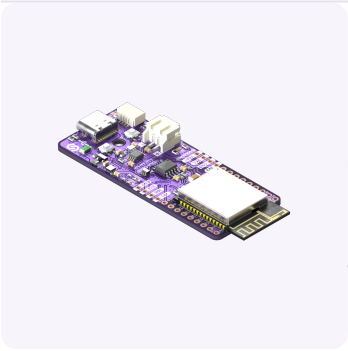


PRODUCT DATASHEET

Soldered NULA Dual ESP32-C5

333403

An ESP32-C5 development board with dual-band Wi-Fi 6, so your project can join both 2.4 GHz and 5 GHz networks.

Full product documentation, files and tutorials: **solde.red/333403**

CORE ATTRIBUTES

SKU	**333403**
DIMENSIONS	**26.0 × 63.0 × — mm**
ORIGIN	**HR**
BARCODE	**732388629107**

DESCRIPTION

The NULA Dual ESP32-C5 is a development board built around the ESP32-C5-WROOM-1 module from Espressif. Its radio runs **Wi-Fi 6 on both the 2.4 GHz and the 5 GHz band**, and also handles **Bluetooth LE, Zigbee and Thread**. You can put a project on a crowded 2.4 GHz network or on 5 GHz, and talk to phones and 802.15.4 mesh devices from the same board.

The module has a **32-bit RISC-V core at up to 240 MHz**, **384 KB of SRAM, 8 MB of flash and 8 MB of PSRAM**. In deep sleep with the RTC timer running, the module draws 12 µA. The onboard TP4056M charges a single-cell Li-ion battery from USB at **400 mA**, and the board switches to the battery by itself when you unplug the cable. A TPS7A2633 regulator makes the 3.3 V rail.

USB-C goes through a CH340K USB-to-serial chip with automatic reset, so you upload code without pressing any buttons. **19 GPIO** come out on two 13-pin 2.54 mm headers that fit a breadboard; they ship unsoldered. The **Qwiic connector** has 10 kΩ pull-ups on SDA and SCL, so you can add sensors without soldering. There is also a WS2812B RGB LED on IO8, a user button on IO28 and a reset button. You program the board in the Arduino IDE with the ESP32 core from Espressif, in MicroPython with the generic ESP32-C5 firmware, or with ESP-IDF.

TECHNICAL DETAILS

- **Module:** ESP32-C5-WROOM-1-N8R8, PCB antenna
- **CPU:** 32-bit RISC-V, single core, up to 240 MHz
- **Memory:** 384 KB HP SRAM, 16 KB LP SRAM, 8 MB flash, 8 MB PSRAM
- **Wi-Fi:** Wi-Fi 6 (802.11ax), 2.4 GHz and 5 GHz
- **Bluetooth:** Bluetooth 5 (LE), Bluetooth Core 6.0 certified

- **IEEE 802.15.4:** Zigbee and Thread
- **USB:** USB-C, CH340K USB-to-serial, automatic reset, 500 mA fuse
- **GPIO:** 19 on two 13-pin 2.54 mm headers, 3.3 V logic
- **Qwiic:** 1 connector, SDA on IO4, SCL on IO5, 10 kΩ pull-ups to 3.3 V (jumper JP1)
- **Battery:** 2-pin JST connector, TP4056M charger, 4.2 V charge voltage, 400 mA charge current
- **Power input:** USB-C 5 V, battery, or 3.7 V to 5.3 V on the VCC pin
- **Regulator:** TPS7A2633, 3.3 V, 500 mA
- **Onboard:** WS2812B-2020 RGB LED on IO8, user button on IO28, reset button, power, charge, TX and RX LEDs
- **Deep-sleep current (module):** 12 µA typical, RTC timer and LP memory on
- **Dimensions:** 26 × 63 mm
- **Mounting hole:** 1× 3.2 mm

SPECIFICATIONS

MCU PART NUMBER	ESP32-C5-WROOM-1-N8R8
MCU CLOCK (MHZ)	240 MHz
SRAM (KB)	384 KB
FLASH (MB)	8 MB
WIFI	Wifi6
BLUETOOTH	Ble 5
WIRELESS MODULE	ESP32-C5-WROOM-1-N8R8
GPIO COUNT	19
QWIIC COMPATIBLE	Yes
BREADBOARD COMPATIBLE	Yes
BATTERY CONNECTOR	Jst 2Pin
ONBOARD BATTERY CHARGER	Yes
SUPPLY VOLTAGE	3V3 5V
LOGIC LEVEL	3V3
DEV ENVIRONMENTS	Arduino IDE, MicroPython, ESP-IDF

DOCUMENTS

Main IC Datasheet · EN	https://cms.soldered.com/products/333403/documents/ic-datasheet/333403_ic-datasheet_b12c34.pdf

LINKS

Full Documentation	https://docs2.soldered.com/nula-dual-esp32-c5/

GALLERY

