DATASHEET

Custom PCB

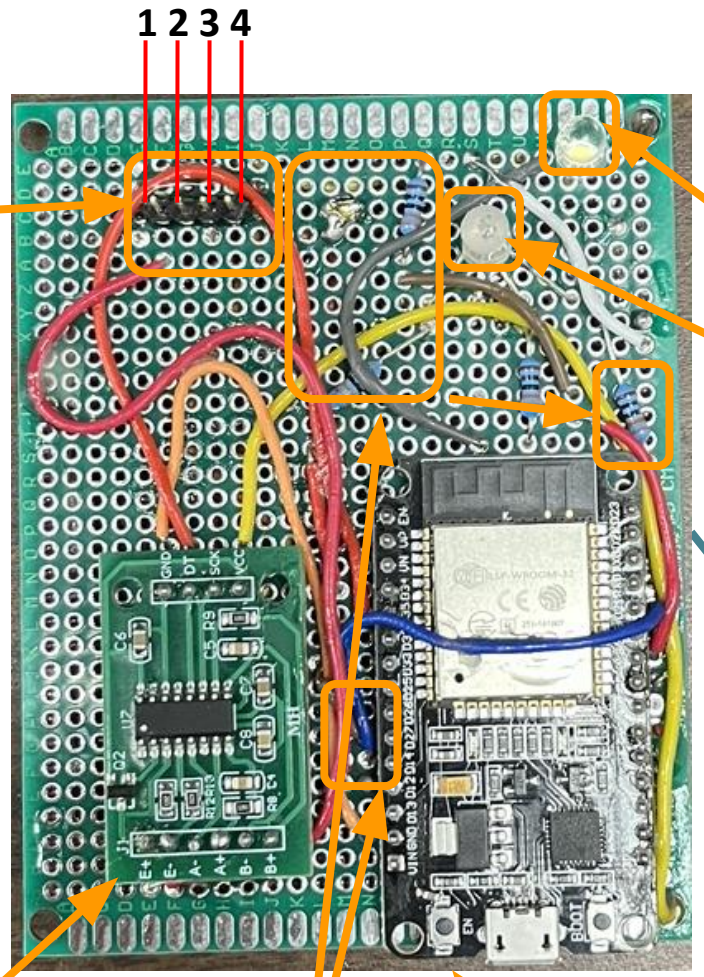
Load Cell Unit

Pins: (LEDs in Top Right) (L→R)

1 = E+ ⟶ Red
2 = E- ⟶ Black
3 = A- ⟶ White
4 = A+ ⟶Green

(Board ⟶ Load Cell Wire Color)

Power: USB G in ESP 32 Port



Indicators:

Dim White (LED #1): Powered On
Bright White (LED #1): Program Running
Off (LED #1): Powered Off

Red (LED #2): 0%-33.33% weight range
Yellow (LED #2): 33.33%-66.67% weight range
Green (LED #2): 66.67%-100% weight range
Off (LED #2): Program Halt

LED #1

LED #2

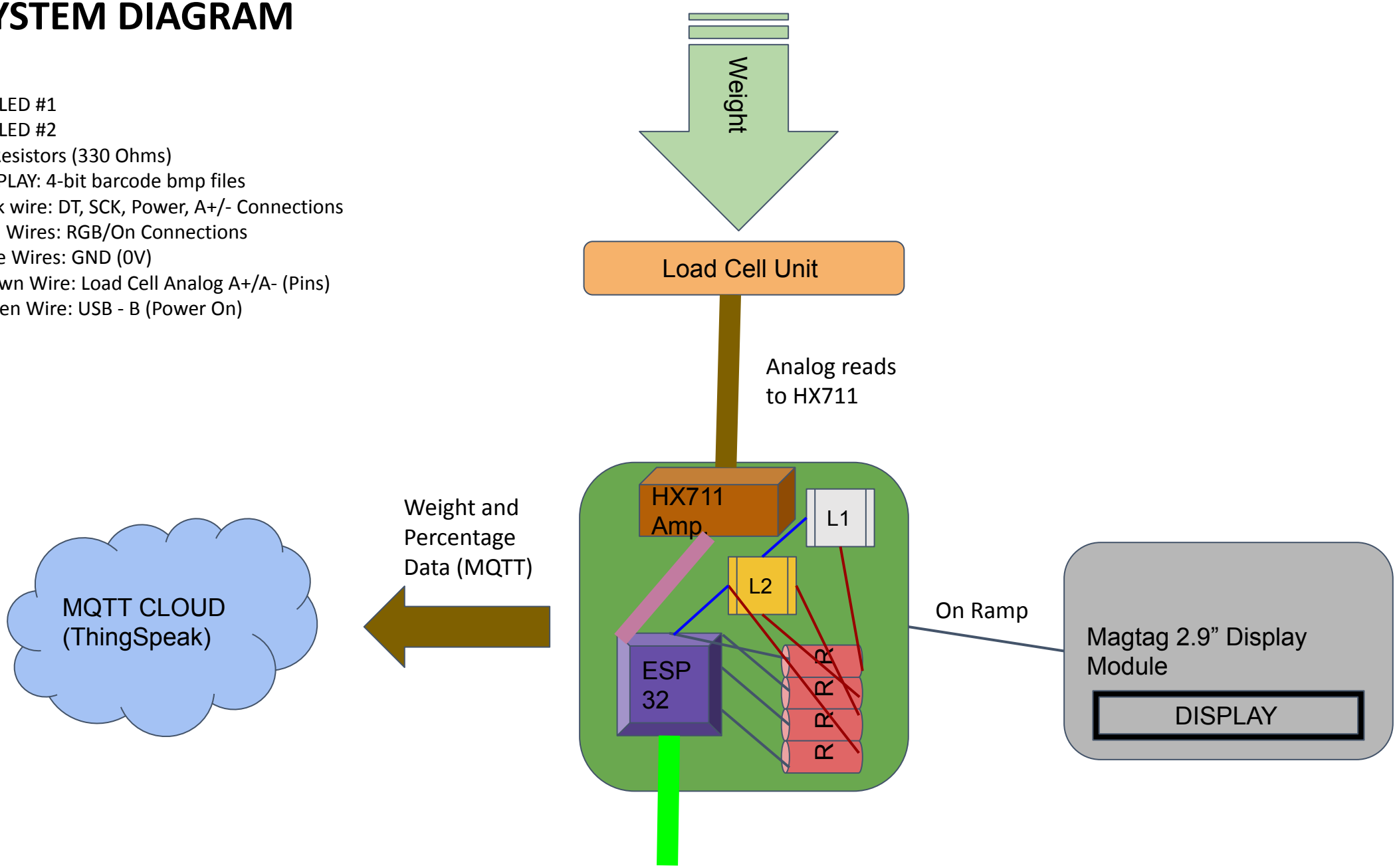
Note on Load Cell Wires:

Separate connections are made typically since the wires of the load cell are too fragile to be permanently soldered on the PCB, causing wire strain and irreparable damage to board functionality if broken, or snapped. Hence use this datasheet to make safe reconnections everytime upon disconnect/use.

The wires are originally bundled and placed in the enclosure, but this is a safety feature for the load cell wires, and it also ensured PCB universality

SYSTEM DIAGRAM

L1: LED #1
L2: LED #2
R: Resistors (330 Ohms)
DISPLAY: 4-bit barcode bmp files
Pink wire: DT, SCK, Power, A+/- Connections
Red Wires: RGB/On Connections
Blue Wires: GND (0V)
Brown Wire: Load Cell Analog A+/A- (Pins)
Green Wire: USB - B (Power On)



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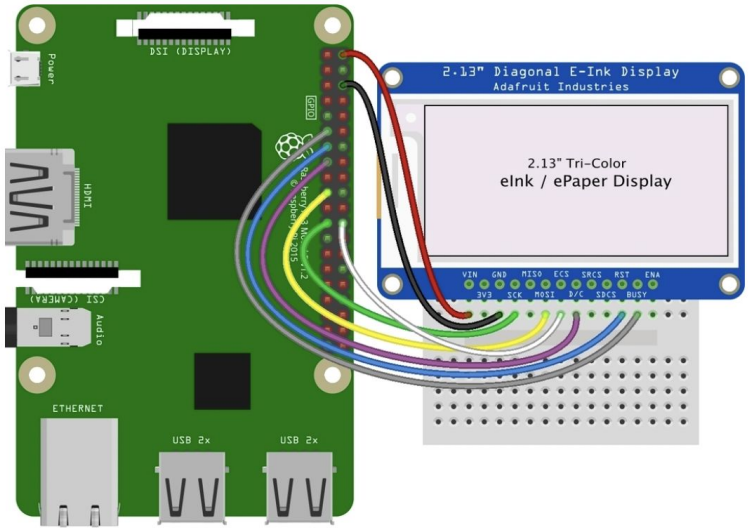
2.13 E-ink to RPi4

Python Wiring

The wiring for the eInk Breakout and eInk Breakout Friend to the Raspberry Pi is the same.

- **Raspberry Pi 3.3** to **display VIN**
- **Raspberry Pi GND** to **display GND**
- **Raspberry Pi SCLK** to **display SCK**
- **Raspberry Pi MOSI** to **display MOSI**
- **Raspberry Pi GPIO CE0** to **display ECS**
- **Raspberry Pi GPIO 22** to **display D/C**
- **Raspberry Pi GPIO 27** to **display RST**
- **Raspberry Pi GPIO 17** to **display BUSY**



Load Cell + HX711 to ESP32

Load Cell > HX711:

Green > A+
Red > E+
Black > E-
White > A-

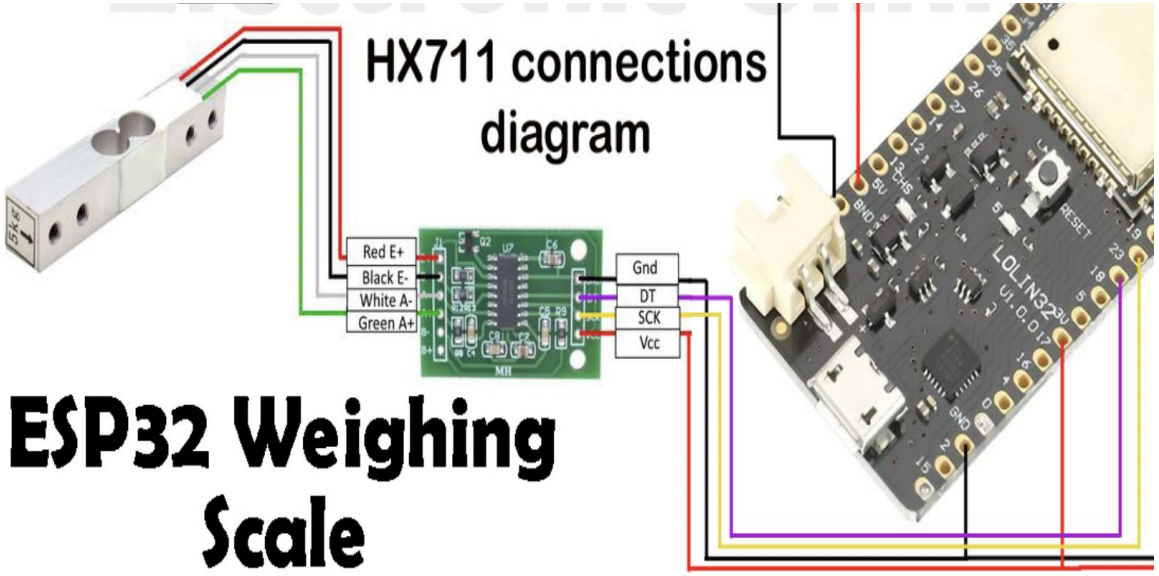
HX711 > ESP32:

GND > GND

Vcc > 3v3 (3v)

DT > D35 (35)

SCK > D27 (27)



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ESP 32 to LED Display (1)

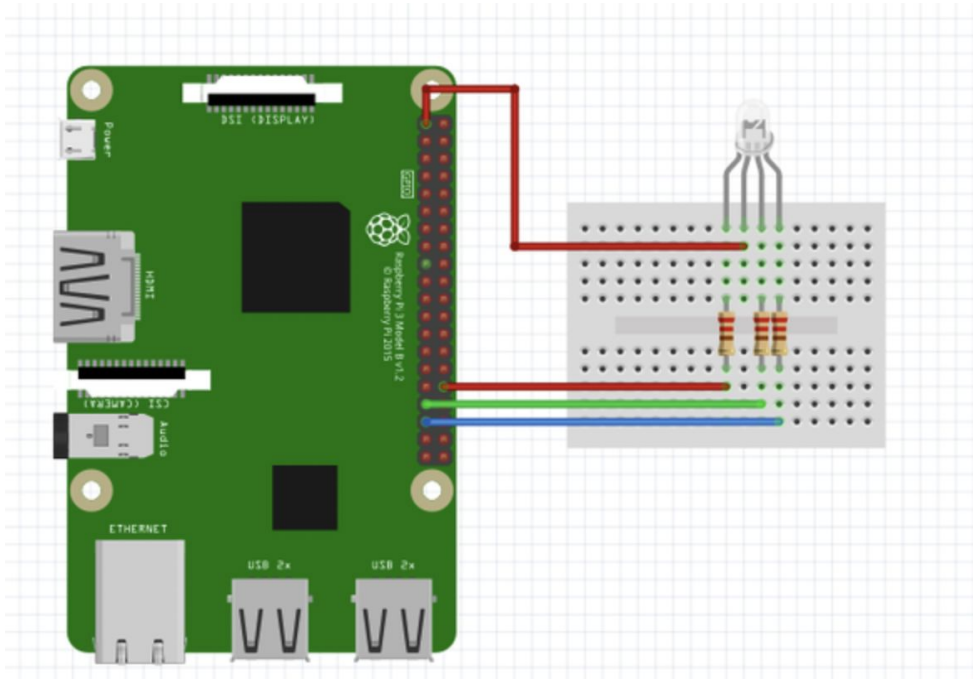
RGB Level: RGB > ESP32:

4 (or 5) > 12 (RED)
12 (or 13) > 14 (GREEN)
9 (or 10) > 13 (BLUE)
6 (or 7) > GND (0 V)

LED Display level Pins (1) and (2):

Left to Right = 1 to 16 inclusive (pin no.)

Pin Jack at Bottom, held horizontally (single PCB)



Resistors between 12,13,14 (from ESP32) and 8, 10, 11 (RGB LED) respectively: RGB Level --- 220 Ohm

ESP 32 to LED Display (2)

Multi (4) Level: 4-LED > ESP32:

16 > 12 (LED 1)
11 (or 12) > 13 (LED 2)
7 (or 8 or 9) > 14 (LED 3)
4 (or 5) > 18 (LED 4)
1 (or 2) > GND (0 V)

Resistors between 12,13,14, 18 (from ESP32) and 3, 7, 11, 14 (4-Level LED) respectively: 4 LED Level --- 330 Ohm

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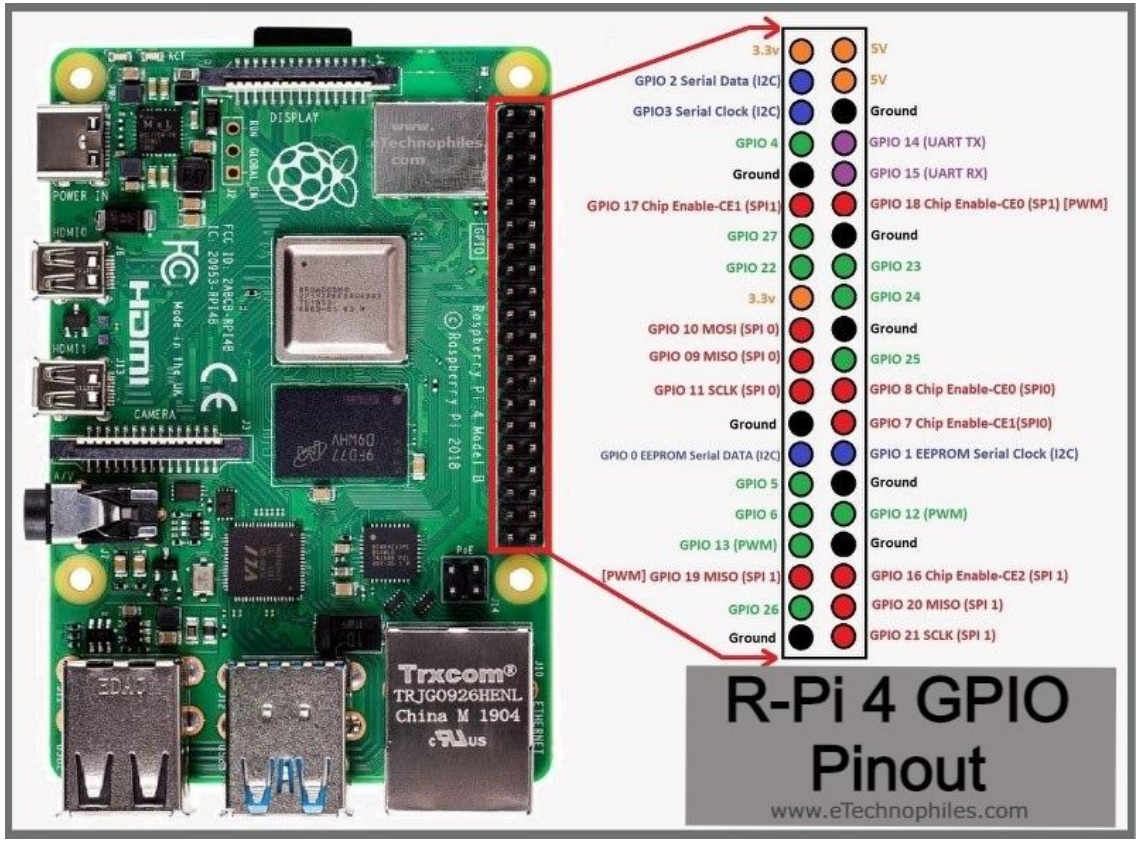
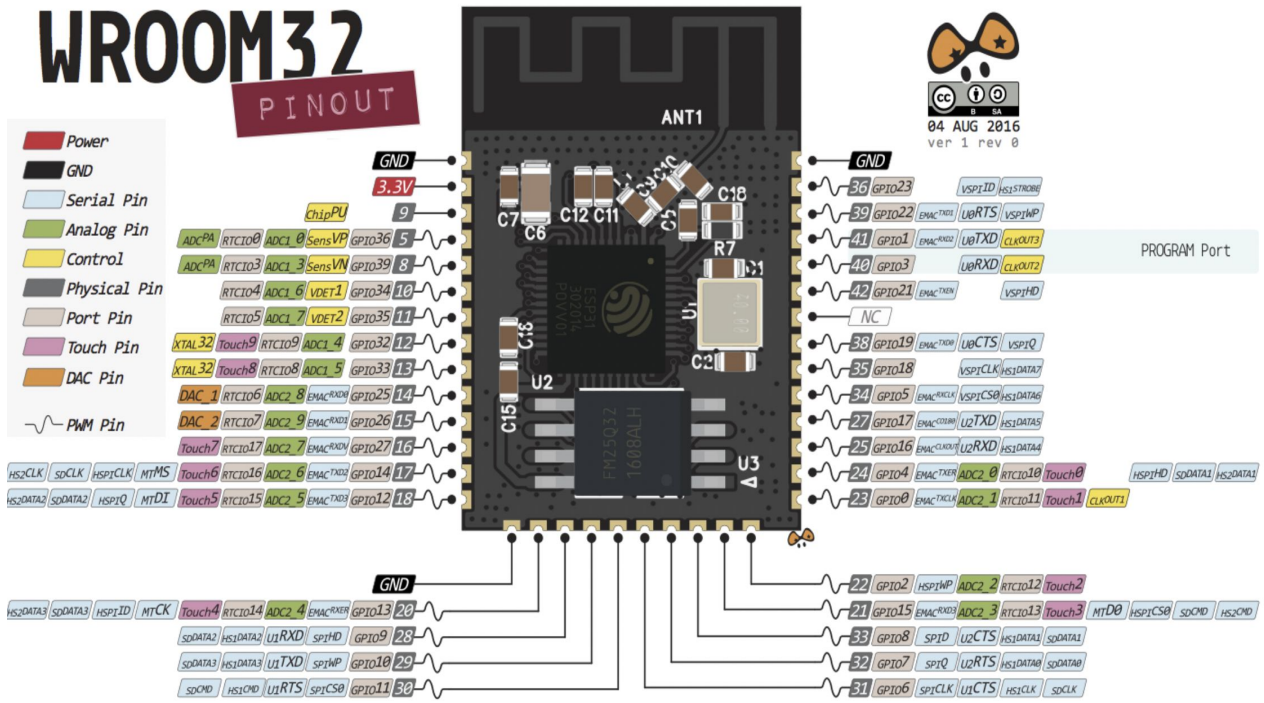
Microcontroller Pinouts

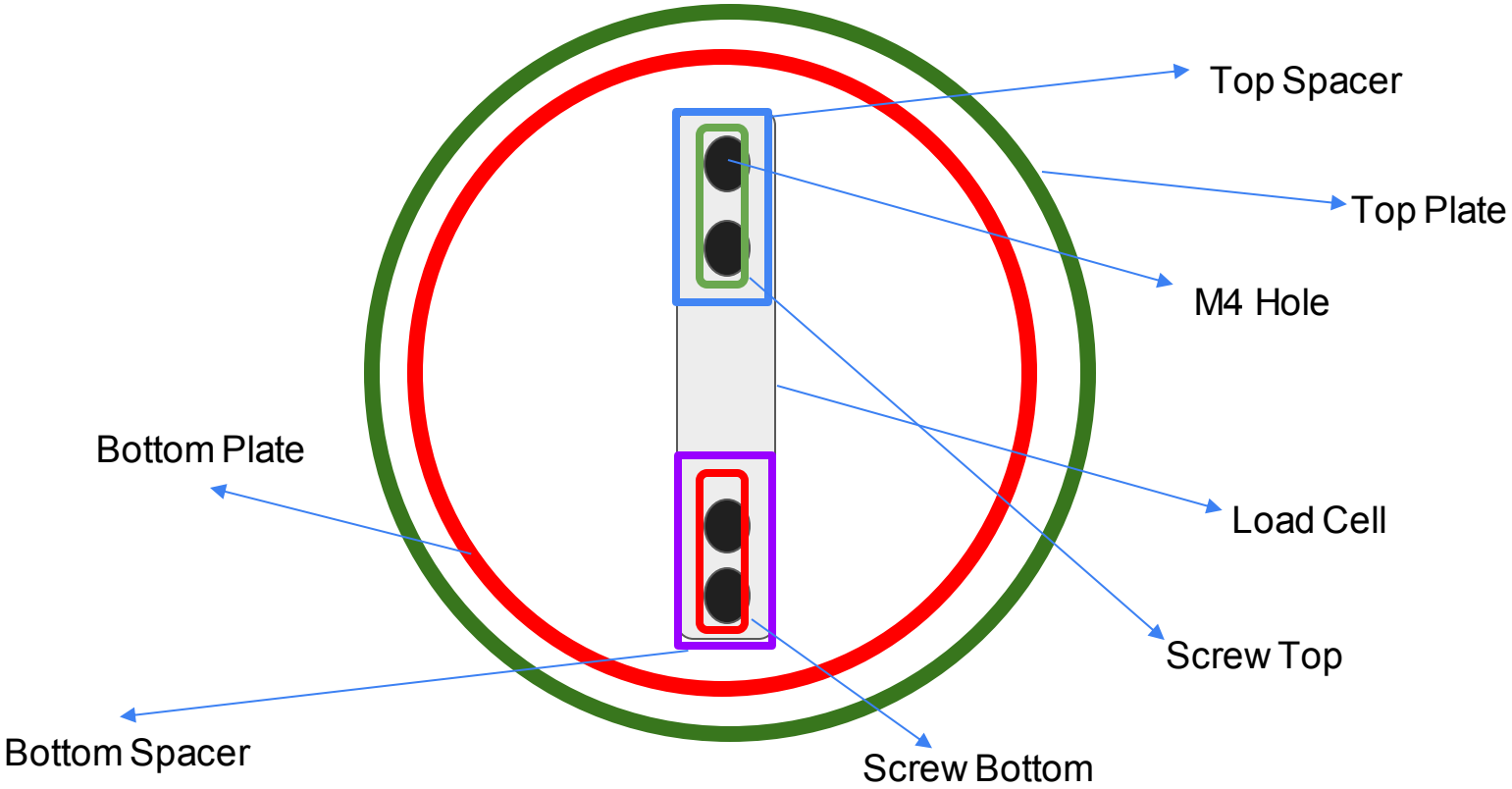


RPi4 (Left) Pinout



ESP32 (Right) Pinout

Load Cell Plates:



Load Cell Mounting Sliceview (Longitudinal):