

## ESP32 Developer Timer firmware load. V1.0 B 5/02/2024

Note:- this is an early version & screen shots show different file names

**Note:-** These guides below must be followed in the correct order

ESP32 Installing CP2102 or CH340 USB Driver

ESP32 Firmware Load

### Download the code from the github page.

click on the green **<> Code** button, which will allow you to download all of the files as a zip file.

Unzip (extract) the downloaded file.

[billbill100/Build-a-B-W-Film-Developer-Timer-Auto-Twiddler-Cheap-Easy-it-Works: Build a Black & White Film Developing Timer with optional motor driven twiddler for agitation \(github.com\)](#)

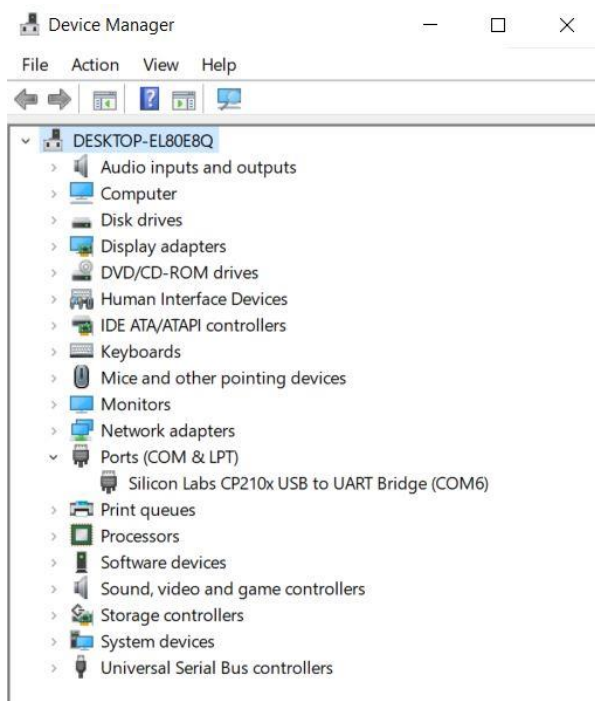
### Download the Flashing software.

A program called Flash Download Tool is required. It is included on the Github page, or can be downloaded from [Tools | Espressif Systems](#)

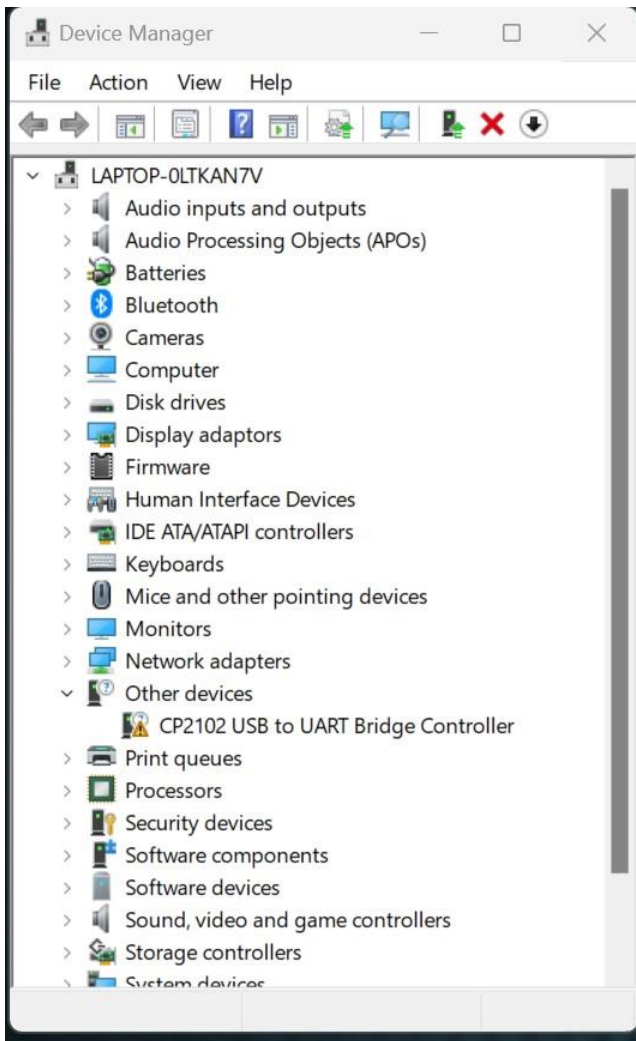
Unzip (extract) the folder and put the files somewhere suitable on the computer. The software is stand-alone and does not need to be installed.

### Checking the ESP32 USB driver.

The USB driver should have been installed, following the driver installation guide. To confirm, after connecting the ESP32 board, press Windows key + x and select Device Manager. Look for the COM ports and expand. The ESP module should be seen, as in this example on COM port 6, showing the CP2102 driver. You will most likely show a different com port & if using the Lolin board, a different driver.



If the driver is missing, as shown on the screen below (Yellow Triangle) refer to the document Installing CP2102 Driver. Found in the github repository.

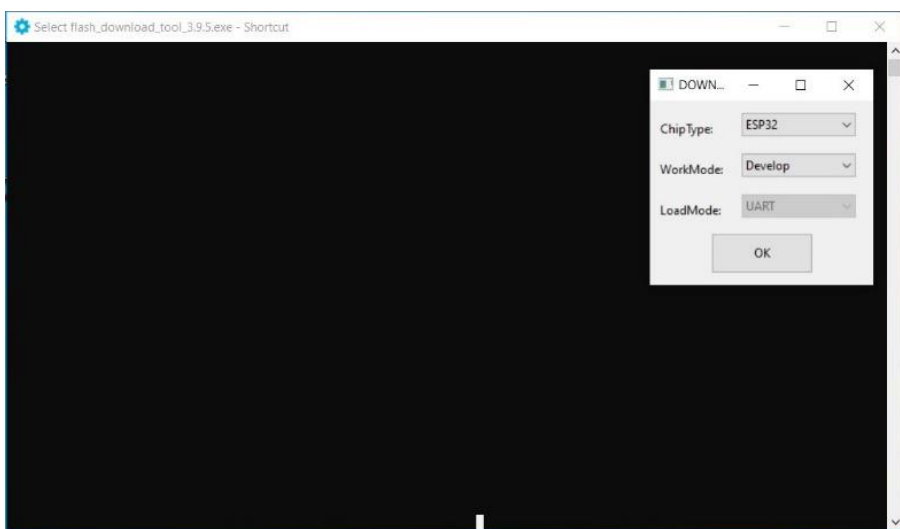


## Flash the Developer Timer firmware to ESP32

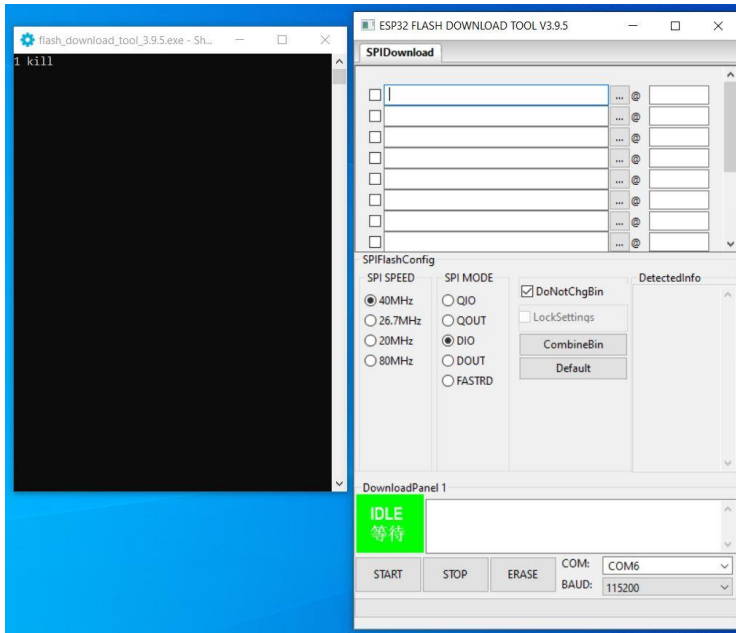
Find the folder where the Flash Download Tool files were extracted to.

Launch the Flash Download Tool by double clicking on 'flash\_download\_tool\_3.9.5.exe'

Select 'ESP32' from the drop-down box, as shown in the screenshot below and click ok.

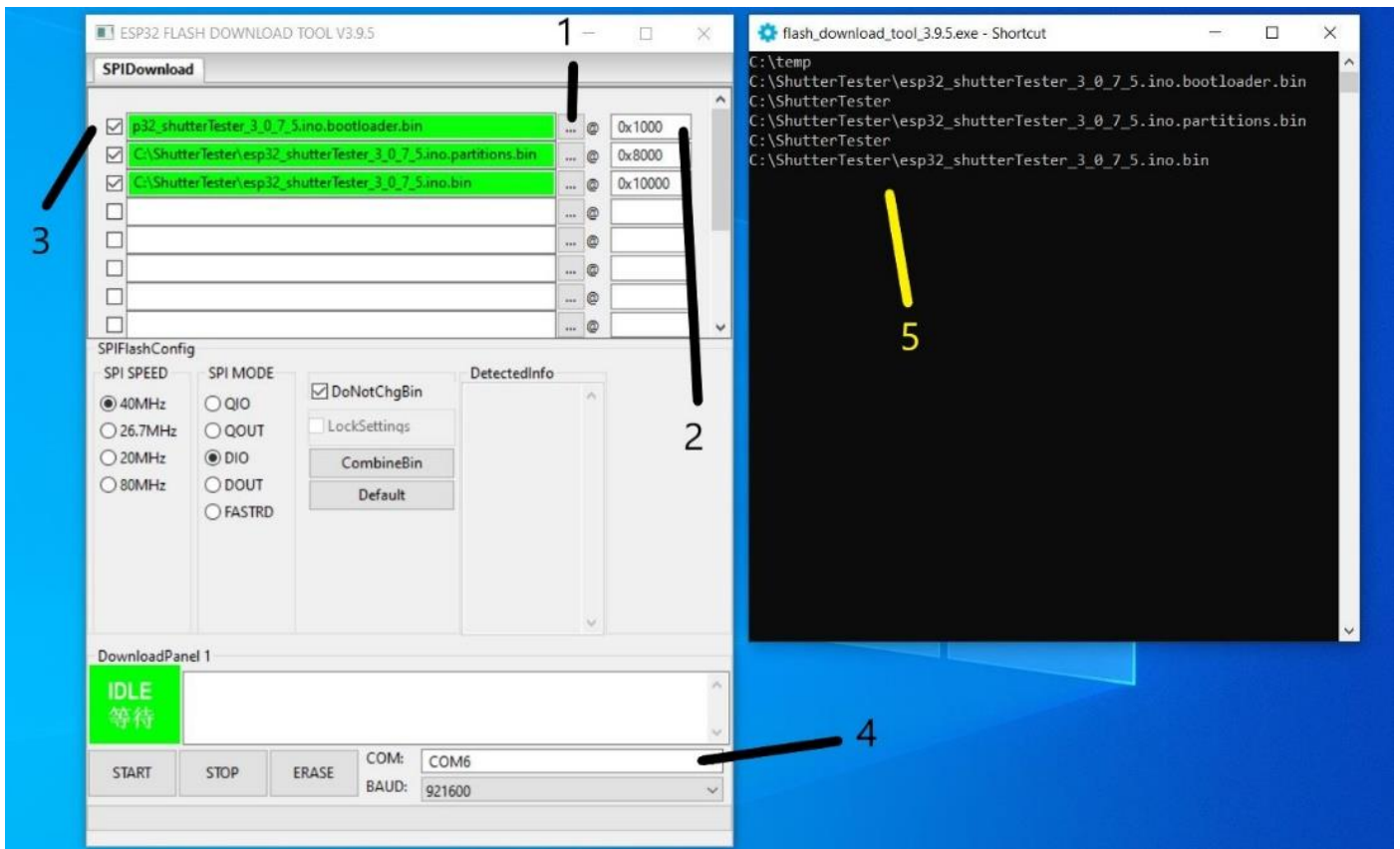


A screen like the below will appear and must now be populated. (The two windows can be moved as required)



Populate the values as follows

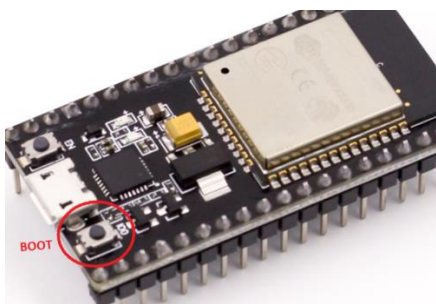
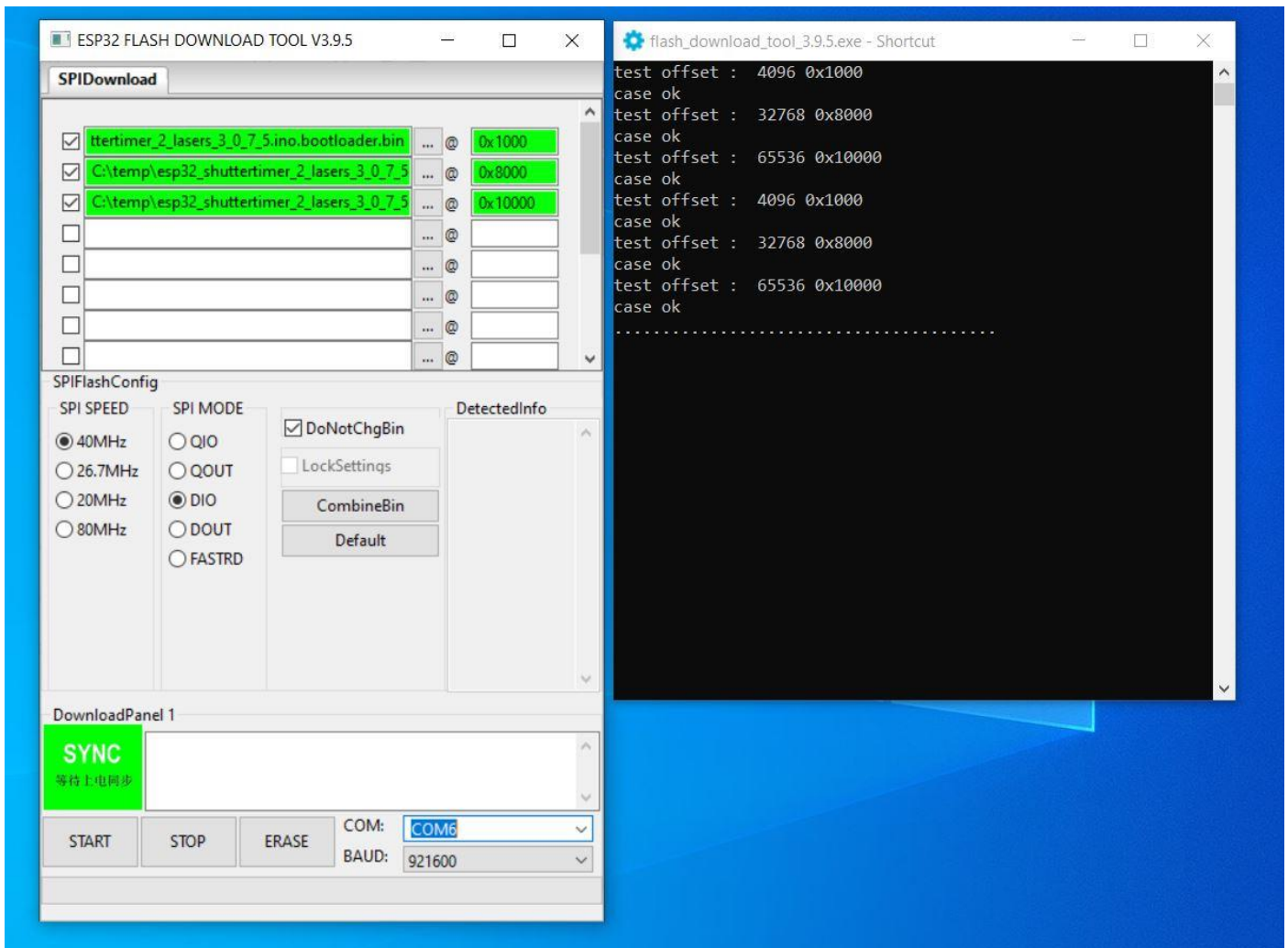
- 1) Click the three dots, navigate to, and select the downloaded *developerTimer\_x\_x\_x\_x.ino.bootloader.bin.bin* file.  
Do the same on the second line, selecting *developerTimer\_x\_x\_x\_x.ino.partitions.bin*  
and again for the third line *developerTimer\_x\_x\_x\_x.ino.bin*  
*If the files are selected correctly, the black window (5) will show each file name*
- 2) Type 0x1000 into the top box, 0x8000 into the second and 0x10000 into the third.
- 3) Tick the three boxes next to the file names
- 4) Select the correct COM port from the drop-down box



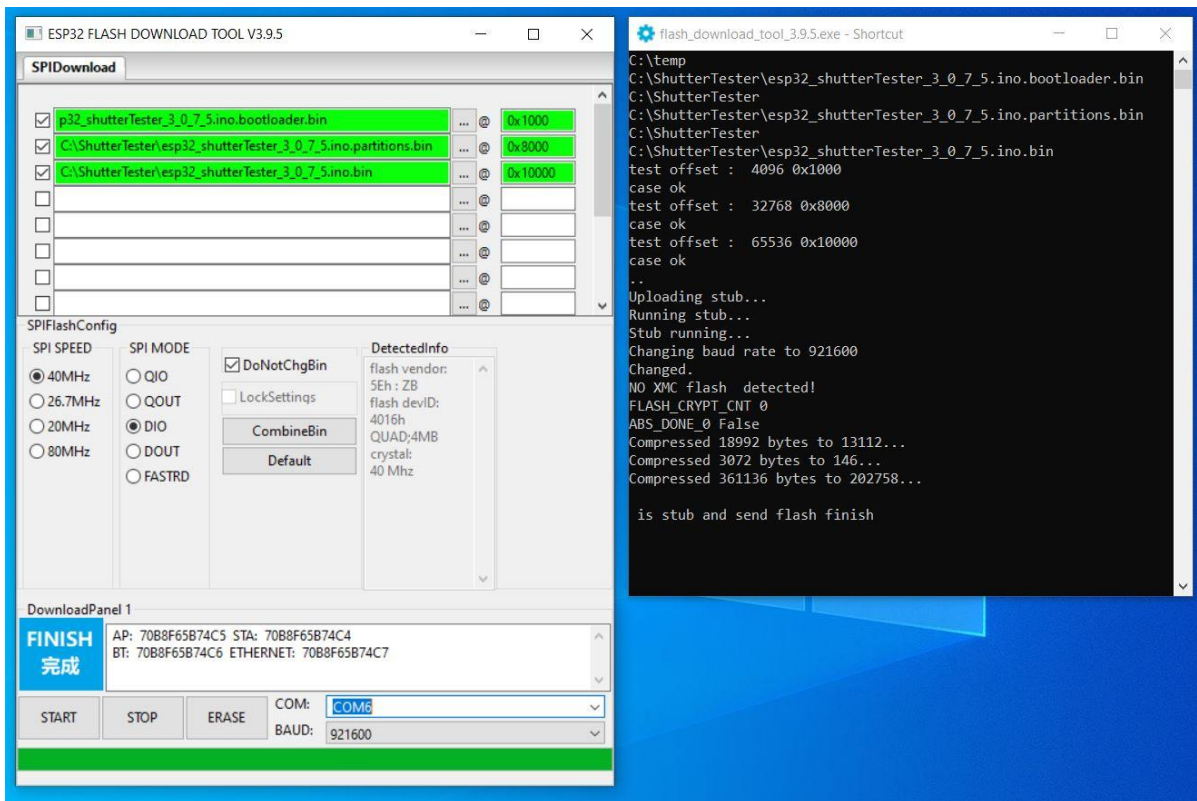
The file names and number boxes will be **green**, if the Flash Download Tool as found the files & is happy with the values.

Now press 'Start' at the bottom left of the box. The green **'IDLE'** box will change to **'SYNC'**

A line of dots will appear on the black screen, press the Boot button on the ESP32 board for 3 seconds and then release. (If using the Lolin D32, this board does not have a boot button & this step is not required).



If successful, a screen, as below, will be seen. The Black screen will show the flashing to the device. A green progress bar blue box will appear in the other screen, then the green start button will change to a blue 'FINISH'



**Note:-** the flashed code will not start running until the Reset button has been pushed on the ESP32 board, located on the opposite side of the USB connector to the Boot button.

If problems occur, check the following:-

Remove & insert the USB cable into the computer. Windows, by default will make a sound indicating a USB device has been connected.

Open Device Manager and check the ESP32 board is shown. Removing & re-inserting the USB cable will make the ESP32 disappear & re-appear.

Ensure there is no yellow warning triangle by the COM port in Device Manager, indicating the device driver is not loaded.

Try changing the baud value to 115200 and try again.

If any of the file names or numbers did not turn green as they were selected & the black window report 'case ok', then there is an issue with the downloaded flash files, or the stored location on the computer.