

USB90µC Minimal Development Board Environment Setup Instructions for Ubuntu 10.04 LTS

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Configuring Udev

Udev is the device manager for the Linux kernel. In order to allow first time access to the USB90µC Minimal Development Board for uploading programs, udev rules must be set for the device. To set udev rules you must have sudo rights.

To make a new udev rule for the device, right-click the mouse on an empty spot on the desktop. A context menu should appear. Select **Create Document > Empty File**. Type:

```
60-at90usb162-dfu.rules
```

as the name of the new file and hit enter. Open the new file for editing in a text editor. If you are using gedit as your editor, make sure text wrapping is turned off (**Edit > Preferences > View**, and make sure Enable text wrapping is not checked.) Copy the following three lines into the rules file:

```
# This file gives all users permission to update firmware for an AT90USB162
# device in DFU mode
SUBSYSTEM=="usb", SYSFS{idVendor}=="03eb", SYSFS{idProduct}=="2ffa", GROUP="users", MODE="0666"
```

Once completed, save your file and exit your text editor.

Open a terminal (**Applications > Accessories > Terminal**) and type:

```
cd Desktop/
chmod 644 60-at90usb162-dfu.rules
sudo chown root:root 60-at90usb162-dfu.rules
sudo mv -i 60-at90usb162-dfu.rules /etc/udev/rules.d/
sudo restart udev
```

The above lines change permissions and ownership of the newly created rules file, moves it to the directory where the udev daemon expects to find rule files, and restarts udev.

Installing dfu-programmer

From the Applications menu, select Ubuntu Software Center. In the upper-right corner of the software center, there is a search box. In the search box type "*dfu*" and look for the entry titled "**device firmware update (DFU) based USB programmer for Atmel chips, dfu-programmer**". Click on this entry and then the install button.

Installing The GNU Toolchain For AVR

In the Ubuntu Software Center, search for "*avr-libc*" and select the entry "**Standard C library for Atmel AVR development, avr-libc**" and install it as you did with the previous dfu-programmer. This step will also automatically install binutils-avr and gcc-avr, the GNU C cross-compiler for AVR target, as avr-libc depends on those.

Congratulations

Once you've made it this far, congratulations, you should now have a functioning dfu-programmer and tool chain to begin developing your first programs in C for the USB90µC Minimal Development Board.