



## Minimus AVR USB Instruction Manual v1.4 - 4th October 2010

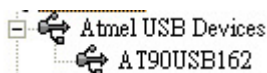
1. First install the Atmel Flip Software.

[http://www.atmel.com/dyn/products/tools\\_card.asp?tool\\_id=3886](http://www.atmel.com/dyn/products/tools_card.asp?tool_id=3886)

Here is an alternative faster link to Atmel Flip v3.4.1\* (Including the Java Runtime Environment) <http://www.megaupload.com/?d=P6JGMIJJ>

Note: When connecting the Minimus to the PC USB for the first time it will automatically boot into DFU mode so you can program it straight away without using the HWB/RESET buttons. For future re-programming instructions goto step 9 on this list.

Plug the Minimus AVR USB into the PC, and make sure the Minimus USB was detected correctly as Atmel USB devices - AT90USB162 (if you have a Minimus 32 it will say ATmega32U2)



**If it is installed correctly then goto Step 2.**

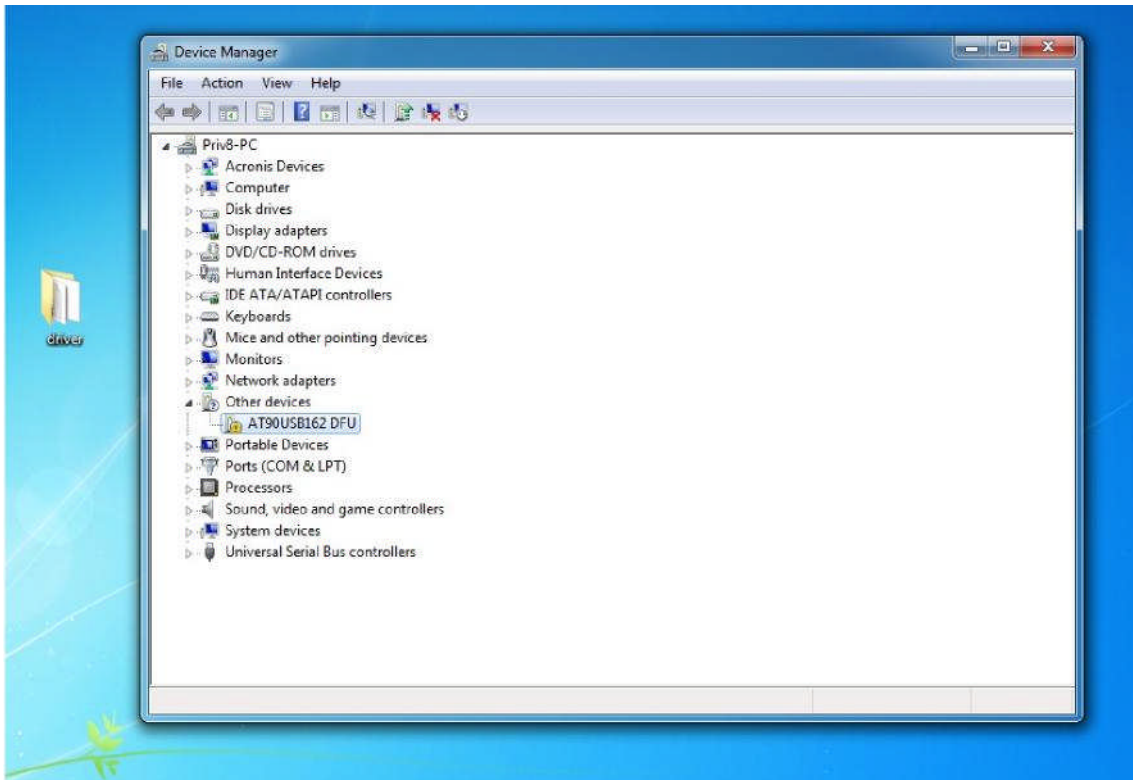
If the drivers are missing (most likely you are using Windows 7) you will need to download the ones below and install them manually. You can use these modified drivers (They work fine on both 32bit & 64bit) : [http://www.minimususb.com/files/minimus\\_x64\\_drivers.rar](http://www.minimususb.com/files/minimus_x64_drivers.rar)

If you have installed Flip 3.4.1 on Windows XP and it can't find the drivers, simply update the driver manually in device manager and navigate the drivers update path to C:\Program Files\Atmel\Fliap 3.4.1\usb

\*Note: Flip 3.4.2 is reported to work better with the newer ATmega32U2 controllers.

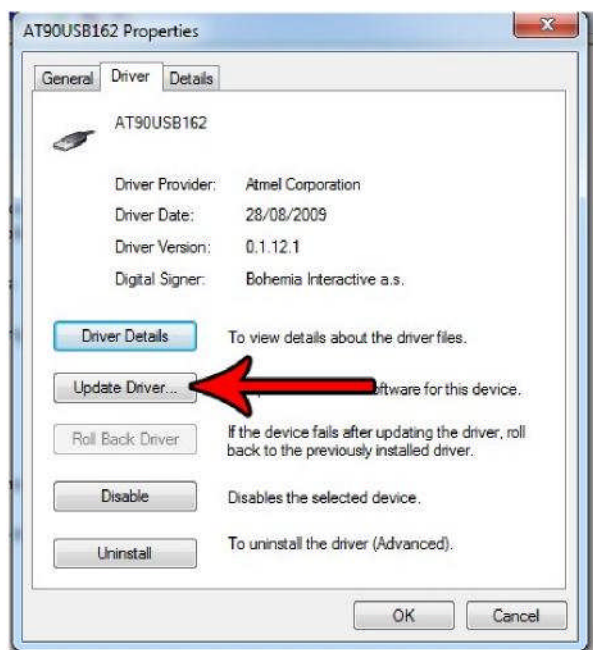
**Note: Added Info at the end of this doc on how to program the Minimus using a Mac - Thanks to Maltloaf :)**

To install the drivers, unzip the drivers package to your desktop and go to your device manager which should look like this:

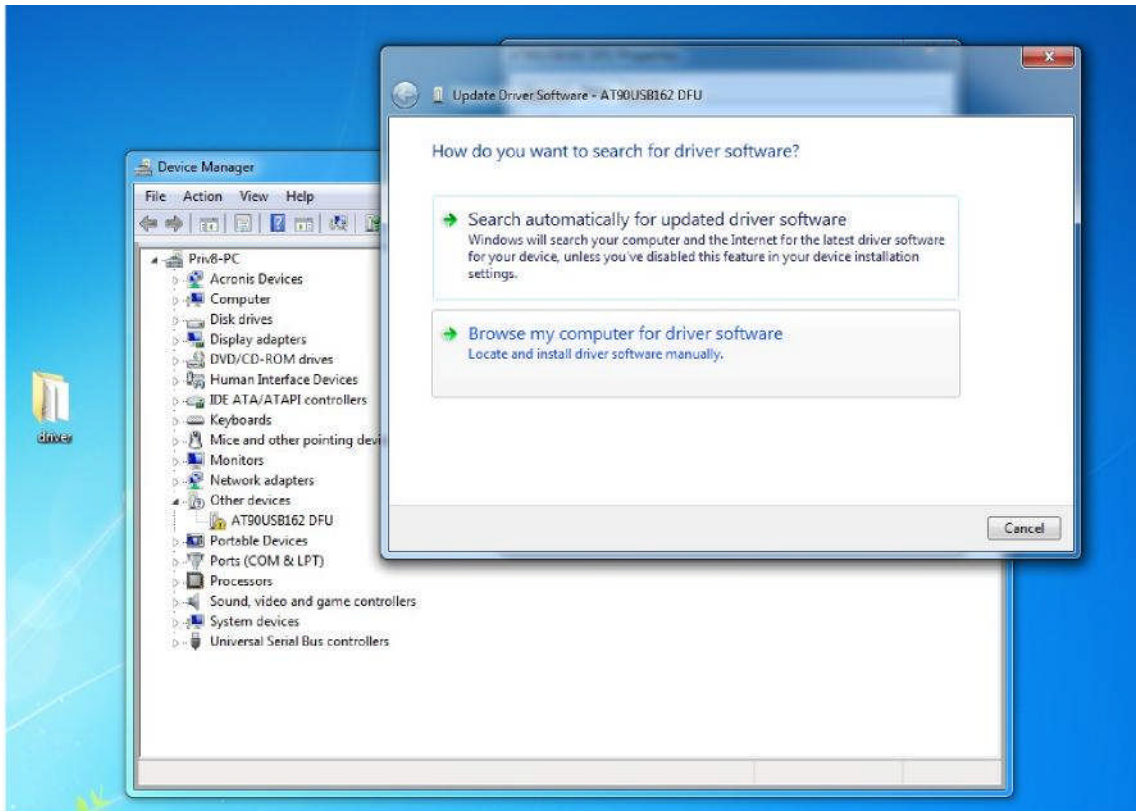


As you can see from the picture above the drivers are missing and there is a yellow exclamation mark at the side of the device name.

Double click on the device with drivers missing then click on driver (middle top box) then click UPDATE DRIVER (see below)

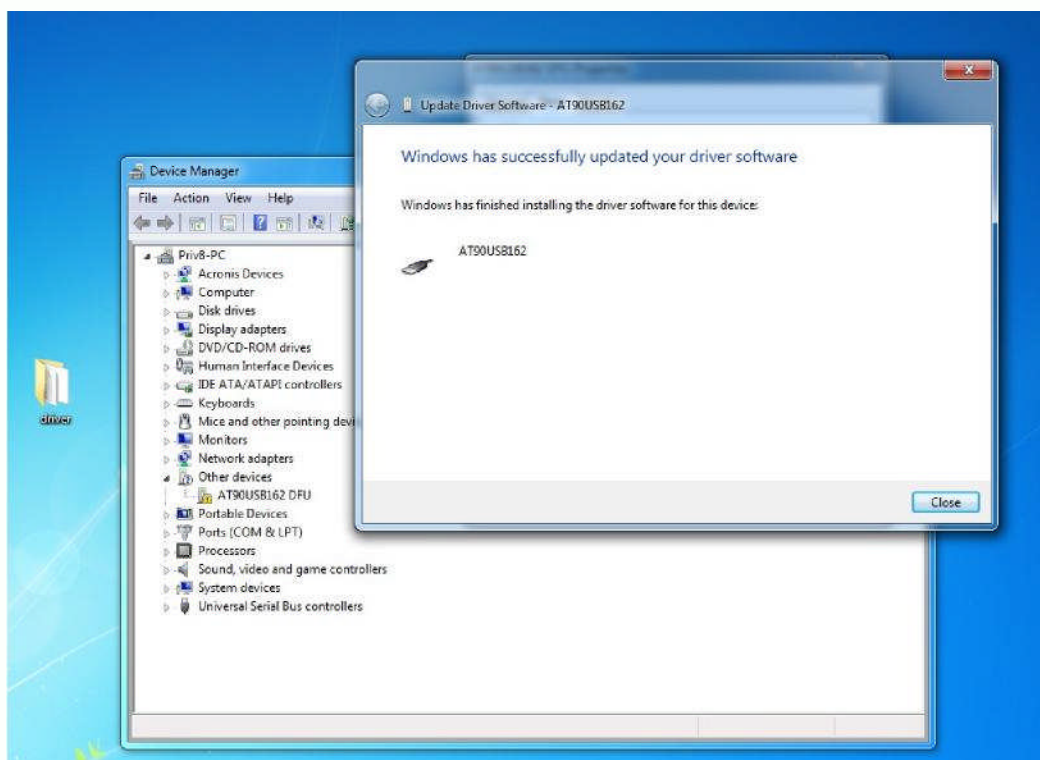


A New box will then pop up, select “Browse my computer for driver software”



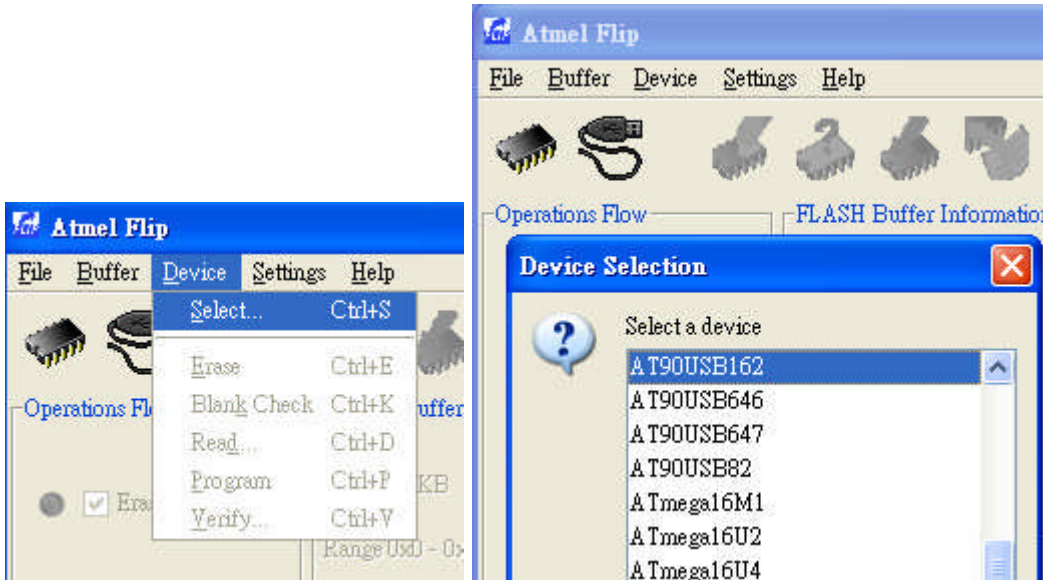
Then navigate to the drivers folder which you unzipped previously and click ok. Windows should then find the drivers and pop up another box asking if you trust the drivers from Atmel Corporation, Select YES.

And the drivers should now be working fine and the device will be recognised (see below)

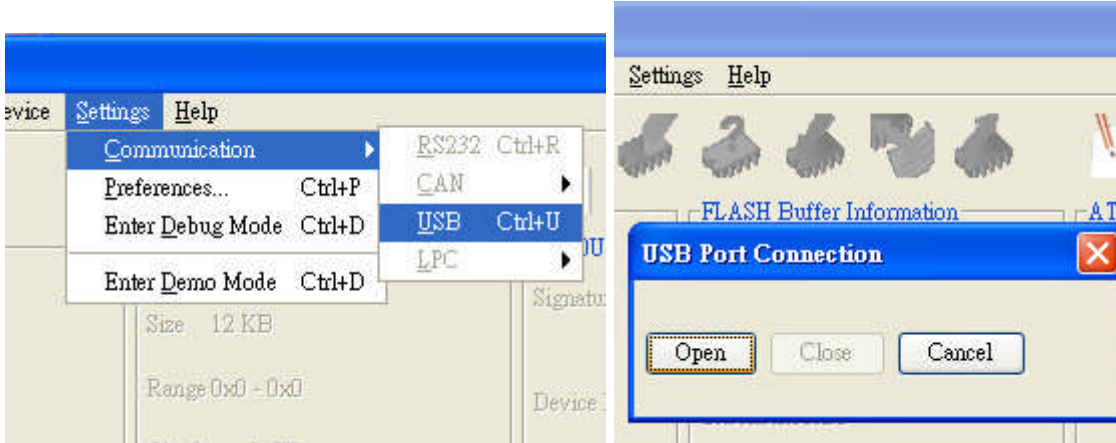


2. Open the Atmel Flip software.

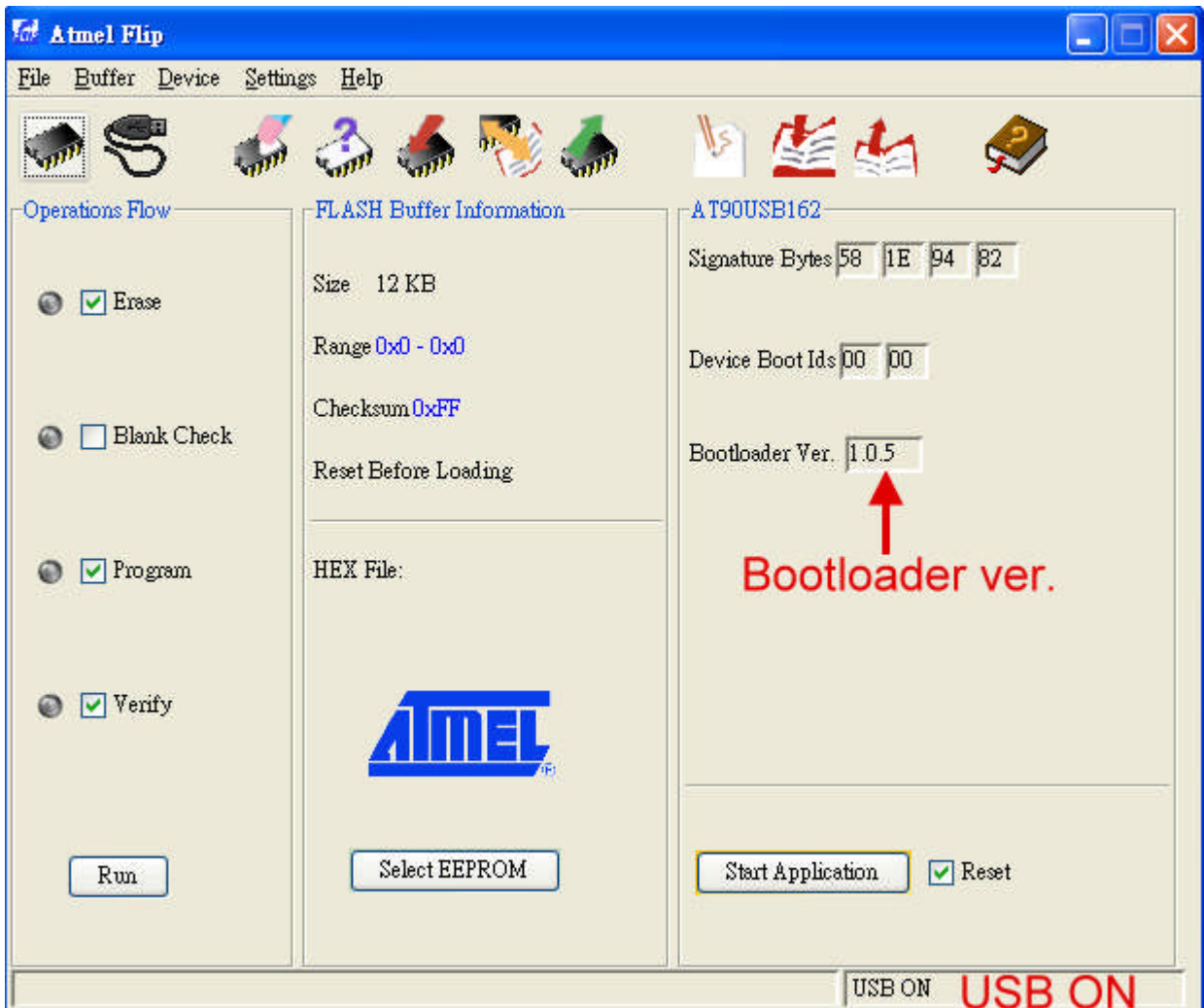
3. Click: Device > Select and then choose AT90USB162 (For Minimus 32 select ATmega32u2)



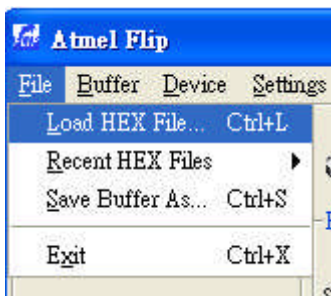
4. Click: Settings > Communication > USB then click Open.



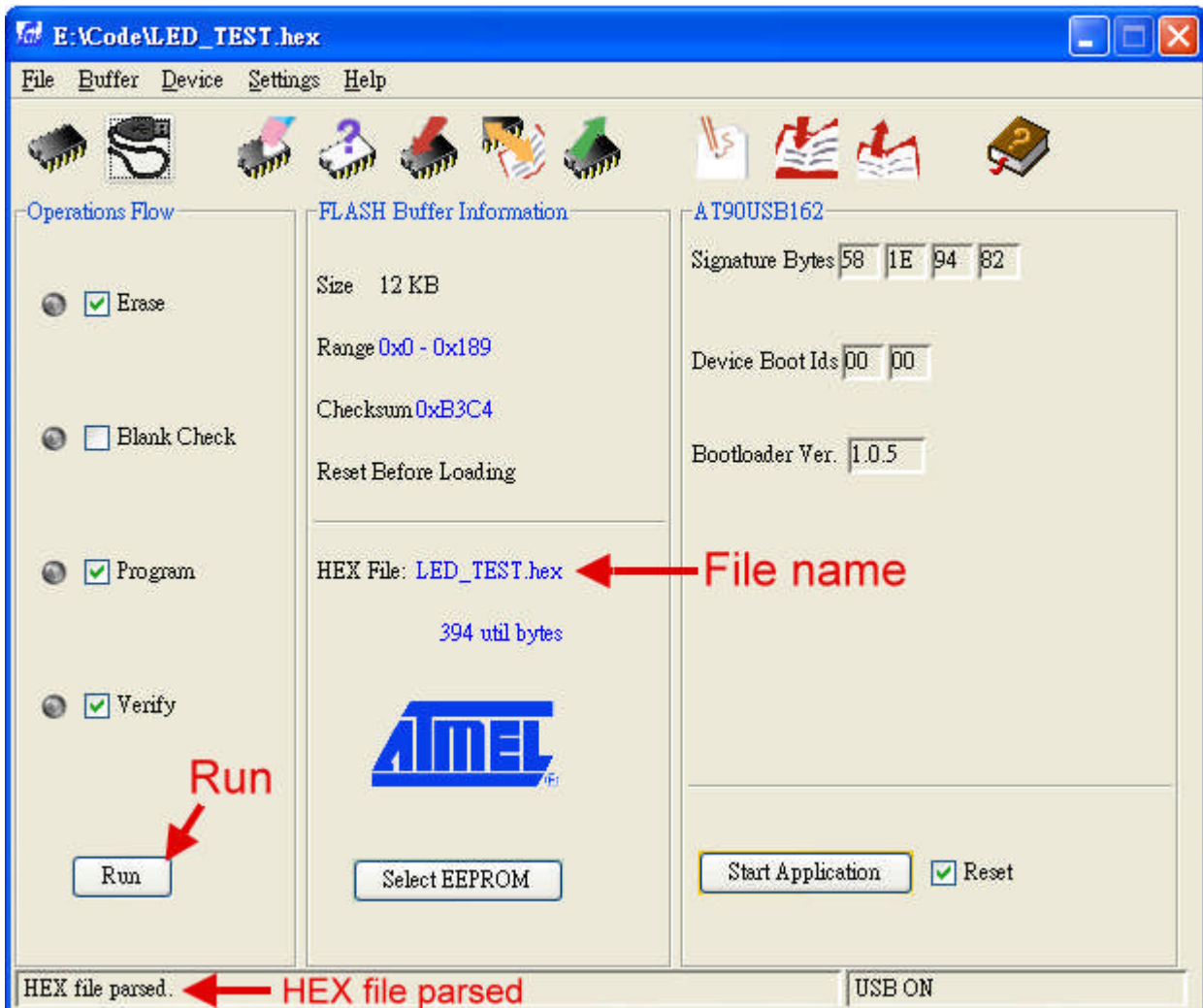
5. The program should then display the information like the image below:



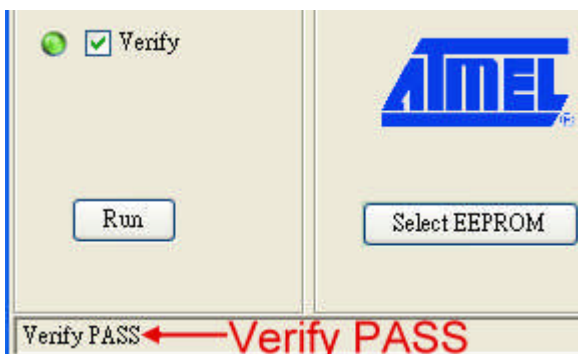
6. Click: File -> Load HEX File..., then find the HEX file you want to load and press OK.



7. Check if the file file name is correct, then press RUN to program chip.



8. After programming, check if Verify PASS is shown as below. You have now successfully programmed your Minimus AVR USB ☺



9. If you need to re-program the Minimus then putting it into DFU mode for programming is very easy:

- a. Plug the Minimus into the USB port of your PC.
- b. Press and hold the RESET button.
- c. Press and hold the HWB button.
- d. Release the RESET button.
- e. Release the HWB button.
- f. That's it - now you are ready to program with Flip :)

Coming Soon Special Case Design - Thanks to Team Xecuter:



#### Technical Notes:

The MCU is **AT90USB162** for Minimus v1 or **ATMEGA32U2** for Minimus 32

The Board Type Has been designed to work as **Teensy** (Red + Green LED's) or you can also set it to work as **USBKEY** (Red + Green + Blue Led's)

The Clock setting is **16000000**

If you are using a Hex where only 1 or no LED's work - then it is the **WRONG** hex file or the code has been compiled incorrectly. The Minimus LED's have been tested 100% working using the above settings.

## How To Program The Minimus AVR USB Using a Mac

You need:

Minimus (duh!)

Mac (duh!)

dfu-programmer ([Click Here To Download](#))

libftdi ([Click Here To Download](#))

Whatever hex file you are using

Put the Minimus into DFU mode and execute the command

```
./dfu-programmer at90usb162 erase
```

and you should get output like...

```
dfu_device_init(000003eb,00002ffa)
 0: 0x05ac,0x8005
 1: 0x05ac,0x021b
 2: 0x05ac,0x8005
 3: 0x03eb,0x2ffa
dfu_find_interface()
config 0: maxpower=50*2 mA
interface 0
setting 0: class:0, subclass 0, protocol:0
opened interface 0...
set configuration 1...
claimed interface 0...
```

then execute the command

```
./dfu-programmer at90usb162 flash hexname.hex
```

and you should see...

```
dfu_device_init(000003eb,00002ffa)
 0: 0x05ac,0x8005
 1: 0x05ac,0x021b
 2: 0x05ac,0x8005
 3: 0x03eb,0x2ffa
dfu_find_interface()
config 0: maxpower=50*2 mA
interface 0
setting 0: class:0, subclass 0, protocol:0
opened interface 0...
set configuration 1...
claimed interface 0...
Validating...
12006 bytes used (97.71%)
```

Credit goes to Maltloaf :)