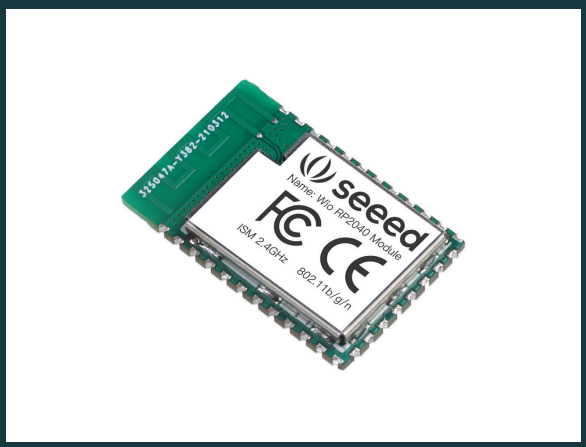
seeed studio

INDUSTRIAL PRODUCT DATASHEET

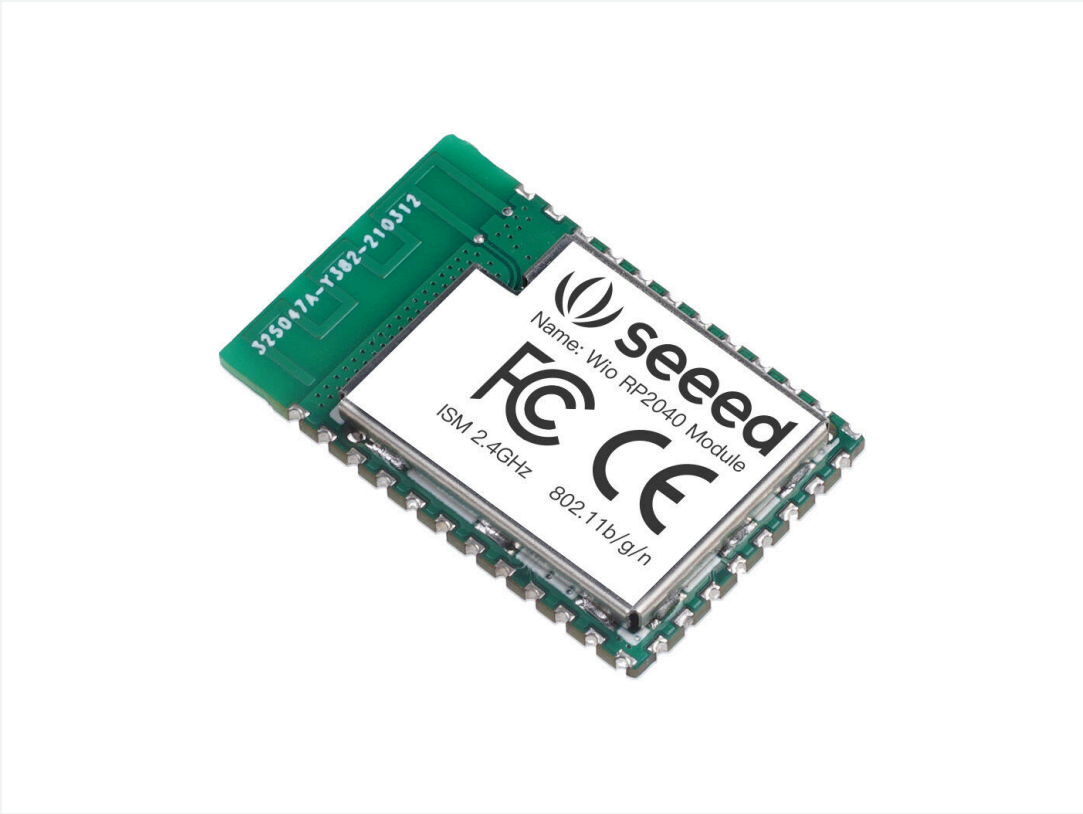
Wio RP2040 Module - Build-in RP2040 + ESP8285 WIFI chip - Wireless 2.4G & IoT Platform

Compact IoT module with RP2040 and ESP8285 Wi-Fi, ideal for wireless control and smart projects.

SKU	UPDATED	PRICE
102991556	2026-04-15 07:25:11	$6.95(Excl. VAT)



Overview



The Wio RP2040 Module integrates a dual-core 133MHz Raspberry Pi RP2040 processor and an ESP8285 Wi-Fi SoC (802.11 b/g/n, up to 72.2Mbps) in a compact 18.0x28.2x1.0mm SMT package. It supports C/C++/MicroPython, Thonny editor, and offers 2MB Flash, 264KB SRAM, and rich I/O (32 GPIO, 2 UART, 4 ADC, 2 SPI, 2 I2C) for wireless Pico projects, smart toys, and IoT applications.

Key Features

Key Feature

- **Highly integrated Wi-Fi SoC:** powerful ESP8285 wifi chip, support 802.11 b/g/n, 2.4~2.4835GHz up to 72.2 Mbps, and Ap&Station mode
- **Powerful CPU with high performance**: dual-core 133MHZ Raspberry PI RP2040 processor with 264KB SRAM, 2MB Flash, clock running up to 133 MHz
- **Flexible Compatibility and User-Friendly:** Comprehensive C/C++/MicroPython SDK, software examples and documentation support, C++/Micropython support, Thonny editor compatible
- **Extremely compact size:** 18.0x 28.2x 1.0mm 32 pins SMT
- **Multiple certifications obtained:** FCC and CE certification

Description

Wio RP2040 module is designed with the RP2040 + ESP8285 wifi chip.The onboard wifi chip provides stable wireless capabilities, making it a perfect fit for your IoT platform choice. This rp2040 wifi module supports the Thonny code editor used by Raspberry Pi Pico. You can upgrade your original Pico project to Pico IoT project with a few simple lines of code! And the module adopts the stamp hole package form and small size, you can solder the module on various PCB boards more conveniently.

In addition to the RP2040 + ESP8285 wifi chip combination, the board has rich interfaces, including 32 GPIO PINs (20 PINs support PIO and PWM), 2 UART, 4 ADC, 2 SPI, and 2 I2C. Some pins can be multiplexed, such as GP12 and GP13 with I2C, SPI, and UART functions. This is why 28 GPIO PINs can achieve more I/O PINs and interfaces. The Wio RP2040 module also has a USB PIN, which can be designed and connected to the USB interface.

The Wio RP2040 module is fully compatible with the Thonny code editor, which means that you do not need professional electronic engineering-related knowledge, and you can control hardware devices just by using a simple MicroPython language!

We've set up a **#tinyml** channel on our Discord server, please click to join for 24/7/365 making, sharing, discussing, and helping each other out.

Specification

Related Product Selection Chart

Come take a look at Seeed's RP2040-related products. For the XIAO RP2040 based on the Raspberry Pi RP2040 chip, it is very suitable for small wearable projects. In addition, XIAO BLE is a powerful Bluetooth-enabled microcontroller. Let's see how they compare in terms of performance, interfaces, wireless connectivity, and more.

Application

- Various Pico projects with wireless functions
- Wireless control application
- Smart Toys - wireless voice-activated toy car
- Various IoT projects - such as smart home, smart air quality monitoring, etc.

Pinout

Note

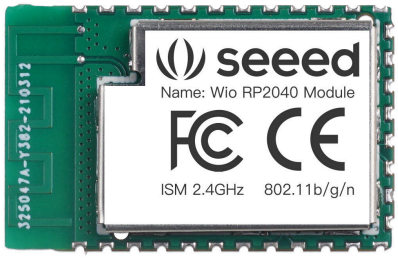
The GPIO pins are programmable so you can reconfigure the pins! Check out the **RP2040 datasheet** for more information on the GPIO functionality.

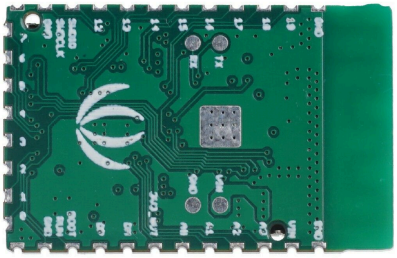
PCBA Prototype Sponsorship for Commercial Wio RP2040 Module Designs

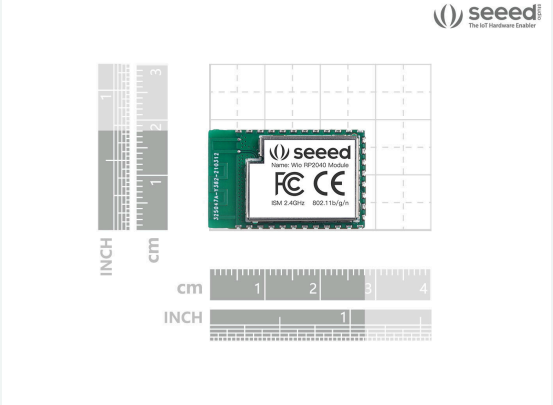
Special Note: Seeed is offering 5 free Wio RP2040 modules to designers who use the module with the Seeed Fusion F

There is great **C/C++ support**, an official **MicroPython port**, and a **Seeedstudio Wio RP2040 Module MicroPython UF2 file**! We of course recommend our custom Wio RP2040 Module MicroPython UF2 because we think it's the easiest way to get started and it has support with wireless drivers, network, usocket, MQTT, supported out of the box so you can follow along with our projects and tutorials.

Product Gallery







Specification

Item	Details
Processors	Dual Cortex M0+ processors, up to 133 MHz
SRAM	264KB
Flash	2MB
Wireless connectivity	2.4～2.4835 GHz；IEEE802.11 b/g/n；AP & Station mode
GPIO，PIO and PWM Pins	20
I2C	2
SPI	2
UART	2
ADC	4
VIN	5V-3.6V DC
Size	18.0 x 28.2 x 1.0mm
Antenna	Onboard PCB antenna
Programming Languages	C/C++, MicroPython

Items	Wio RP2040	XIAO RP2040
Microcontroller	RP2040	
Processor	Dual-core ARM Cortex M0+@133MHz	
Wireless connectivity	WIFI 2.4～2.4835 GHz；IEEE802.11 b/g/n；AP & Station mode,on-board antenna	N/A
Interfacing	32 GPIO PINs (20 PINs support PIO and PWM)	11x digital pins, 4 analog
	2 UART, 4 ADC, 2 SPI, and 2 I2C	1 I2C interface, 1 UART in
Voltage	3.3V	3.3V
Size	18.0 x 28.2 x 1.0mm	20x17.5x3.5 mm
Programming Languages	C/C++/MicroPython	Arduino/ MicroPython/ C

Applications

- **Various Pico projects with wireless functions**
- **Wireless control application**
- **Smart Toys:** wireless voice-activated toy car
- **Various IoT projects:** such as smart home, smart air quality monitoring, etc.

Compliance & Logistics

HSCODE	8538900000
USHSCODE	8538901000
UPC	
EUHSCODE	8543709099
COO	CHINA

Resource Links

- https://www.seeedstudio.com/Wio-RP2040-Module-p-4932.html
- Wio RP2040 Module Eagle Package File.lbr
- Wio RP2040 CE, RED, EMC Authentication
- Wio RP2040 FCC Authentication

Seeed Technology Co.,Ltd.
9F, Building G3, International E City,
Zhongshanyuan Road, Nanshan, Shenzhen, China

Tel: +86 0755-80695676
Web: www.seeed.cc
Shop: www.seeedstudio.com