

113991115 | Seeed Studio XIAO ESP32-S3 Sense

SKU: 113991115

Product Overview

The Seeed Studio XIAO ESP32-S3 uses a dual-core ESP32-S3 chip with support for both Wi-Fi and BLE connectivity, enabling battery charging. It includes an integrated camera sensor and digital microphone, along with 8MB PSRAM and 8MB flash memory, plus an external SD card slot. This makes it suitable for embedded machine learning applications such as intelligent voice and vision AI.

Features

Powerful MCU Board: Incorporate the ESP32-S3 32-bit, dual-core, Xtensa processor chip operating up to 240 MHz, mounted multiple development ports, Arduino / MicroPython supported

Advanced Functionality: Detachable OV3660 camera sensor for 20481536 resolution, compatible with OV5640 camera sensor, integrating additional digital microphone

Great Memory for more Possibilities: Offer 8MB PSRAM and 8MB FLASH, supporting SD card slot for external 32GB FAT memory

Outstanding RF performance: Support 2.4GHz Wi-Fi and BLE dual wireless communication, support 100m+ remote communication when connected with U.FL antenna

Thumb-sized Compact Design: 21 x 17.8mm, adopting the classic form factor of XIAO, suitable for space-limited projects like wearable devices

Pre-trained AI models from SenseCraft AI for no-code deployment Production-Ready Design with Fusion 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.

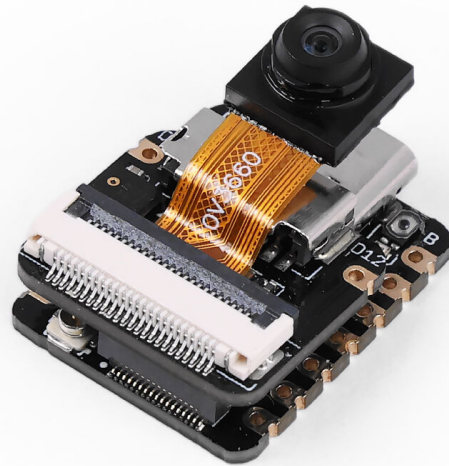
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Product Image



Product image

Specifications

Seeed Studio XIAO ESP32-S3

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Product		
Processor	ESP32-S3R8Xtensa LX7 dual-core,32-bit processor that operates at up to 240 MHZ	
Wireless	Complete 2.4GHz Wi-Fi subsystemBluetooth Low Energy 5.0 / Bluetooth Mesh	
Built-in Sensors	/	1x OV3660 camera sensor1x Digital Microphone
Memory	On-chip 8MB PSRAM & 8MB Flash	On-chip 8MB PSRAM & 8MB FlashOnboard SD Card Slot, supporting 32GB FAT
Interface	1x UART1x IIC1x SPI11x GPIO(PWM)9x ADC1x User LED1x Charge LED1x Reset button1x Boot button	1x UART1x IIC1x IIS1x SPI11x GPIOs (PWM)9x ADC1x User LED1x Charge LED1x B2B Connector(with 2 additional GPIOs)1x Reset button1x Boot button
Dimensions	21 x 17.8mm	21 x 17.8 x 15mm (with expansion board)
Power(Typ.)	Input voltage (Type-C): 5VInput voltage (BAT): 3.7V	

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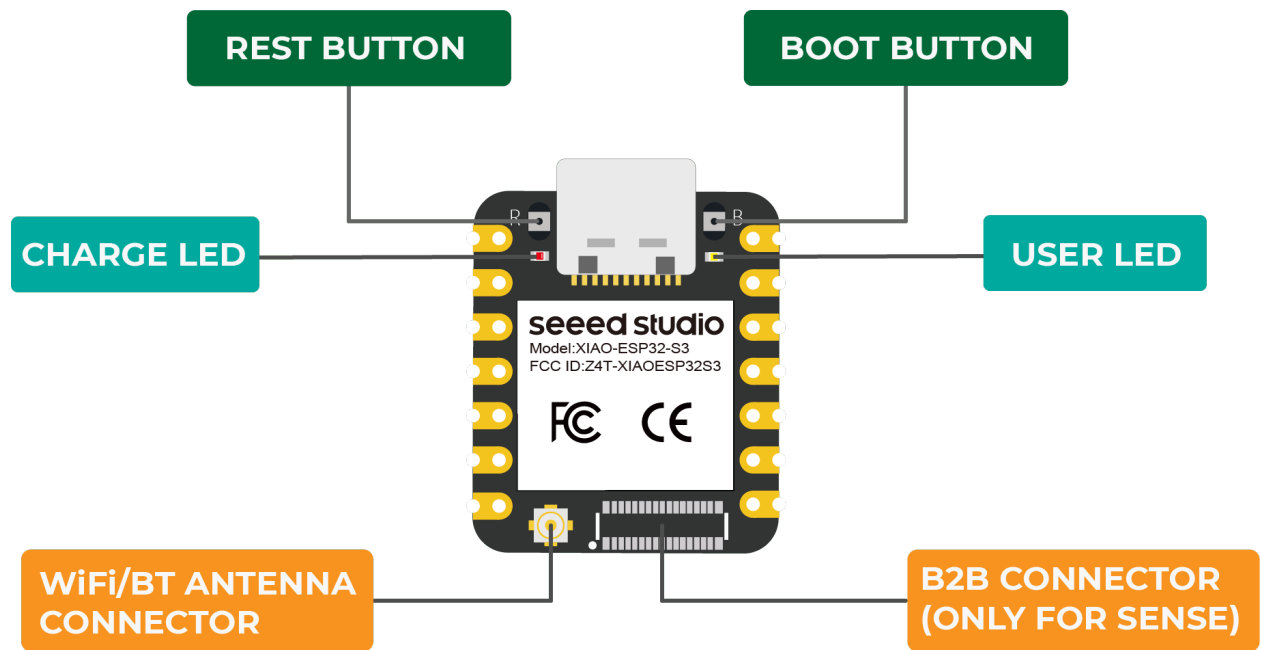
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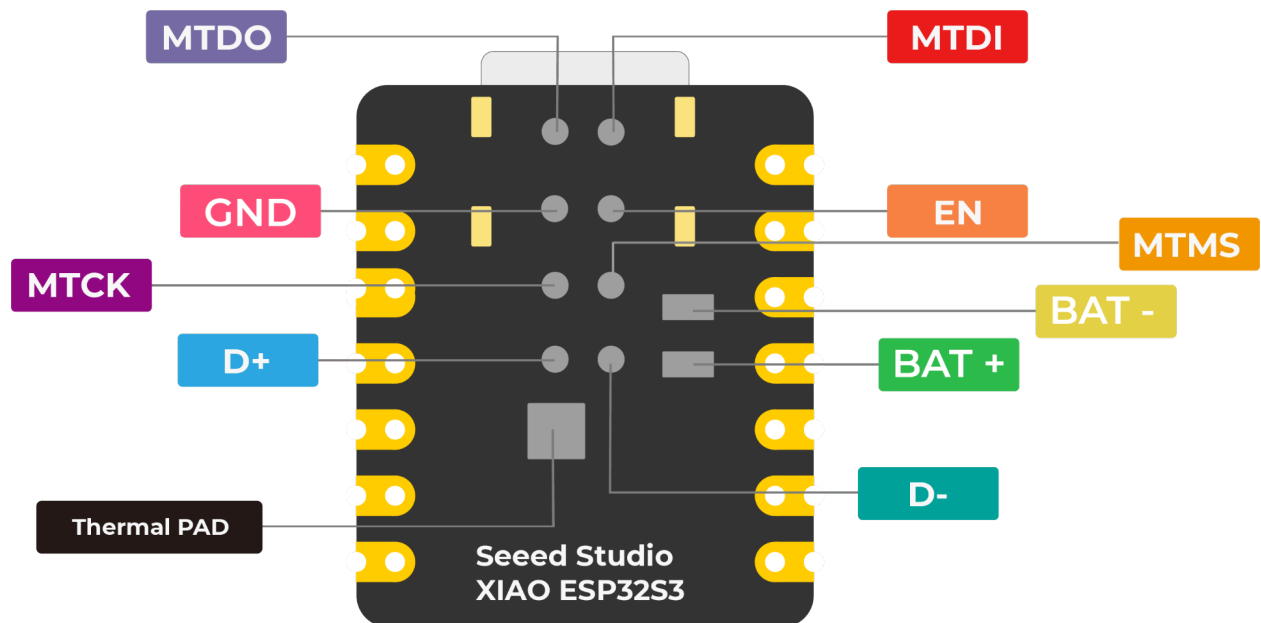
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Product		
Circuit operating Voltage:- Type-C:5V@19mA- BAT: 3.8V@22mA	Circuit operating Voltage:-Type-C: 5V@38.3mA- BAT: 3.8V@43.2mA (with expansion board)	
/	Webcam Web application:- Type-C:- - Average power Consumption: 5V/140mA- - Peak power consumption(Image Capture): 5V/347mA- Battery:- - Average power Consumption: 3.8V/155mA- - Peak power consumption(Image Capture): 3.8V/366mA	
/	Microphone recording & SD card writing:- Type-C:- - Average power consumption: 5V/54.58mA- - Peak power consumption: 5V/86.7mA- Battery:- - Average power consumption: 3.8V/64.5mA- - Peak power consumption: 3.8V/109.3mA	
50mA(Fast) / 3.8mA(Trickle)		
Low Power Consumption Model(Typ.)(Supply Power: 3.8V)	Modem-sleep Mode: 27mALight-sleep Mode: 2mADeep Sleep Mode: 14uA	Modem-sleep Mode: 44mALight-sleep Mode: 5mADeep Sleep Mode: 3mA
Wi-Fi Enabled Power Consumption(Typ.)	Active Mode: 100 mA	Active Mode: 110 mA (with expansion board)
BLE Enabled Power Consumption(Typ.)	Active Mode: 85 mA	Active Mode: 102 mA (with expansion board)
Working Temperature	20degC 65degC	

Hardware Overview



Hardware overview image



NFC

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