

seeed studio

INDUSTRIAL PRODUCT DATASHEET

Seeed Studio XIAO ESP32-S3 Plus

Seeed Studio XIAO ESP32-S3 Plus: a compact ESP32-S3 board with WiFi, BLE 5.0, 16MB Flash, expanded 20 GPIOs, and low-power operation for IoT, wearables, smart homes, and more.

SKU

102010671

UPDATED

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PRICE

\$7.90(Excl. VAT)



Overview



The Seeed Studio XIAO ESP32-S3 Plus is a thumb-size development board powered by a dual-core ESP32-S3 processor at 240MHz, offering WiFi, BLE 5.0, 16MB Flash, and expanded 20 GPIOs with 9 extra SMD castellation pins. It features efficient power management with 14 μ A deep sleep and integrated Li-ion charging, and is suitable for Internet of Things, wearable devices, smart homes, robotics, health monitoring, education, ESP-Now Communication, and Low-Power networking.

Key Features

Inspired by the unique SMD pins design of [the RICK TNY](#), we're now introducing the Seeed Studio XIAO Plus boards (available in XIAO nRF52840 Plus, XIAO nRF52840 Sense Plus, and XIAO ESP32-S3 Plus) to include an updated design of more castellations and a new pad layout on the back.

Seeed Studio XIAO ESP32-S3 Plus, powered by ESP32-S3's 240MHz Xtensa 32-bit LX7 dual-core processor, brings more SMD pins to the tiny versatile [XIAO ESP32-S3](#). While maintaining all the powerful features including WiFi and BLE 5.0 wireless connectivities, 2.4GHz Rod antenna, and ultra-low power consumption of 14µA in deep sleep mode with lithium battery charging management, the Plus variant features redesigned castellations and pad layout on the back, offering 9 additional GPIOs specifically for advanced Bluetooth projects requiring expanded I/Os via SMD board-to-board soldering. It's ideal for advanced IoT projects, Smart Homes, and professional wireless devices requiring extra I/O connectivity. XIAO ESP32-S3 Plus additionally features an upgraded 16MB Flash memory for advanced applications.

- **High-Performance MCU:** Dual-core ESP32-S3 at 240MHz, Arduino / MicroPython / ESP-IDF compatible
- **Advanced Wireless:** 2.4GHz WiFi + BLE 5.0, 100m+ range with U.FL antenna support
- **Efficient Power Management:** Four power modes with 14µA deep sleep, integrated Li-ion charging
- **Expanded 20 GPIOs:** 9 extra 1.27mm pitch SMD castellation pins beyond standard XIAO nRF52840
- **Universal Compatibility:** Standard backside layout (with aligned battery pads, and debugger pads) for more to-be-released XIAO expansion boards
- **Classic XIAO Form Factor:** 21 x 17.8mm design with 2.54mm pin headers, single-sided mounting for wearables and space-constrained projects
- **XIAO Accessory Add-ons Compatibility:** Natively compatible with all the [XIAO accessory add-ons of expansion, connectivity modules](#) (LoRa, CAN_Bus, RS-485), sensors (2-Mic Array, Vision AI, mmWave Motion, Environmental sensing), and actuators (ePaper display, LED Matrix, relay and more).
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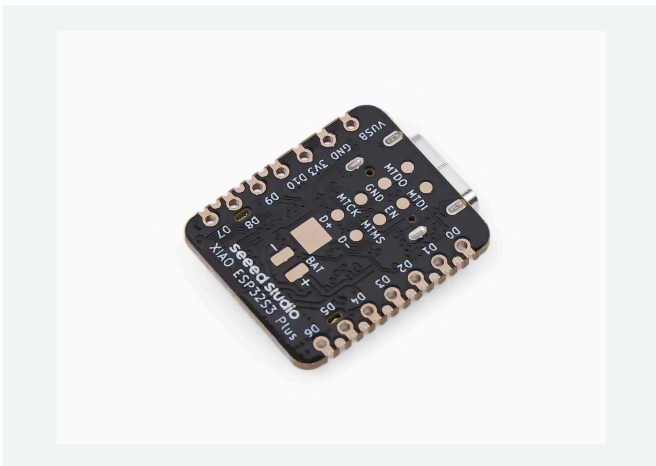
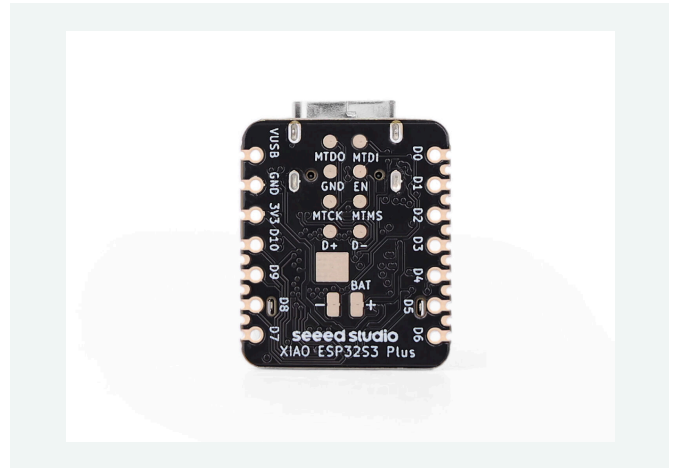
Production-Ready Design with Fusion PCBA Support

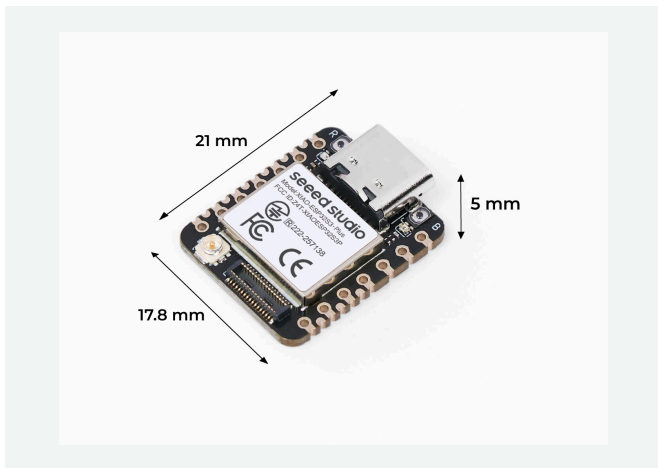
As a new addition to the [Seeed Studio XIAO family](#), the XIAO ESP32S3 Plus remains the classic XIAO design (thumb-size, SMD, stamp holes). All these features make it a perfect fit for either space-limited applications, or a production-ready System on Module (SoM) for your PCBA designs. With our [Seeed Studio Fusion](#) services, you can access competitive **one-stop PCBA manufacturing, component sourcing, and testing, plus free DFA/DFM review** to reduce manufacturing risks and accelerate the 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

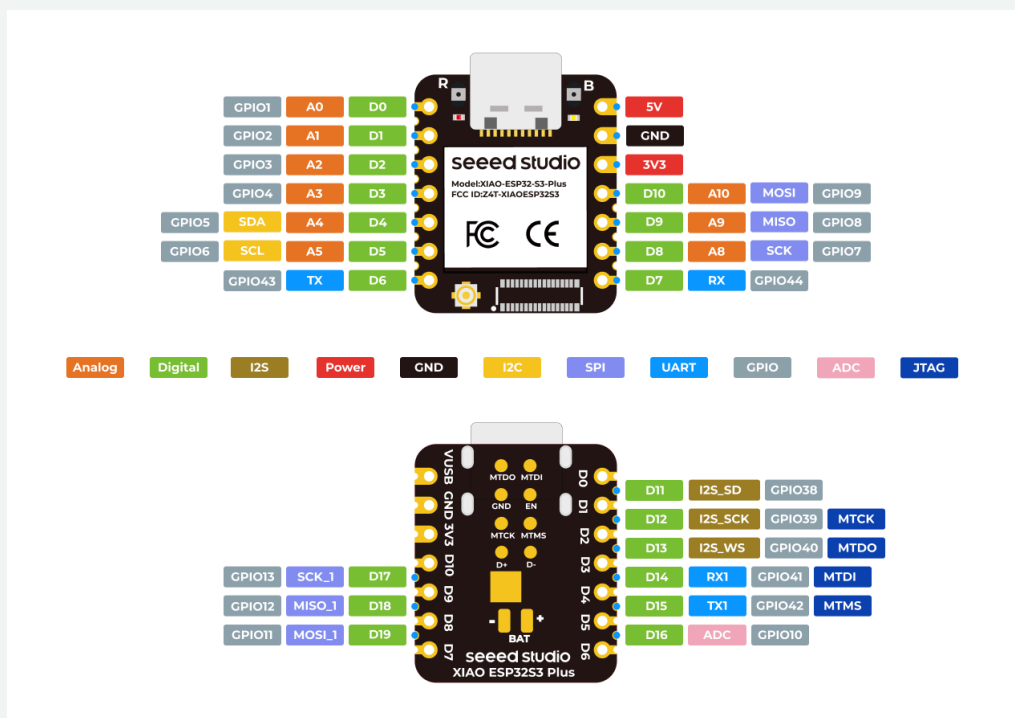
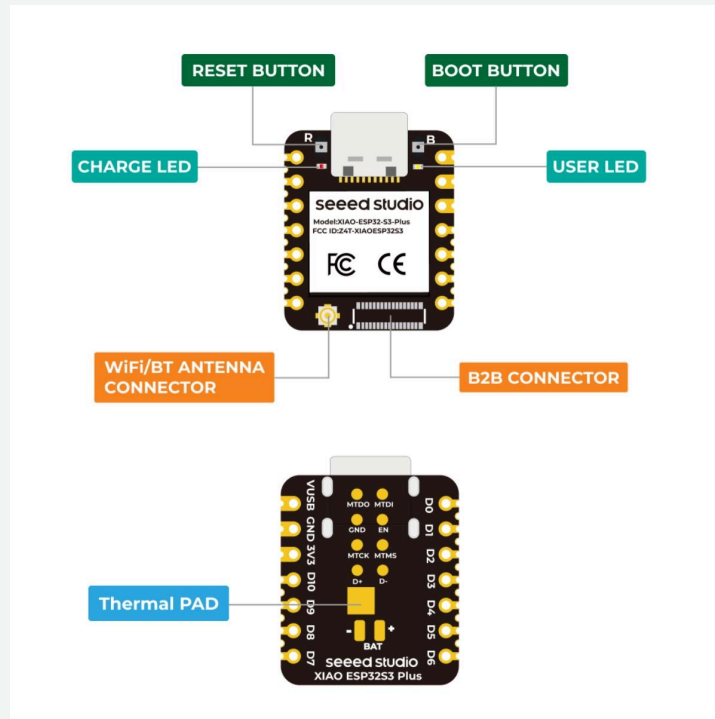




Specification

Item	Seeed Studio XIAO ESP32-S3	Seeed Studio XIAO ESP32-S3 Plus
Processor	ESP32-S3R8 Xtensa LX7 dual-core, 32-bit processor that operates at up to 240 MHz	
Wireless	Complete 2.4GHz Wi-Fi subsystem Bluetooth Low Energy 5.0 / Bluetooth Mesh	
Memory	On-chip 8MB PSRAM & 8MB Flash	On-chip 8MB PSRAM & 16MB Flash
Interface	1x UART 1x IIC 1x SPI 11x GPIOs (PWM) 9x ADC 1x User LED 1x Charge LED 1x Reset button 1x Boot button	2x UART 1x IIC 1x IIS 2x SPI 18x GPIOs (PWM) 9x ADC 1x User LED 1x Charge LED 1x B2B Connector 1x Reset button 1x Boot button
Dimensions	21 x 17.8mm	
Power (Typ.)	Input voltage (Type-C): 5V Input voltage (BAT): 3.7V	
	Circuit operating Voltage: - Type-C: 5V@19mA - BAT: 3.8V@22mA	Circuit operating Voltage: - Type-C: 5V@28mA - BAT: 3.8V@35mA
	Charging current: 50mA(Fast) / 3.8mA(Trickle)	Charging current: 100mA(Fast) / 0.9mA(Trickle)
Low Power Consumption Model (Typ.)	Modem-sleep Mode: 3.8V/25 mA Light-sleep Mode: 3.8V/2 mA Deep Sleep Mode: 3.8V/14 μ A	Modem-sleep Mode: 3.8V/31.6 mA Light-sleep Mode: 3.8V/2.45 mA Deep Sleep Mode: 3.8V/33.51 μ A
Wi-Fi Enabled Power Consumption (Typ.)	Active Mode: 100 mA	Active Mode: 81 mA
BLE Enabled Power Consumption (Typ.)	Active Mode: 85 mA	Active Mode: 101 mA
Working Temperature	-40°C ~ 65°C	

Hardware Overview



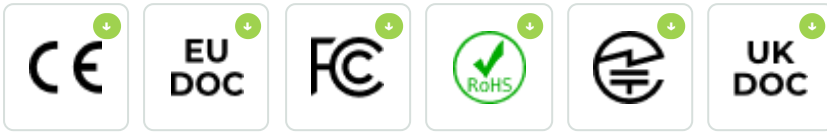
Applications

- Internet of Things
- Wearable devices
- Smart Homes
- Robotics
- Health monitoring
- Education
- ESP-Now Communication
- Low-Power(LP) networking

Part List

Seeed Studio XIAO ESP32-S3 Plus	x1
Antenna	x1
7 Pin Header	x2

Compliance & Logistics



HSCODE	8543709990
USHSCODE	8517180050
UPC	
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/Seeed-Studio-XIAO-ESP32S3-Plus-p-6361.html>
- [PCN-XIAO Series Packaging Upgrade.pdf](#)
- [Wiki-XIAO ESP32-S3 Series Resources](#)
- [Seeed Studio XIAO Use Case](#)

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