

EMBEDDED SYSTEM FOR QUADRICOPTER

Technical Report #1

**FLYMAPLE CONTROLLER BOARD
DRIVERS & IDE INSTALLATION**

Bùi Nhã Đạt

Poitiers, February 2014

Introduction

This technical report is a part of the PFE Quadricopter. In this report, you can find information about the installation of MapleIDE and drivers for the FlyMaple Controller Board.

This technical report is targeted to Windows operating system. With different OSes, please refer the LeafLabs' documentations on leaflabs.com/docs/.

Disclaimer: some parts of this report are cited from LeafLabs' documentations. It will be noted in the related part.

1 MapleIDE Installation

1.1 Download

Currently, MapleIDE is officially tested on Windows XP 32-bit. However, during this PFE, everything has been done on Windows 8 and 8.1, 64-bit. MapleIDE works fine with these platforms.

MapleIDE for Windows can be downloaded from leaflabs.com/docs/maple-ide-install.html#download.

1.2 Installation

1.2.1 Installation for Windows XP

[Source: leaflabs.com/docs/maple-ide-install.html#installation/]

- First, extract all the files in the ZIP file to a suitable location on your system (like your Desktop folder). Next, you have to install some drivers. Sorry!

Note: Note that while these instructions work on Windows XP, changes in Windows 7 (and later) mean that you won't be able to install the IDE without disabling driver signing on your computer. Users on the forum have reported a workaround (see *the next part*), but we only officially support the IDE on 32-bit Windows XP.

- First, install DFU drivers (for uploading code to your Maple) using the following steps.
 1. Plug your Maple into the USB port.
 2. Hit the reset button on your Maple (it is the small button at the bottom left, labeled RESET). Notice that it blinks quickly 6 times, then blinks slowly a few more times.
 3. Hit reset again, and this time push and hold the other button during the 6 fast blinks (the button is on the top right; it is labeled BUT). You can release it once the slow blinks start.
 4. Your Maple is now in perpetual boot loader mode. This should give you a chance to install the DFU drivers.
 5. Windows should now prompt you for some drivers. In the top-level directory of the Maple IDE, point Windows to drivers/mapleDrv/dfu/.
- Next, install serial drivers (for communicating with your Maple using serial over USB).
 1. Reset your Maple and allow it to exit the boot loader (wait for the slow blinking to stop). The Maple will next start running whatever program was uploaded to it last. (New Maples will start running the test program we upload to them before shipping them to you).
 2. Once Maple is running some user code, Windows should prompt you for more drivers. Point windows to driver/mapleDrv/serial.
- You can now run the Maple IDE by double-clicking on the maple-ide program from within the extracted IDE directory.

1.2.2 Disabling Driver Signature on Windows Vista and Later

Windows Vista and 7

The following steps are to disable digital signature enforcement temporarily so that Windows will load an unsigned driver properly.

- Restart computer.
- Hit “F8” during the startup in order to enter the *Advance Boot Mode* (Figure 1).
- Select “Disable Driver Signature Enforcement”.
- Following the instructions as in Part 1.2.1, install the necessary drivers.

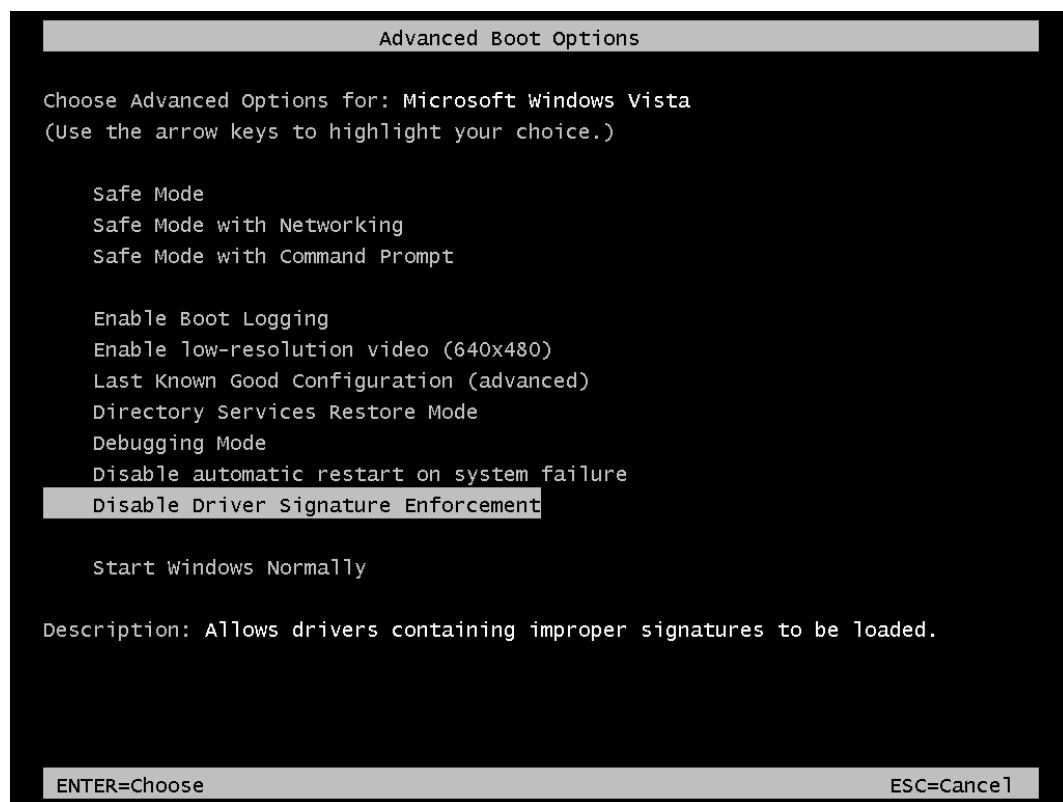


Figure 1. Advanced boot mode in Windows Vista

Windows 8 and 8.1

From Windows 8, the *Advance Boot Mode* cannot be entered by pressing F8 during the startup process. In order to enter this mode, holding Shift key while selecting the Restart command (Figure 2).

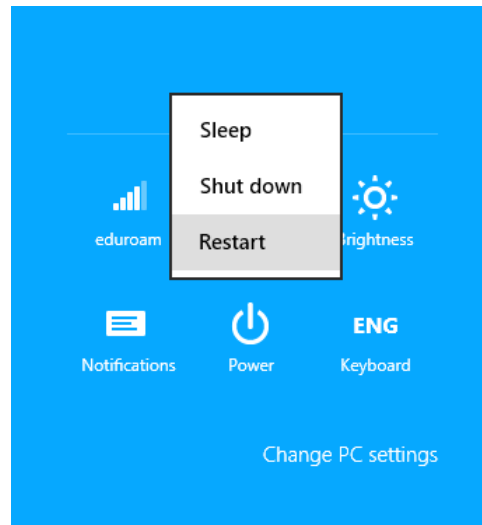


Figure 2. Restarting Menu in Windows 8 and 8.1

- When the “**Choose an Option**” screen appears (Figure 3), select “**Troubleshoot**”.
- In the Troubleshoot menu select “**Advanced Options**” (Figure 4).
- In the Advanced Options menu select “**Startup Settings**” (Figure 5).
- Click the “**Restart**” button to boot into the “**Startup Settings**” screen (Figure 6).
- When the laptop restarts, select the desired startup by pressing the associated F key from the options below and the computer will boot into the selected mode. Here we select the option 7 for “Disable driver signature enforcement.”
- Now, following the instructions as in Part 1.2.1, install the necessary drivers.

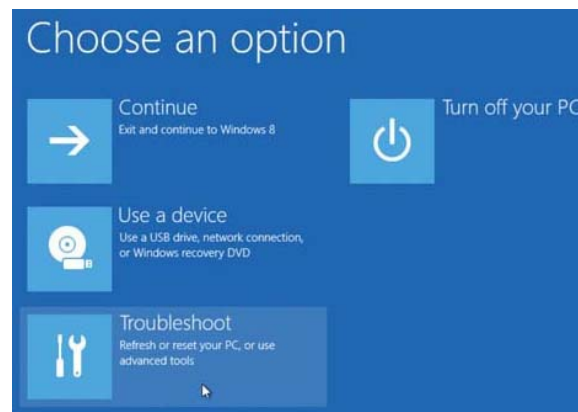


Figure 3. “Choose an option” screen



Figure 4. "Troubleshoot" menu

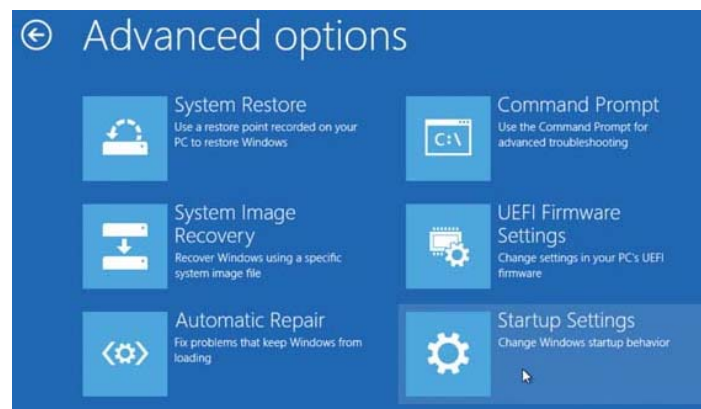


Figure 5. "Advanced options" menu



Figure 6. "Startup Settings" menu