

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

[Build a shutter tester for Focal Plane shutters - Cheap, Easy & it Works | Page 18 | Photrio.com Photography Forums](#)

Please refer to Photrio for further build help

## ESP32 Shutter Tester wiring guide V1.5

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. Shorter lengths can be used for the LCD & buttons, to make wiring neater.

There is only one 5V output on the board, one 3.3V and two 0V (or GND). It will not be possible to fit all of these wires into a single screw terminal. Do not use the GND terminal between pins 19 & 21 (it is an error on the board printing and is CMD, not GND)

One solution is to gather the 3.3V ends 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.

As an alternate, the power wires can be daisy chained to each module, but this requires soldering directly to the modules. Some of the build photos will show this.

**Note:-** The LCD and/or TFT screens are optional, as output is also sent to the computer screen.

The LCD can only show limited data, where as the TFT screen shows all data.

Touch-screen functionality maybe added in the future, requiring the tft touch screen.

There are three hardware versions.

**Legacy.** This uses two sensors and a LCD. This is no longer supported, or code available.

**Version 2.** Three sensors, four input buttons & LCD

**Version 3** As per version 2 but with the addition of a tft display. LCD can also be used.

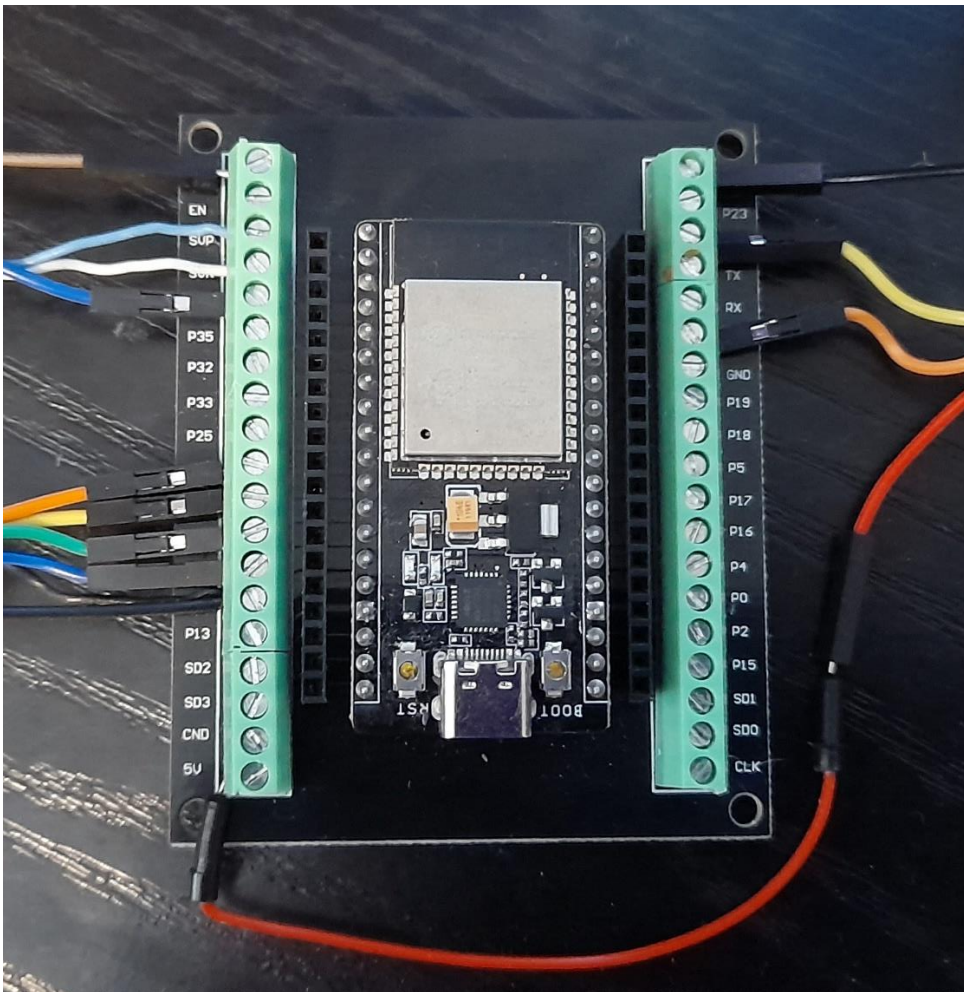
**Note:-** Current firmware works with both Version 2 & 3 hardware build.

Please refer to the version 2 or 3 schematic for details of all connections

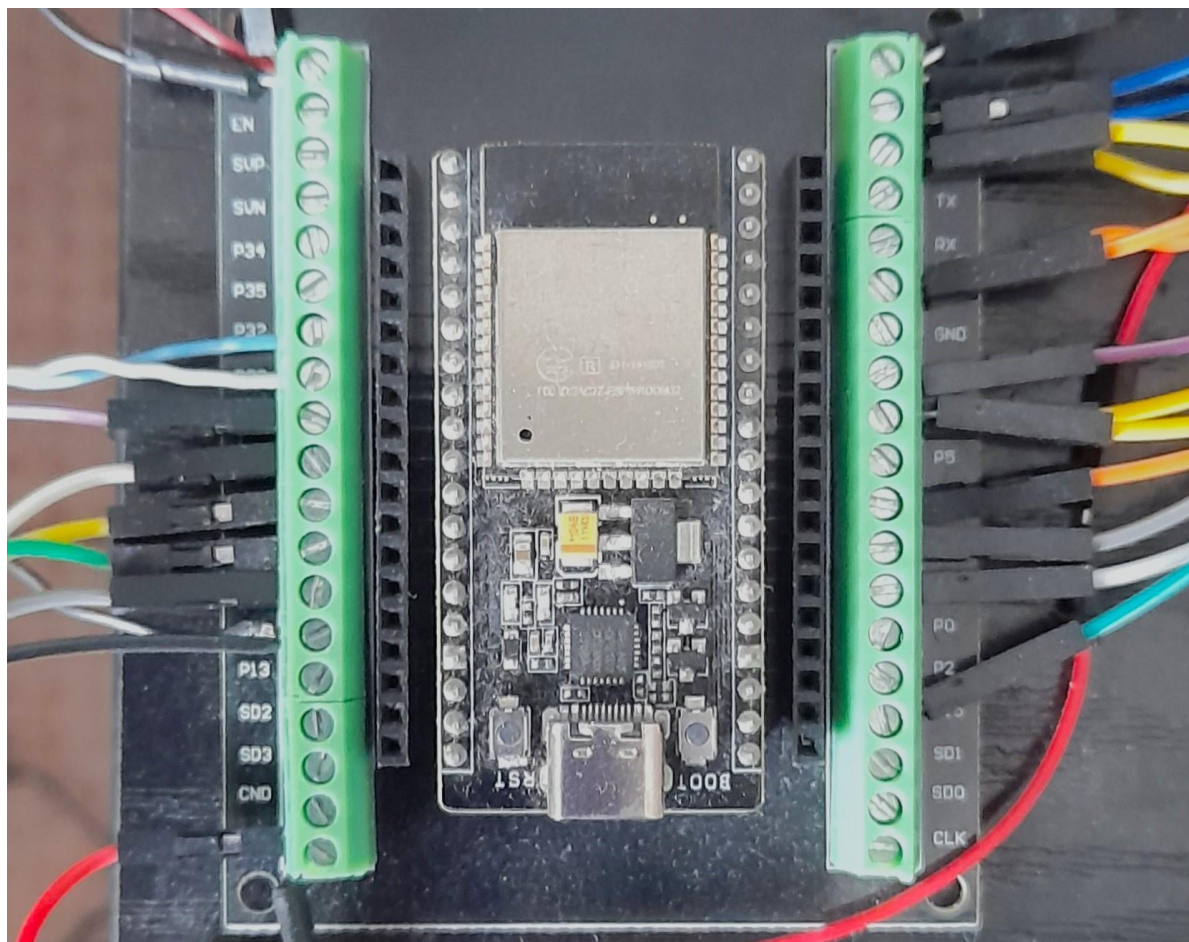
and use them in conjunction with the photographs below.

Version 2 with LCD.

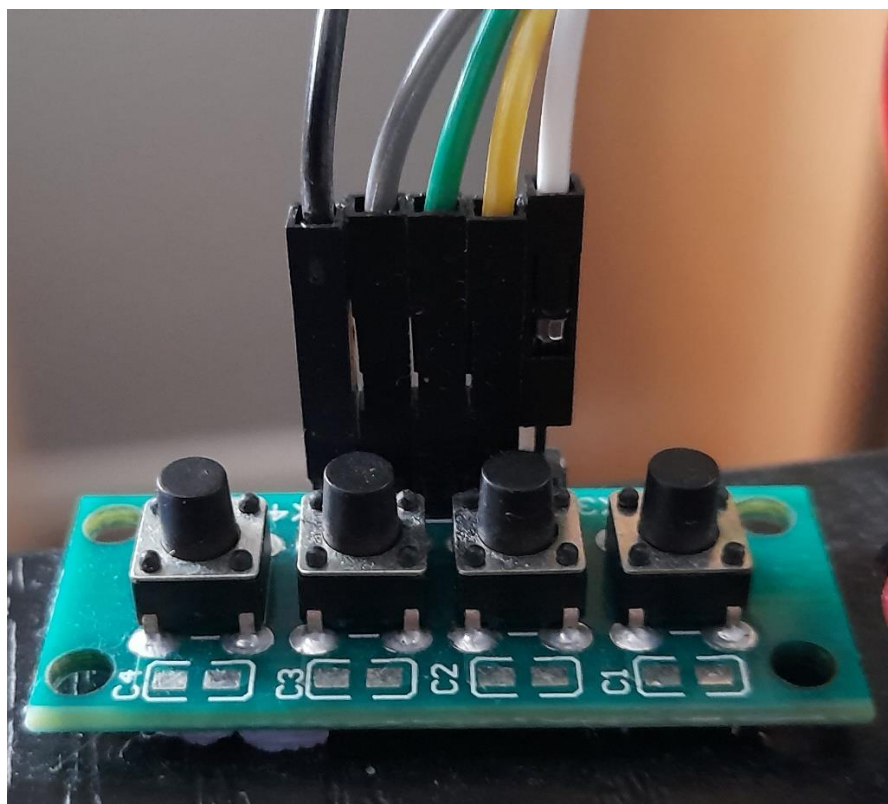
**Note:-** This shows old positions for the sensors & old button wiring colours on the left side of the board. Sensors have now been moved to 25, 33, 32.



Version 3 with TFT and LCD connected.

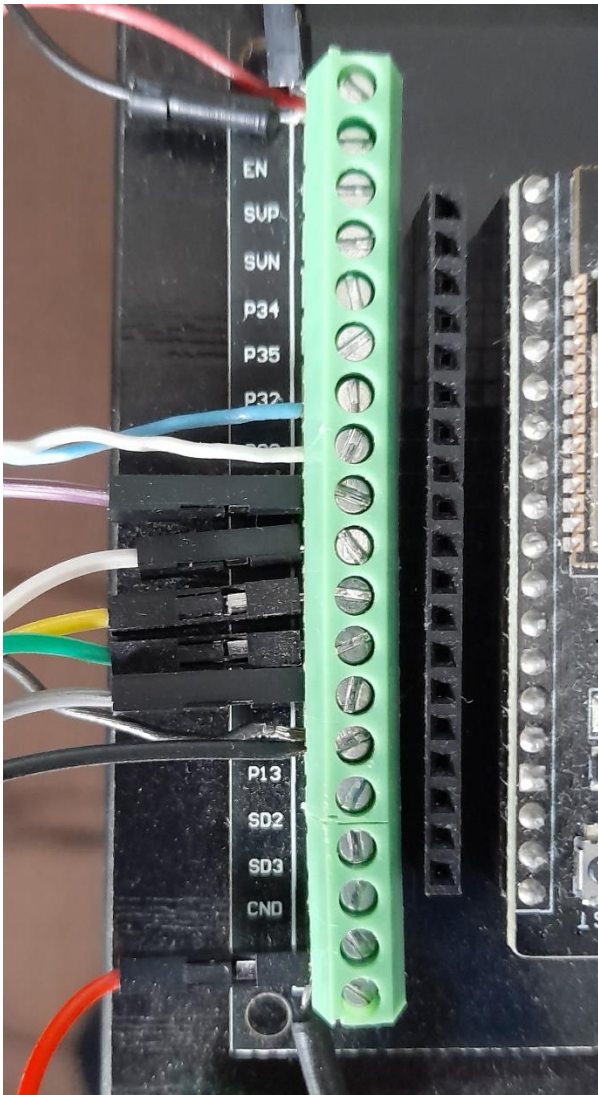


Button wiring

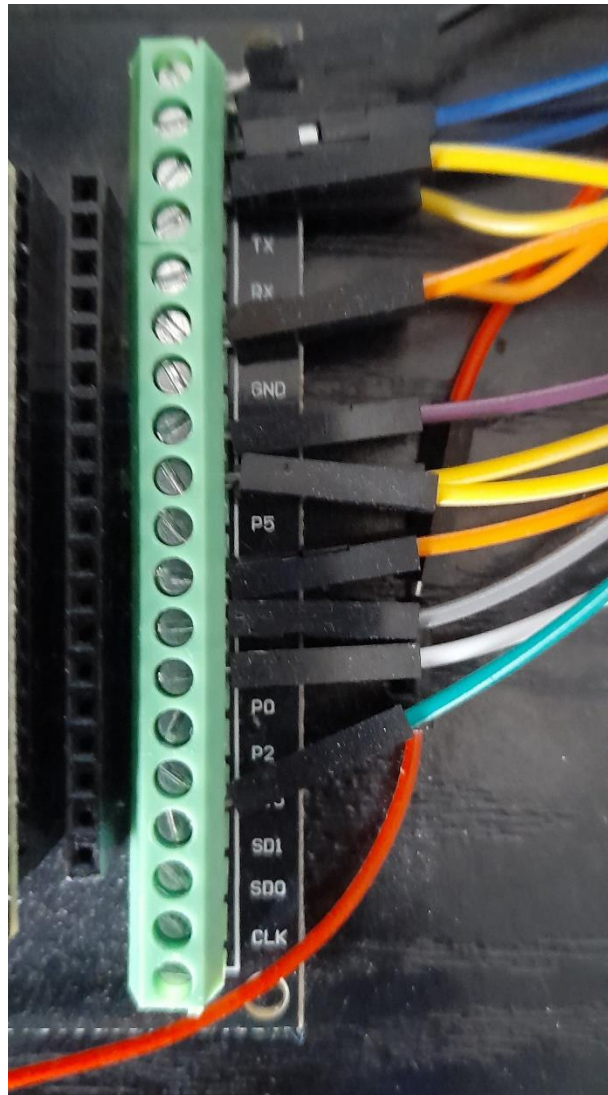




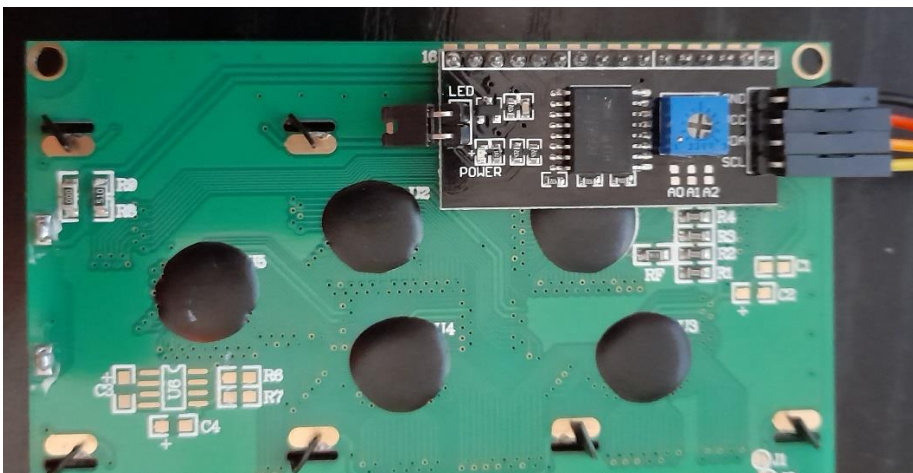
Left side board wiring



Right side board wiring



LCD connections. Note blue contrast adjuster



A red PCB with various electronic components. At the top, a multi-colored ribbon cable is connected to a black header. Below the header, there are several resistors (labeled R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100) and capacitors (labeled C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100). A microcontroller (labeled U1) is also present. The PCB has two mounting holes on the left and right sides.

TFT version mounted in project box. Note:- this is running the developing timer firmware, hence the different screen.

