

Download lib FPGA link from

<http://jatinga.iitg.ernet.in/~asahu/cs223/libfpgalink-20120621-CS223.tgz>

[http://jatinga.iitg.ernet.in/~asahu/cs223-2014/lab8\\_usb\\_fpgalink.pdf](http://jatinga.iitg.ernet.in/~asahu/cs223-2014/lab8_usb_fpgalink.pdf)

<http://jatinga.iitg.ernet.in/~asahu/cs223/lowpass.c>

<http://jatinga.iitg.ernet.in/~asahu/cs223/test.bmp>

This code tested on Linux Fedora 24- 64 bit

1. Insert microusb USB cable between PC and FPGA board prog port

you can see device id, vendor id and product id using dmesg command

**\$dmesg**

```
[3185199.629353] usb 1-8: New USB device strings: Mfr=1, Product=2, SerialNumber=0
[3185199.629358] usb 1-8: Product: FPGALink v1.0
[3185199.629361] usb 1-8: Manufacturer: Swaton Electronics
[3186114.209230] usb 1-8: USB disconnect, device number 53
[3186562.663532] usb 1-8: new high-speed USB device number 54 using xhci_hcd
[3186562.828804] usb 1-8: string descriptor 0 read error: -32
[3186562.828814] usb 1-8: New USB device found, idVendor=1443, idProduct=0007
[3186562.828819] usb 1-8: New USB device strings: Mfr=1, Product=2, SerialNumber=0
```

2. Download libfpga link from <http://jatinga.iitg.ernet.in/~asahu/cs223/libfpgalink-20120621-CS223.tgz>
3. Untar/unzip on your home directory **\$tar -xvzf libfpgalink-20120621-CS223.tgz**
4. Go to directory **\$ cd libfpgalink-20120621-CS223**
5. Generated bit file for FPGA communication DEMO1 is stored in gen-csvf directory
6. login as root: to access usb port communication
7. Issue command as root mode  
**# ./linux.x86\_64/rel/flcli -v 1443:0007 -i 1443:0007 -s -x gen\_csvf/demo1.xsvf**

This command flcli (fpga link command line interface) will take bit file and configure the FPGA

8. CLI interface  
**#/linux.x86\_64/rel/flcli -v 1443:0007 -c**  
>

```
try : w0    FF           // it will write FF to register 0, also glow all LEDs
try : r0           // Read status of all Keys
```

```
try : w1 23
try : w2 45
try:           // change some key of FPGA
try : r0
try : r2           // it should retrieve 45
```

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## Sending data from PC to FPGA using C code

### 9. Compiling FPGA link C code and inserting your own code

```
$ cd examples/c
$ vi README
// compile using
```

```
$gcc -m64 -O3 -Wall -Wextra -Wundef -pedantic-errors -std=c99 -Wstrict-prototypes -Wno-missing-
field-initializers -I../.. -I../..../common -Wl,--relax,--gc-sections,-rpath,\$ORIGIN,-rpath-
link,..../linux.x86_64/rel -o ../..../linux.x86_64/rel/fpgalink *.c -L../..../linux.x86_64/rel -lfpgalink
```

10. \$ cd ../../
11. \$su
12. # linux.x86\_64/rel/fpgalink -v 1443:0007 -i 1443:0007 -s -x ../../gen\_csvf/demo1.xsvf
13. # linux.x86\_64/rel/fpgalink -v 1443:0007 -i 1443:0007 -f xx

xx is a datafile containing some numbers in hexformat