

esp-rs / esp-rust-board Public

Open Hardware with ESP32-C3 compatible with Feather specification designed in KiCad

esp-rs.github.io/esp-rust-board/


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 SergioGasquez ... ✓ on Jun 22

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README.md

Rust ESP Board

Welcome to the Rust ESP Development board project. This repository contains everything you will need to build the board yourself.

Where to buy

- [ESP32-C3-DevKit-RUST-1](#)
- [AliExpress Espressif Official Store](#)
- [Mouser Electronics](#)

Ferrous Systems Training

- [Training Book: Explore the power of Rust on the new Espressif board](#)
 - [Training Material](#)

Project Specification

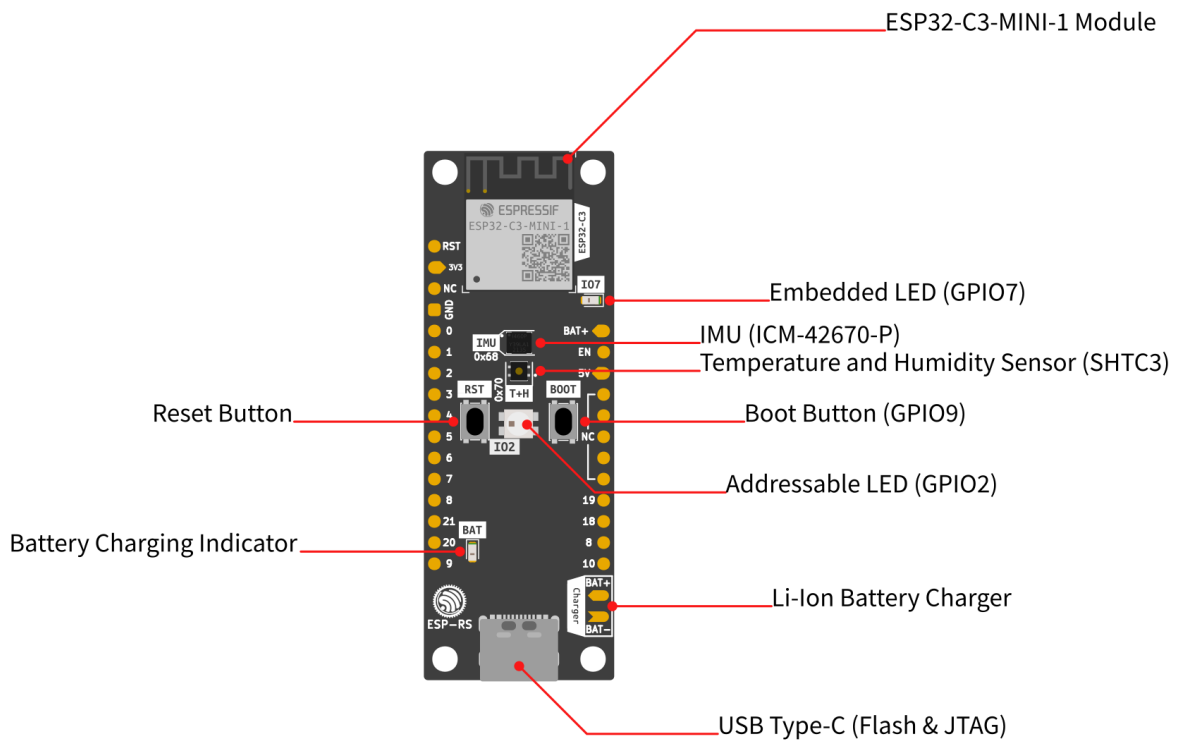
This board is based on the ESP32-C3, and includes sensors, LEDs, buttons, a battery charger, and USB type-C connector.

SoC Features

- IEEE 802.11 b/g/n-compliant
- Bluetooth 5, Bluetooth mesh
- 32-bit RISC-V single-core processor, up to 160MHz

- 384 KB ROM
- 400 KB SRAM (16 KB for cache)
- 8 KB SRAM in RTC
- 22 × programmable GPIOs
- 3 × SPI
- 2 × UART
- 1 × I2C
- 1 × I2S
- 2 × 54-bit general-purpose timers
- 3 × watchdog timers
- 1 × 52-bit system timer
- Remote Control Peripheral (RMT)
- LED PWM controller (LEDC)
- Full-speed USB Serial/JTAG controller
- General DMA controller (GDMA)
- 1 × TWAI®
- 2 × 12-bit SAR ADCs, up to 6 channels
- 1 × temperature sensor

For the complete description, see the [ESP32-C3 Datasheet](#).



I2C Peripherals

This board includes the following peripherals over the I2C bus:

Peripheral	Part number	Reference	Crate	Address
IMU	ICM-42670-P	Datasheet	Link	0x68
Temperature and Humidity	SHTC3	Datasheet	Link	0x70

I2C Bus Connection

Signal	GPIO
SDA	GPIO10
SCL	GPIO8

I/Os

The following devices are connected through GPIO:

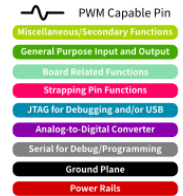
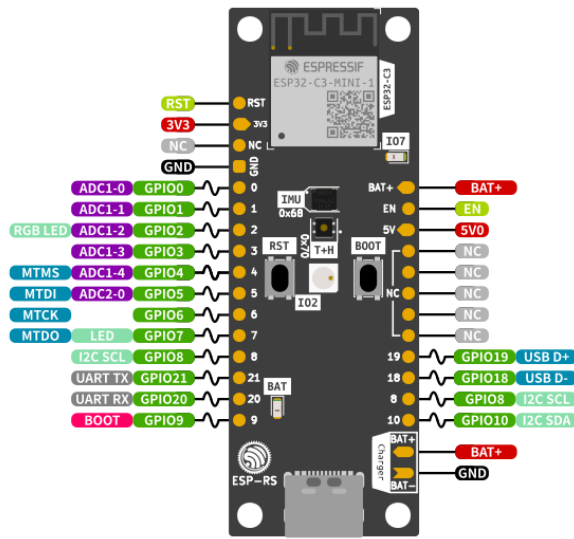
I/O Devices	GPIO
WS2812 LED	GPIO2
LED	GPIO7
Button/Boot	GPIO9

Power

- USB type-C (*no PD compatibility*).
- Li-Ion battery charger.

Pin Layout

Rust Board ESP32-C3



Left Side

Pin Number	Description	SoC
1	Reset	EN/CHIP_PU
2	3V3	
3	N/C	
4	GND	
5	IO0/ADC1-0	GPIO0
6	IO1/ADC1-1	GPIO1
7	IO2/ADC1-2	GPIO2
8	IO3/ADC1-3	GPIO3
9	IO4/ADC2-0	GPIO4
10	IO5/ADC2-1	GPIO5
11	IO6/MTCK	GPIO6
12	IO7/MTDO/LED	GPIO7
13	IO9/LOG	GPIO8
14	IO21/U0RXD	GPIO21
15	IO20/U0TXD	GPIO20

Pin Number	Description	SoC
16	IO9/BOOT	GPIO9

Right Side

Pin Number	Description	SoC
1	VBAT	
2	EN [1]	
3	VBUS [2]	
4	NC	
5	NC	
6	NC	
7	NC	
8	NC	
9	IO18/USB_D-	GPIO18
10	IO19/USB_D+	GPIO19
11	IO8/SCL	GPIO8
12	IO10/SDA	GPIO10

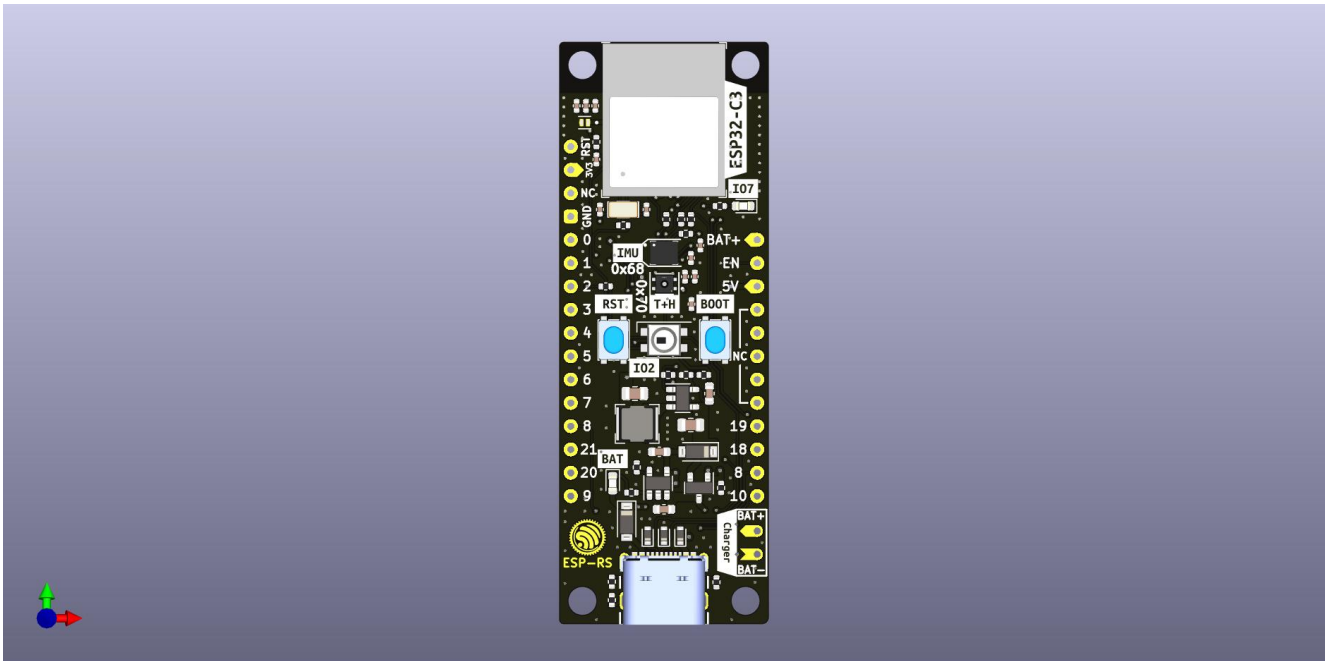
- [1] Connected to LDO enable pin*
- [2] Connected to USB 5V*

Project KiCad Libraries

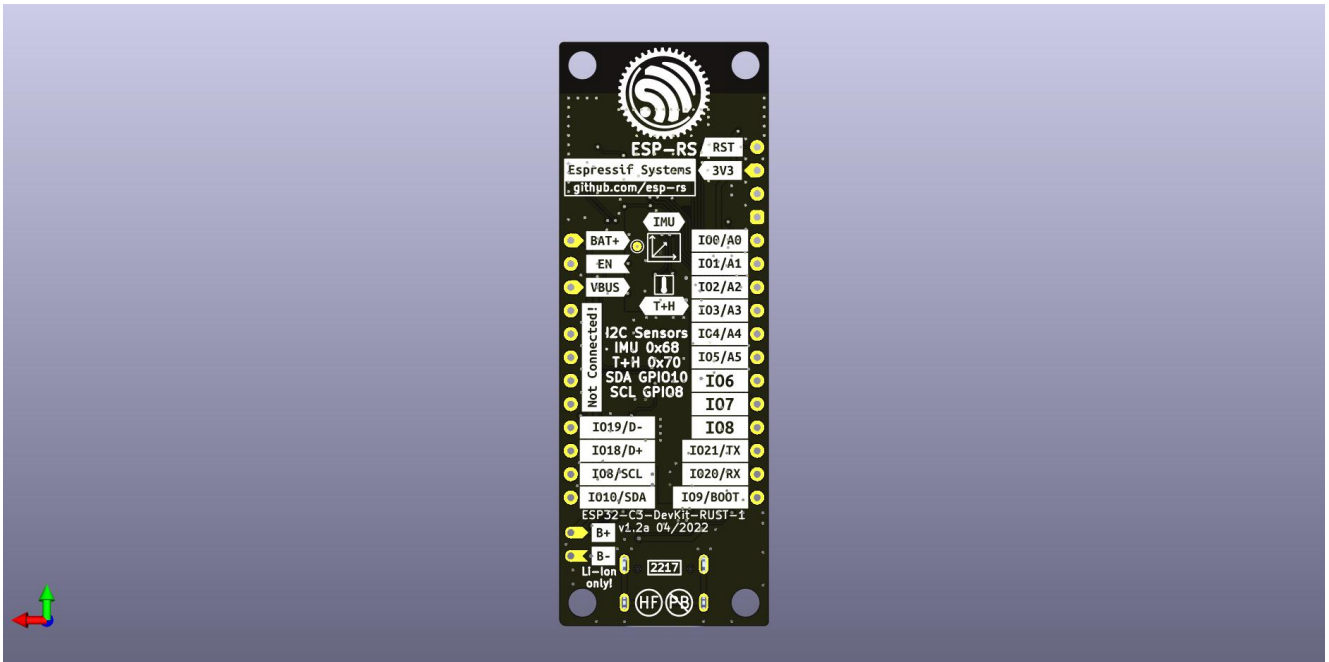
- [ESP32C3](#)

Board Design

Top



Bottom



Bill of Material

[Interactive BOM](#)

Case

[Case 3D Printing Model](#)

Releases

2 tags

Packages

No packages published

Contributors 8

