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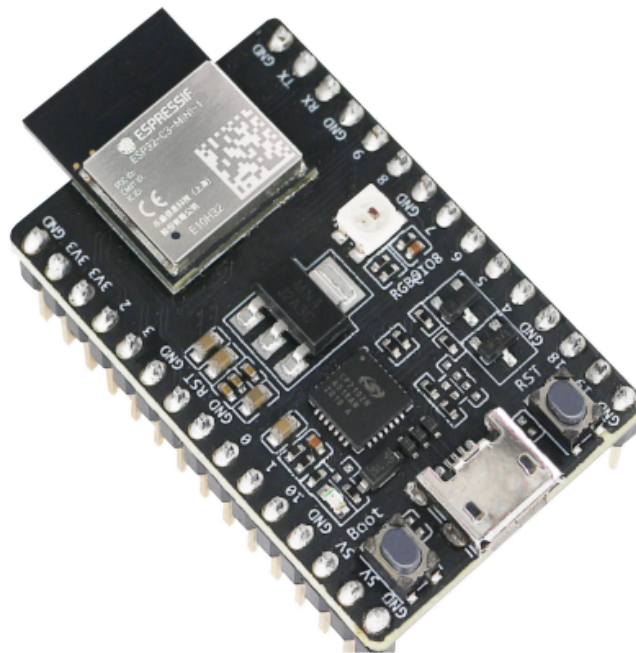
ESP32-C3-DevKitM-1

[中文]

This user guide will help you get started with ESP32-C3-DevKitM-1 and will also provide more in-depth information.

ESP32-C3-DevKitM-1 is an entry-level development board based on ESP32-C3-MINI-1 or ESP32-C3-MINI-1U modules, which are named for their compact size. This board integrates complete Wi-Fi and Bluetooth® Low Energy functions.

Most of the I/O pins on the module are broken out to the pin headers on both sides of this board for easy interfacing. Developers can either connect peripherals with jumper wires or mount ESP32-C3-DevKitM-1 on a breadboard.
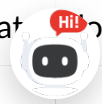

ESP32-C3-DevKitM-1

The document consists of the following major sections:

- Getting Started: Overview of ESP32-C3-DevKitM-1 and hardware/software setup instructions to get started.
- Hardware Reference: More detailed information about the ESP32-C3-DevKitM-1's hardware.

- Hardware Revision Details: Revision history, known issues, and links to user guides for previous versions (if any) of ESP32-C3-DevKitM-1.
- Related Documents: Links to related documentation.

Getting Started

This section provides a brief introduction of ESP32-C3-DevKitM-1, instructions on how to do the initial hardware setup and how to flash firmware onto it.

Description of Components
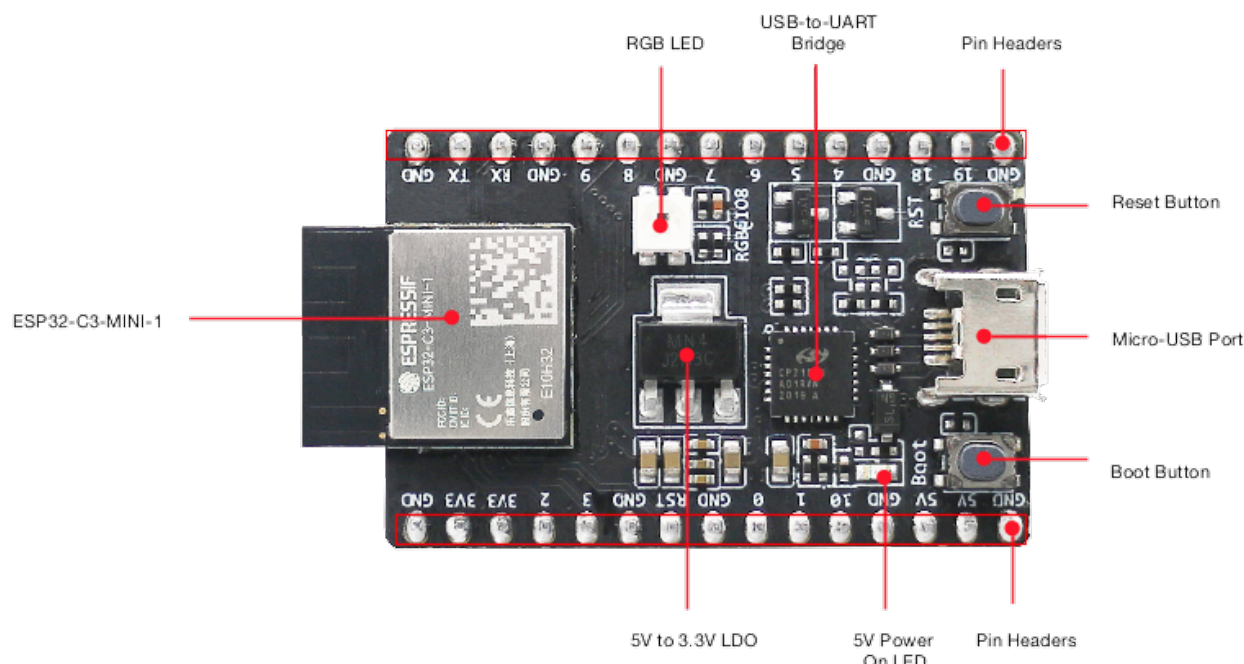
ESP32-C3-DevKitM-1 (with the ESP32-C3-MINI-1 module) - front

The key components of the board are described in a counter-clockwise direction.

Key Component	Description
ESP32-C3-MINI-1 or ESP32-C3-MINI-1U	ESP32-C3-MINI-1 and ESP32-C3-MINI-1U are genera
5 V to 3.3 V LDO	Power regulator that converts a 5 V supply into a 3.3 V
5 V Power On LED	Turns on when the USB power is connected to the boa
Pin Headers	All available GPIO pins (except for the SPI bus for flash
Boot Button	Download button. Holding down **Boot** and then pressi
Micro-USB Port	USB interface. Power supply for the board as well as th
Reset Button	Press this button to restart the system.
USB-to-UART Bridge	Single USB-UART bridge chip provides transfer rates u
RGB LED	Addressable RGB LED, driven by GPIO8.

Start Application Development

Before powering up your ESP32-C3-DevKitM-1, please make sure that it is in good condition with no obvious signs of damage.
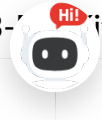
Required Hardware

- ESP32-C3-DevKitM-1
- USB 2.0 cable (Standard-A to Micro-B)
- Computer running Windows, Linux, or macOS

❶ Note

Be sure to use an appropriate USB cable. Some cables are for charging only and do not provide the needed data lines nor work for programming the boards.

Software Setup

Please proceed to ESP-IDF Get Started, which will quickly help you set up the development environment then flash an application example onto your board.

Contents and Packaging

Retail Orders

If you order one or several samples, each ESP32-C3-DevKitM-1 comes in an individual package in either antistatic bag or any packaging depending on your retailer.

For retail orders, please go to https://www.espressif.com/en/contact-us/get-samples.
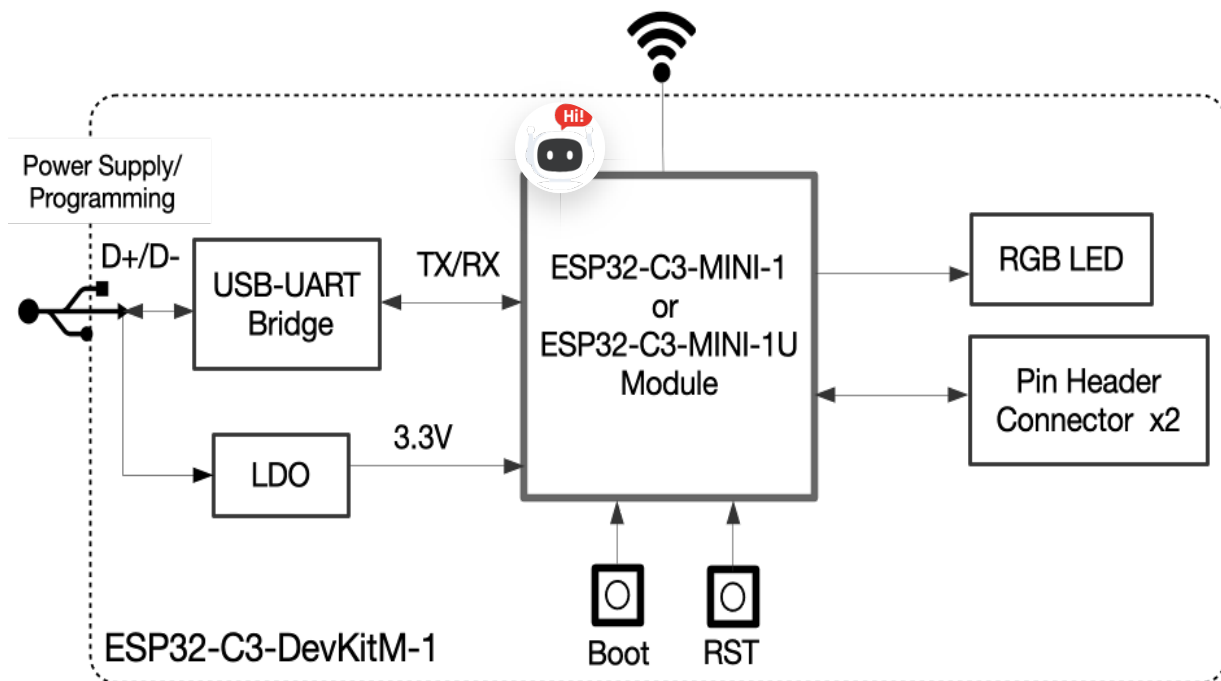
Wholesale Orders

If you order in bulk, the boards come in large cardboard boxes.

For wholesale orders, please check Espressif Product Ordering Information (PDF)

Hardware Reference

Block Diagram

The block diagram below shows the components of ESP32-C3-DevKitM-1 and their interconnections.

ESP32-C3-DevKitM-1 (click to enlarge)

Power Supply Options

There are three mutually exclusive ways to provide power to the board:

- Micro-USB Port, default power supply
- 5V and GND pin headers
- 3V3 and GND pin headers

It is recommended to use the first option: Micro-USB Port.

Header Block

The two tables below provide the **Name** and **Function** of the pin headers on both sides of the board (J1 and J3). The pin header names are shown in ESP32-C3-DevKitM-1 (with the ESP32-C3-MINI-1 module) - front. The numbering is the same as in the ESP32-C3-DevKitM-1 Schematic (PDF).

J1

No.	Name	Type [1]	Function
1	GND	G	Ground
2	3V3	P	3.3 V power supply
3	3V3	P	3.3 V power supply
4	IO2	I/O/T	GPIO2 [2], ADC1_CH2, FSPIQ
5	IO3	I/O/T	GPIO3, ADC1_CH3

No.	Name	Type [1]	Function
6	GND	G	Ground
7	RST	I	_PU
8	GND	G	Ground
9	IO0	I/O/T	GPIO0, ADC1_CH0, XTAL_32K_P
10	IO1	I/O/T	GPIO1, ADC1_CH1, XTAL_32K_N
11	IO10	I/O/T	GPIO10, FSPICS0
12	GND	G	Ground
13	5V	P	5 V power supply
14	5V	P	5 V power supply
15	GND	G	Ground

J3

No.	Name	Type [1]	Function
1	GND	G	Ground
2	TX	I/O/T	GPIO21, U0TXD
3	RX	I/O/T	GPIO20, U0RXD
4	GND	G	Ground
5	IO9	I/O/T	GPIO9 [2]
6	IO8	I/O/T	GPIO8 [2], RGB LED
7	GND	G	Ground
8	IO7	I/O/T	GPIO7, FSPID, MTDO
9	IO6	I/O/T	GPIO6, FSPICLK, MTCK
10	IO5	I/O/T	GPIO5, ADC2_CH0, FSPIWP, MTDI
11	IO4	I/O/T	GPIO4, ADC1_CH4, FSPIHD, MTMS
12	GND	G	Ground
13	IO18	I/O/T	GPIO18, USB_D-
14	IO19	I/O/T	GPIO19, USB_D+
15	GND	G	Ground

[1] (1,2):   P: Power supply; I: Input; O: Output; T: High impedance.

[2] (1,2,3):   GPIO2, GPIO8, and GPIO9 are strapping pins of the ESP32-C3 series of chips. These pins are used to control several chip functions depending on binary voltage values applied to the pins during chip power or system reset. For description and application of the strapping pins, please refer to section Boot Configurations in ESP32-C3 Datasheet.

Pin Layout

ESP32-C3-DevKitM-1 Pin Layout (with the ESP32-C3-MINI-1 module, click to enlarge)

Hardware Revision Details

No previous versions available.

Related Documents

- ESP32-C3 Datasheet (PDF)
- ESP32-C3-MINI-1 & ESP32-C3-MINI-1U Datasheet (PDF)
- ESP32-C3-DevKitM-1 Schematic (PDF)
- ESP32-C3-DevKitM-1 PCB Layout (PDF)
- ESP32-C3-DevKitM-1 Dimensions (PDF)
- ESP32-C3-DevKitM-1 Dimensions source file (DXF)

For further design documentation for the board, please contact us at sales@espressif.com.