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Twiddler 2.1 Firmware Upgrade Procedure

1. Type the chord: N+S RM00 to see the latest firmware version. Compare with the latest firmware listed in the Support section at Handykey.com
2. Backup twiddler.cfg file from the Twiddler's flash disk. The new firmware will attempt to retain and use the original twiddler.cfg, but if by chance something goes wrong, the file could be overwritten with a default configuration. It is also advisable to print a copy of your Twiddler configuration for your records.
3. Download and install the programming tool applicable to your operating system.

Windows: Atmel Flip

http://www.atmel.com/dyn/products/tools_card.asp?tool_id=3886

Linux: dfu-programmer

<http://dfu-programmer.sourceforge.net/>

Debian and Ubuntu: # `sudo apt-get install dfu-programmer`

4. Place the Twiddler in Programming Mode by plugging it in and typing the chord N+S LM00, or by holding all four thumb buttons while plugging in the Twiddler. The Twiddler will not function as a keyboard and mouse while in Programming Mode. If you wish to exit Programming Mode, unplug and re-plug the Twiddler.

WINDOWS UPGRADE PROCEDURE

5. Launch Atmel Flip.
6. Select a device: *Device | Select...* then select *AT90USB1287* and press OK.
7. Connect to the device: *Settings | Communication | USB*. The buttons and checkboxes in the lower portion of the Flip program should now become active. If not, repeat steps 4 and 6.
8. Load the firmware file: *File | Load HEX File...*, find and open the file you downloaded in step 1.
9. The HEX file should be shown under the Flash Buffer Information section, and the Checksum a value other than 0xFF. If not, repeat step 8.
10. Under Operation Flow, *Erase, Program*, and *Verify* should be checked. Un-check *Blank Check*.
11. Click *Run*.
12. When the procedure is complete, click *Start Application* or unplug and re-plug the Twiddler.
13. Wait 30 seconds for the Twiddler to initialize, then check to see that the new firmware is loaded by typing the chord N+S RM00 to a text editor.

LINUX UPGRADE PROCEDURE

5. Erase the device:

```
# sudo dfu-programmer at90usb1287 erase
```

6. Program the device:

```
# sudo dfu-programmer at90usb1287 flash --debug 1 Twiddler.hex
```

where `Twiddler.hex` is the firmware filename that you wish to use. If the file is stored in a different directory, the filename should be prefixed by the relative or absolute path to the file.

7. Reset the device:

```
# sudo dfu-programmer at90usb1287 reset
```

8. Unplug and re-plug the Twiddler.

14. Wait 30 seconds for the Twiddler to initialize, then check to see that the new firmware is loaded by typing the chord `N+S RM00` to a text editor.

Revision	Date	Author	Notes
0	Aug 18, 2010	EA	Original