

113991254 | Seeed Studio XIAO ESP32-C6

SKU: 113991254

Product Overview

The XIAO ESP32-C6 is a cost-effective microcontroller based on Espressif's ESP32-C6. It supports 2.4GHz Wi-Fi 6, BLE 5.0, Zigbee, and Thread, making it suitable for Matter-compliant smart home applications. With its compact size and single-sided mount design, it is ideal for space-constrained projects. The device offers built-in encryption and easy integration with major IoT cloud platforms, facilitating secure and streamlined development.

Features

Enhanced Connectivity: Combines 2.4GHz Wi-Fi 6 (802.11ax), Bluetooth 5(LE), and IEEE 802.15.4 radio connectivity, allowing you to apply the Thread and Zigbee protocols.

Matter Native: Supports building Matter-compliant smart home projects thanks to its enhanced connectivity, achieving interoperability

Security Encrypted on Chip: Powered by ESP32-C6, it brings enhanced encrypted-on-chip security to your smart home projects via secure boot, encryption, and Trusted Execution Environment (TEE)

Outstanding RF performance: Has an on-board antenna with up to 80m BLE/Wi-Fi range, while reserving an interface for external UFL antenna

Leveraging Power Consumption: Comes with four working modes, with the lowest being 15 uA in deep sleep mode, while also supporting lithium battery charge management.

Dual RISC-V Processors: Incorporates two 32-bit RISC-V processors, with the high-performance processor running up to 160 MHz, and the low-power processor clocking up to 20 MHz

Classic XIAO Designs: Remains the classic XIAO designs of the thumb-size form factor of 21 x 17.8mm, and single-sided mount, making it perfect for space-limited projects such as wearables

Seamless integration with mainstream Cloud Platforms: ESP Rain Maker, AWS IoT, Microsoft Azure, and Google Cloud Production-Ready Design with Fusion PCBA Support Being the 8th member of the Seeed Studio XIAO family, XIAO ESP32C6 remains the classic XIAO design. All these features make it a perfect fit for either space-limited projects such as wearables, or a production-ready unit for your PCBA designs. 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

XIAO ESP32-C3

XIAO ESP32-S3

Product	XIAO ESP32-C6		
Processor	Espressif ESP32-C6 SoC	Espressif ESP32-C3 SoC	Espressif ESP32-S3R8 SoC
two 32-bit RISC-V processors, with the high-performance one running up to 160 MHz, and the low-power one clocking up to 20 MHz	RISC-V single-core 32-bit chip processor with a four-stage pipeline that operates at up to 160 MHz	Xtensa LX7 dual-core, 32-bit processor running up to 240 MHz	
Wireless	Complete 2.4GHz Wi-Fi 6 subsystem	Complete 2.4GHz Wi-Fi subsystem	Complete 2.4GHz Wi-Fi subsystem
Bluetooth Low Energy 5.0			
Zigbee, Thread, IEEE 802.15.4	/	/	
On-chip Memory	512KB SRAM & 4MB Flash	400KB SRAM & 4MB Flash	8MB PSRAM & 8MB Flash
Interface	1x UART1x LPUART1x IIC1x LPIIC1x SPI11x GPIO(PWM) 7x ADC1xSDIO	1x UART1x IIC1x SPI11x GPIO(PWM)4x ADC	1x UART1x IIC1x SPI11x GPIO(PWM)9x ADC1x User LED1x Charge LED
1x Reset button1x Boot button			

Seeed Technology Co.,Ltd.

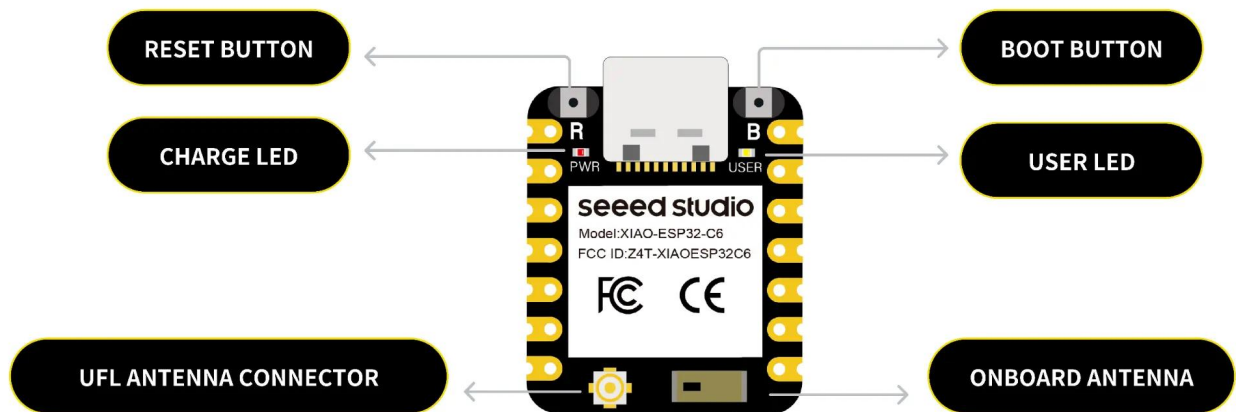
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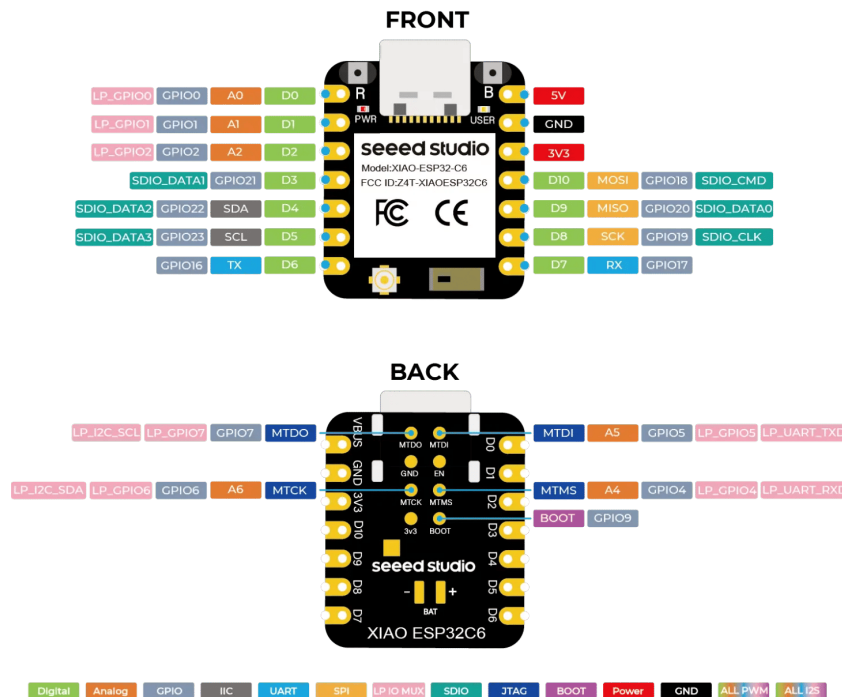
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Product	XIAO ESP32-C6		
Dimensions	21 x 17.8mm		
Power	Input voltage (Type-C): 5V Input voltage (BAT): 3.7V		
Power Consumption Model(Typ.)(Supply Power: 3.8V)	Modem-sleep Model: 30 mALight-sleep Model: 3.1 mADeep Sleep Model: 15 uA	Modem-sleep Model: 24 mALight-sleep Model: 3 mADeep Sleep Model: 44 uA	Modem-sleep Model: 27 mALight-sleep Model: 2 mADeep Sleep Model: 14 uA
Working Temperature	40degC 85degC	40degC 85degC	40degC 65degC

Hardware Overview



Hardware overview image



Hardware overview image