TigerBoard Installation (under Linux)

Installation of TigerBoard under Linux consists of two steps. First OpenSource LibUsb for Linux is installed. Secondly the TigerBoard example applications and documentation is installed.

Step 1: LibUsb Installation

LibUsb is an OpenSource USB driver available for usage for commercial applications. The TigerBoard class library will make low level USB calls to LibUsb to implement the desired high level functions available through the TigerBoard API.

The LibUsb installation is contained within "libusb-0.1.12.tar.gz".

Installation consists of the following:

a) One should first ensure that GNU g++ is available on the Linux machine. This will be needed during the installation.

b) In a working directory untar the file using
```
linux%> gzip -cd libusb-0.1.12.tar.gz | tar xvf -
```

c) Move to the created directory using
```
linux%> cd libusb-0.1.12
```

d) Run the configure script
```
linux%> ./configure
```

e) Run make (become root if necessary) to build LibUsb
```
linux%> make
```

f) Install LibUsb
```
linux%> make install
```

At this point you should have installed LibUsb for Linux. Unfortunately in most cases it seems that the library can only be seen by the root user. This means that applications would only work as root. To fix this one needs to edit one of the rule files in UDEV.

g) Change to be root
```
linux%> sudo bash
```

h) Edit for example your /etc/udev/rules.d/40-basic-permissions.rules to include the following two new lines (in red). This makes the TigerBoard USB connection able to be seen by someone other than root.

```
# USB devices (usbfs replacement)
SUBSYSTEM=="usb", ENV{DEVTYPE}=="usb_device", MODE="0664"
SUBSYSTEM=="usb_device",              MODE="0664"
#New lines for Tigerboard
SUBSYSTEM=="usb", ENV{DEVTYPE}=="usb_device",SYSFS{idVendor}=="04b4",
SYSFS{idProduct}=="1004", MODE="0666"
SUBSYSTEM=="usb", ENV{DEVTYPE}=="usb_device",SYSFS{idVendor}=="2058",
SYSFS{idProduct}=="1007", MODE="0666"
```

The above change to permissions shows how to change USB permissions for Ubuntu Linux. For other kernels permissions may need to be changed in other files. For example in Federa 11, one needs to make the modification to /lib/udev/rules.d/50-udev-default.rules.

i) You can return from being root now and now and you are ready to install the TigerBoard examples and documentation.

Step 2: TigerBoard Examples and Documentation Installation

a) Documents and the example applications are all contained in
TigerBoard_Installation_1.0.2.tar.gz. Untar this in some suitable place.

```
linux%> tar xvfz TigerBoard_Installation_1.0.2.tar.gz
```

b) Move to the created directory.

```
linux%> cd TigerBoard_Installation_1.0.2
```

c) You will see the following documents to read:

Readme.pdf
TigerBoardUserGuide_ver_Nov12.pdf
TigerBoardAPI_ver_ Nov12.pdf
TigerBoardApplicationExamples_ver_ Jan13.pdf

d) You will find the application examples in the Examples/ directory. Read
TigerBoardApplicationExamples_ver_Jan13.pdf to learn about running these. The file
structure should appear as below.

```
TigerBoard_Installation_1.0.2/

    ── Examples/
        ── common/
            ── tigerboard.h          ◄─────── TigerBoard Header File
            ── tigerboard_class.h    ◄─────── TigerBoard Class Header File
            ── tigerboard_class.c    ◄─────── TigerBoard Class C++ File
        ── src/
            ── ConfigurationExample.c  ◄─── Main Program (Example 1)
        ── scripts/
            ── go_ConfigurationExample  ◄─── Compile Script for Application 1

    ── Readme.pdf
    ── TigerBoardUserGuide_ver_Nov12.pdf
    ── TigerBoardAPI_ver_Nov12.pdf
    ── TigerBoardApplicationExamples_ver_Jan13.pdf
    ── COPYING_GPL.txt
    ── COPYING_LGPL.txt
```