



Mountaineer

.NET Gadgeteer compatible platform

Mountaineer Firmware and USB Driver Installation Guide for NETMF 4.2 QFE2

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This document shows how you can switch from the factory-installed Mountaineer firmware (NETMF 4.2 QFE1), or from any other firmware version for that matter, to the NETMF 4.2 QFE2 release.

Compared to QFE1, the QFE2 release allows you to use USB drivers that run in user mode and therefore cannot cause the infamous Blue Screens of Death. It also adds support for analog outputs, which was contributed by Oberon microsystems to the NETMF community.

To install the QFE2 firmware, perform the following steps:

1) QFE2 Firmware and USB Driver

Download the firmware and driver file suitable for your board, i.e., either “*Mountaineer Firmware and USB Driver 4.2 QFE2 (USB Mainboard)*” or “*Mountaineer Firmware and USB Driver 4.2 QFE2 (Ethernet Mainboard)*” from the Mountaineer [NETMF 4.2 QFE2](#) page.

Unzip the file. The resulting directory should contain a file ending in “.dfu” and a subdirectory “*Mountaineer_WinUSB_Driver*”. The “.dfu” file contains the firmware for the board. Now you need a tool to deploy this firmware.

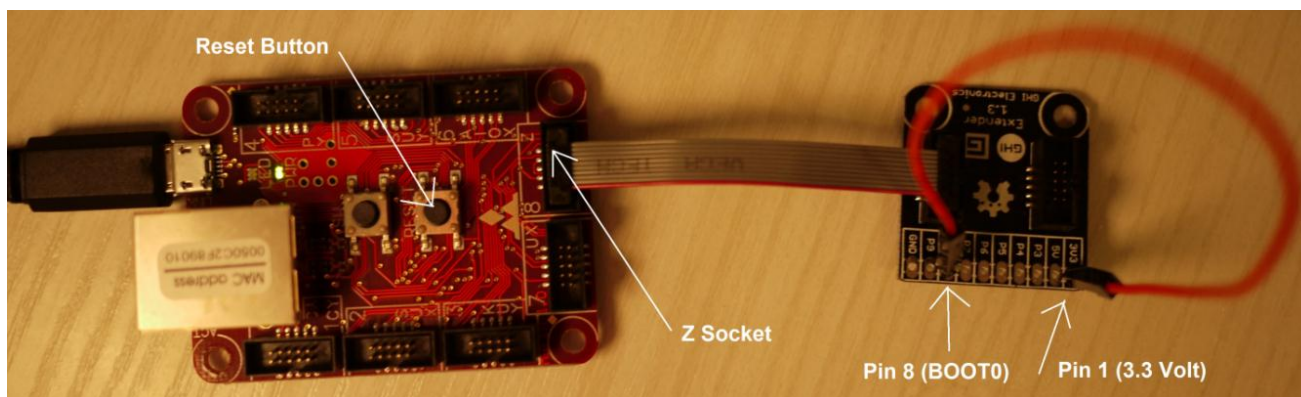
2) DfuSe Tool

[Download](#) the *DfuSe Demonstration* program V3.0.2 from the STMicroelectronics Web site and install it. You may have to enter a company name during installation.

3) Restart in Boot Mode

Start the board in Boot mode. Only in this special mode, the microcontroller will talk to the DfuSe tool:

- Make a connection between pins 1 and 8 on the Z (debug) socket, which is socket 8 on both the Ethernet Mountaineer Mainboard and the USB Mountaineer Mainboard. One way to do this is shown below, where a GHI Extender module is used with a cable that connects pin 1 (3.3 Volt) with pin 8 (BOOT0 selector¹):





Mountaineer

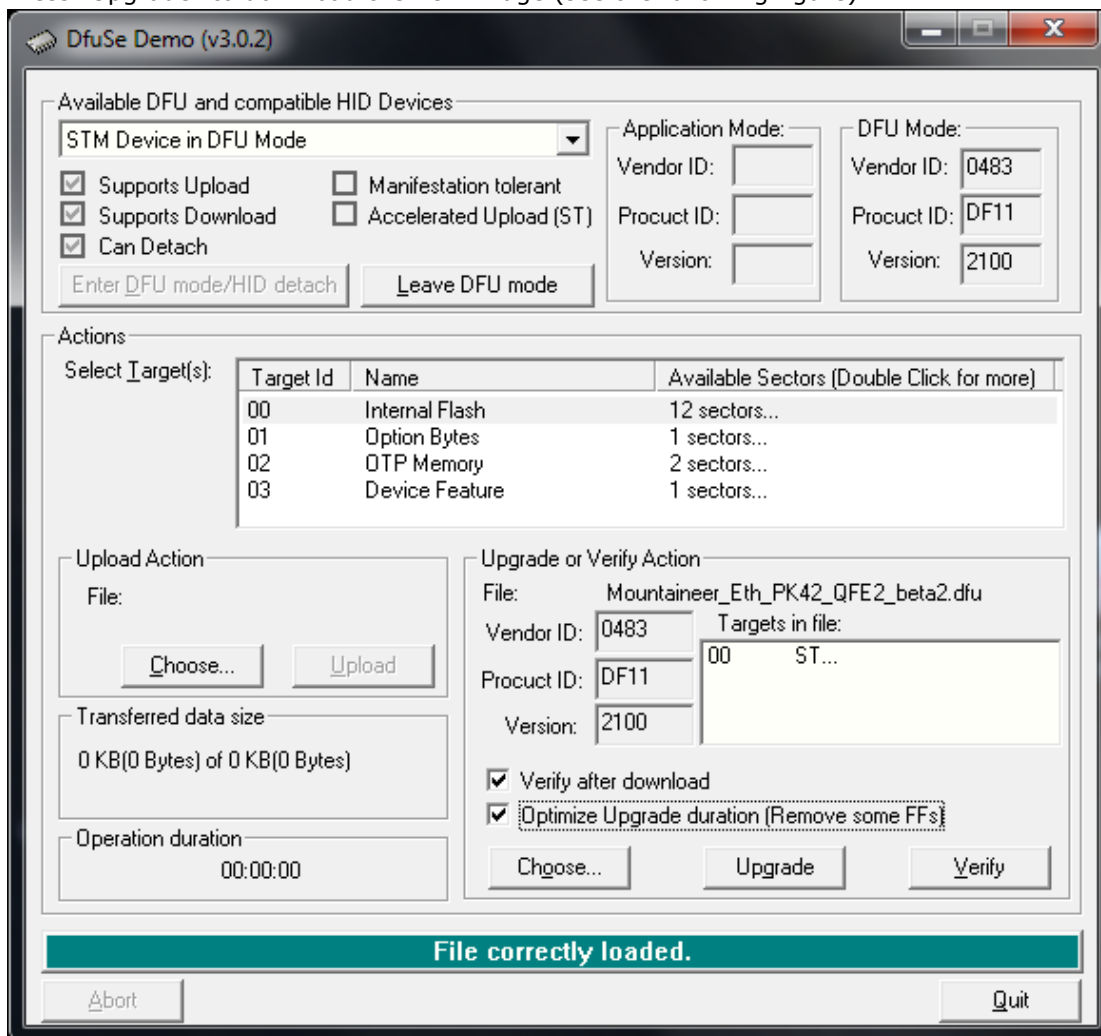
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- Reset the board by pressing the Reset button.

If you see the error message "Device driver software was not successfully installed", you may have to switch on the automatic lookup of drivers in Windows Update.

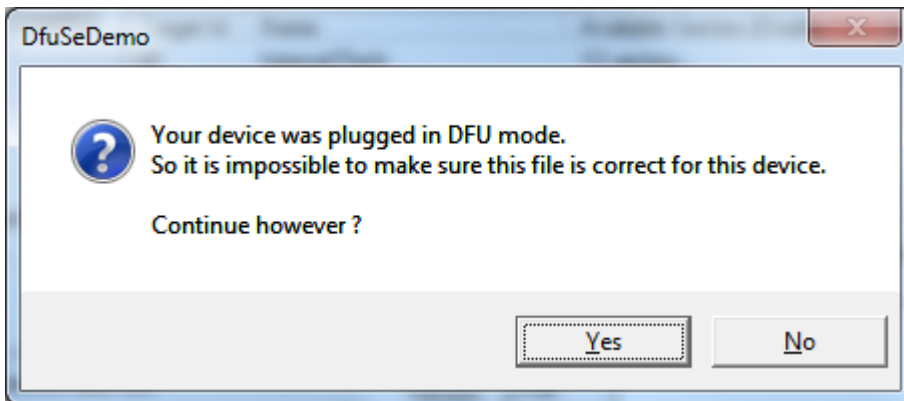
4) Upgrade with DfuSe

- Start the DfuSe Demonstration program.
- Verify that an "STM Device in DFU Mode" appears in the list of available devices.
- In the "Upgrade or Verify Action" group press "Choose ..." and select the provided "Mountaineer_USB_PK42_QFE2.dfu" or "Mountaineer_Eth_PK42_QFE2.dfu".
- Check the two check boxes "Verify after download" and "Optimize Upgrade duration (Remove some FFs)".
- Press "Upgrade" to download the new image (see the following figure).



- Click "Yes" when you see the following dialog box:





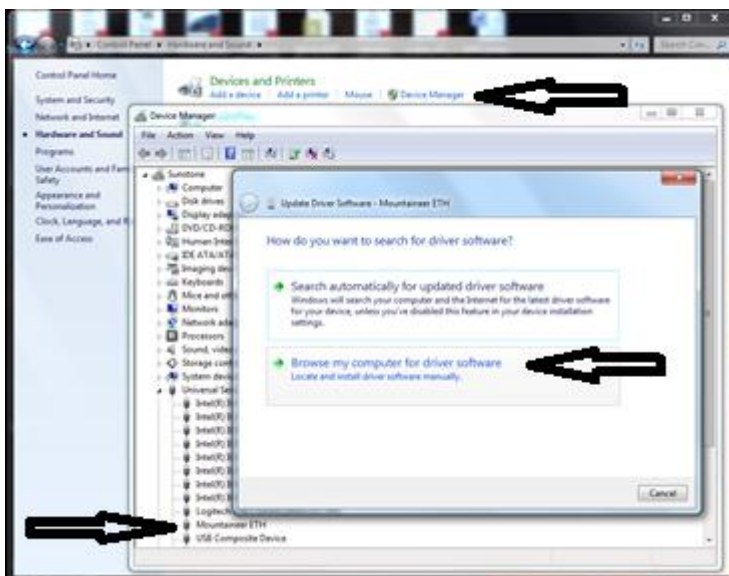
5) Restart the board

- Remove the Boot mode contraction from the Z socket.
- Reset the board.

6) Install WinUSB driver files

Follow *all* the steps in this chapter! If Windows 7 tells you that it already has a good driver, don't believe it. You need to force Windows to let go of the old driver; it clings to it as long as it can. Therefore, **don't try any shortcuts** to the following sequence of steps:

- In the Device Manager Control panel, open the *Universal Serial Bus controllers* folder, right-click the old *Mountaineer USB* or *Mountaineer ETH* driver, and then choose the "Update Driver Software..." command.
- Click "Browse my computer for driver software" (middle arrow in the following figure)



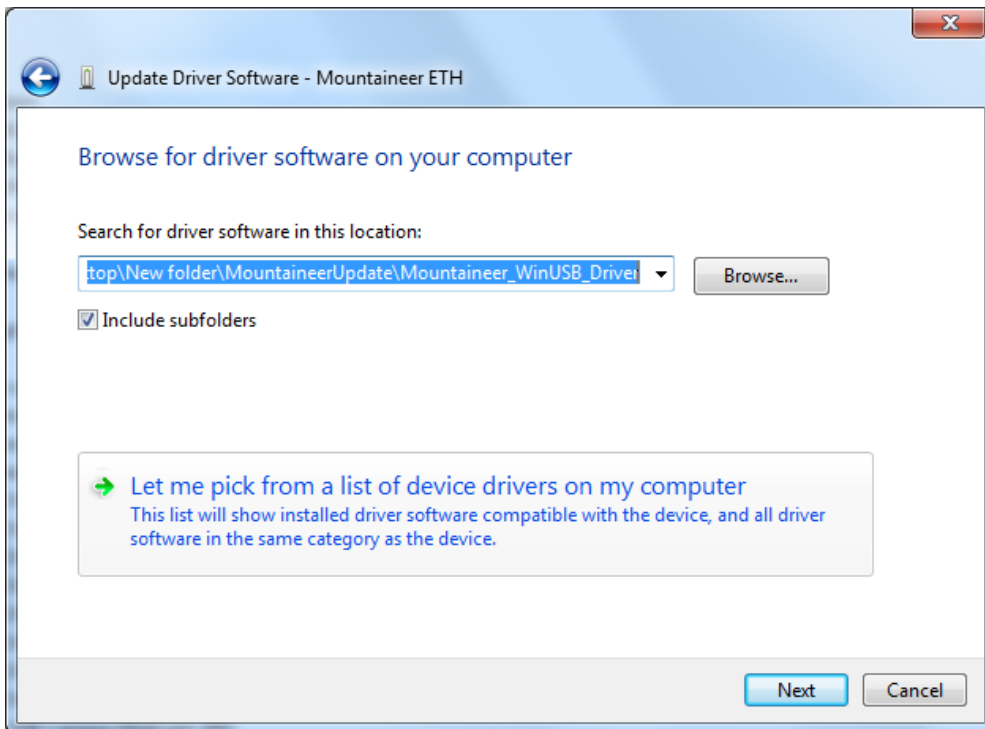
- Click "Let me pick from a list of device drivers on my computer" (see the following figure).





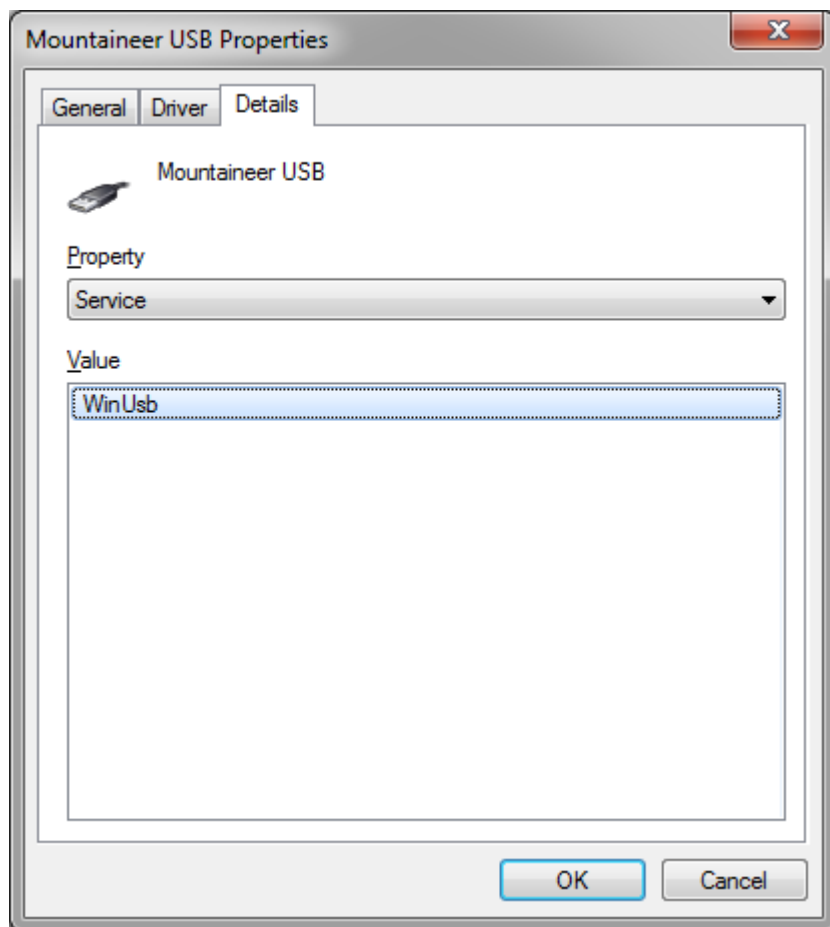
Mountaineer

.NET Gadgeteer compatible platform



- Click "Have Disk"
- Click "Browse"
- In the directory that you have downloaded in step 1, open "*Mountaineer_WinUSB_Driver*". Select "*MountaineerUSB.inf*" or "*MountaineerEth.inf*".
- Click "OK".
- Click "OK".
- Click "Next".
- If dialog box "Windows can't verify the publisher of this driver software" appears, then click "Install this driver software anyway".
- Now go back to the Device Manager, and to the new *Mountaineer USB* or *Mountaineer ETH* driver. Right-click on the driver. Select the *Details* tab, and the *Service* entry in the *Property* list. It **must** show the value "WinUsb" (see the following picture), otherwise Windows has tricked you and kept the old driver.





7) Download new SDK

[Download](#) and install the NETMF 4.2 QFE2 SDK from Microsoft. **Even if you already had installed the SDK, make sure that you install it again, otherwise MFDeploy may not work!**

1) If you want to learn more about the Mountaineer pins, see the [pin assignment table](#).

