



UPLOADING THE LATEST FIRMWARE FOR STM32F411CEU6 BASED FLIGHT COMPUTERS

Last modified: February 12 2025

By Cosmic Aerospace Technologies

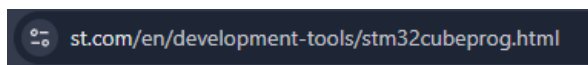
Compatible Flight Computers:

- Vega FC-301

Please view Sections 9 & 10 of the Vega user manual for additional information

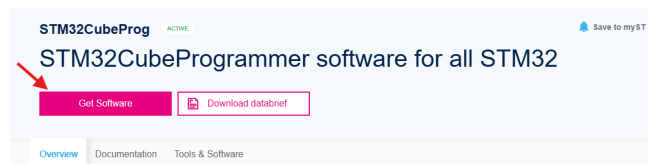
1 – Install STM32CubeProgrammer

Install the latest version of STM32CubeProgrammer from the STM's official website [st.com](https://www.st.com).



After navigating to the site by following the link above, you will be greeted with the following.

> Press "Get Software"



You will be navigated down to where you will find different version of the software based on your computer's specifications. Choose the appropriate one for your operating system.

Get Software

Part Number	General Description	Latest version	Download	All versions
+ STM32CubePrg-Lin	STM32CubeProgrammer software for Linux	2.18.0	Get latest	Select version
+ STM32CubePrg-Mac	STM32CubeProgrammer software for Mac	2.18.0	Get latest	Select version
+ STM32CubePrg-W32	STM32CubeProgrammer software for Win32	2.18.0	Get latest	Select version
+ STM32CubePrg-W64	STM32CubeProgrammer software for Win64	2.18.0	Get latest	Select version

If you have:

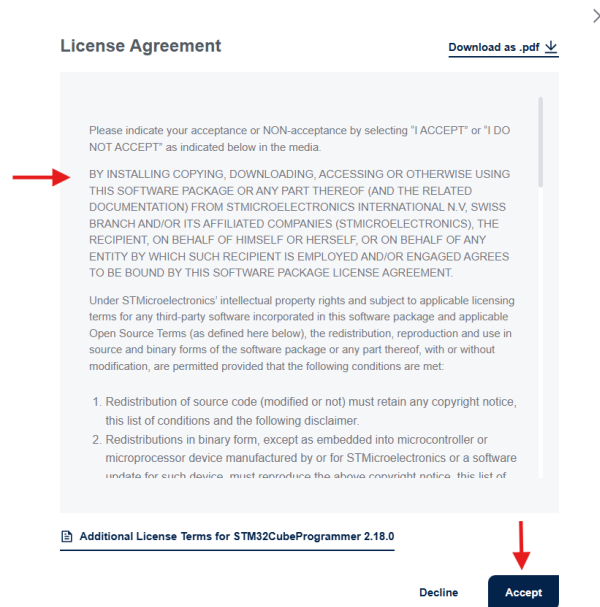
Linux – 1st option

Mac – 2nd option

Windows 32bit – 3rd option

Windows 64bit – 4th option (Most common for windows)

Read their License Agreement and press “Accept” to continue.



The image shows a 'License Agreement' dialog box with a close button (X) in the top right corner. At the top right, there is a link 'Download as .pdf' with a download icon. The main text area contains the following content:

Please indicate your acceptance or NON-acceptance by selecting "I ACCEPT" or "I DO NOT ACCEPT" as indicated below in the media.

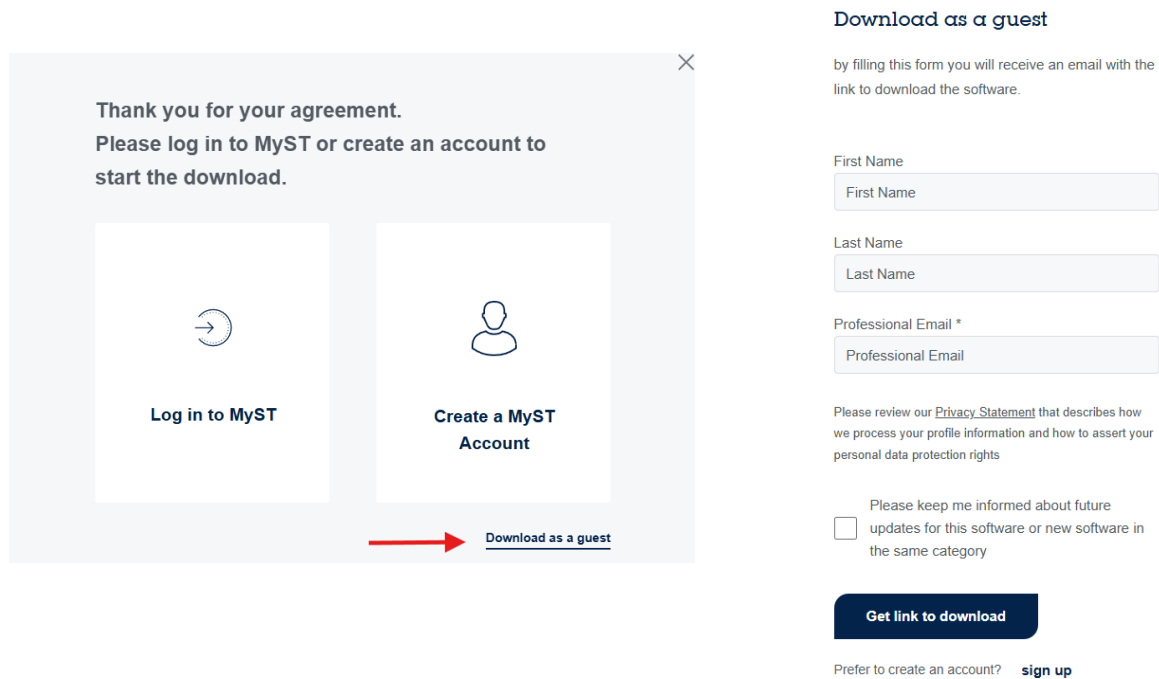
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At the bottom, there is a link 'Additional License Terms for STM32CubeProgrammer 2.18.0'. Below the text area are two buttons: 'Decline' and 'Accept'. A red arrow points to the 'Accept' button.

According to the recent changes , you will no longer have to create an account with ST in order to download their software. However, you will have to provide an E-mail address and name to receive a download link.



The image shows a 'Download as a guest' form. On the left, there is a modal window with the text 'Thank you for your agreement. Please log in to MyST or create an account to start the download.' Below this text are two buttons: 'Log in to MyST' and 'Create a MyST Account'. A red arrow points from the 'Create a MyST Account' button to the 'Download as a guest' link at the bottom of the modal.

The main form on the right is titled 'Download as a guest' and includes the following fields:

- First Name
- Last Name
- Professional Email *

Below the form fields, there is a checkbox labeled 'Please keep me informed about future updates for this software or new software in the same category'.


At the bottom of the form, there is a button 'Get link to download' and a link 'sign up'.

Once you have filled out the form, they will send the downloadable link to your inbox (Check **Spam Folder**)

Follow the instructions and you should be able to download the software once you receive the link. It may take a few minutes to receive the link.

2 – Download & Upload the latest firmware

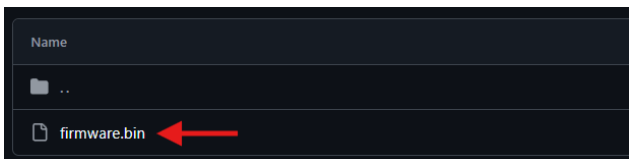
> Locate the latest firmware for your Vega flight computer on the GitHub repository.

Vega-FC-3XX / FC-301 / Latest Software / Firmware / 

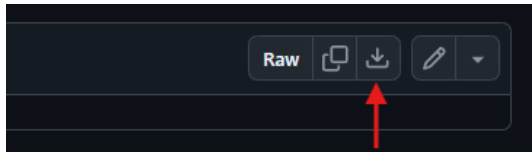
Link:

<https://github.com/Cosmic-Aerospace-Technologies/Vega-FC-3XX/tree/main/FC-301/Latest%20Software/Firmware>

> Press “firmware.bin”



> Press “Download raw file” on the top right corner.

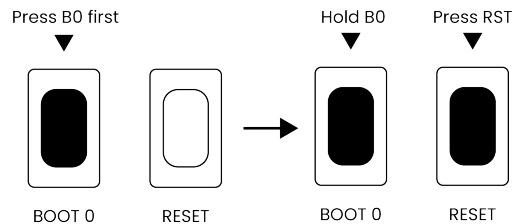


Save this file in a location you will remember (e.g. Desktop, Documents, etc...)

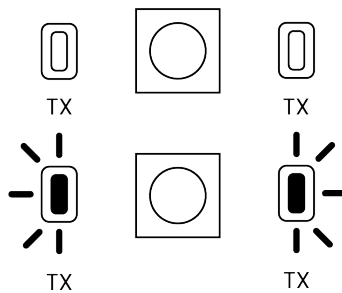
Now we will be connecting the STM32CubeProgrammer to the flight computer.

Let's put the flight computer into "bootloader mode".

- > Plug the flight computer into your PC via USB-C with the provided cable or one that supports data transfers.
- > Press and Hold the B0 (boot 0) button & then press the RST (reset) button **while still pressing down on the B0 button.**



- > You will notice that the 2 TX lights are now on, this indicates that the flight computer is indeed in bootloader mode.



(Optional) You can check that the device is indeed in "Bootloader" mode by going to:

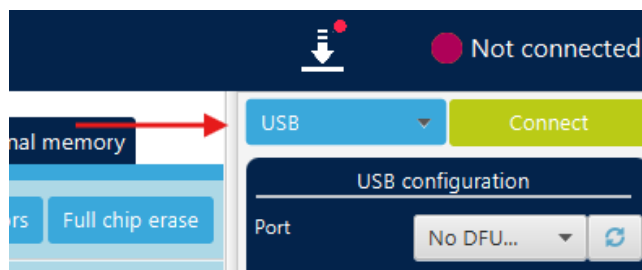
Device manager > "Universal Serial Bus devices (not controllers)" > "STM32 BOOTLOADER"

Note: If you do not see this, repeat the last step in order to properly place the flight computer into bootloader.

- > Now open the **STM32CubeProgrammer** which you have installed.

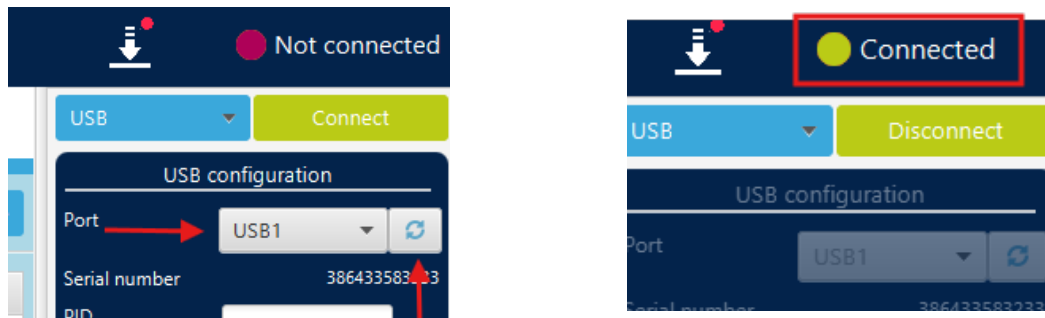
To connect the flight computer:

- > Have "USB" selected as the connection type.



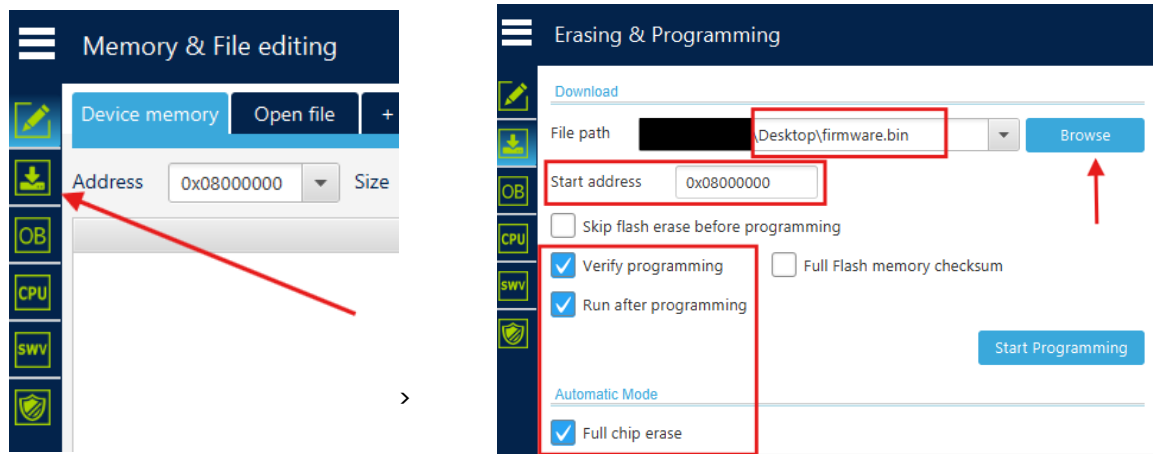
> Press the refresh icon next to “port”.

You should see a “USB{#}” show up, make sure it is selected. Press “Connect”



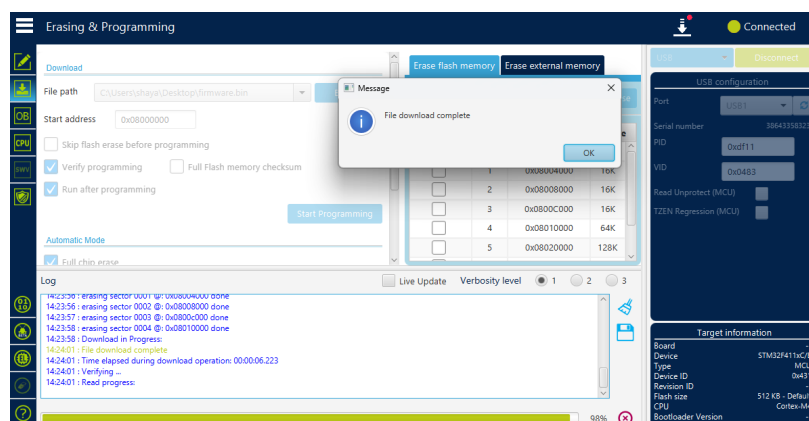
> Press the second icon the left side, called **“Erasing & Programming”**

> Press “Browse” and locate the “firmware.bin” which you have installed previously.



Make sure the Start address is 0x08000000, this is the starting location of the Main memory sector on this MCU.

> Press “Start Programming”, the Programmer should erase and reboot the flight computer with the new firmware.



You may get warnings and errors after the bootloader is done uploading (e.g. “Connection with device is lost”). This is normal, as long as the warnings/errors are not RED in color.