

Firmware Install

Jul 2026



Introduction

The firmware installation is pretty simple, but it's a manual process, unlike the RPi Pico where Thonny can do it for you. First we need to get the latest firmware file, you can get this from the link below.

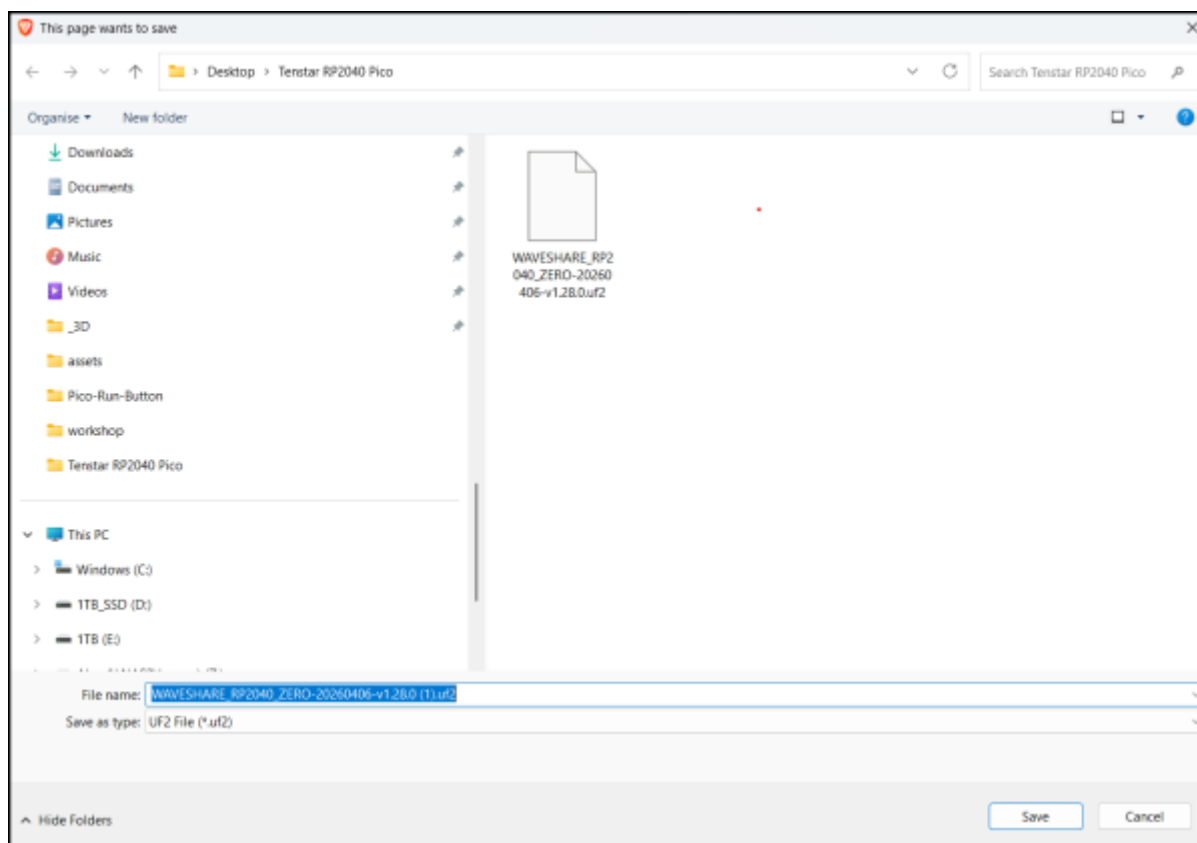
https://micropython.org/download/WAVESHARE_RP2040_ZERO/

Note: this firmware is for the WaveShare (or compatible) RP 2040 device. I am using a Tenstar RP2040-Zero from AliExpress, and this firmware works with that.

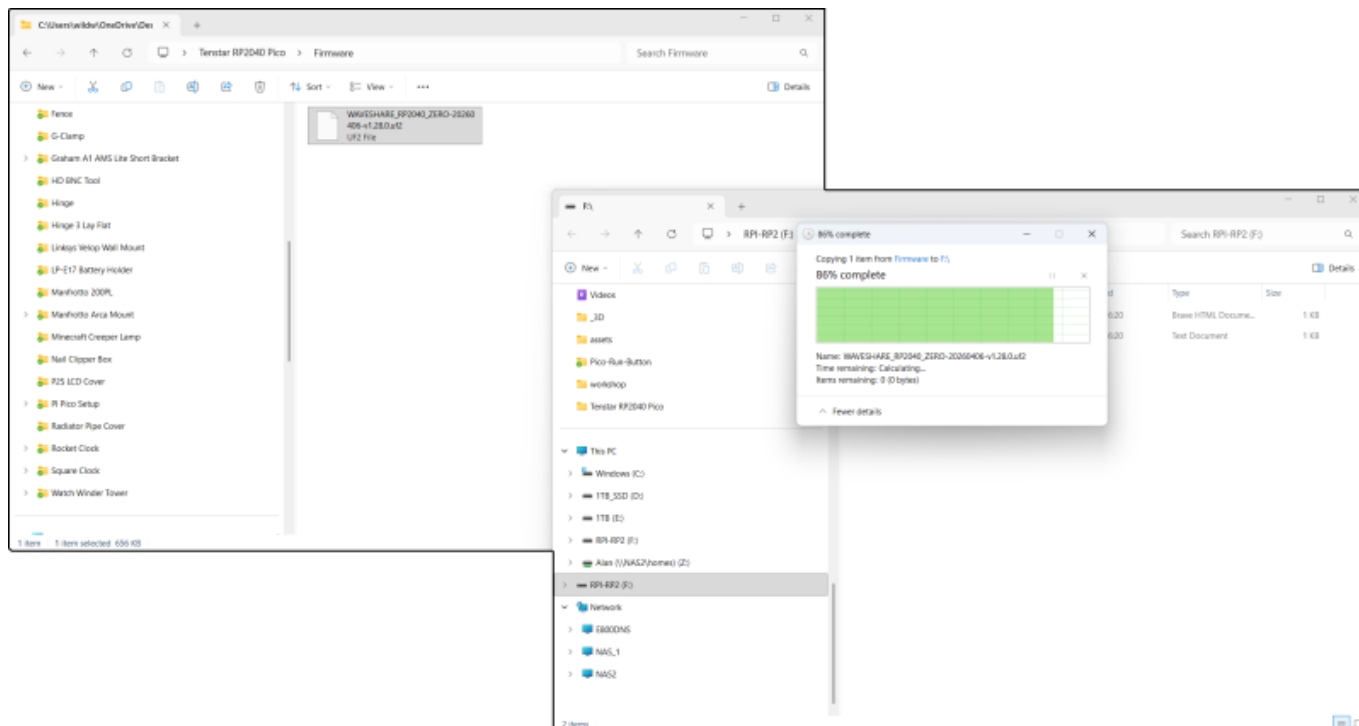
NOTE You can use the Raspberry Pi Pico Firmware, but if you do things like the NeoPixel will not work.

Download the latest .UF2 file (at time of writing [WAVESHARE_RP2040_ZERO-20260406-v1.28.0.uf2](#))

While holding down the BOOT button, plug the board in to your computer USB, a window will open.

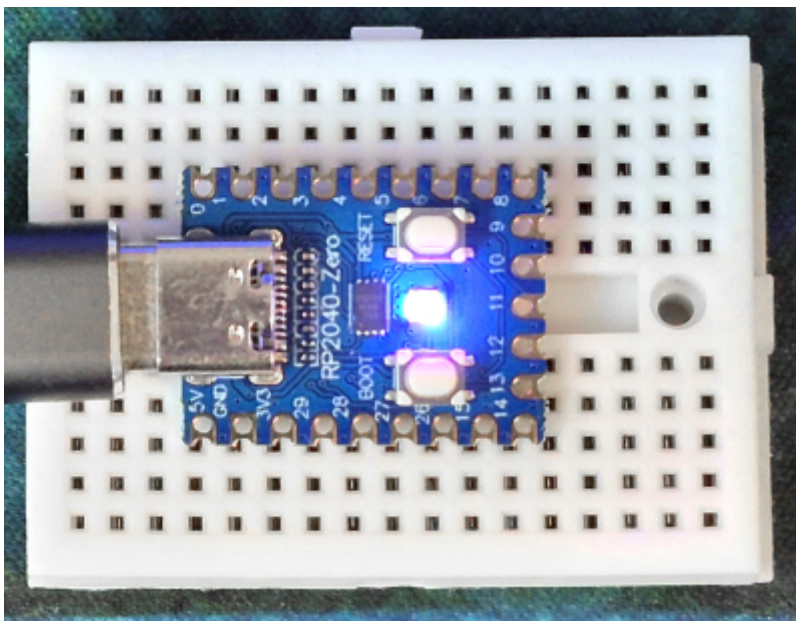


Copy the downloaded firmware file to the window that just opened.



Once the file is copied, the RP2040 will automatically reboot.

Once the unit reboots, it will come back and the onboard LED will be illuminated White (or a very light blue, not sure).



That is the firmware installation complete.

Quick Test

When the firmware was installed, a file called main.py was created, and when the RP2040 rebooted, this file ran at boot.

This is what causes the LED to end up a white colour. However, if you press the RESET button, the device will reboot and you will see the code main.py does a bit more.

[rp2040-neopixel_edit.mp4](#)

Here we can see that the LED flashes from Red to Green to Blue, then goes to a static White.

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