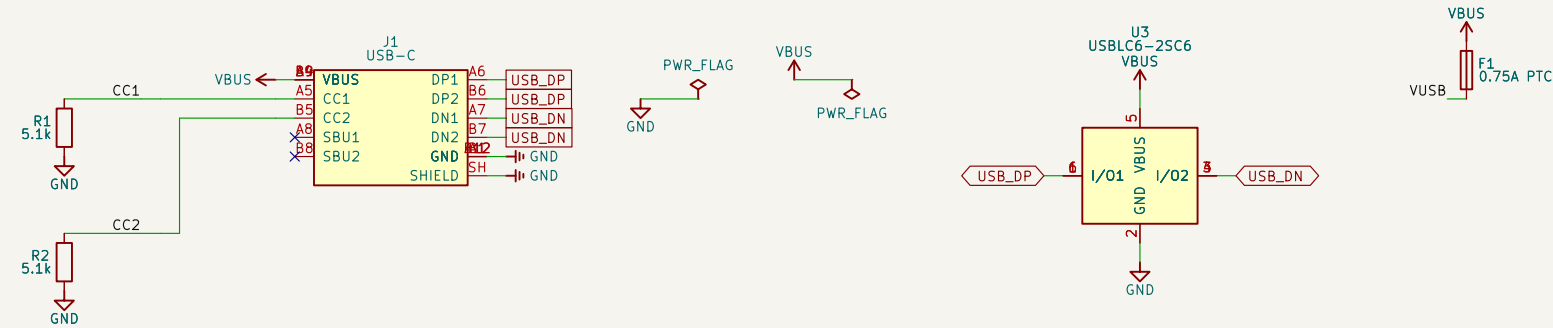


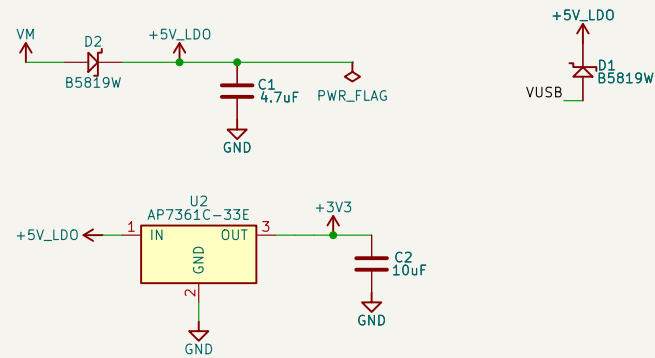
USB-C

Flashes and talks to the ESP32 (its built-in USB serial / JTAG) and powers the logic. It does not power the motors. 5.1 kOhm CC pull-downs make it a USB-C sink; USBLC6 ESD protection; 0.75 A PTC fuse on VBUS.



3.3 V supply

Makes 3.3 V for the ESP32 from USB or from the motor supply, whichever is there (two Schottky diodes pick the higher one). AP7361C 1 A LDO in SOT-223. Its heat limits it to the ESP32 plus about 50 mA for the GPIO header's 3V3 pin.



Sheets

- ESP32-C3 Wi-Fi module and more
- Reset, boot and straps and more

Generated from the netlist (run/state/circuit_graph.json) – do not edit by hand
Sheet: USB-C and 3.3 V supply
faezor PCB

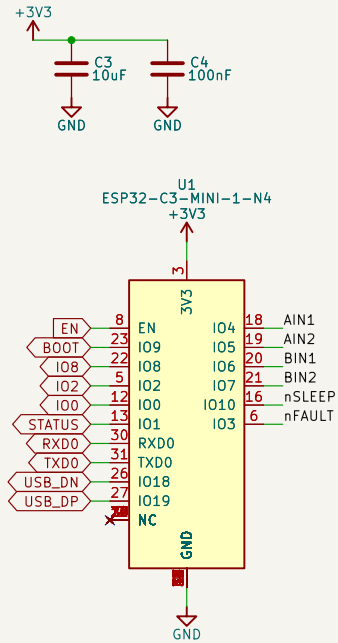
Sheet: /
File: board.kicad_sch

Title: ESP32-C3 dual DC motor driver (DRV8833)

Size: A4	Date: 2026-10-19	Rev: 1
KiCad E.D.A. 10.0.6		Id: 1/3

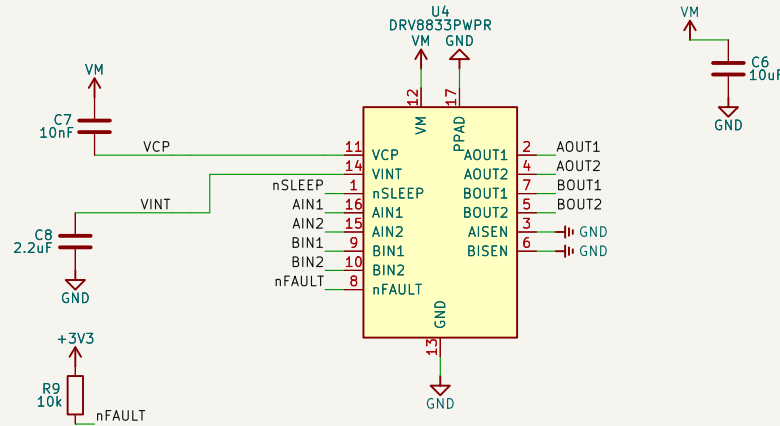
ESP32-C3 Wi-Fi module

The brain. A small Wi-Fi + Bluetooth computer that tells the motor driver which way and how fast each motor turns.
Motor pins: AIN1 = IO4, AIN2 = IO5 (motor A), BIN1 = IO6, BIN2 = IO7 (motor B); nSLEEP = IO10 (high = driver on), nFAULT = IO3 (low = fault).
Its PCB antenna sits at the top edge with no copper under it; keep metal and wires away from it.



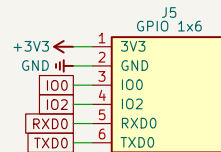
Motor driver

The DRV8833 dual H-bridge. It switches the 5 V motor supply to each motor, forward, reverse, brake or coast, at the speed the PWM sets.
Per motor: IN1 PWM / IN2 low = forward, IN1 low / IN2 PWM = reverse, both low = coast, both high = brake.
Up to 1.5 A per motor; the chip shuts down itself on overcurrent (about 2 A) or overheating and pulls nFAULT low.
Six vias carry the heat from its pad into the ground copper on the back.



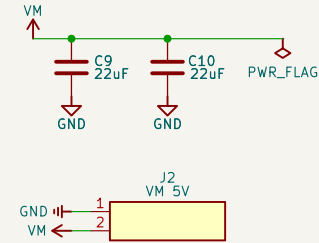
GPIO header

Spare pins for sensors or a serial adapter.
Pinout: 1 3V3 (50 mA max), 2 GND, 3 IO0, 4 IO2 (pulled up, keep high at boot), 5 RXD0 (IO20), 6 TXD0 (IO21). 3.3 V logic only.



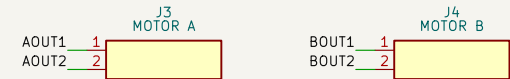
Motor power in

The 5 V supply for the motors (a 5 V adapter or a 1S boost). It also runs the ESP32 when no USB is plugged in.
4.5 to 5.5 V only, right polarity: pin 1 GND, pin 2 +5 V. No reverse-polarity protection.



Motor outputs

Screw terminals for motor A and motor B. Swap the two wires of a motor to swap its direction.



Generated from the netlist (run/state/circuit_graph.json) – do not edit by hand
Sheet: ESP32-C3 Wi-Fi module and more

faezor PCB

Sheet: /ESP32-C3 Wi-Fi module and more/

File: board-esp32-c3-wi-fi-module-and-more.kicad_sch

Title: ESP32-C3 dual DC motor driver (DRV8833)

Size: A4

Date: 2026-10-19

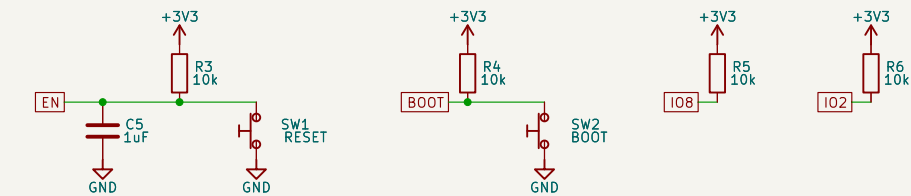
Rev: 1

KiCad E.D.A. 10.0.6

Id: 2/3

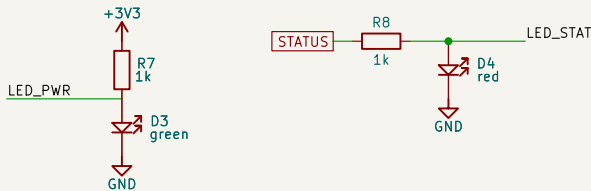
Reset, boot and straps

RESET restarts the ESP32; hold BOOT while pressing RESET to start the USB download mode.
EN has a 10 kOhm / 1 uF delay so the chip starts after 3.3 V is stable.
IO9 (BOOT), IO8 and IO2 are pulled up with 10 kOhm so the module boots from its flash.



Status lights

Green = 3.3 V on; red = status light on IO1 (high = on).



Generated from the netlist (run/state/circuit_graph.json) – do not edit by hand
Sheet: Reset, boot and straps and more

faezor PCB

Sheet: /Reset, boot and straps and more/
File: board-reset-boot-and-straps-and-more.kicad_sch

Title: ESP32-C3 dual DC motor driver (DRV8833)

Size: A4	Date: 2026-10-19	Rev: 1
KiCad E.D.A. 10.0.6		Id: 3/3