How to flash firmware to Artillery Ruby board

Tools:

Firmware compilation: Visual Studio Code, PlatformIO

Firmware upload: Pronterface, STM32CubeProgrammer

Procedure:

Step 1

Follow the guide at https://marlinfw.org/docs/basics/install_platformio_vscode.html to install PlatformIO with VSCode.

Step 2

Download the latest firmware at https://github.com/artillery3d/

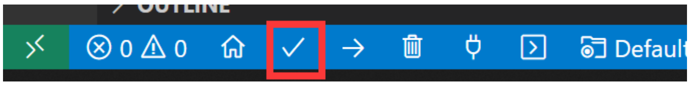
Step 3

Extract the source file and put it in the root folder of C or D drive (DO NOT put in folders with space in the path).

Step 4

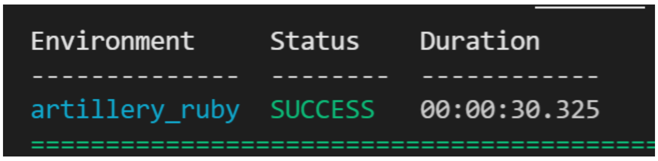
In PlatformIO, click on Open project and browse to the source code folder.

Step 5



On bottom left of VSCode, click on PlatformIO:Build, PlatformIO will download the necessary files and compile the file. (It will take from a few minutes up to 30 minutes to download the necessary files for the first compilation, depends on the download speed of your internet connection, please be patience.)

You should see Success message when it compiled successfully.



```
Environment     Status    Duration
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artillery_ruby  SUCCESS   00:00:30.325
==========================================
```
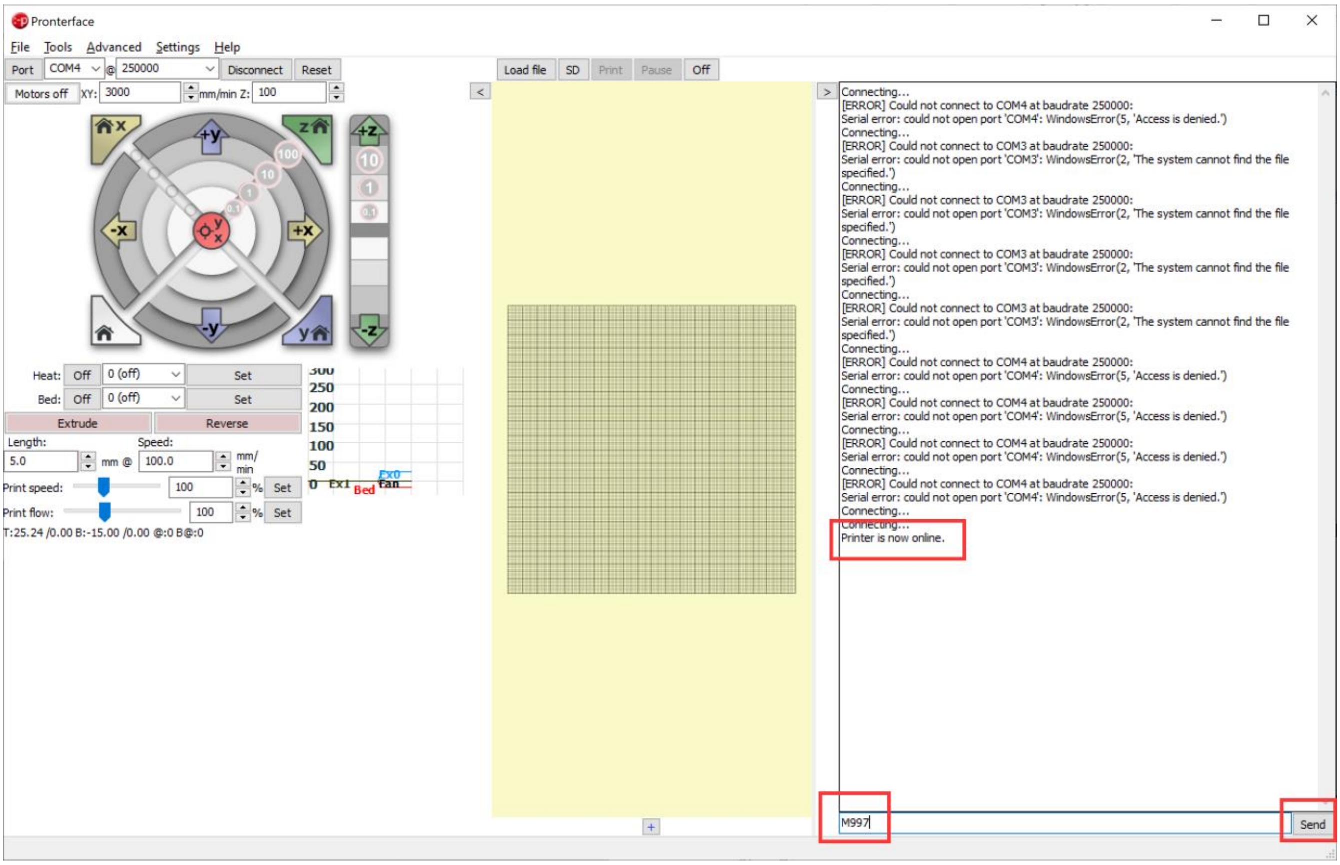

Step 6

Use Pronterface to connect to the printer, and send command M997 to put printer into DFU mode, screen should turn black.



Port COM4 @ 250000

XY: 3000 mm/min Z: 100

Heat: Off 0 (off)

Bed: Off 0 (off)

Length: 5.0 mm @ Speed: 100.0 mm/min

Print speed: 100 %

Print flow: 100 %

T:25.24 /0.00 B:-15.00 /0.00 @:0 B@:0

```
Connecting...
[ERROR] Could not connect to COM4 at baudrate 250000:
Serial error: could not open port 'COM4': WindowsError(5, 'Access is denied.')
Connecting...
[ERROR] Could not connect to COM3 at baudrate 250000:
Serial error: could not open port 'COM3': WindowsError(2, 'The system cannot find the file
specified.')
Connecting...
[ERROR] Could not connect to COM3 at baudrate 250000:
Serial error: could not open port 'COM3': WindowsError(2, 'The system cannot find the file
specified.')
Connecting...
[ERROR] Could not connect to COM3 at baudrate 250000:
Serial error: could not open port 'COM3': WindowsError(2, 'The system cannot find the file
specified.')
Connecting...
[ERROR] Could not connect to COM3 at baudrate 250000:
Serial error: could not open port 'COM3': WindowsError(2, 'The system cannot find the file
specified.')
Connecting...
[ERROR] Could not connect to COM4 at baudrate 250000:
Serial error: could not open port 'COM4': WindowsError(5, 'Access is denied.')
Connecting...
[ERROR] Could not connect to COM4 at baudrate 250000:
Serial error: could not open port 'COM4': WindowsError(5, 'Access is denied.')
Connecting...
[ERROR] Could not connect to COM4 at baudrate 250000:
Serial error: could not open port 'COM4': WindowsError(5, 'Access is denied.')
Connecting...
[ERROR] Could not connect to COM4 at baudrate 250000:
Serial error: could not open port 'COM4': WindowsError(5, 'Access is denied.')
Connecting...
Connecting...
Printer is now online.
```

```
M997
```

Step 7

Download and install STM32CubeProgrammer from https://www.st.com/en/development-tools/stm32cubeprog.html

You don’t need to register but need to fill in a correct email address to receive the actual download link for the program.

It will install the necessary driver during the installation process.

Step 8

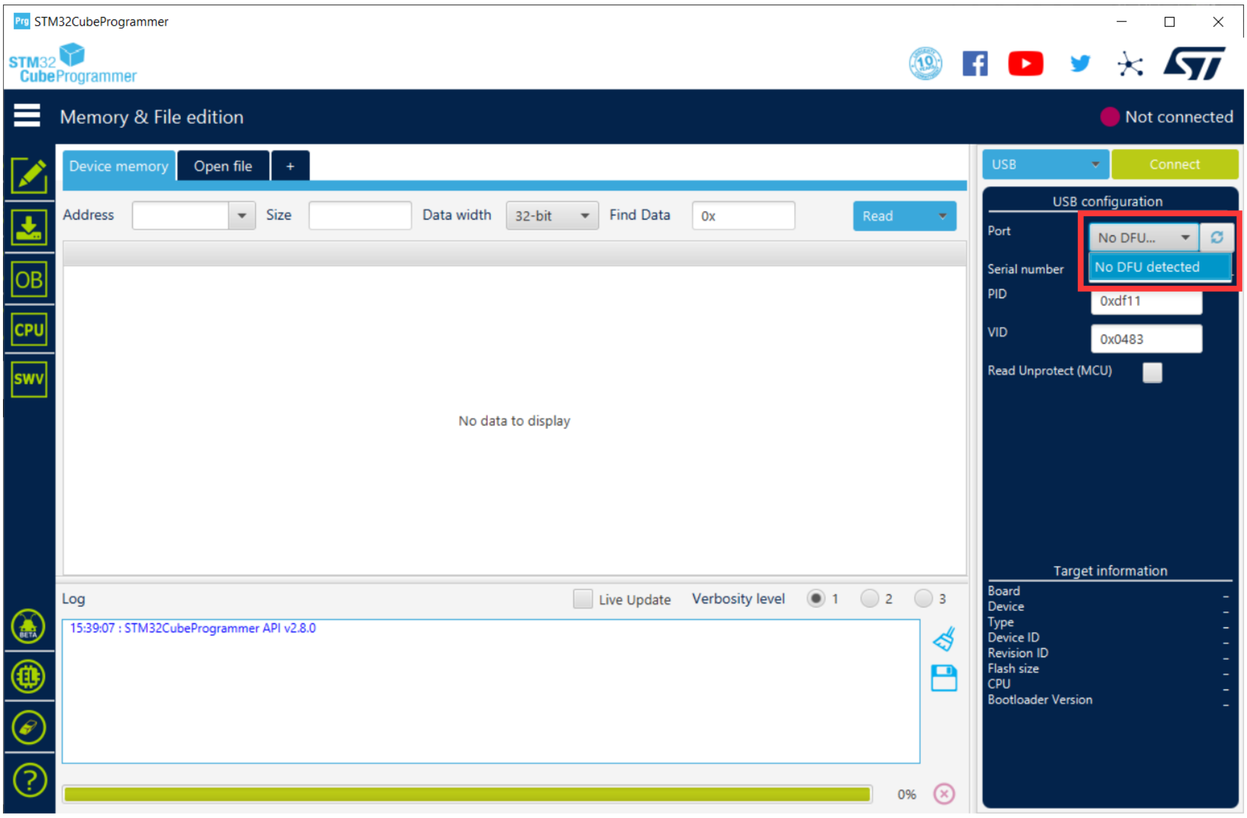
Open STM32CubeProgrammer after sending M997 to mainboard.

Step 9

Choose USB in the drop-down menu in the top right corner

Step 10

Select USB 1 in Port drop-down menu, then click on Connect



Data width: 32-bit

Find Data: 0x

Port: No DFU... — No DFU detected

PID: 0xdf11

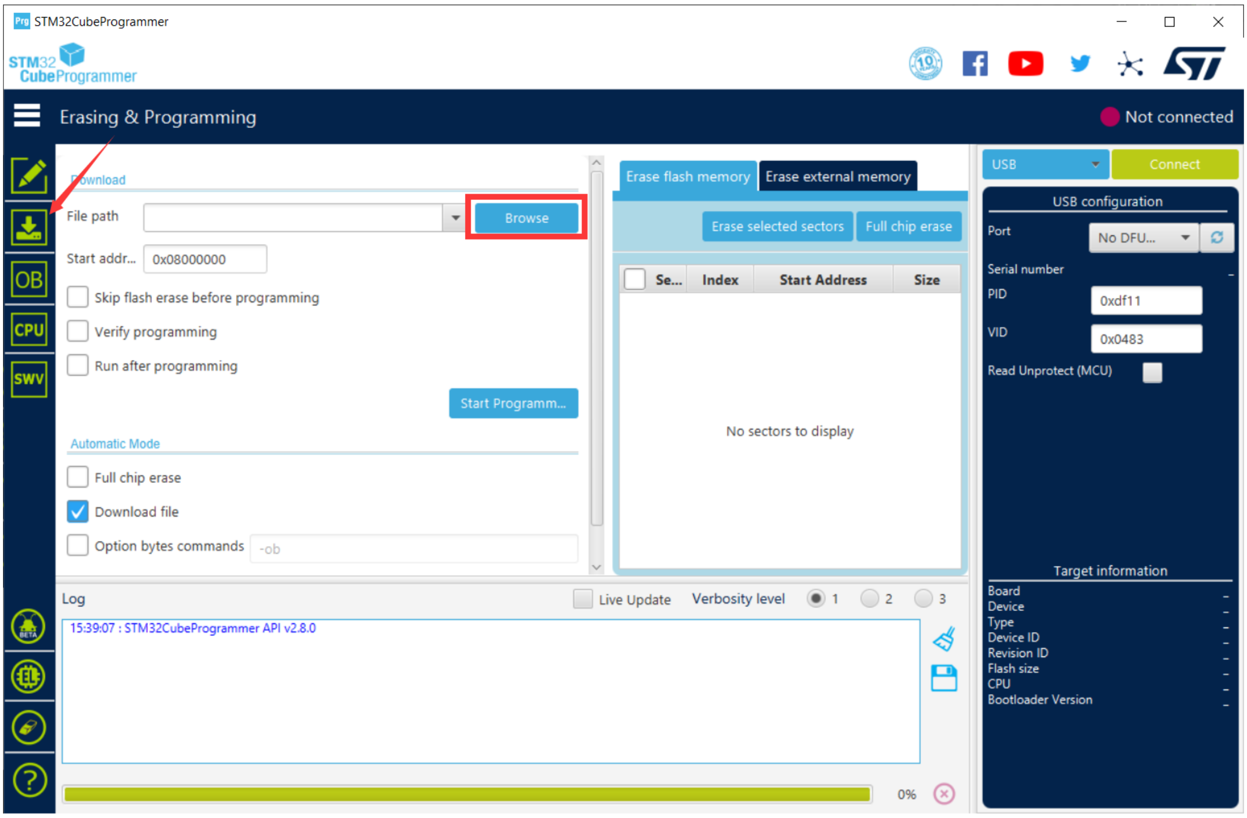
VID: 0x0483

Verbosity level: ● 1 ○ 2 ○ 3

```
15:39:07 : STM32CubeProgrammer API v2.8.0
```

Step 11

Click on second button on the left then click on browse to select the <filename>.hex compiled in Step 5.



Start addr...: 0x08000000

□ Skip flash erase before programming

□ Verify programming

□ Run after programming

□ Full chip erase

☑ Download file

□ Option bytes commands -ob

Port: No DFU...

PID: 0xdf11

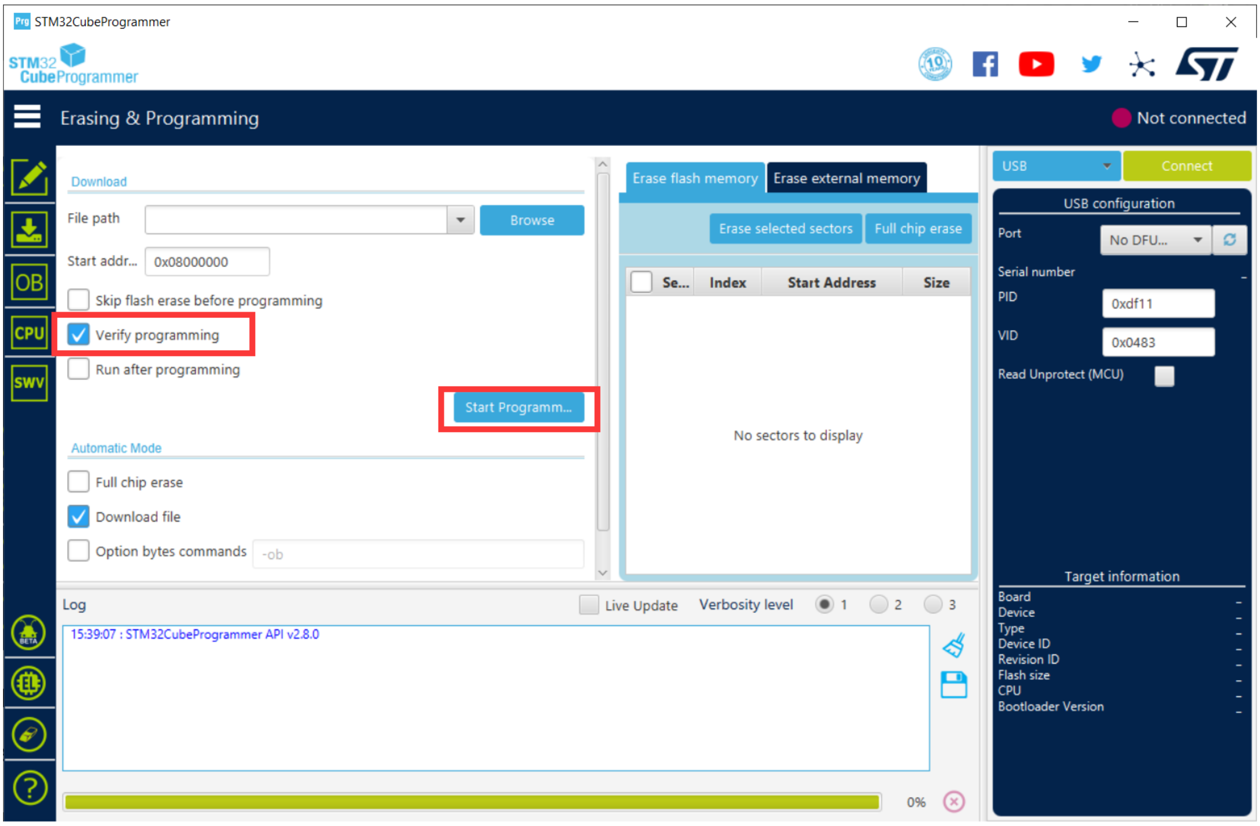
VID: 0x0483

Verbosity level: ● 1 ○ 2 ○ 3

```
15:39:07 : STM32CubeProgrammer API v2.8.0
```

Step 12

Check Verify programming then click on Start Programming button



```
15:39:07 : STM32CubeProgrammer API v2.8.0
```