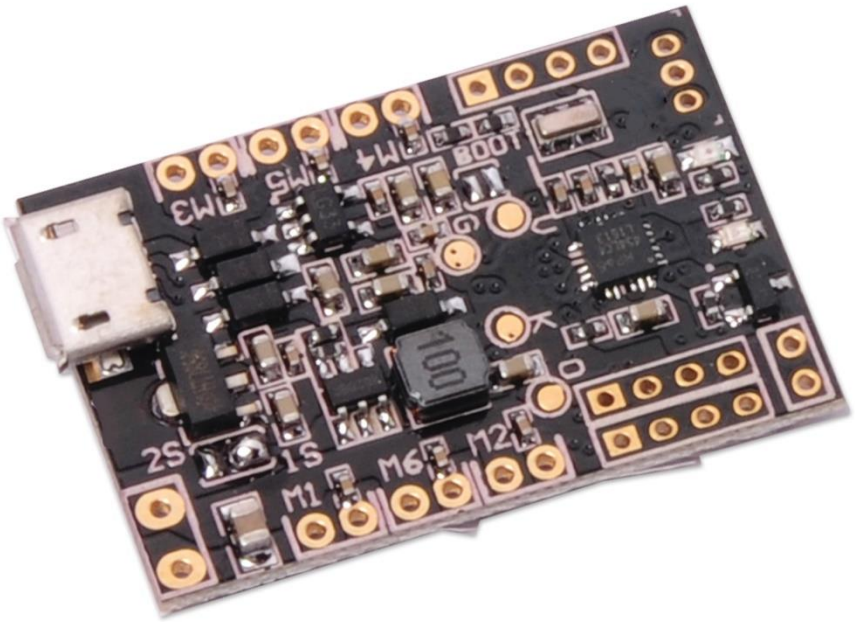
Hyperion F3 Evo Brushed Manual



The Hyperion F3 EVO Brushed Flight Controller gives you all the features in a small size and designed for micro size quads with brushed motors. Supports up to 6 motors for Hex copter configurations.

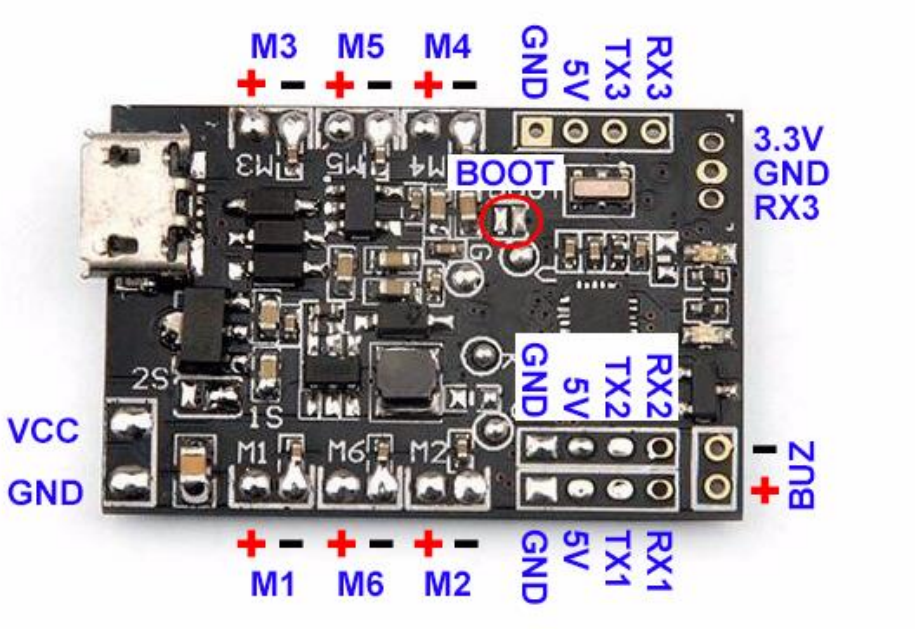
Dedicated Open source Cleanflight software ensures that you are always updated.

Warning

This F3 EVO Brush flight controller is for use with BRUSHED MOTORs only and Not compatible for BRUSHLESS MOTOR.

Supports for 1S and 2S lipo only.

Board layout



Specifications:
Brand Name: Hyperion
Item Name: F3 EVO Brushed Flight Controller
Dimension: 22mmx32.5mm
Thickness: 1.2mm
Weight: 3g

Features:

1. F3 EVO Brush is based on the popular F3 EVO from SP RACING. It is a 32bit brush flight controller based on F3 EVO firmware.

2. Supports 1S (4.2V) and 2S (8.4V) lipo, with 2S power flying experience can be more wild.

3. Independent design of the circuit structure, comes with the pressure reduction technology, whether it is 1S or 2S power input, UART1/2 output 5V, UART3 output 3.3V

4. Using STM32F303CCT6 + MPU6500 and advanced hardware platform the F3 guarantees more stable flight.

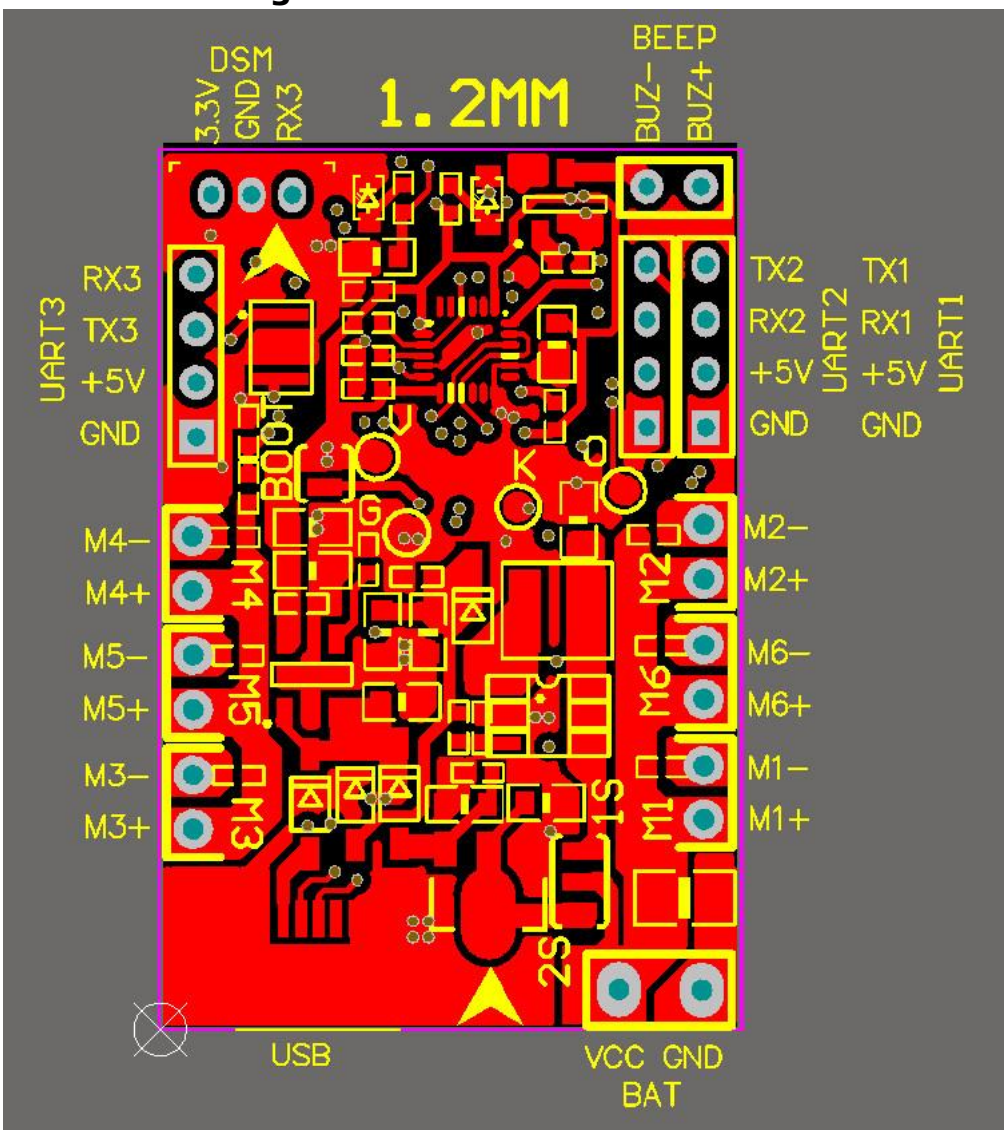
5. With a 6-ways large current NMOS transistors, operating current of up to 10A or more. Each machine is equipped with freewheeling diodes.

6. Support for PPM, SBUS, DSM receiver input signal.

7. With battery voltage detection and buzzer interface.

8. Support for 6 motors, including 1020 coreless motor.

Connection diagram:

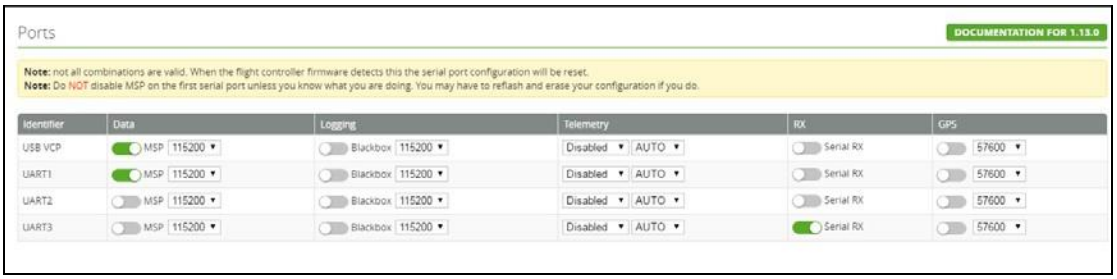


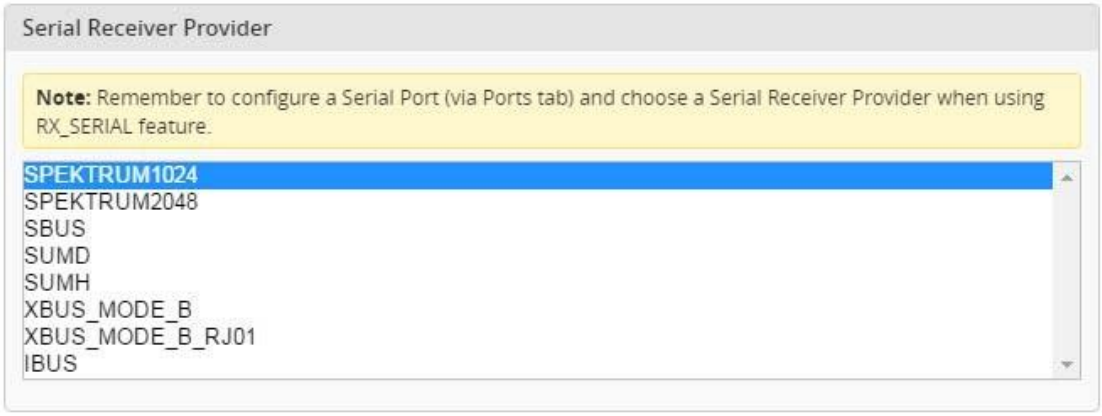
- Micro USB socket: Connect to computer to flash firmware and configure the flight controller
- M1/M2/M3/M4: Connect to Brush motor
- VCC/GND: Connect to the battery 1s~2s input (Configure by the voltage input pad)
- UART1: GND +5V RX1 TX1 Connect to GPS/OSD
- UART2: GND +5V RX2 For PPM/SBUS Receiver input（RX2）
- UART3: GND +5V RX3 TX3 Connect to GPS OR Telemetry module, cannot be used when DSM/DSM/DSMX Receiver Used.
- BUZ+ -: Connect to an external buzzer

- DSM/DSM2/DSMX: 3.3V GND RX3 DSM/DSM2/DSMX Receiver input

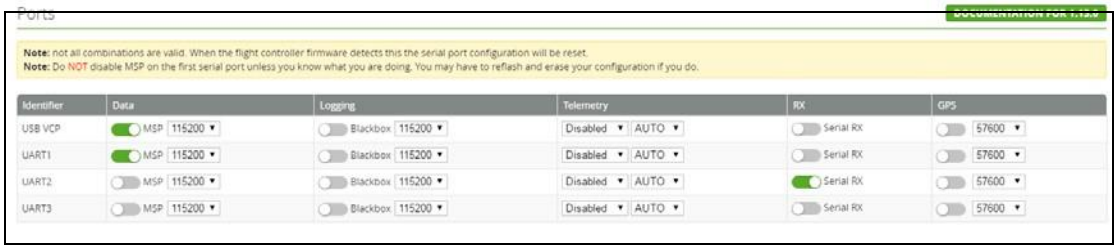
Receiver configuration:

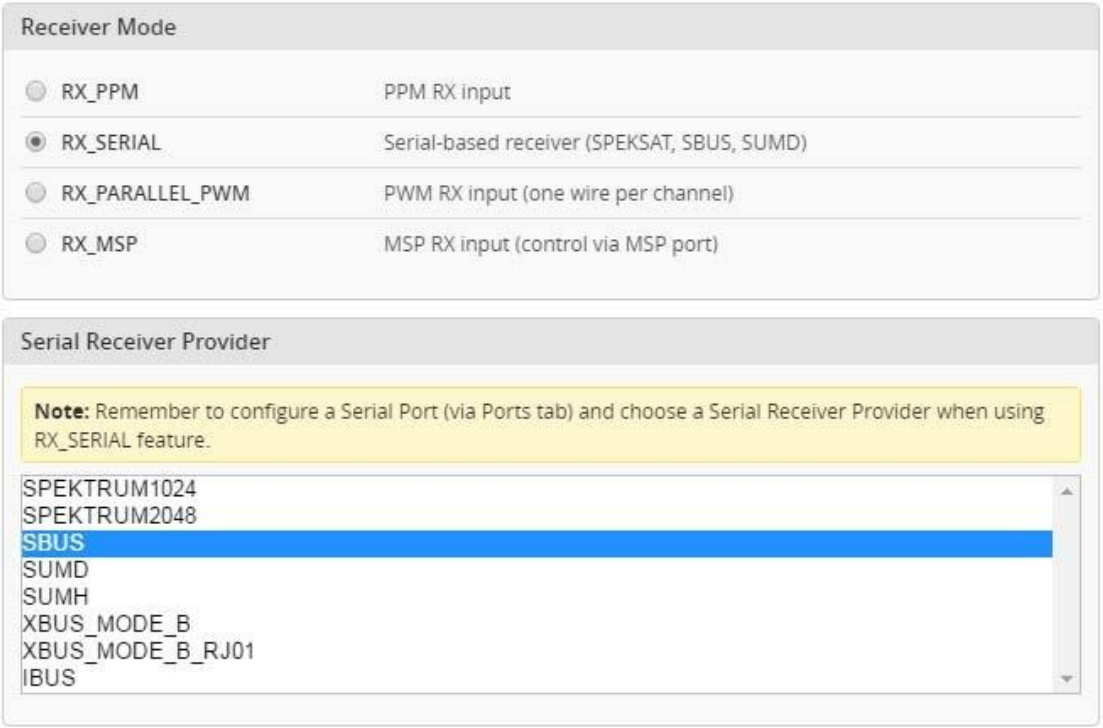
1. DSM receiver can be soldered directly to the DSM/DSM2/DSMX Receiver interface 3.3V, GND, RX3. Enable Serial RX for UART3 and Set Receiver mode RX_SERIAL, Select Spektrum1024 (DSM/DSM2) or Spektrum2048 (DSMX) in Cleanflight configurator. Refer below image.





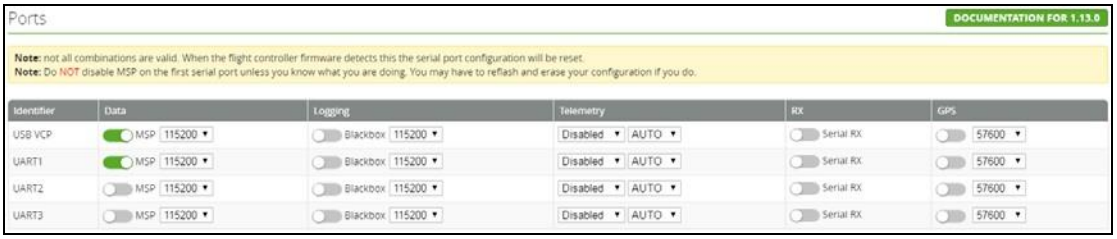
2. For SBUS receiver's soldered to the UART2 GND, + 5V, RX2. Then Enable Serial RX and Set Receiver mode RX_SERIAL, Select Sbus signal in

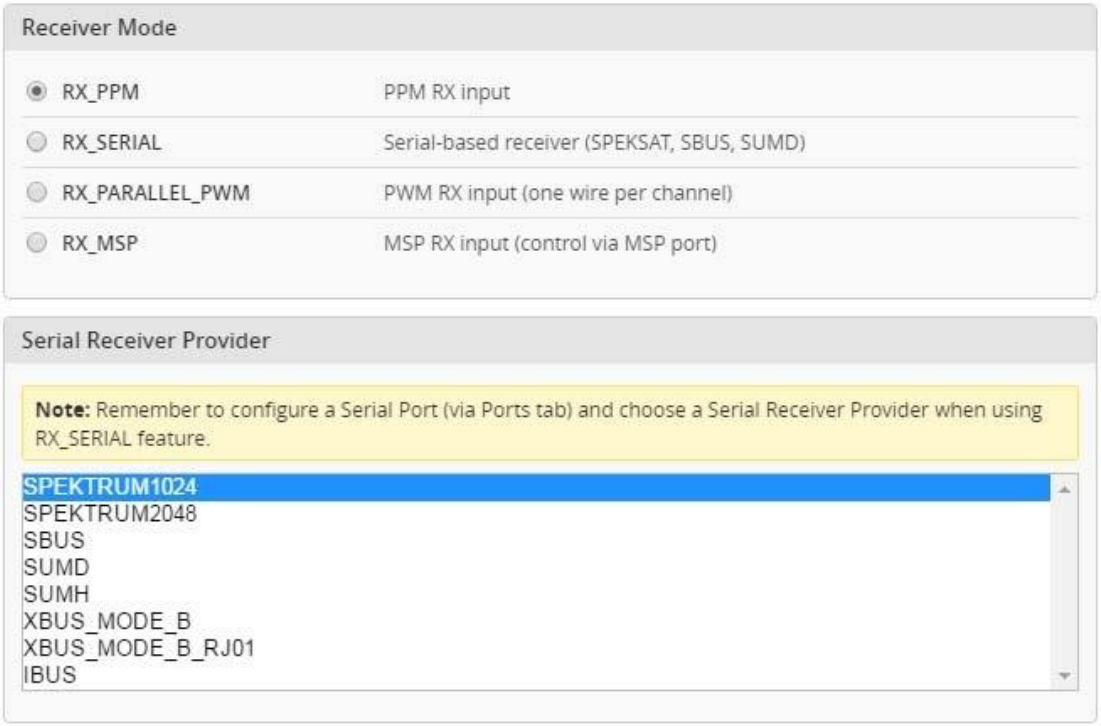




Cleanflight configurator.

3. For PPM receiver, soldered to the UART2 GND, + 5V, RX2 .Then set Receiver mode to RX_PPM in Cleanflight configurator.



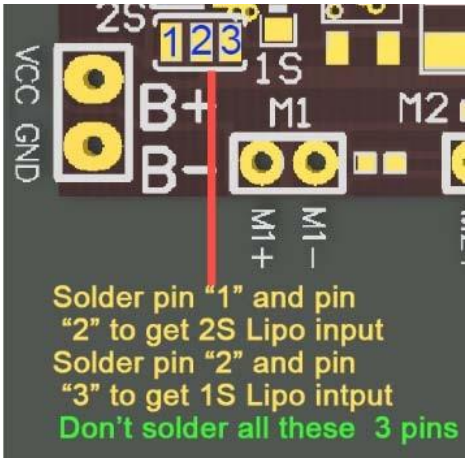


Note:

Before applying power, pay careful attention to the battery voltage selection. The default setting is 1S (4.2V); if you intend to use 2s lipo, please first disconnect pin2 and pin 3 and then re solder pin 1 and pin 2.

Warning

Avoid using the same three pads shorted together.



FIRMWARE FLASHING for F3 EVO Brush

The following tutorial covers flashing Cleanflight Firmware onto the F3 EVO Brush Flight Controller. Betaflight is the same steps like Cleanflight.

Installing the ST drivers: (For Windows Only)

Download and install the DfuSe demo package

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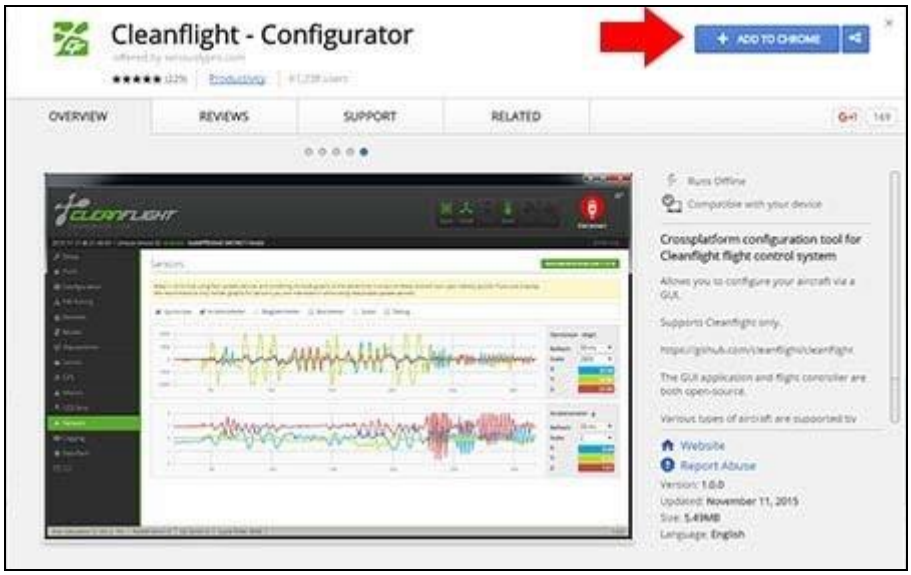
Open an explorer window and browse to (assuming you’ve installed to the default path) C:\Program Files (x86)\STMicroelectronics\Software\DfuSe v3.0.5\Bin\Driver

Browse two folders deeper to the folder relative to your Operating System version, and x86-32bit or x64-64bit variant.

Click the dpinst_x##.exe to install the driver.

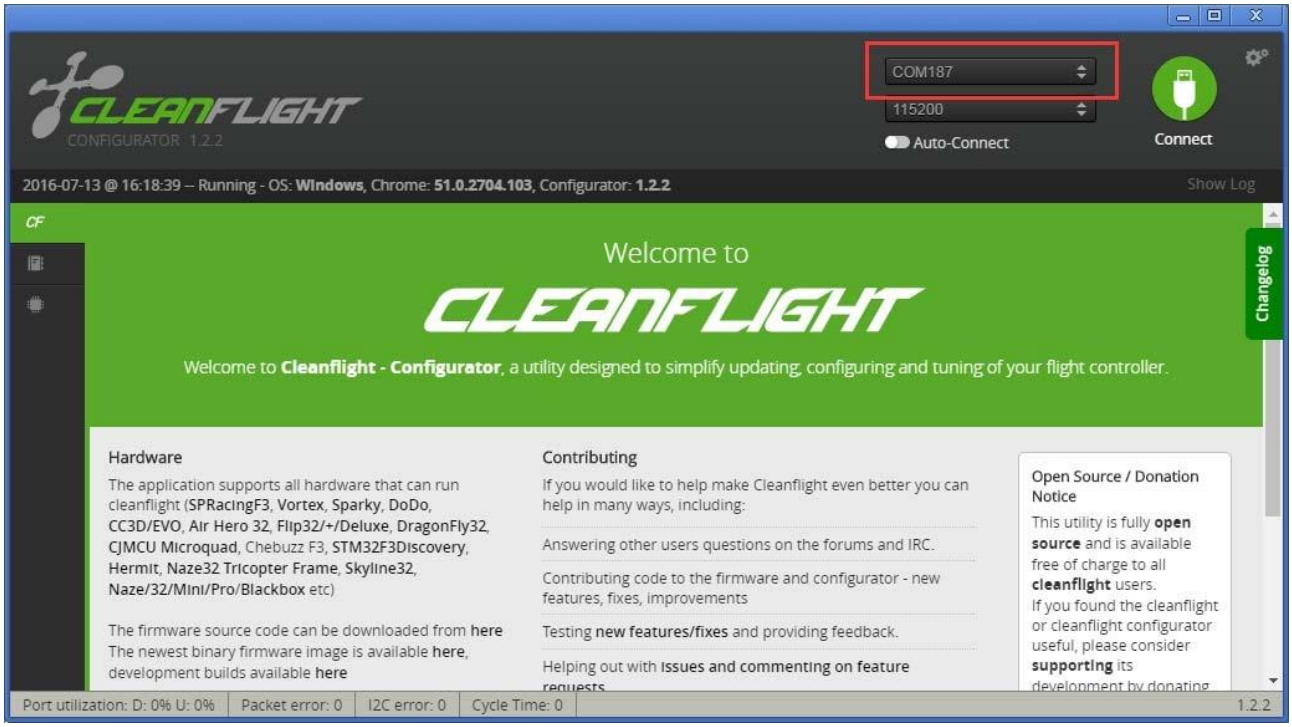
Installing Cleanflight Configurator: (For Windows Only)
You must use Cleanflight Configurator v 1.0.0 or newer.

The following assumes you also have the Chrome Browser installed.
Get the latest Cleanflight Configurator (+ Add to Chrome)

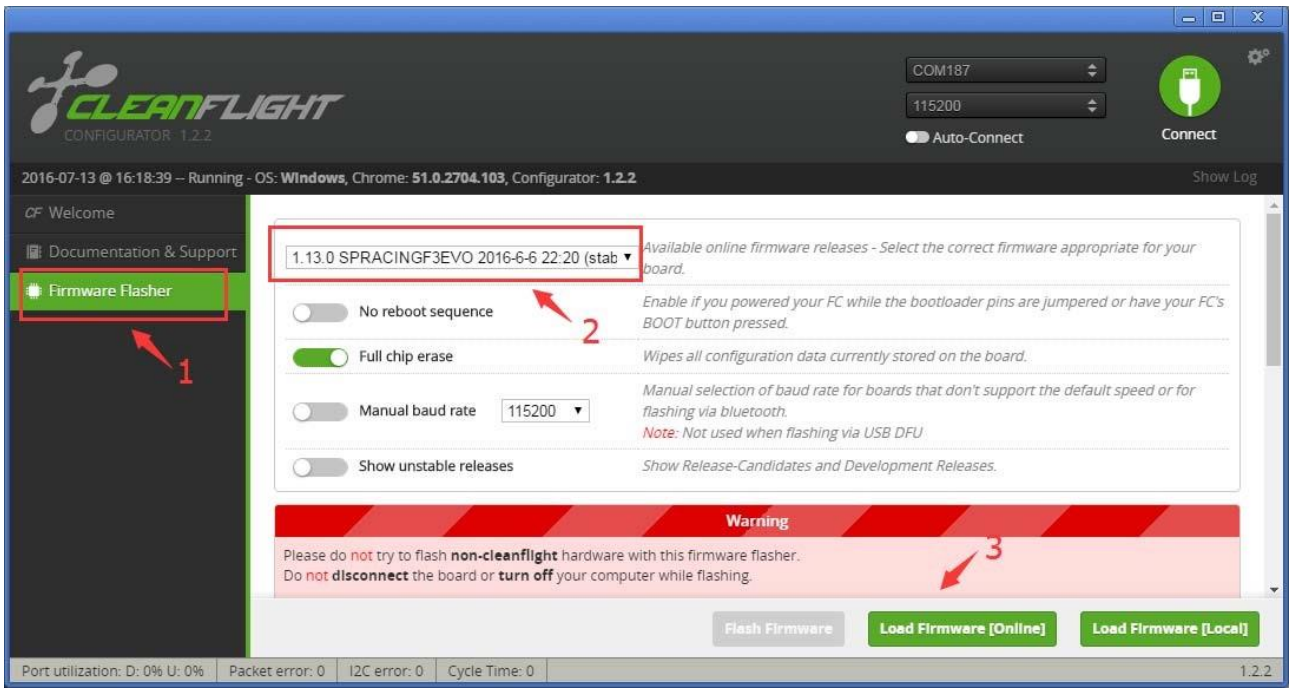


Replacing the ST Driver with WinUSB driver: (For Windows Only)

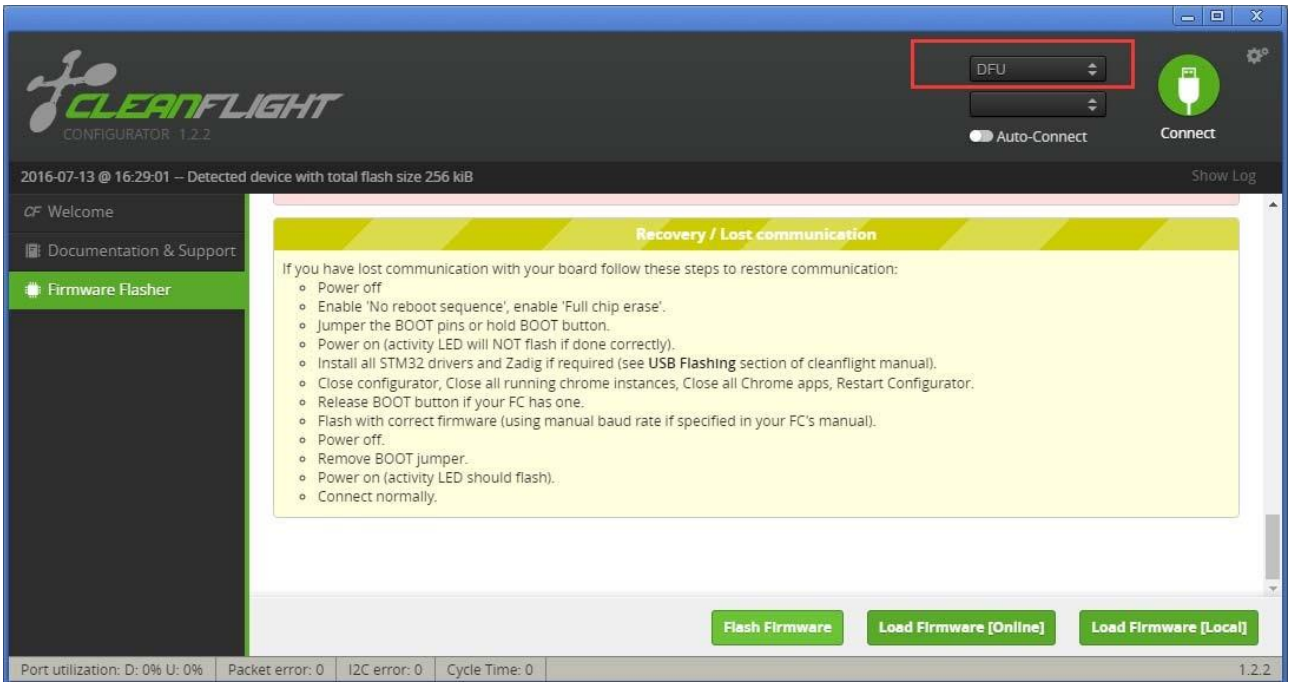
1. Plug your F3 EVO_Brush board onto your computer. Open Cleanflight configurator , you should see the serial com port



2. Click "Firmware Flash" menu, select the latest firmware for F3 EVO Brush and load firmware [online] or load firmware [Local]

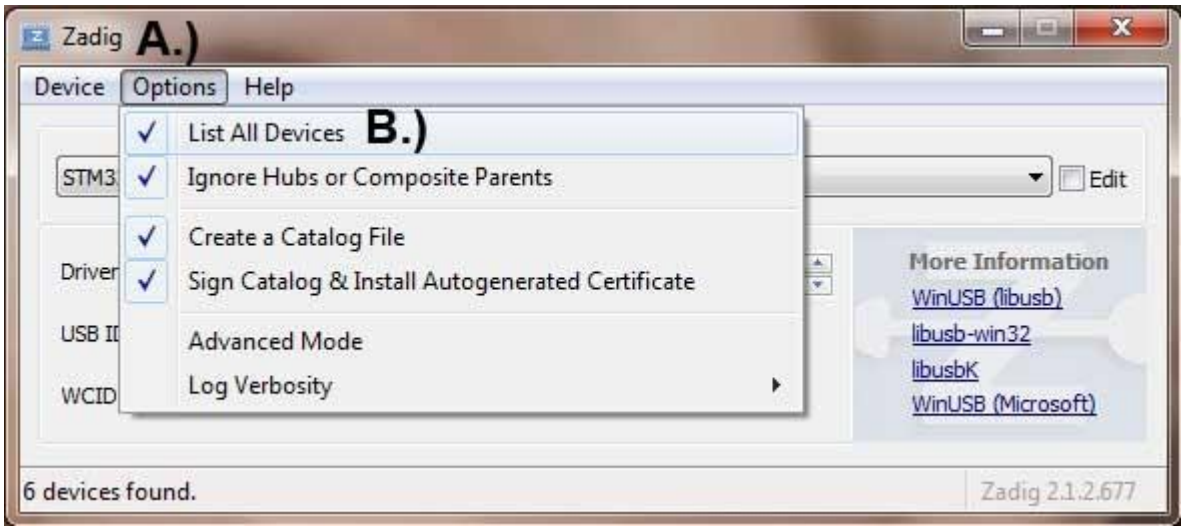


3. Click "Flash Firmware" and wait the ST DFU DRIVER Automatic installation. It's successfully installed when you see the DFU port on the Up right corner.



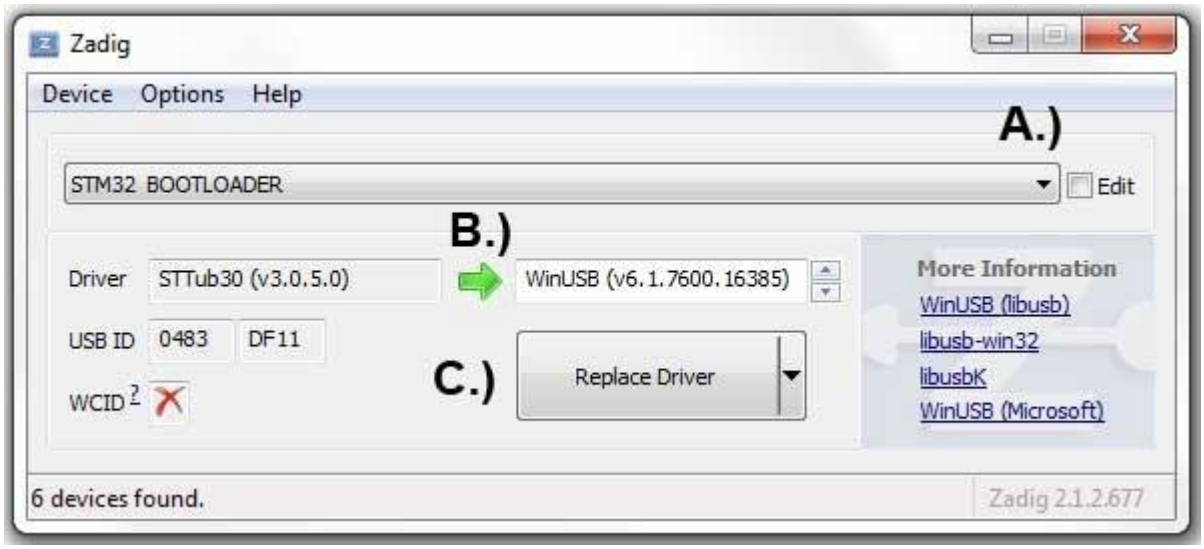
4. Download and launch Zadig

5. From Zadig, a.) Select Options, b.) Tick List All Devices



6. a.) Select STM32 Bootloader from the dropdown.
   b.) Choose WinUSB as the replacement,
   c.) Click Replace Driver.

   (Sometimes the Replace progress will be slow or no response, you can close it and do it again, you will find in the dropdown menu there is no STTUB30, but WinUSB. just click replace driver from WinUSB to WinUSB)



Flash Firmware

Go back to Cleanflight configurator and Click Flash Firmware

again after the Driver replace completed, and you will see the firmware flashed successfully!