



NanoBoard Installation (under Linux)

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

Step 1: LibUsb Installation

LibUsb is an OpenSource USB driver available for usage for commercial applications. The NanoBoard class library will make low level USB calls to LibUsb to implement the desired high level functions available through the NanoBoard 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 NanoBoard 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 Nanoboard
SUBSYSTEM=="usb", ENV{DEVTYPE}=="usb_device", SYSFS{idVendor}=="2058",
SYSFS{idProduct}=="1006", 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 Fedora 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 NanoBoard examples and documentation.



Step 2: NanoBoard Examples and Documentation Installation

a) Documents and the example applications are all contained in NanoBoard_Installation_1.0.2.tar.gz. Untar this in some suitable place.

```
linux%> tar xvfz NanoBoard_Installation_1.0.2.tar.gz
```

b) Move to the created directory.

```
linux%> cd NanoBoard_Installation_1.0.2
```

c) You will see the following documents to read:

Readme.pdf

NanoBoardUserGuide_ver_Apr12.pdf

NanoBoardAPI_ver_Apr12.pdf

NanoBoardApplicationExamples_ver_Apr12.pdf

d) You will find the application examples in the Examples/ directory. Read **NanoBoardApplicationExamples_ver_Apr12.pdf** to learn about running these. The file structure should appear as below.

