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ESP32-C3 SUPER MINI

WI-FI + BLUETOOTH LE DEVELOPMENT BOARD

- ESP32-C3 32-BIT RISC-V PROCESSOR
- 2.4 GHz WI-FI 802.11 b/g/n
- BLUETOOTH 5 LOW ENERGY
- 4 MB FLASH MEMORY
- USB-C PROGRAMMING AND POWER

APPLICATIONS

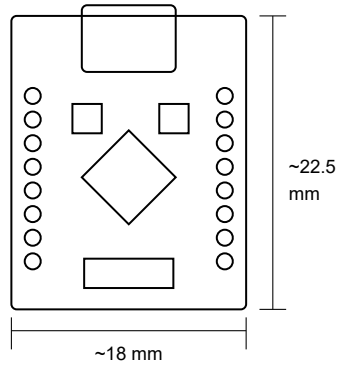
- WIRELESS SENSORS AND IOT NODES
- COMPACT EMBEDDED PROTOTYPES
- HOME AUTOMATION AND DATA LOGGING
- EDUCATION AND EXPERIMENTS

DESCRIPTION

A compact third-party development board based on Espressif's ESP32-C3. Its USB-C interface and wireless connectivity make it useful for connected prototypes and small embedded projects.

A USB data cable and suitable development environment are required. Physical board details vary by supplier.

BOARD OUTLINE



Typical illustration; not to scale

GENERAL SPECIFICATIONS

Parameter	Description
Processor	ESP32-C3, single-core 32-bit RISC-V, up to 160 MHz
Flash memory	4 MB
Chip SRAM / ROM	400 KB SRAM / 384 KB ROM
Wireless	2.4 GHz Wi-Fi 802.11 b/g/n; Bluetooth 5 LE
USB interface	USB-C; native USB Serial/JTAG
Digital I/O logic	3.3 V logic; GPIOs are not 5 V tolerant
Typical board footprint	Approximately 22.5 x 18 mm; verify the actual board

Chip specifications follow the Espressif ESP32-C3 datasheet. Board construction may vary.

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PIN REFERENCE AND GETTING STARTED

TYPICAL HEADER PINOUT

Component side facing you, USB-C at the bottom. Check the board silkscreen before wiring.

LEFT SIDE	RIGHT SIDE
GPIO0	GPIO21
GPIO1	GPIO20
GPIO2	GPIO10
GPIO3	GPIO9
GPIO4	GPIO8
3V3	GPIO7
GND	GPIO6
5V	GPIO5

POWER AND GPIO

Use a suitable USB-C data cable for programming and USB power. Digital pins use 3.3 V logic; do not connect 5 V signals directly to GPIO. Do not connect external 5 V and USB power simultaneously without checking the board power circuit.

BOOT AND PROGRAMMING

Install Espressif's ESP32 board package in your development environment and select a suitable ESP32-C3 target. If needed, hold BOOT, press RESET, then release BOOT to enter download mode. USB serial availability depends on the firmware and IDE settings.

PIN SHARING AND LIMITATIONS

GPIO2, GPIO8 and GPIO9 are boot strapping pins. GPIO8 often drives the onboard LED and GPIO9 often shares the BOOT button; check the actual board before attaching circuits. GPIO18 and GPIO19 are typically used by the USB interface. ADC2 may be limited while Wi-Fi is active.

REFERENCES

Espressif ESP32-C3 Series Datasheet:

documentation.espressif.com/esp32-c3_datasheet_en.html

Apache NuttX: ESP32-C3 SuperMini board documentation:

github.com/apache/nuttx/tree/master/Documentation/platforms/risc-v/esp32c3/boards/esp32c3-supermini