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Creality Ender 3 Firmware (32-Bit)

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Getting Started



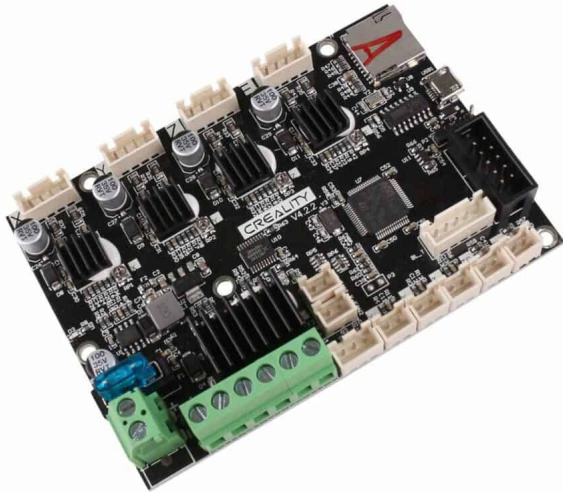
Flashing your printer firmware is pretty easy once you go through the installation steps one or two times. We've simplified the firmware setup as much as possible so you don't have to be an expert with code. Our firmware allows you to get more control over your printer, make repairs easier, add on upgrades, and really get into tuning your machine to make it print better.



The firmware update consists of downloading the firmware itself, opening it in Visual Studio Code, setting the options for your machine, compiling it, and then uploading it to the printer.

Board Compatibility

This firmware is for the stock Creality V4.2.2 Board. This board does NOT need any special folder structure for its firmware to be flashed.




Setup Visual Studio Code First

If you have not already installed and set up Visual Studio Code to compile the firmware please see our guide on how to do that before continuing. Click here to open the guide that we've written for you. (<https://support.th3dstudio.com/helpcenter/vscode-setup-guide-for-unified-2-and-marlin-2-firmware/>)

Download

In the firmware download below you will get a ZIP file. Extract this to a folder on your PC



ZIP

Unified 2 Firmware for Creality V4.X Boards

(<https://support.th3dstudio.com/download/unified-2-firmware-for-creality-v4-x-boards/>)

1 file(s) 10MB

DOWNL

We also recommend you download the Unified 2 STL pack as well. This contains EZABL mounts, Gantry leveling Blocks, Solid bed mounts, and Bed Level test files.



ZIP

Unified 2 STL Pack

(<https://support.th3dstudio.com/download/unified-2-stl-pack/>)

1 file(s) 150 MB

DOWNL

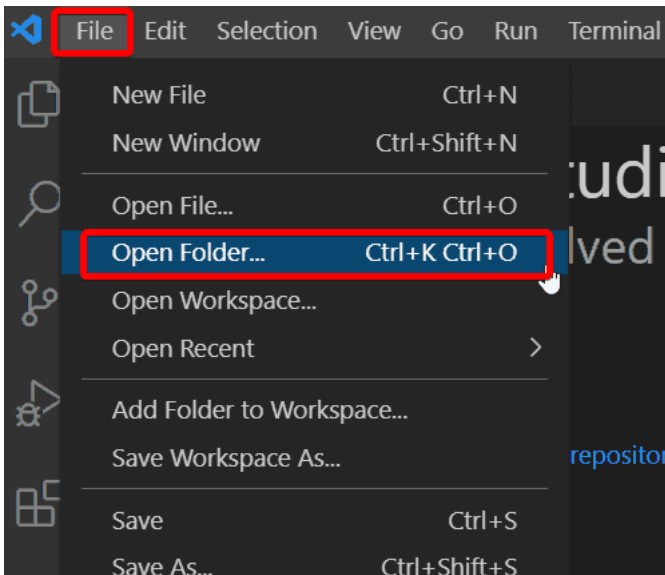
Cloud Storage Note: Extract to a folder that is NOT in a "cloud" storage folder. Many users have reported issues using the firmware when the folder is in a cloud storage folder.

Using the Firmware

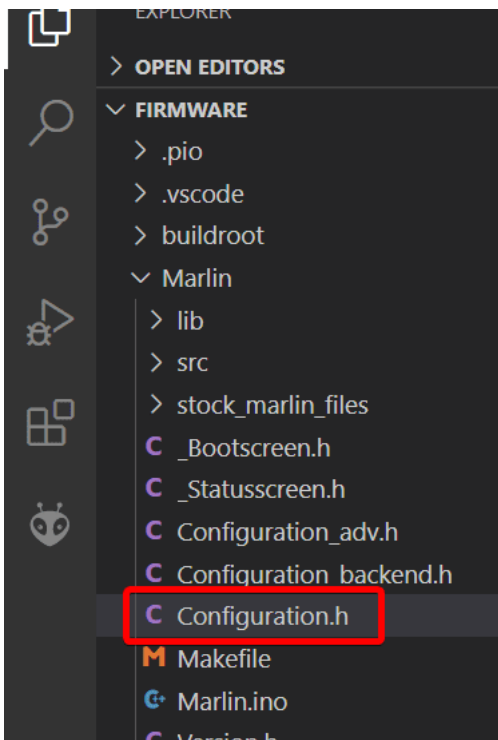
Opening the firmware in Visual Studio Code

Once the files are extracted you will need to open the folder in Visual Studio Code. You must open the folder named Firmware and not any other one. Failure to open the firmware at the correct folder level will result in it not working.

First time using our firmware or having issues? Watch our video that is intended to clear up common mistakes people make when opening and using the firmware here: Unified 2 VSCode Tips for Noobs | EZTip #8 – YouTube (<https://www.youtube.com/watch?v=iE7dyl-COX0>)



Once the folder is opened, you will expand the Marlin folder on the left and side and then double click on the file called "Configuration.h". This file is where you will set up the firmware for your specific printer.



Editing The Configuration.h File

In the configuration.h file there are printer models you can uncomment to tell the firmware what machine you are setting it up for. Uncomment means removing the // in front of a setting and you will be left with #define XXXXXX if an option is enabled.

There are many other options in the firmware for setting up upgrades, tuning, and other features. Read through the files configuration section to see all the features we've put in the firmware for you.

Testing the Firmware Settings

Once you have all the options you want and your printer model setting uncommented now it's time to make sure it compiles with no issues. To do that just click the ✓ at the bottom-left of Visual Studio Code and it will build the firmware.



If the build succeeds it is ready for you to upload to your printer. You will know if it was successfully built because it will show a SUCCESS in green at the bottom of the window in Visual Studio Code.

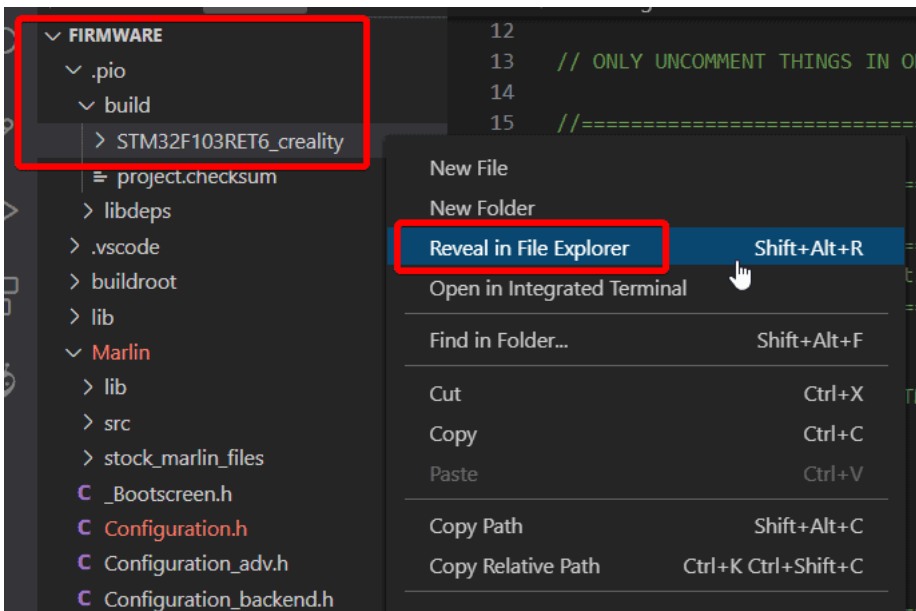
Environment	Status	Duration
-----	-----	-----
mega2560	SUCCESS	00:00:47.336
=====		

Example of what a successful compile looks like. Your environment name may be different from what is shown above.

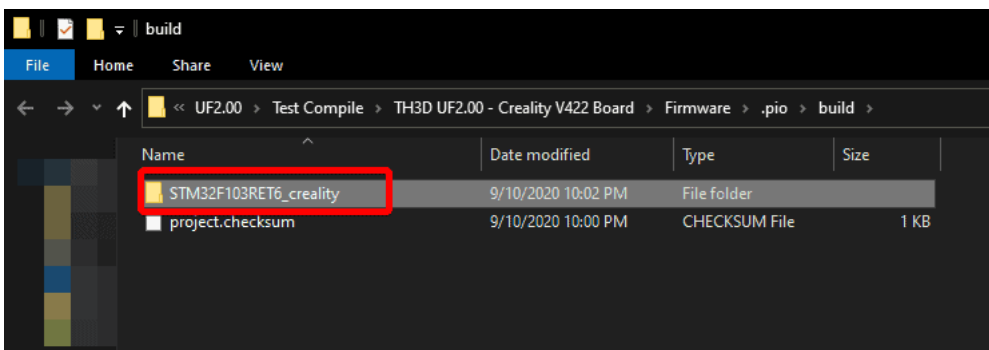
Flashing the Firmware

Upload the firmware to your board (SD Card Method)

Now that we have the firmware tested we can upload it to your printer. Your particular printer uses a SD Card to upload it to the printer board. The firmware will be in a folder that matches the CPU name in `.pio > build > CPUNAME`. There will only be ONE folder in the Build folder so you just open that folder. Your folder name may be different from the picture shown below. You can open the folder by right-clicking on the folder for your board's CPU and clicking "Reveal in File Explorer".



In this folder you will look for a file with a `.bin` file extension, this is the firmware that you will put on the SD card. Some printers require the `.bin` file to be put in a specific folder. If your printer requires a specific folder name to put the firmware in to flash it we will list it above at the beginning of this page, most printers do not require a folder.



Open the folder for your board CPU. Inside will be your `.bin` file needed for flashing.

Once you locate the `.bin` file for your board copy this to your SD card. This SD card MUST be formatted with FAT or FAT32 file system and most boards prefer a 4096 allocation byte size. Smaller cards (16GB or less) are better to use than larger ones for the best compatibility.

libfb	9/10/2020 10:01 PM	File folder	
src	9/10/2020 10:01 PM	File folder	
.gcc_path	9/10/2020 10:00 PM	GCC_PATH File	1 KB
scansion37.dhLite	9/10/2020 10:02 PM	DRI ITE File	4 702 KB
firmware-20200910-220141.bin	9/10/2020 10:02 PM	BIN File	196 KB
firmware-20200910-220141.elf	9/10/2020 10:02 PM	ELF File	10,863 KB
longcmd-1b7b02f293beffba0e216e18bf3...	9/10/2020 10:01 PM	File	18 KB
longcmd-de57e98d9032a97a3d1d05a1f94...	9/10/2020 10:02 PM	File	11 KB
longcmd-f382d839091a61ed8cb5d6766f4...	9/10/2020 10:00 PM	File	16 KB

If you have multiple .bin files listed, choose the one with the latest time & date on it.

Power off your printer and put the SD card into your printer's SD slot. Turn the power on. This will cause the printer to flash the firmware from the SD card to your printer CPU. This may take up to 1 minute on some boards.

DO NOT UNPLUG THE PRINTER. Interrupting the flashing can "brick" your board and if this happens you will need to reflash the bootloader with a programmer before you can flash again.


When the printer boots you may see the TH3D logo on your LCD, printers with low-end CPUs may not show a TH3D logo but all will show a Marlin screen with TH3D Studio showing on the version information.

Reset your EEPROM!

Make sure to reset your EEPROM on your printer after flashing any firmware. You can do this from your printer LCD by going to Configuration -> Reset EEPROM or by sending an M502 followed by M500 with your favorite Gcode sender (<https://support.th3dstudio.com/helpcenter/gcode-sender-pronterface/>) application.

Updated on September 11, 2022

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