

INDUSTRIAL PRODUCT DATASHEET

Seeed Studio XIAO RP2040 - Supports Arduino, MicroPython and CircuitPython

Seeed Studio XIAO RP2040 is a compact, production-ready development board supporting Arduino, MicroPython, and CircuitPython with an extensive XIAO Add-on ecosystem for learning, wearables, IoT, displays, robotics, and more.

SKU

102010428

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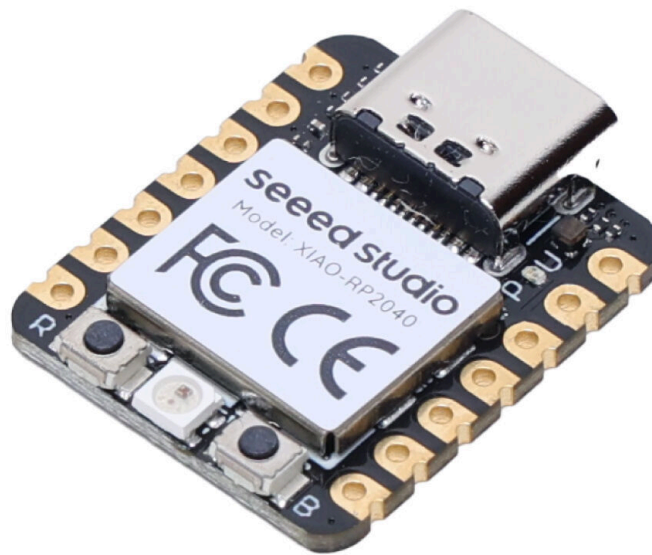
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PRICE

\$3.90(Excl. VAT)



Overview



Seeed Studio XIAO RP2040 supports Arduino, MicroPython, and CircuitPython in a compact 21 x 17.8mm form factor, featuring a 3-color User LED and an RGB LED. It offers an extensive XIAO Add-on ecosystem and production-ready SMD design with standardized stamp holes, making it suitable for learning, USB HID devices, wearables, IoT, displays, development, robotics, and audio/video applications.

Key Features

- **Perfect Toolset for Learning Coding and Electronics**

XIAO RP2040 offers an extensive development ecosystem that makes coding accessible for beginners while providing powerful tools for experienced developers. Code with Arduino IDE for rapid prototyping, utilize C/C++ SDK for optimal performance, explore MicroPython/CircuitPython for quick scripting, or develop with Rust and Go for modern applications. Backed by comprehensive documentation and an active Raspberry Pi community, you'll find abundant examples and resources to kickstart your projects. The board features both a 3-color User LED and an RGB LED, making it easy to add visual indicators or stunning light effects to enhance both functionality and creativity.

- **Classic Form Factor and Extensive Seeed Studio XIAO Ecosystem**

Launched in 2021, XIAO RP2040 with the classic XIAO compact design of 21 x 17.8mm. Its native compatibility with the comprehensive XIAO Add-on ecosystem - from expansion boards, sensors and displays to connectivity modules and actuators (Grove Expansion, CAN-Bus, LoRa module, LED Matrix, Vision AI Sensor, Round Display, L76K GSP module, 2-Mic Array, ePaper Displays, mmWave sensor, AC relay, Bus Servo Driver and many more) - makes it versatile for any project, no matter how simple or complex.

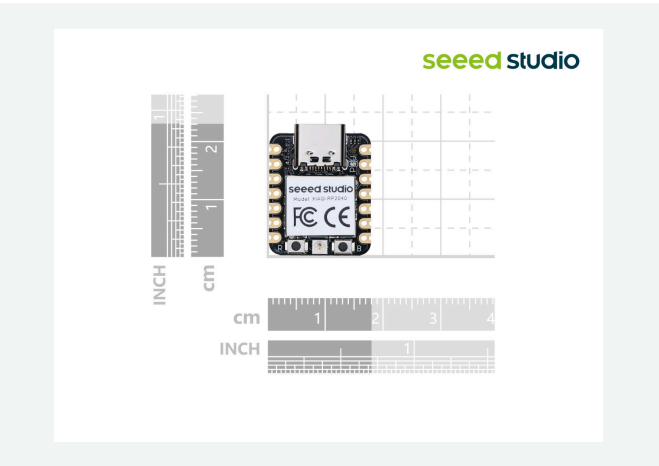
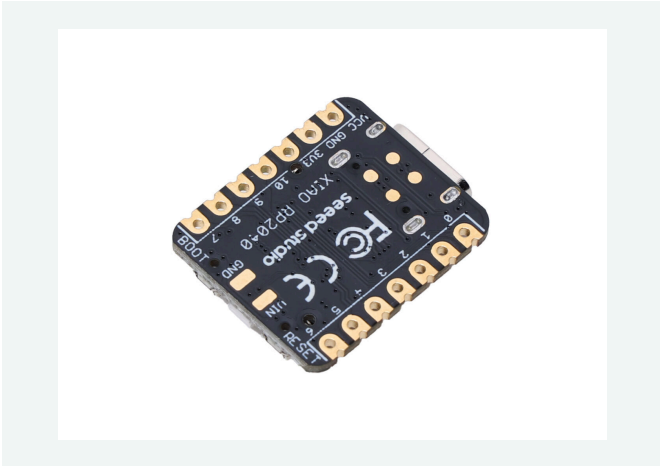
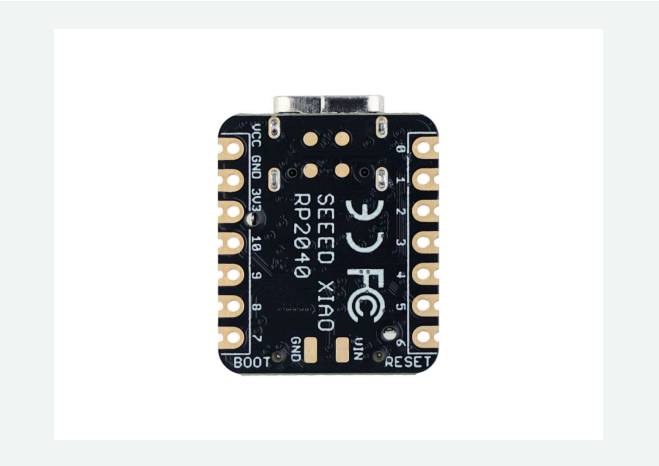
- **Production-Ready Design with FREE PCBA Support**

All Seeed Studio XIAO dev boards feature a production-optimized SMD (Surface Mount Device) design with standardized stamp holes, making it perfect for commercial PCBA (Printed Circuit Board Assembly) integration. Through our [Fusion PCBA Sponsorship program](#), you can not only enjoy the lowest unit prices for all XIAO modules from our Fusion Open Parts Library, but also fabricate and scale your XIAO-based PCBA designs at low cost (30% off) with FREE Design for Manufacturing consulting services, streamlining your journey from prototype to production.

Note

XIAO SoM User Manual open-sources all hardware and software materials of XIAO, providing professional product design guidelines to help you accelerate ideas off the ground, streamline product design, providing a seamless experience from module selection to mass production. You can check [here](#) to see more info.

Product Gallery

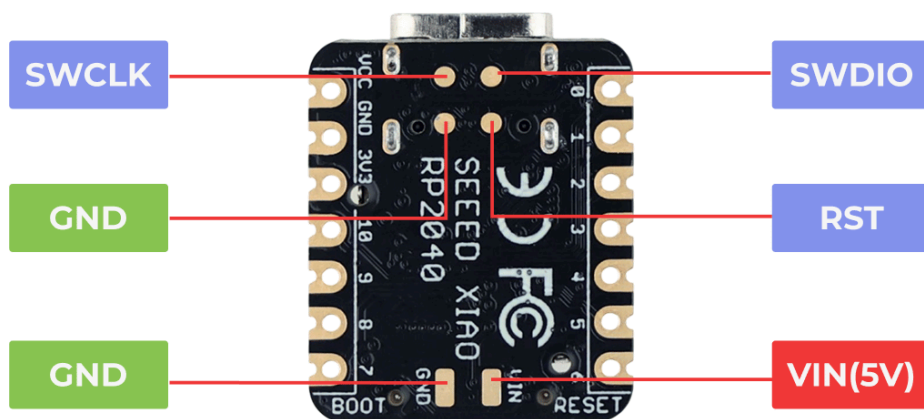
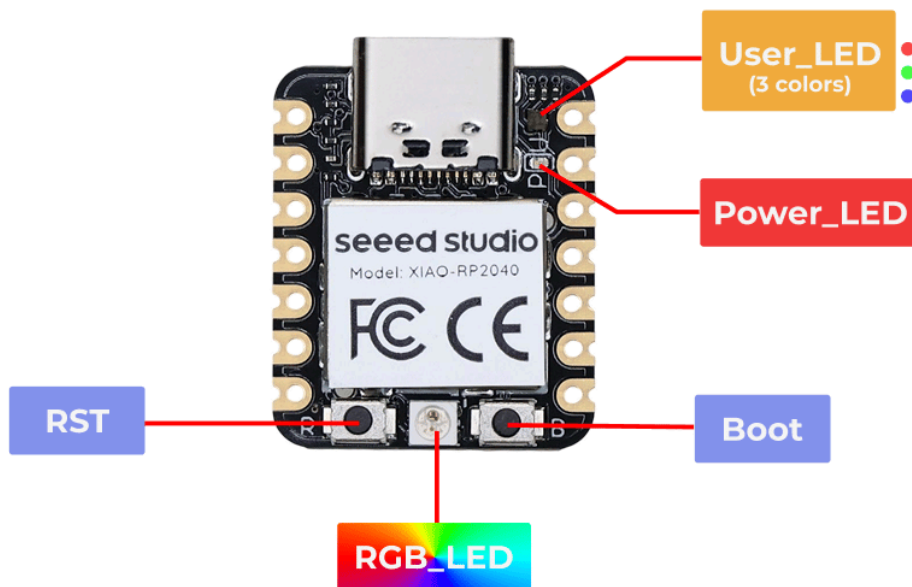


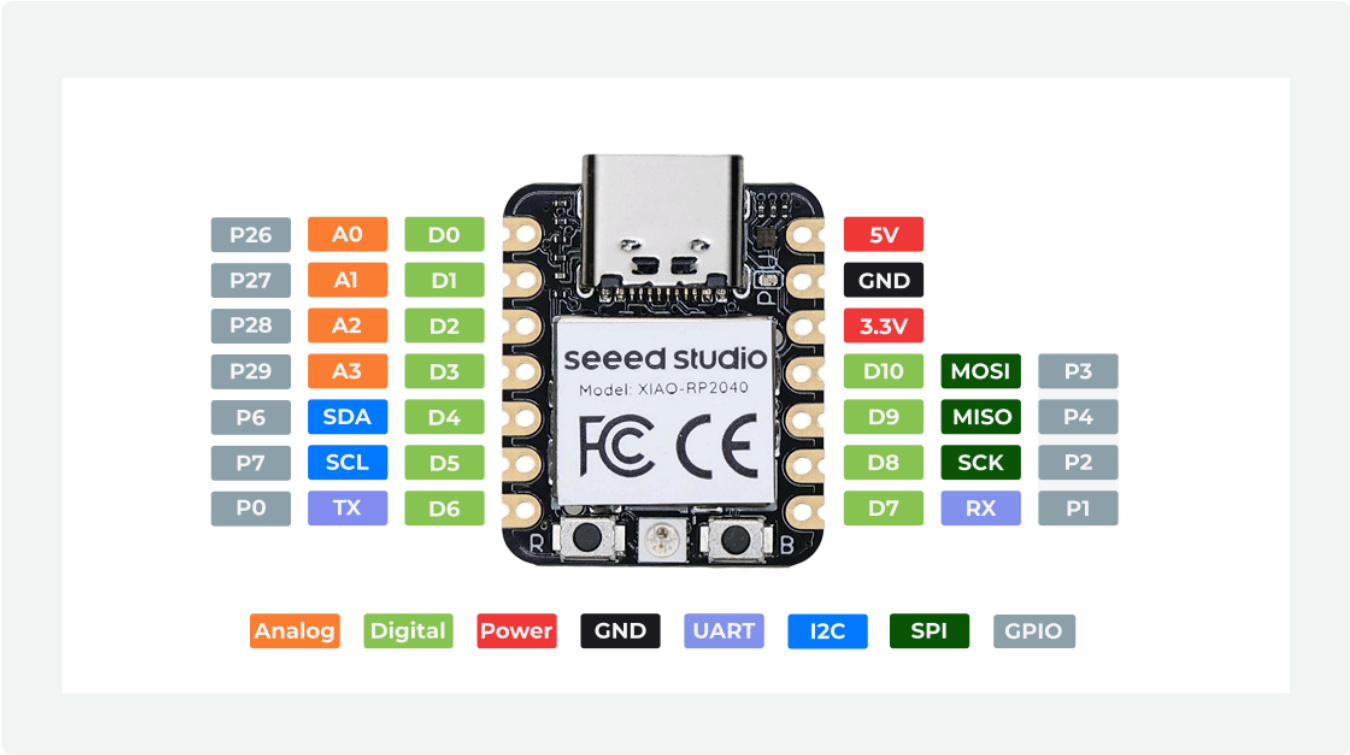
Specification

Product Name	Seeed Studio XIAO RP2040	Seeed Studio XIAO RP2350
Chipset	Raspberry Pi 2040	Raspberry Pi RP2350

Processor	Dual Cortex M0+ processor running at up to 133 MHz	Dual Cortex-M33 processor running at up to 150MHz with FPU
RAM	264KB SRAM	520KB SRAM
Flash	2MB Onboard Flash	2MB Onboard Flash
Interface	GPIO Pin x14 Digital Pin x11 Analog Pin x4 I2C x1 UART x1 SPI x1 PWM x11	GPIO Pinx22 Digital Pin x19 Analog Pin x3 I2C x2 UART x2 SPI x2 PWM x19
Onboard	User LED (3 Colors) x1 Power LED x1 RGB LED x1 Reset Button x1 Boot Button x1	User LED x1 Charge LED (Battery Charging Indicator) x1 RGB LED x1 Reset Button x1 Boot Button x1
Wireless Connectivity	/	/
Power	Input Voltage (Type-C): 5V Input Voltage (BAT): 5V	Input Voltage (Type-C): 5V Input Voltage (BAT): 5V
Low Power Mode(Typ.)	/	3.7V/27.9 mA
Software Compatibility	Arduino, PlatformIO, MicroPython, CircuitPython, tinyGo, Rust, Zephyr, and more to come	Arduino, PlatformIO, MicroPython, CircuitPython, and more to come
Working Temperature	-20°C-70°C	-20°C-70°C
Dimensions	21x17.8mm	21x17.8mm
Varients	XIAO RP2040 3PCS Pack XIAO RP2040 (Pre-Soldered)	XIAO RP2350 (Un-Soldered)XIAO RP2350 (Pre-Soldered)

Hardware Overview





Applications

- **Learning & Education:** Arduino, MicroPython, CircuitPython, TinyGo, Rust, embedded systems basics
- **USB HID Devices:** Custom keyboards, stream decks, arcade controllers, MIDI interfaces
- **Wearable Projects:** Smart accessories, LED clothing, wrist devices, sensor wearables
- **IoT & Sensors:** Environmental monitoring, smart home panels, weather stations, MQTT
- **Display Projects:** LED matrices, POV displays, rotating LED spheres
- **Development:** Rapid prototyping, hardware testing, PCB validation
- **Robotics:** Basic motor control, sensor integration, automation
- **Audio/Video:** Sound processing, media controls, visualizations

Part List

Seeed Studio XIAO RP2040	X1
7-Pin Header (2.54mm)	X2

Compliance & Logistics



HSCODE	8517180050
USHSCODE	8517180050
UPC	841454123521
EUHSCODE	8543709099
COO	CHINA

FCC Requirement

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

15.21

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy.

If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Resource Links

- <https://www.seeedstudio.com/XIAO-RP2040-v1-0-p-5026.html>
- [Wiki-XIAO RP2040 Resources](#)
- [Seed Studio XIAO Use Case](#)
- [3D Printing "Case" Studies](#)
- [PCN-XIAO Series Packaging Upgrade.pdf](#)

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