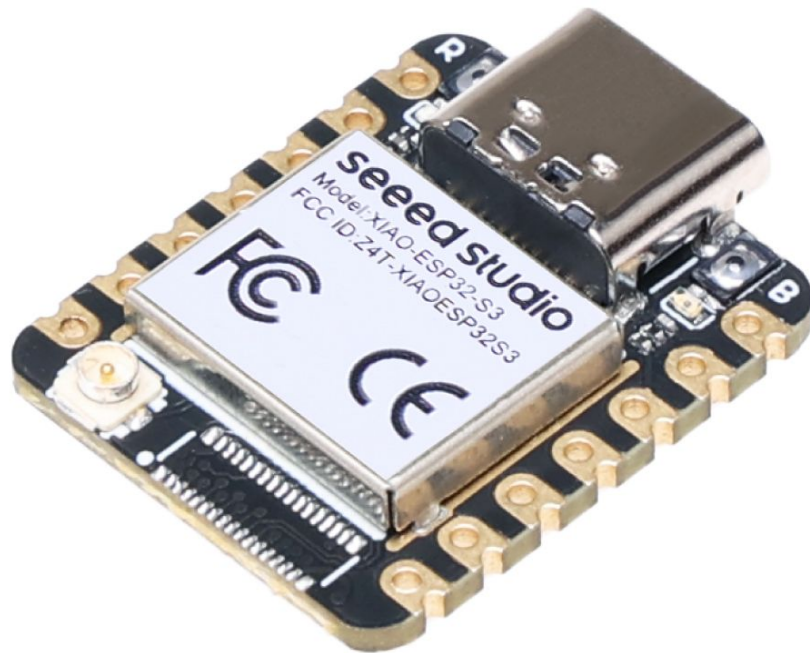# Seeed Studio XIAO ESP32S3 - 2.4GHz WiFi, BLE 5.0, Dual-core, battery charge supported, power efficiency and rich Interface, ideal for Smart Homes, IoT, Wearable Devices, Robotics

Seeed Studio XIAO Series are diminutive development boards, sharing a similar hardware structure, where the size is literally thumb-sized. The code name "XIAO" here represents its half feature "Tiny", and the other half will be "Puissant".

Seeed Studio XIAO ESP32S3 leverages 240MHz Xtensa 32-bit LX7 dual-core processor, supporting both **WiFi and BLE 5.0** wireless connectivities, allows for deep sleep mode with power consumption as low as **14µA** while supporting lithium battery charging management. Ideal for the Internet of Things, Smart Homes, Wireless wearable devices, Robotics, etc.

Feature

- **Powerful MCU Board:** Incorporate the ESP32S3 32-bit, dual-core, Xtensa processor running at up to 240MHz, mounted multiple development ports, Arduino / MicroPython supported

- **Outstanding RF performance:** Supports 2.4GHz WiFi and BLE 5.0 dual wireless communication, support 100m+ remote communication when connected with U.FL antenna
- **Elaborate Power Design:** Lithium battery charge management capability, offer 4 power consumption model which allows for deep sleep mode with power consumption as low as 14μA
- **Thumb-sized Compact Design:** 21 x 17.5mm, adopting the classic form factor of XIAO, suitable for space limited projects like wearable devices
- **Perfect for Production:** Breadboard-friendly & SMD design, no components on the back

Specification

Parameter	Seeed Studio XIAO ESP32S3	Seeed Studio XIAO ESP32C3
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	**8M PSRAM & 8MB Flash**	**400KB SRAM & 4MB Flash**
Interface	1x UART, 1x IIC, 1x IIS, 1x SPI,11x GPIO(PWM), **9x ADC, 1x User LED, 1x Charge LED**	1x UART, 1x IIC, 1x IIS, 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 (Type-C): 5V
	Input voltage (BAT): 4.2V	Input voltage (BAT): 4.2V

	Circuit operating Voltage (ready to operate): - Type-C: 5V@**19mA** - BAT: 3.8V@**22mA**	Circuit operating Voltage (ready to operate): - USB:5V@**9mA** - BAT:3.8V@**9mA**
	Charging battery current: **50mA**	Charging battery current: **350mA**
Low Power Consumption Model (Supply Power: 3.8V)	Modem-sleep Model: **~ 25 mA** Light-sleep Model: **~ 2mA** Deep Sleep Model: **~ 14 µA**	Modem-sleep Model: **~ 24 mA** Light-sleep Model: **~ 3 mA** Deep Sleep Model: **~ 44 µA**
WiFi Enabled Power Consumption	Active Model: **~ 100 mA**	Active Model: **<75 mA**
BLE Enabled Power Consumption	Active Model: **~ 85 mA**	Modem-sleep Model: **<27 mA**
Working Temperature	-40°C ~ 65°C	-40°C ~ 85°C

Part List

XIAO ESP32S3	x1
Antenna	x1