Hardware notes

ARM-USB-TINY-H

Chip datasheet: http://www.ftdichip.com/Support/Documents/DataSheets/ICs/DS_FT2232H.pdf

Connector pinout

```
      9 5 1
 ----^^----
/ooooooooo\
\ooooooooo/
 ----------
        6 2
```

Low voltage UART mode

Pin functions

- 1, 2: Vcc (connected)
- 4, 6 and the rest of the low row: GND (connected)
- 5: RX (I)
- 7: CTS# (I)
- 9: TX (O)
- 11: RI# (I)
- 13: RTS# (O)
- 17: DTR# (O): my modification

Driver

- http://ftdi-usb-sio.sourceforge.net/
- modprobe ftdi_sio vendor=0x15ba product=0x002a
- echo -n “15ba 002a” > /sys/bus/usb-serial/drivers/ftdi_sio/new_id

Xtensa JTAG

Pin functions

- 1: Vcc
- 3: TRST#
- 4: GND
- 5: TDI
- 7: TMS

- 9: TCK
- 13: TDO
- 15: SRST# (doesn't work)

topology.xml controller line

```
<controller id='Controller0' module='ft2232' probe='flyswatter' vid='0x15ba'
pid='0x002a' usbser='OLVGHYS?' speed='10MHz'/>
```

SPI master

Pin functions

- 5: MOSI
- 7: CS0
- 9: SCK
- 13: MISO (pulled up by default)

PyFTDI-based example

API doc: https://eblot.github.io/pyftdi/api/spi.html

```
from pyftdi import ftdi, spi

ftdi.Ftdi.add_custom_vendor(vid = 0x15ba)
ftdi.Ftdi.add_custom_product(vid = 0x15ba, pid = 0x002a)

ftdi.Ftdi.show_devices()

ctrl = spi.SpiController()
ctrl.configure("ftdi://0x15ba:0x002a:1/1")
port = ctrl.get_port(freq = 1000000, cs = 0)

port.write(b'1234', start = True, stop = False) # address phase, 4 bytes
port.read(1, start = False, stop = False, droptail = 4) # dummy phase, 4
clock cycles
port.read(1, start = False, stop = True) # read phase, 1 byte
```

From:
http://wiki.osll.ru/ - **Open Source & Linux Lab**

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Last update: **2026/08/29 16:52**