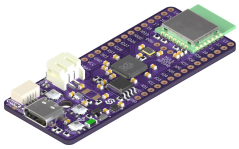
PRODUCT DATASHEET · VARIANT OF 333409



Soldered male pin headers

333410

RP2040 development board with the Raspberry Pi Radio Module 2 for WiFi 4 and Bluetooth 5.2, Qwiic and a Li-Ion charger, with the headers soldered on.

Full product documentation, files and tutorials: **solde.red/333410**

CORE ATTRIBUTES

SKU	**333410**
DIMENSIONS	**65.0 × 26.0 × — mm**
ORIGIN	**HR**
BARCODE	**732388627905**

DESCRIPTION

Soldered NULA Node RP2040 is a development board built around Raspberry Pi's dual-core Cortex-M0+ **RP2040** at **133 MHz**, with **264 KB** of SRAM and **16 MB** of flash. The **Raspberry Pi Radio Module 2** sits on the board, so you get **WiFi 4** (802.11 b/g/n, 2.4 GHz) and **Bluetooth 5.2** Classic and Low Energy without adding a second board.

The two 15-pin headers bring out **24 GPIO** pins, three of which read analog voltages with the 12-bit ADC. The **Qwiic** connector carries I2C0 on GPIO8 and GPIO9, with 4.7 kΩ pull-ups you can disconnect at jumper JP1. An addressable **WS2812B** LED on GPIO2, a USER button on GPIO21, and RESET and BOOT buttons are already on the board, so your first sketch needs no wiring.

Power comes over **USB-C**, behind a 500 mA fuse, or from a 3.7 V Li-Ion battery on the **2-pin JST** connector. The onboard TP4056 charger charges the battery at 400 mA, and the board switches between USB and battery on its own. The VCC header pin takes **3.3 V to 5 V** and all logic runs at **3.3 V**. The header rows sit 22.86 mm (0.9 in) apart and this version comes with the male headers already soldered, so it drops straight into a breadboard. Program the board in the Arduino IDE through the Raspberry Pi Pico core (board: Soldered Electronics NULA Node), with PlatformIO or with the Pico C/C++ SDK, and use the 3-pin **SWD** header when you want a hardware debugger.

TECHNICAL DETAILS

- **MCU:** RP2040, dual-core Arm Cortex-M0+ at 133 MHz
- **Memory:** 264 KB SRAM, 16 MB QSPI flash (W25Q128)
- **Wireless:** Raspberry Pi Radio Module 2 (Infineon CYW43439), WiFi 4 802.11 b/g/n at 2.4 GHz, Bluetooth 5.2 Classic and Low Energy

- **GPIO:** 24 on two 15-pin 2.54 mm male headers, soldered, three with 12-bit ADC (GPIO26 to GPIO28)
- **Qwiic connector:** I2C0 on GPIO8 (SDA) and GPIO9 (SCL), 4.7 kΩ pull-ups to 3.3 V, removable at jumper JP1
- **Onboard:** WS2812B LED on GPIO2, USER button on GPIO21, RESET and BOOT buttons, power LED (jumper JP2)
- **USB-C:** power, programming and serial, 500 mA fuse
- **Battery:** 2-pin JST connector, TP4056 Li-Ion charger at 400 mA, automatic switch between USB and battery
- **Supply:** VCC header pin 3.3 V to 5 V, 3.3 V regulator TPS7A26 (500 mA)
- **Logic level:** 3.3 V
- **Debug:** 3-pin SWD header
- **Dimensions:** 26 × 65 mm, header rows 22.86 mm (0.9 in) apart
- **Environments:** Arduino IDE (Raspberry Pi Pico core), PlatformIO, Pico 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

DOCUMENTS

Main IC Datasheet · EN	https://cms.soldered.com/products/333409/documents/ic-datasheet/333409_ic-datasheet_a2fac4.pdf

LINKS

Full Documentation	https://docs2.soldered.com/soldered-nula-node-rp2040/

Arduino: Get Started	`https://docs2.soldered.com/products/soldered-nula-node-rp2040/quick-start`
Hardware Details	`https://docs2.soldered.com/products/soldered-nula-node-rp2040/hardware`
Pinout	`https://cms.soldered.com/products/333409/media/333409_pinout-png_b47dd6.png`

GALLERY

