

The diagram illustrates the internal circuitry of a USB-C to UART module. On the left, a USB-C receptacle (J3) is connected to a 3V3 regulator. The VBUS pin is connected to the +5V input of the regulator. The CC1 and CC2 pins are connected to a 5.1k resistor and ground. The D- and D+ pins are connected to the USB-to-UART bridge IC (U2: FT231XL) through a 47pF capacitor. The SHIELD pin is connected to ground. The bridge IC is also connected to a 3V3 regulator. The TXD and RXD pins are connected to the TXD and RXD pins of the bridge IC. The RTS and DTR pins are connected to the RTS and DTR pins of the bridge IC. The DSR and DCD pins are connected to the DSR and DCD pins of the bridge IC. The RI pin is connected to the RI pin of the bridge IC. The CBUS0, CBUS1, CBUS2, and CBUS3 pins are connected to the CBUS0, CBUS1, CBUS2, and CBUS3 pins of the bridge IC. The bridge IC is also connected to a 3V3 regulator. The TXD and RXD pins are connected to the TXD and RXD pins of the bridge IC. The RTS and DTR pins are connected to the RTS and DTR pins of the bridge IC. The DSR and DCD pins are connected to the DSR and DCD pins of the bridge IC. The RI pin is connected to the RI pin of the bridge IC. The CBUS0, CBUS1, CBUS2, and CBUS3 pins are connected to the CBUS0, CBUS1, CBUS2, and CBUS3 pins of the bridge IC. The bridge IC is also connected to a 3V3 regulator. The TXD and RXD pins are connected to the TXD and RXD pins of the bridge IC. The RTS and DTR pins are connected to the RTS and DTR pins of the bridge IC. The DSR and DCD pins are connected to the DSR and DCD pins of the bridge IC. The RI pin is connected to the RI pin of the bridge IC. The CBUS0, CBUS1, CBUS2, and CBUS3 pins are connected to the CBUS0, CBUS1, CBUS2, and CBUS3 pins of the bridge IC.

ESP32-C3-wroom-02

The diagram illustrates the power supply and pin configuration for the ESP32-C3-wroom-02 module.

Power Supply Circuit:

- A **+3V3** input is connected to a network of components.
- A capacitor **C3 (10u)** is connected to ground (**GND**).
- A capacitor **C2 (0.1u)** is connected in parallel with C3.
- A resistor **R1 (10k)** is connected between the +3V3 line and the **EN** pin.
- A capacitor **C1 (1u)** is connected between the +3V3 line and ground (**GND**).
- The output of this network is labeled **+3V3**.

ESP32-C3-WROOM-02 Pinout:

- EN (2):** Enable pin, connected to the +3V3 line.
- I00 (18), I01 (17), I02 (16), I03 (15), I04 (14), I05 (13), I06 (12), I07 (11), I08 (10), I09 (9):** General purpose I/O pins.
- I020/RXD (11):** RX pin, connected to **U0RXD**.
- I021/TXD (12):** TX pin, connected to **U0TXD**.
- GND (9):** Ground connection.

USB to UART programmer

The diagram shows a circuit for interfacing a USB-to-UART programmer with a target device. Two NPN transistors, Q1 and Q2 (MMBT222A), are used as buffers. Resistor R10 (10k) connects the DTR signal to the base of Q1. Resistor R11 (10k) connects the RTS signal to the base of Q2. The emitters of both transistors are connected to ground. The collectors of Q1 and Q2 are connected to the EN pin of the target device. The target device is represented by a box with pins 1, 2, and EN.

DTR RTS-->EN 100					
1	1	1	1	1	
0	0	1	1	1	
1	0	0	1	1	
0	1	1	0		

The diagram illustrates the pin configuration for the Raspberry Pi 4B, showing two 15-pin connectors, J1 and J2, and their corresponding functions. The pins are numbered 1 to 15, and the functions are listed next to them. The diagram also shows the power supply connections: +3V3 and +5V.

J1 Connector Pin Functions:

- Pin 1: GND
- Pin 2: GND
- Pin 3: +3V3
- Pin 4: EN
- Pin 5: GND
- Pin 6: IOD0
- Pin 7: IOD5
- Pin 8: IOD6
- Pin 9: IOD7
- Pin 10: GND
- Pin 11: IOD8
- Pin 12: IOD9
- Pin 13: +5V
- Pin 14: GND
- Pin 15: GND

J2 Connector Pin Functions:

- Pin 1: GND
- Pin 2: IOD0
- Pin 3: IOD1
- Pin 4: IOD2
- Pin 5: IOD3
- Pin 6: IOD4
- Pin 7: IOD10
- Pin 8: GND
- Pin 9: U0RXD
- Pin 10: U0TXD
- Pin 11: GND
- Pin 12: IOD18
- Pin 13: IOD19
- Pin 14: GND
- Pin 15: GND

Reset and Boot buttons

Programmable LED

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graph LR; IO8 --- R12[R12 22k]; R12 --- D4[D4 LED]; D4 --- GND
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Voltage Regulator