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ESP32 ESP-WROOM-32 NodeMCU v2

esp32, arduino, constrained, iot, development

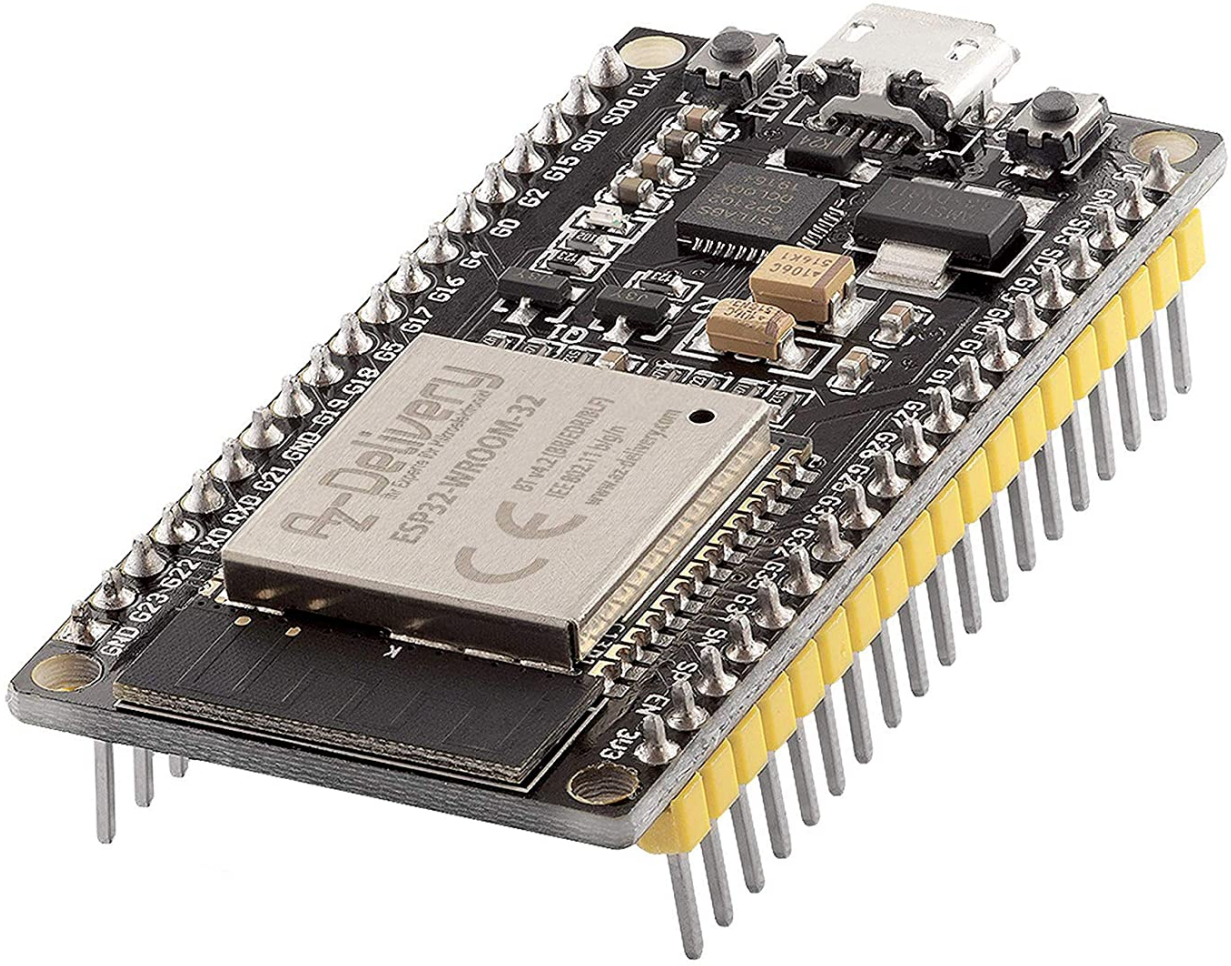
https://www.amazon.es/gp/product/B074RGW2VQ/ref=ppx_yo_dt_b_asin_title_o01_s00?ie=UTF8&psc=1

AZDelivery 3 pcs ESP32 ESP-WROOM-32 NodeMCU Modulo Wifi + Bluetooth Dev Kit C Placa de Desarrollo 2.4 GHz Dual Core con Chip CP2102 (sucesor del ESP8266) compatible con Arduino con E-Book incluido!

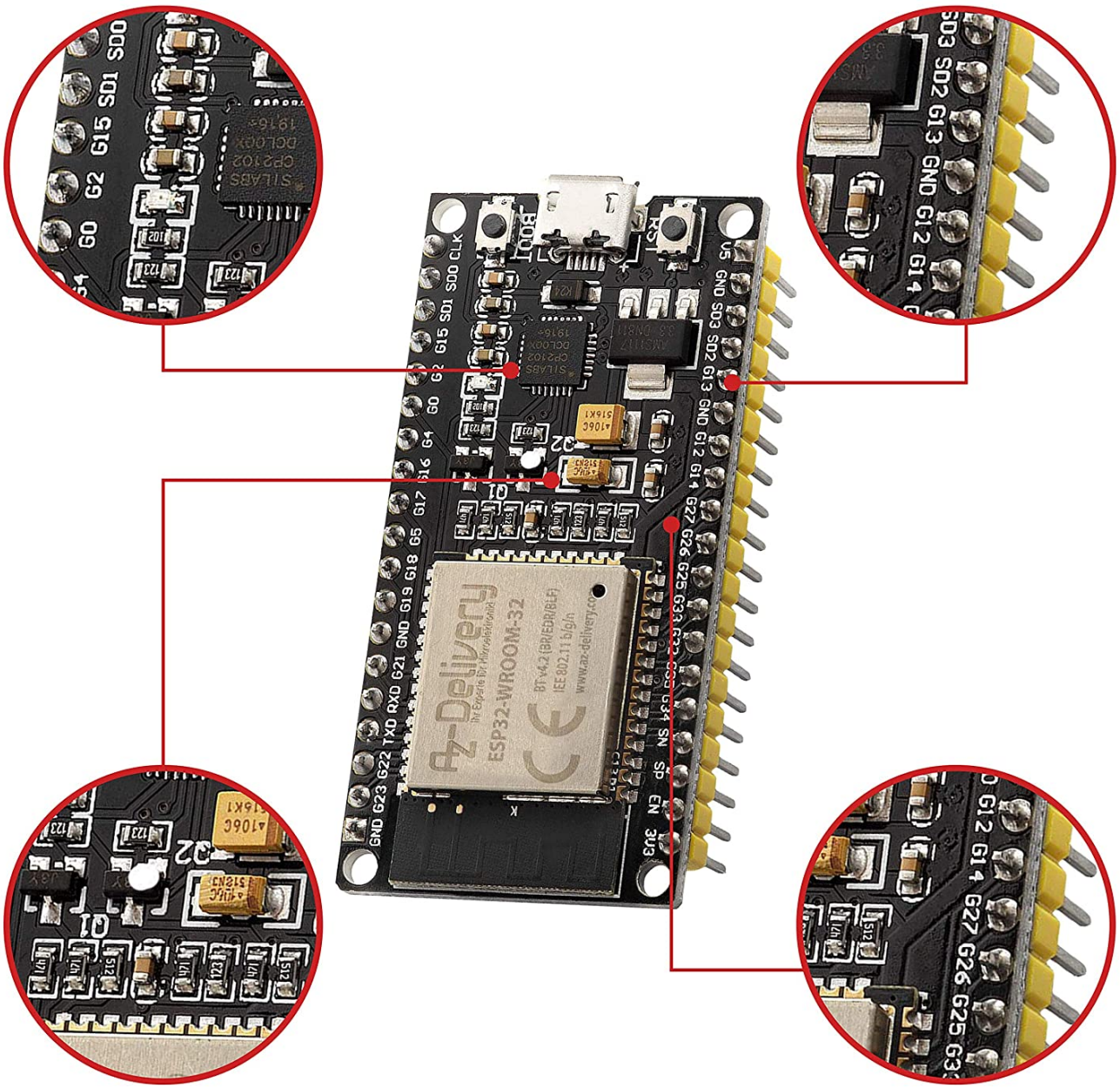
```
Voltaje de alimentación     : 5V
Voltaje de entrada / salida : 3.3V
Corriente de Funcionamiento : min. 500mA
SoC                         : ESP32-WROOM 32
Frecuencia de Reloj         : 80MHz / 240MHz
RAM                         : 512kB
Memoria Flash externa       : 4MB

Pines I / O                 : 34
Interfaces                  : SPI, I2C, I2S, CAN, UART
Protocolos Wi-Fi            : 802.11 b/g/n (802.11n hasta 150 Mbps)
Frecuencia Wi-Fi            : 2.4 GHz - 2.5 GHz
Bluetooth                   : V4.2 - BLE y Bluetooth clásico
Antena inalámbrica          : PCB
Dimensiones                 : 56x28x13mm
```

Fotos:

- The Module Has 38 Pins
- Smaller & More Conveniet To Use



A-Delivery


SD0
G15
SD1
G2
G0
SD3
SD2
G13
GND
G12
G14
G27
G26
G25
G33
G32
G35
G34
SN
SP
EN
3V3
GND
G23
G22
TXD
RXD
G21
GND
G19
G18
G5
G17
G16
G4
G0
G2
G15
SD1
SD0
CLK
5V
GND
SD3
SD2
G13
GND
G12
G14
ESP32-WROOM-32
AZ-Delivery

Pinout:

Para hacerla funcionar

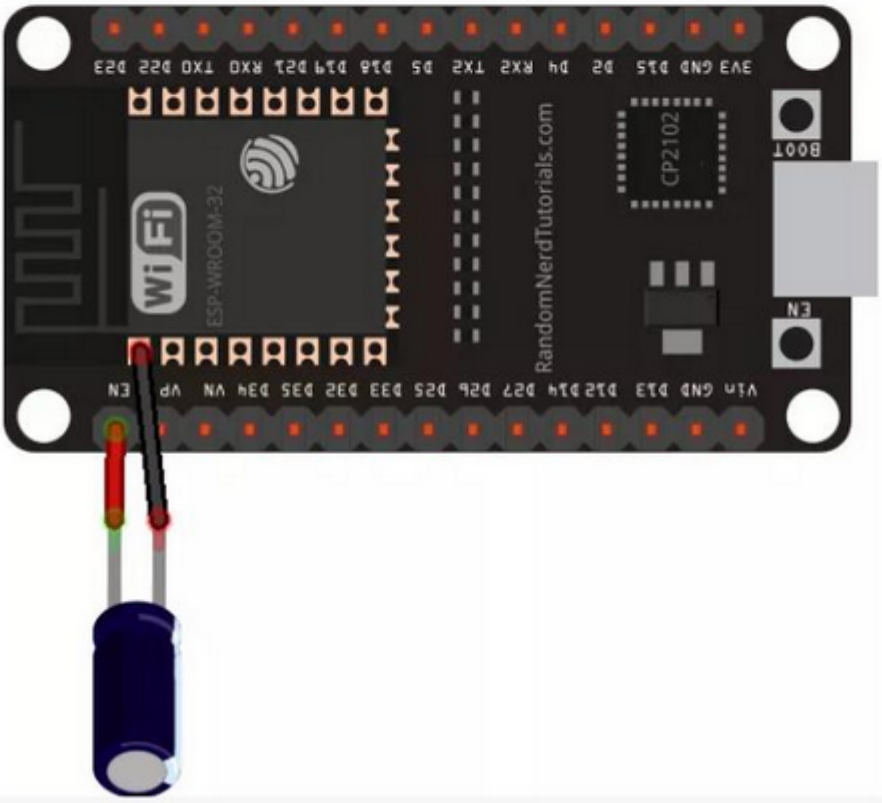
- Tienes que configurar el IDE de arduino para que reconozca esta placa.

  - En “Preferencias” tienes que agregar la opción “Gestor de URLs adicionales de tarjetas” la siguiente URL:

    - https://raw.githubusercontent.com/espressif/arduino-esp32/gh-pages/package_esp32_index.json
- Luego en la opción “Herramientas” y luego “Placas” tienes que seleccionar la placa en cuestión dentro del apartado “ESP arduino”.
- Si no lo tienes claro del todo puedes consultar la documentación en: https://github.com/espressif/arduino-esp32
- Se puede programar la placa con ArduinoIDE o LUA(espressif).

Evitar tener que pulsar el botón al programar (??)

If it works, then you can solder the **10 uF electrolytic capacitor** to the board. Since the EN and GND pins are far apart from each other, you can simply connect the capacitor between the EN and the GND of the ESP32 chip as shown in the schematic diagram below:

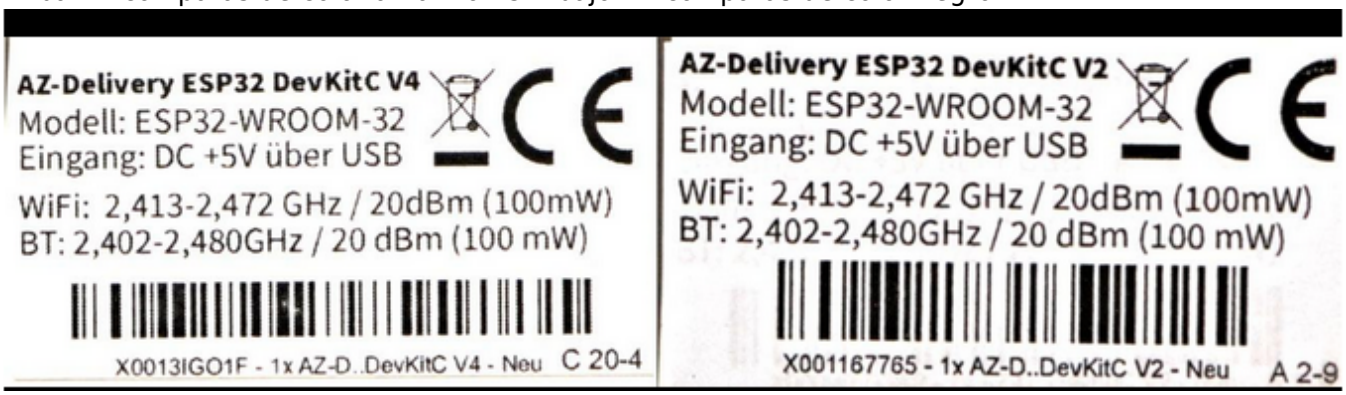


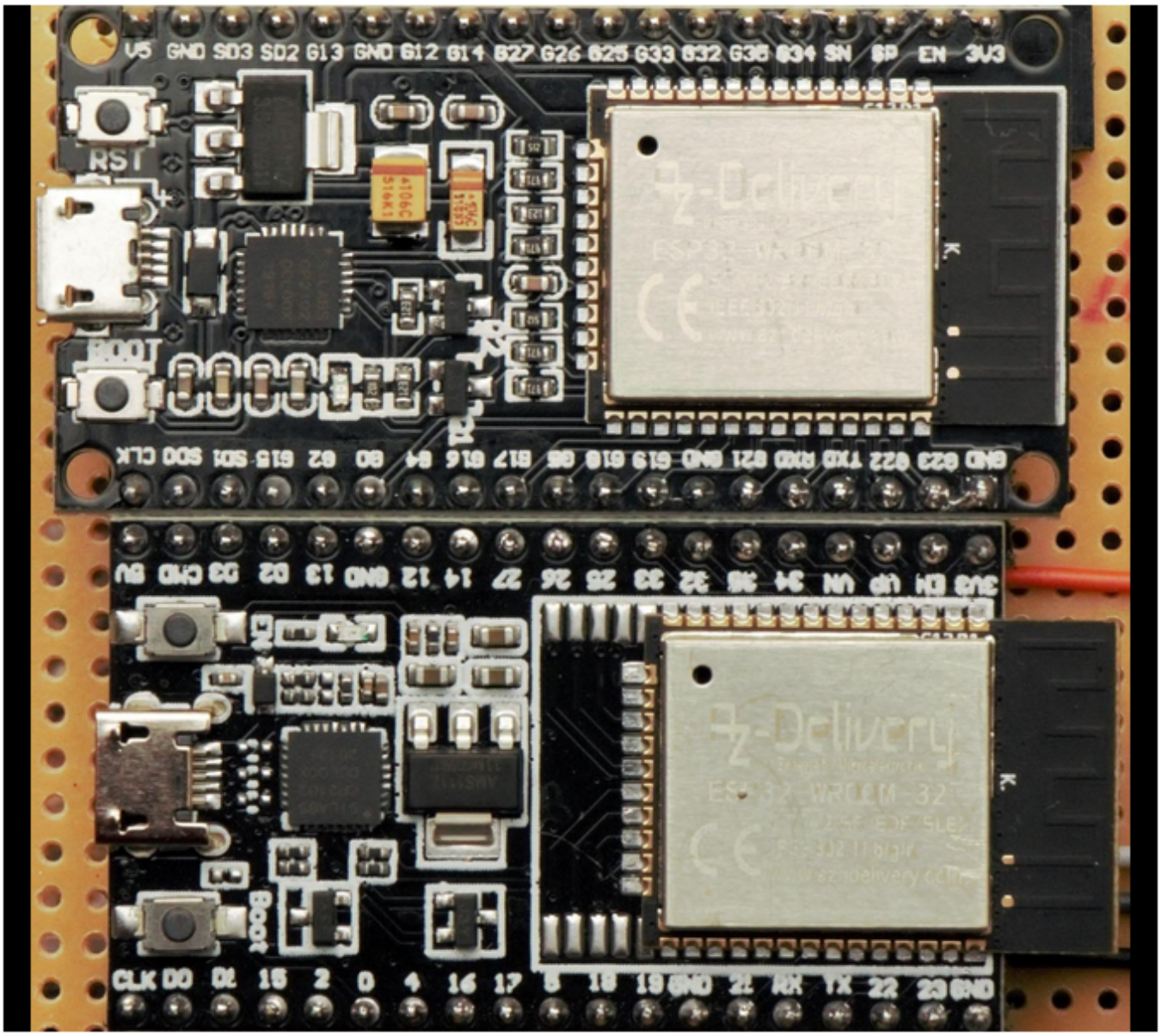
Versiones — V2 Vs. V4

Es necesario identificar si estamos tratando con la V2 o la V4:

Fotos para diferenciar:

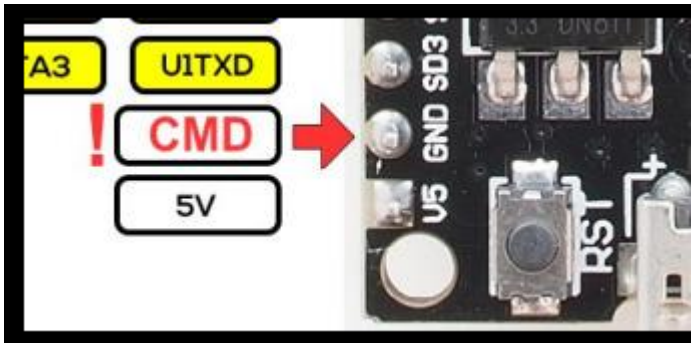
Arriba V2 con patas de color amarillo Vs. Abajo V4 con patas de color negro.





ERROR en la serigrafía

El pin junto a 5V **NO ES GND**, es un pin CMD que conecta directamente con la SPI interna y no debería conectarse a nada.



Instrucciones para hacer funcionar dispositivos I2C

https://www.az-delivery.de/en/blogs/azdelivery-blog-fur-arduino-und-raspberry-pi/esp32-beide-i-c-schnittstellen-verwenden

https://randomnerdtutorials.com/esp32-i2c-communication-arduino-ide/

Información adicional copiada directamente de Mensajes de página de compra en Amazon

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This week found another e-book, “ESP-32 Dev Kit C V4 Eng”. This is much better with 30 pages, a pinout diagram, explanation of pin functions and sketches for PWM control of an LED as well as blinking.

There appears to be a mistake in the pinout diagram. GPIO2 and GPIO4 are both called SD*D1. I think one of them should be SD*D0, but which?

The guide helpfully tells a user to avoid using pins 6,7,8,9,10 & 11 as they are SPI pins connected to the integrated SPI flash and should not normally be used.

The two boards appear to be from different manufactures – V2 at the top with yellow components and legs – V4, below with black legs.

Version 2 has a larger base board with four fixing holes and clearer pin names. Version 4 has fuzzy printing of the pin names and the antenna overhangs the end of the board.

Una es que hay que pulsar el boton de bot al grabar la placa, pero lo solucioné colocando un condensador electrolítico de 10uf/25v entre las patillas EN y GND; respetando la polaridad. Dejo una foto que circula por la red. A mi me funcionó de lujo. La otra es que está mal serigrafiado un pin GND. En este caso no es masa sino CMD….se parece no? Dejo una foto para que se vea cuál es. Pero después de tantas ventas, ya podrían corregir estas cosas.

El micro es V2, o es lo que pone en arduino después de compilar el sketch. Me hubiese gustado disponer de la placa Dev C V4 que está agotada y es mas como la original de Espressif.

I had previously ordered one of these boards, direct from Germany, and received a V4 board. Ordering another, via Amazon UK, I was sent, and disappointed to receive, an earlier, yellow legged version 2. (Old stock in UK?)

These boards are too wide to fit into a normal breadboard so I built a breakout board with stripboard and added an I2C SSD1306 128×64 display, a test button/switch, an LED with protection resistor and a 10K potentiometer.

The V2 board had a manufacturing problem and the legs, with yellow plastic support, were not at right angles to the bottom of the board. Each leg had to be carefully straightened to the correct angle before it could be inserted into a correctly spaced vertical socket on the breakout board.

Earlier, in mid-September, I had downloaded a free e-book, ”ESP32 Development Board Englisch”, and found that it was very short, did not provide a pinout (except to expect the built in LED to be on pin 1)

and only described how to add the board drivers to the Arduino IDE and run the Blink sketch. I found this rather disappointing.

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Rather disconcerting are the different pin names when you compare the boards. Top left on the V2 board the pin next to the 5V pin is marked GND. It is not a GND pin but is in fact CSC/CMD – one of internal SPI pins to be avoided like the next two adjacent pins SD3 and SD2 and on the opposite edge CLK, SD0 and SD1.

On the V4 boards the pins to be avoided are in the same positions but called: CMD, D3, D2, CLK, D0 and D? (next to 15).

Looking at the top right of the V2 board, near to the 3V3 pin and moving left to right are 4 pins called G35, G34, SN and SP. On the V4 board, in the same position they are called 35, 34, VN and VP. Their GPIO numbers are 35, 34 39 and 36. These are input only pins, without pull-up/pull down resisters so you need to add your own if using a button/switch. (I think SN, SP and VN, VP are inputs to a signal pre-amplifier for an external Hall Sensor. Probably best to avoid use to prevent damage for the moment.)

The e-book explains how to add board support to the Arduino IDE and this worked perfectly. I then tried the Blink and LED Fade sketches using an LED and 560 Ohm resistor on pin 2. Both worked as expected. I did notice that the V2 board did not appear to have a power ON LED, while the V4 board did. Neither appear to have spare “D13 like LED” available for the user to flash.

The e-book states that any of the normal GPIO pins support PWM. I tried using pin 23 (default SPI MOSI) with the Fade sketch. It worked on the V4 board but on the V2 board I had problems. Initially I could get it to Blink but not Fade, then it stopped blinking. Dead pin? I’ve never had this happen before. I tried a button switch on pin 23. It did not work either – the pin is dead! This was not a short. I work on a clear wooden table top next to my keyboard.

I continued with the V4 board with an LED on 23, button switch on 34 (pull-down 10K resistor) and a 10 K potentiometer on 32. An SSD1304 was connected to the I2C pins 22 and 21. A suitable sketch to read the pot and switch, display their values on the OLED and turn the LED on/off worked well. Compilation was much slower than on an Arduino. The A/D registered an accurate zero at one end of the pot, and 4095 at the high end with a little bit of ‘dead twist’ at the high end.

My final test was to modify a self-setting internet clock sketch, using NTP time and the ESP32’s ability to link to your WiFi network. The compilation took ages because of the essential libraries, but work

perfectly.

Conclusion: I’m very happy with the V4 board and give it 5 stars but the V2 board only 1 star – bent pins, no power LED, poor labels and a dead pin.

- Ref. Comentarios de Amazon: https://www.amazon.es/gp/product/B074RGW2VQ/ref=ppx_yo_dt_b_asin_title_o01_s00?ie=UTF8&psc=1
