

**BLE 5.0, 8MB PSRAM, 8MB FLASH, Dual-core, battery charge supported, power efficiency and rich Interface, ideal for Smart Homes, IoT, Wearable Devices, Robotics**

SKU 113991114

**The Pins are no Longer Included. Please order Part number 102010490**

XIAO ESP32S3 is a high-performance board powered by Expressif ESP32-S3R8 chip. With support for **2.4GHz Wi-Fi and low-power Bluetooth® BLE 5.0 dual-mode** wireless communication, this board is perfect for high-performance, low-power IoT applications.

When connected with the U.FL antenna, the remote communication distance and reach up to **100m**.

Equipped with a powerful Xtensa® 32-bit LX7 dual-core processor running at up to **240MHz, 8MB PSRAM, and 8MB Flash**, XIAO ESP32S3 is designed to handle multi demanding tasks with ease.

Additionally, XIAO ESP32S3 supports lithium battery charging management and allows for deep sleep mode with power consumption as low as **14µA**. With 4 adjustable power modes, XIAO ESP32S3 can balance communication distance, data rate, and power consumption to meet the needs of various application scenarios.

At just 21 x 17.5mm, XIAO ESP32S3 is designed with the classic thumb-sized form factor, making it perfect for wearable devices. Its breadboard-friendly and surface-mount design makes it ideal for production, with all SMD components on a single-sided board for ease of mass production.

## Part List

1 -XIAO ESP32S3

1 - Antenna



## Starter Kit with free Course for all Electronics Neophytes and Enthusiasts

Seeed Studio has provided the [Grove Starter Kit](#) along with [free and detailed courses](#) for you quickly get started with microcontrollers and electronics, regarding all the Seeed Studio XIAO boards, promising you a great learning experience.

Not only programming but also electronics knowledge is not required, you will be taken step by step, from understanding the basic concepts to exercising the simple projects individually, finally being able to build complex, interesting, wearable projects on your own, owing a practical electronic product prototype from the course.



You can have access to the **Seeed Studio Grove ecosystem** by connecting it to the compatible **Seeed Studio XIAO expansion board**. We have developed more than **400 Grove modules**, covering a wide range of applications that can fulfill various needs. Get started and explore the infinite possibilities of the Seeed Studio XIAO series.

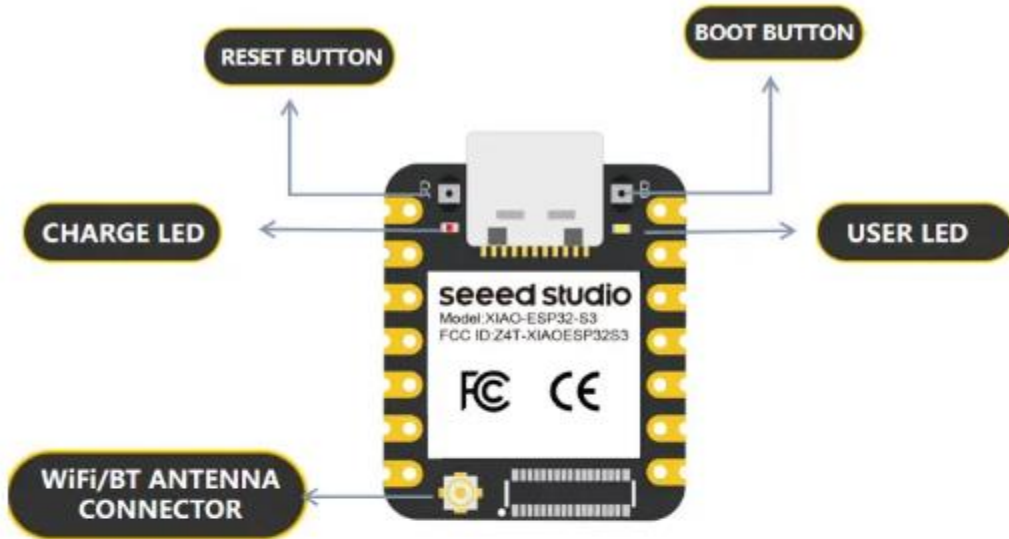
## Application

- Internet of Things
- Wearable devices
- Smart Homes
- Robotics
- Health monitoring
- Education
- Low-Power(LP) networking
- Rapid prototyping

## Specification

Parameter	<a href="#">Seeed Studio XIAO ESP32S3</a>	<a href="#">Seeed Studio XIAO ESP32C3</a>
Processor	ESP32-S3R8	ESP32-C3 SoC
	Xtensa LX7 dual-core, 32-bit processor running up to 240 MHz	RISC-V single-core 32-bit chip processor with a four-stage pipeline that operates at up to 160 MHz
Wireless	Complete 2.4GHz WiFi subsystem	Complete 2.4GHz WiFi subsystem
	BLE: Bluetooth 5.0, Bluetooth mesh	BLE: Bluetooth 5.0, Bluetooth mesh
On-chip Memory	<b>8M PSRAM &amp; 8MB Flash</b>	<b>400KB SRAM &amp; 4MB Flash</b>
Interface	1x UART, 1x IIC, 1x IIS, 1x SPI, 11x GPIO(PWM), <b>9x ADC, 1x User LED, 1x Charge LED</b>	1x UART, 1x IIC, 1x SPI, 11x GPIO(PWM), 4x ADC
	1x Reset button, 1x Boot button	1x Reset button, 1x Boot button
Dimensions	21 x 17.5mm	21 x 17.5mm
Power	Input voltage (Type-C): 5V Input voltage (BAT): 4.2V	Input voltage (Type-C): 5V Input voltage (BAT): 4.2V
	Circuit operating Voltage (ready to operate): - Type-C: 5V@ <b>19mA</b> - BAT: 3.8V@ <b>22mA</b>	Circuit operating Voltage (ready to operate): - USB:5V@ <b>9mA</b> - BAT:3.8V@ <b>9mA</b>
	Charging battery current: <b>100mA</b>	Charging battery current: <b>350mA</b>
Low Power Consumption Model (Supply Power: 3.8V)	Modem-sleep Model: ~ <b>25 mA</b> Light-sleep Model: ~ <b>2mA</b> Deep Sleep Model: ~ <b>14 μA</b>	Modem-sleep Model: ~ <b>24 mA</b> Light-sleep Model: ~ <b>3 mA</b> Deep Sleep Model: ~ <b>44 μA</b>
WiFi Enabled Power Consumption	Active Model: ~ <b>100 mA</b>	Active Model: < <b>75 mA</b>
BLE Enabled Power Consumption	Active Model: ~ <b>85 mA</b>	Modem-sleep Model: < <b>27 mA</b>
Working Temperature	-40°C ~ 65°C	-40°C ~ 85°C

# Hardware Overview



## FRONT

