

**I would really be grateful if you start to build the Developing Timer, that you go to the Photrio thread and say hi. Also please post photos of your completed timer.**

Please refer to Photrio for further build help & to let us know you are building the timer.

[Build a B&W film developing timer & twiddler - Cheap, Easy & it Works | Photrio.com Photography Forums](#)

## ESP32 Developing Timer Wiring Guide V1.0 b 17/02/2024

Wiring of the modules is easily accomplished using Dupont wires. They come in a variety of lengths with terminals being male-male, female-female or male-female.

Using a screw-terminal breakout board, male-female are most suitable, with a mix of 10 and 20cm lengths.

There are limited 3.3V and 0V (or GND) screw terminals available. One solution is to gather the 3.3V wires together, cut off the connector and remove a small piece of the insulation. Terminate all of the wires into a choc-bloc and then just one wire from the choc-bloc will go to the screw-terminal on the breakout board. The same is then done with the 0V wires.

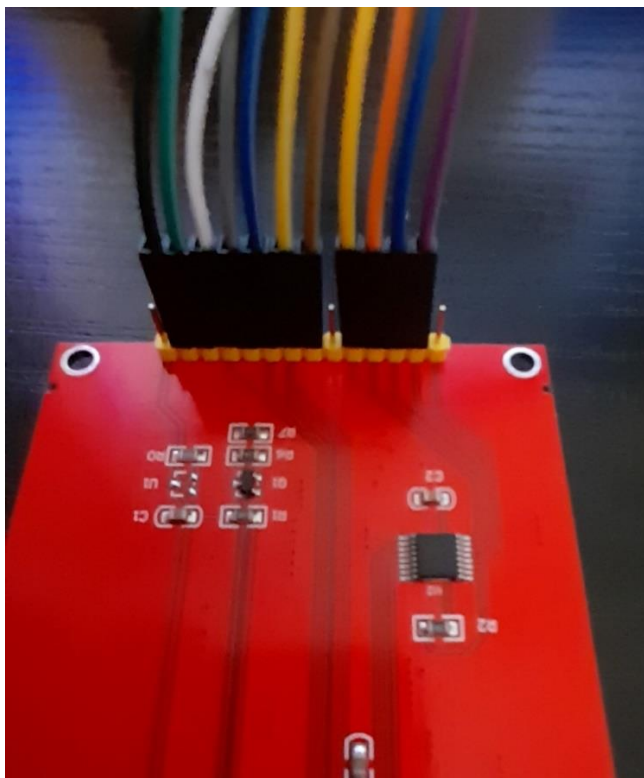
Do not use the GND terminal between pins 19 & 21 on the NodeMcu32 board (it is an error on the board printing and is CMD, not GND) or the GND on the lower left of the Lolin D32 board.

Please refer to the schematic for details of all connections and use them in conjunction with the photographs below.

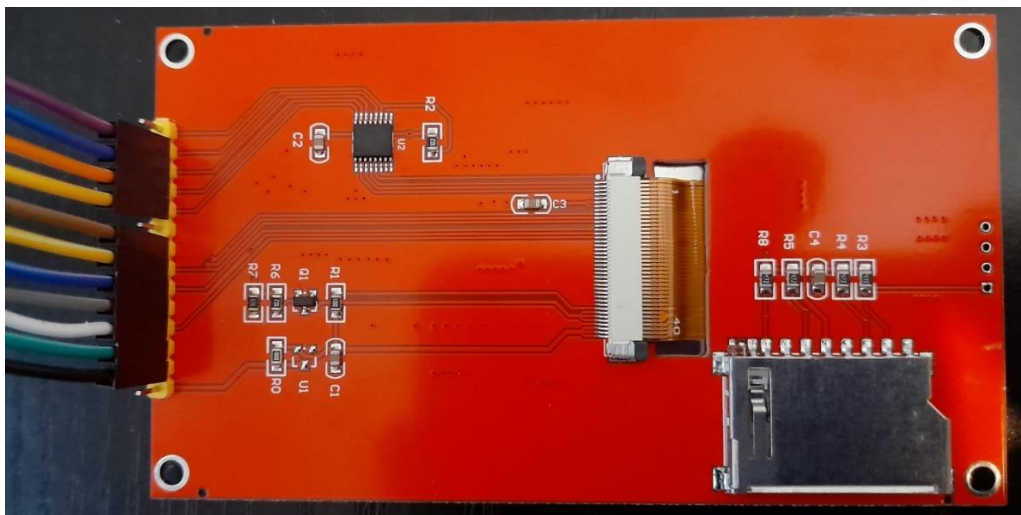
Please be aware that the photos below are of the 32 pin Lolin D32 board and it only uses 32 of the 38 screw connections (the rear 3 on either side are not used) and that the breakout board legends do not match that of the board.

The NodeMcu32 has more pins & uses all 38 screw terminals. Refer to the schematic for the correct connections.

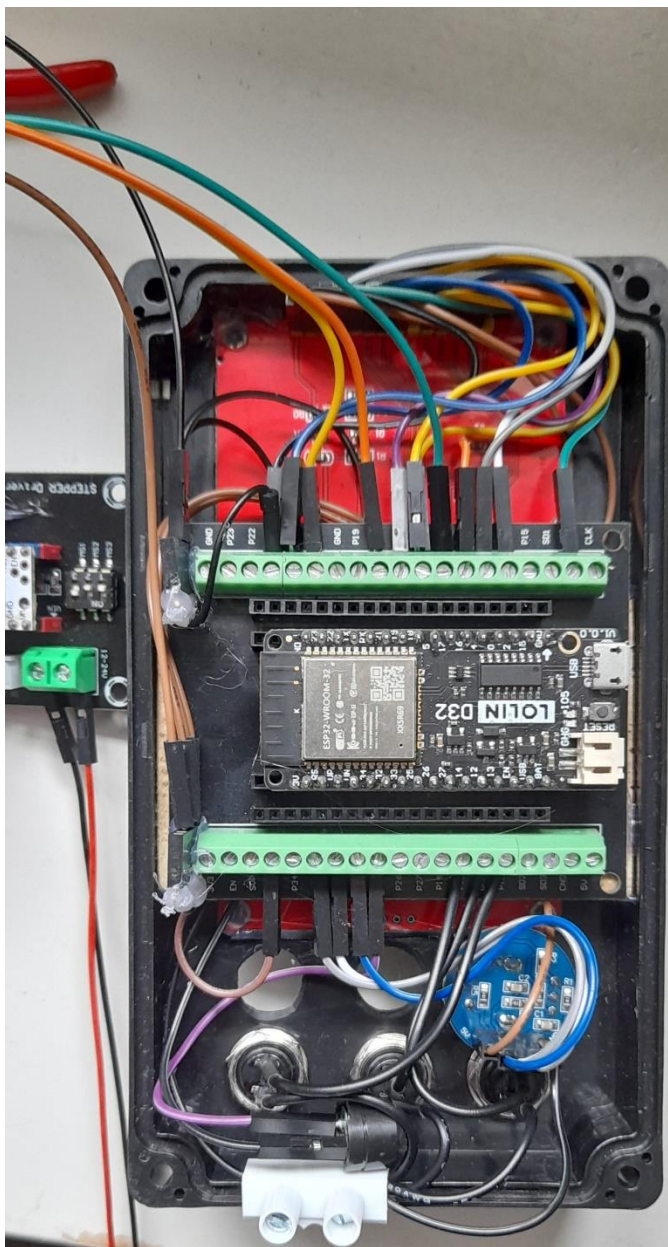
Tft connections.



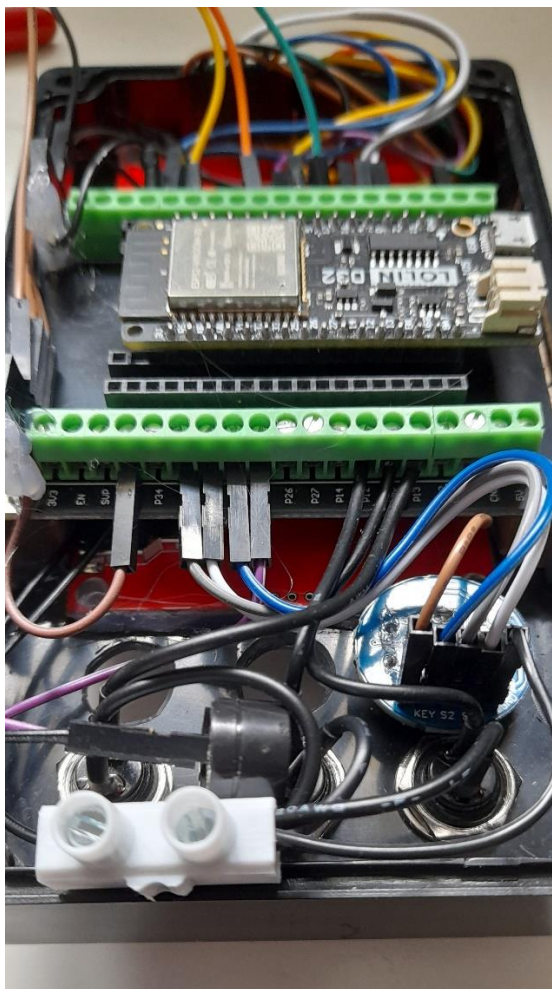
Rear of tft screen 320 x 480 ili9488 Touch. Note U1 is not populated on the board, as it is a 3.3V board



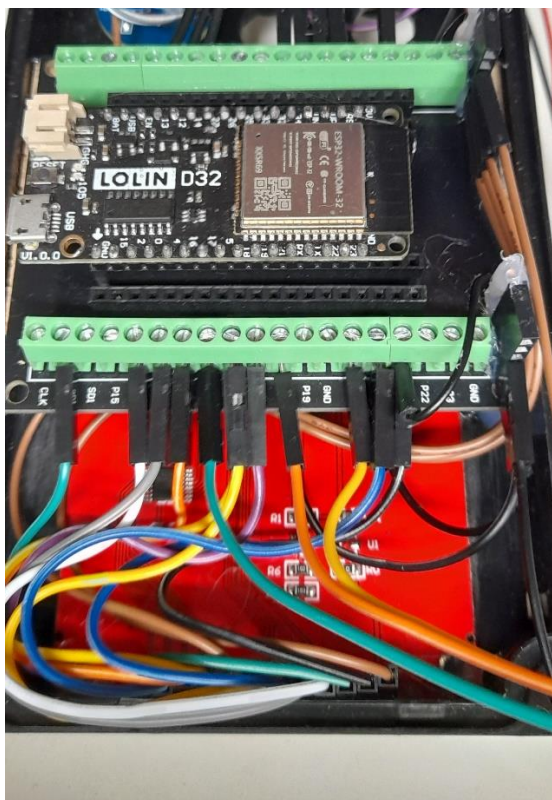
Completed wiring. Note 8-way female header pin used to create more 3V and 0V connection points.



Buttons & encoder wiring. Note the choc-bloc to combine the GND wires and the piezo sounder.



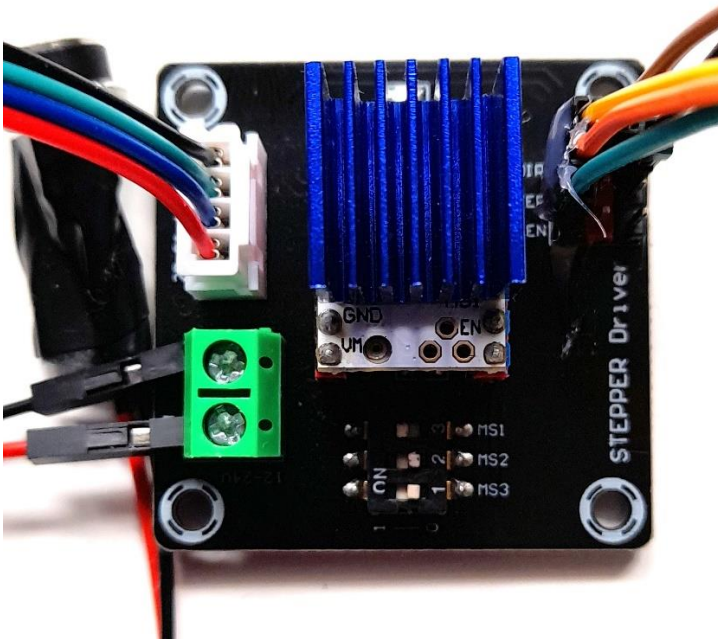
Connections for the tft and stepper driver



Stepper driver Board. This shows the older plug in module, which has the current adjusting potentiometer on the underside. The newer V2 has this mounted on the top



Note DIP switches, 1 is set to On and 2 & 3 are set to OFF.



Completed project, minus two buttons, awaiting delivery.

