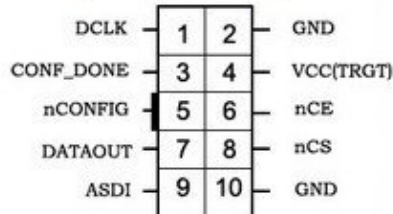
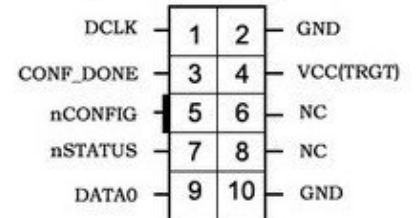


Figure 3. PS header pinout



## Bus Pirate programming

- <http://dangerousprototypes.com/forum/viewtopic.php?f=4&t=2505>

The Bus Pirate can program CPLDs and FPGAs using XSVF format bitstreams and XSVF player firmware. Altera might not output XSVF directly, but there is a simple converter for SVF to XSVF.

Windows binaries are provided, but the source should also compile under Linux. Source is in the Bus Pirate SVN:

<https://code.google.com/p/the-bus-pirate/source/browse/#svn%2Ftrunk%2Fscripts%2FXSVF>

Bus Pirate FPGA and CPLD programming with XSVF:

[http://dangerousprototypes.com/docs/Bus\\_Pirate#FPGA\\_and\\_CPLD\\_programming](http://dangerousprototypes.com/docs/Bus_Pirate#FPGA_and_CPLD_programming)

SVF to XSVF converter:

[http://dangerousprototypes.com/docs/JTAG\\_SVF\\_to\\_XSVF\\_file\\_converter](http://dangerousprototypes.com/docs/JTAG_SVF_to_XSVF_file_converter)

# USB Blaster

FX2LP firmware

- libusb tools <https://github.com/swetland/jtag>
- <https://github.com/mithro/ixo-usb-jtag> usb-jtag - Altera USB Blaster Emulation with a FX2
- <https://github.com/binary-logic/vj-uart> - serial over JTAG USB Blaster for Cyclone IV

## Quartus

### Create SVF file

[http://www.altera.com/support/kdb/solutions/rd07222008\\_677.html](http://www.altera.com/support/kdb/solutions/rd07222008_677.html)

To generate an SVF file in Quartus® II software, follow the steps below:

- Open the Quartus II programmer and add a .sof / .pof file into the programmer window.
- Select the File Menu then select Create/Update within this menu choose Create JAM, SVF, or ISC File.
- Input a file name for your SVF file output.
- In the File Format drop-down select Serial Vector File (SVF) as your output file type.
- Press ok to generate your SVF file.

### manual pin assignment

edit \*.qsf file and add:

```
set_location_assignment PIN_AP30 -to qdr_q[35]
```

### 13.0sp1 start

```
dpavlin@klin:~$ /opt/altera/13.0sp1/quartus/bin/quartus --64bit
```

## Altera hardware

- X300 dongle
- X300 PCI
- MiniPCIe/PCI/LPC Combo-Debug Card