



U2CY7C68013-56 [0,0]

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Cypress CY7C68013A EZ-USB FX2LP

U2CY7C68013-56.pdf

1. With CY7C68013A-56 chip: low-power version of the enhanced 51-core, 16KB program data areas, frequency of 48Mhz, 480Mbps high-speed transmission protocol standards, compatible with USB2.0
2. Firmware, EEPROM: Complete in-system programming solution with a USB cable directly to download firmware, on-board to provide 16K (24LC128) a large program memory (EEPROM), used as storage VID / PID and the USB firmware, the program space to meet the CY7C68013A Needs.
3. All the GPIO pin through the 2.54mm standard leads to very convenient for learners to expand DIY design.
4. With the board firmware can be achieved through the core function of the logic analyzer
5. PDF format, provide the schematic and code

```
dpavlin@blue:/bluez/CY7C68013A$ lsusb -d 04b4:8613
Bus 003 Device 023: ID 04b4:8613 Cypress Semiconductor Corp. CY7C68013 EZ-USB FX2 USB 2.0 Development
```

Be sure to disable any udev rules which try to load firmware for other devices with FX2

Altera USBBlaster clone

- <http://fpga4u.epfl.ch/wiki/FX2>

pull-up TMS, TDI, pull-down TCK

Altera recommends that you use pull-up resistor values between 1k and 10k ohms on the TMS and TDI pins and a pull-down resistor value of 1k ohm on the TCK pin.

```
dpavlin@blue:/bluez/CY7C68013A/USB-Blaster/fx2fw-sdcc$ make
asx8051 -plogfff vectors.a51
make: asx8051: Command not found
Makefile:42: recipe for target 'vectors.rel' failed
make: *** [vectors.rel] Error 127
```

```
dpavlin@blue:/bluez/CY7C68013A/USB-Blaster/fx2fw-sdcc$ dpkg -l sdcc
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name          Version          Architecture      Description
+++-----
ii  sdcc             3.4.0+dfsg-2    amd64             Small Device C Compiler
```

Loading firmware

```
Aug 17 17:38:26 blue kernel: [13787.802348] usb 3-1.6.4.4: new high-speed USB device number 26 on usb-l
Aug 17 17:38:26 blue kernel: [13787.894557] usb 3-1.6.4.4: New USB device found, idVendor=04b4, idProduct=
Aug 17 17:38:26 blue kernel: [13787.894563] usb 3-1.6.4.4: New USB device strings: Mfr=0, Product=1, Serial=0
Aug 17 17:38:26 blue kernel: [13787.894945] usbtest 3-1.6.4.4:1.0: FX2 device
Aug 17 17:38:26 blue kernel: [13787.894950] usbtest 3-1.6.4.4:1.0: high-speed {control bulk-in bulk-out}
```

```
root@blue:/bluez/CY7C68013A/USB-Blaster/fx2fw-sdcc# DEVICE=/dev/bus/usb/003/026 /sbin/fxload -t f
microcontroller type: fx2lp
single stage: load on-chip memory
open RAM hexfile image usbjtag.hex
stop CPU
write on-chip, addr 0x0000 len 6 (0x0006)
write on-chip, addr 0x000b len 3 (0x0003)
write on-chip, addr 0x0013 len 3 (0x0003)
write on-chip, addr 0x001b len 3 (0x0003)
write on-chip, addr 0x0023 len 3 (0x0003)
write on-chip, addr 0x002b len 3 (0x0003)
write on-chip, addr 0x0033 len 3 (0x0003)
write on-chip, addr 0x003b len 3 (0x0003)
write on-chip, addr 0x0043 len 3 (0x0003)
write on-chip, addr 0x004b len 3 (0x0003)
write on-chip, addr 0x0053 len 3 (0x0003)
write on-chip, addr 0x005b len 3 (0x0003)
write on-chip, addr 0x0063 len 3 (0x0003)
write on-chip, addr 0x006b len 1 (0x0001)
write on-chip, addr 0x0080 len 56 (0x0038)
write on-chip, addr 0x0100 len 128 (0x0080)
write on-chip, addr 0x0fa0 len 3 (0x0003)
write on-chip, addr 0x0fb9 len 3 (0x0003)
write on-chip, addr 0x0fa3 len 3 (0x0003)
write on-chip, addr 0x0180 len 1008 (0x03f0)
write on-chip, addr 0x0570 len 77 (0x004d)
write on-chip, addr 0x0fbc len 6 (0x0006)
write on-chip, addr 0xe100 len 83 (0x0053)
write on-chip, addr 0xe154 len 150 (0x0096)
write on-chip, addr 0x05bd len 452 (0x01c4)
write on-chip, addr 0x0f98 len 2 (0x0002)
write on-chip, addr 0x0781 len 440 (0x01b8)
write on-chip, addr 0x0fb3 len 6 (0x0006)
write on-chip, addr 0x0f9a len 6 (0x0006)
write on-chip, addr 0x0939 len 1008 (0x03f0)
write on-chip, addr 0x0d29 len 595 (0x0253)
write on-chip, addr 0x0fa6 len 13 (0x000d)
write on-chip, addr 0x0f7c len 28 (0x001c)
... WROTE: 4110 bytes, 33 segments, avg 124
reset CPU
root@blue:/bluez/CY7C68013A/USB-Blaster/fx2fw-sdcc#
```

```
Aug 17 17:41:23 blue kernel: [13964.652392] usb 3-1.6.4.4: USB disconnect, device number 26
Aug 17 17:41:24 blue kernel: [13965.107683] usb 3-1.6.4.4: new high-speed USB device number 27 us
Aug 17 17:41:24 blue kernel: [13965.199976] usb 3-1.6.4.4: config 1 interface 0 altsetting 0 bulk
Aug 17 17:41:24 blue kernel: [13965.199981] usb 3-1.6.4.4: config 1 interface 0 altsetting 0 bulk
Aug 17 17:41:24 blue kernel: [13965.201001] usb 3-1.6.4.4: New USB device found, idVendor=09fb, i
Aug 17 17:41:24 blue kernel: [13965.201005] usb 3-1.6.4.4: New USB device strings: Mfr=1, Product
Aug 17 17:41:24 blue kernel: [13965.201008] usb 3-1.6.4.4: Product: USB-Blaster
Aug 17 17:41:24 blue kernel: [13965.201009] usb 3-1.6.4.4: Manufacturer: EPFL
Aug 17 17:41:24 blue kernel: [13965.201011] usb 3-1.6.4.4: SerialNumber: 00000000
```

FX2 lib

- <https://github.com/djmuhlestein/fx2lib>

libfx2loader

- <https://github.com/makestuff/libfx2loader>

```
dpavlin@blue:/bluez/CY7C68013A$ wget http://www.swaton.ukfsn.org/bin/makestuff-lindar-20130719.ta
```

```
dpavlin@blue:/bluez/CY7C68013A$ tar xvf makestuff-lindar-20130719.tar.gz
```

```
dpavlin@blue:/bluez/CY7C68013A$ cd makestuff/libs/
```

```
dpavlin@blue:/bluez/CY7C68013A/makestuff/libs$ ../scripts/msgit.sh makestuff/libfx2loader
Cloning into 'libfx2loader'...
remote: Counting objects: 174, done.
remote: Total 174 (delta 0), reused 0 (delta 0)
Receiving objects: 100% (174/174), 58.68 KiB | 0 bytes/s, done.
Resolving deltas: 100% (112/112), done.
Checking connectivity... done.
```

```
dpavlin@blue:/bluez/CY7C68013A/makestuff/3rd$ ln -s ../../fx2lib/
```

```
dpavlin@blue:/bluez/CY7C68013A/makestuff/libs$ cd libfx2loader/
```

smbus

- <http://www.karosium.com/p/smbusb.html>
- <https://github.com/karosium/smbusb>