

PRODUCT DATASHEET



Soldered NULA Node RP2040

333409

The NULA Node is a versatile RP2040 development board with built-in WiFi and Bluetooth, ideal for rapid prototyping and IoT projects.

Full product documentation, files and tutorials: solde.red/333409

CORE ATTRIBUTES

SKU 333409

ORIGIN HR

BARCODE 732388628001

DESCRIPTION

The **Soldered NULA Node RP2040** is a development board with the radio already on it. It pairs Raspberry Pi's dual-core Cortex-M0+ **RP2040** at **133MHz** with the **Raspberry Pi Radio Module 2**, so you get **WiFi 4** and **Bluetooth 5.2** without a second board. There is **264KB** of SRAM and **16MB** of flash, enough for a filesystem, web assets and your code at the same time.

The board brings out **24 GPIO** on two 15-pin headers. Three of them read analogue voltages with a 12-bit **ADC**. A **Qwiic** port connects an I2C sensor with one cable and no soldering. An addressable **WS2812B** LED and a user button are already fitted, so you can write your first sketch before you wire anything up. The header rows sit 0.9 inch apart, and the headers come unsoldered, so the board fits a breadboard once you solder them on.

A **2-pin JST** connector and an onboard charger take a 3.7V Li-Ion battery. The board picks USB or battery on its own, so unplugging the cable does not reset your project. Program it over **USB-C** in **Arduino**, **MicroPython**, **CircuitPython** or the C/C++ SDK. The 3-pin **SWD** header is there when you want a hardware debugger. The design is open source under GPLv3 and made in the EU. A **USB-C to USB-C** cable is included in the package, so you can start programming right out of the box.

Note:

- Before connecting a 3.7V Li-Ion battery, please refer to the detailed technical documentation which you may find on this page

TECHNICAL DETAILS

- **Dual-core Arm Cortex-M0+:** RP2040 at 133 MHz.
- **Memory:** 264 KB SRAM and 16 MB flash.
- **WiFi 4:** 802.11 b/g/n on 2.4 GHz, through the Raspberry Pi Radio Module 2.
- **Bluetooth 5.2:** Classic and Low Energy.
- **24 GPIO:** On two 15-pin headers, three of them with a 12-bit ADC.
- **Qwiic connector:** Plug in an I2C sensor with one cable, pull-up resistors already fitted.
- **Addressable LED:** An onboard WS2812B you can drive from the first sketch.
- **User and reset buttons:** Both on the board, no wiring needed.
- **Battery ready:** 2-pin JST connector and a Li-Ion charger, with automatic switching between USB and battery.
- **USB-C:** Power, programming and serial over one connector, with a 500 mA fuse.
- **3.3 V logic level.**
- **SWD header:** Three pins for a hardware debugger.
- **Breadboard friendly:** 26 × 65 mm, header rows 22.86 mm (0.9 inch) apart, headers included unsoldered.
- **Open source:** Schematics and PCB files published under GPLv3.
- **Programming:** Arduino IDE, PlatformIO, MicroPython, CircuitPython and the C/C++ SDK.

SPECIFICATIONS

MCU PART NUMBER	RP2040
MCU CLOCK (MHZ)	133 MHz
SRAM (KB)	264 KB
FLASH (MB)	16 MB
WIFI	Wifi4
BLUETOOTH	Classic And Ble
WIRELESS MODULE	Raspberry Pi Radio Module 2
GPIO COUNT	24
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, PlatformIO, MicroPython, CircuitPython, C/C++ SDK

LINKS

Pinout	https://cms.soldered.com/products/333409/media/333409_pinout-png_fb873a.png
--------	---
