

# Flashing the firmware

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## How to flash:




The easiest way to get going if you are not planning to build the firmware yourself is to flash the D1 mini with the pre-built binary ...

***Do not flash the firmware via USB while the device is attached to the PCW. The D1 Mini should be removed from the board before flashing***

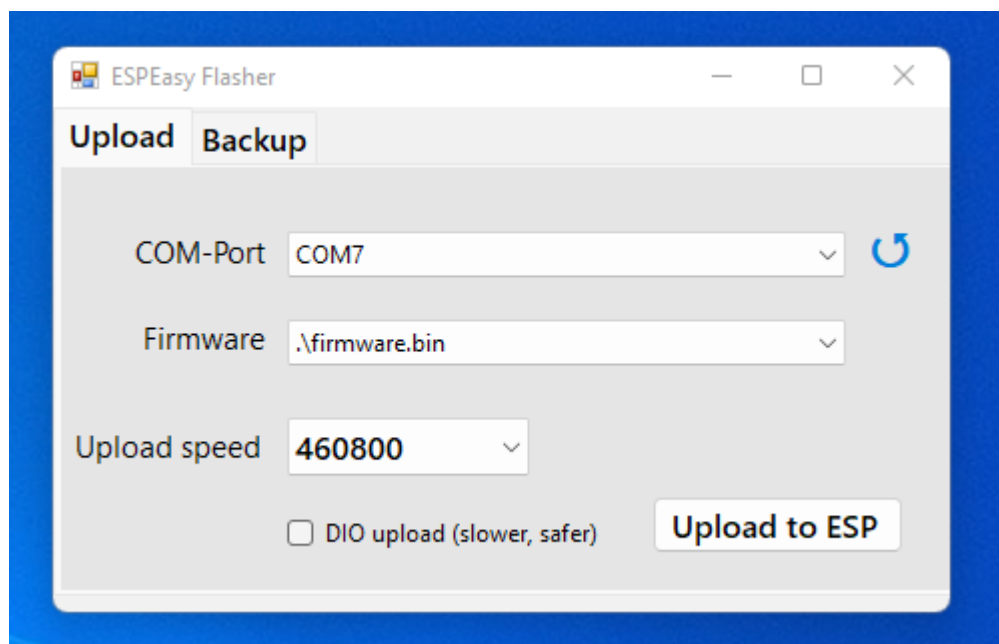
## Using ESPEasyFlasher (Windows only)

1. Download ESPEasyFlasher (e.g. FlashESP-1.2.zip) from here:  
<https://github.com/raomin/ESPEasyFlasher/releases>
  2. Unzip FlashESP-1.2.zip
  3. Download the latest PCW WiFi Modem firmware.bin from [Releases](#)
  4. Copy the downloaded firmware.bin into the unzipped FlashESP-1.2 directory
-

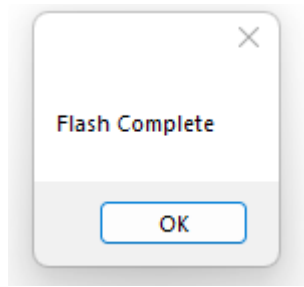
You should now have a directory looking similar to this:

Name	Date modified	Type	Size
 esptool.exe	14/02/2019 14:57	Application	3,410 KB
 FlashESP8266.exe	26/09/2020 15:25	Application	19 KB
 firmware.bin	23/08/2022 21:34	BIN File	329 KB

5. Ensure the WeMos D1 Mini is connected correctly to the PC using a USB cable suitable for data. If your D1 Mini uses the CH340 UART you might need to install this driver so that Windows can see it's com port: <https://learn.sparkfun.com/tutorials/how-to-install-ch340-drivers/windows-710>
6. Run FlashESP8266.exe
7. Select the COM-Port that the D1 Mini is using, and the firmware.bin file



8. Click [Upload to ESP]



All being well you should see:

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## Using esptool

Alternatively, pre-built [Releases](#) can be uploaded using the *esptool.py* tool in the ESP8266 framework's tools directory.

```
e.g. python -m esptool --chip esp8266 --port COM7 write_flash
--flash_mode dio --flash_size detect 0x0 "firmware.bin"
```

## Updating the firmware "OTA"

Once flashed and the connection to WiFi is established, firmware can also be updated through WiFi using the default OTA upload capability in Arduino IDE, PlatformIO (see *platformio.ini*), or the ESP8266 framework's *espota.py*

## (Optional) Isolated Testing

You can test the D1 mini's modem firmware through the USB cable without installing it on the PCB. You will need terminal software on your computer that can talk to the computer's com port. You can even configure the [Joyce Emulator](#) to use it via it's emulated CPS8256!

## (Optional) Alternate firmware

The hardware should be compatible with other ESP8266 platform firmware which uses a serial interface providing it can use the D1 mini's TX/RX (and CTS/RTS if needed) pins.