seeed studio

INDUSTRIAL PRODUCT DATASHEET

Seeed Studio XIAO nRF52840 Sense (3PCS)

Thumb-sized nRF52840 development board with Bluetooth 5.4, onboard microphone, and IMU for embedded ML and IoT applications.

SKU	UPDATED	PRICE
102010570	2026-07-13 02:53:40	$44.90(Excl. VAT)



Overview



The Seeed Studio XIAO nRF52840 Sense is a versatile, thumb-sized development board powered by the Nordic nRF52840 SoC, supporting Bluetooth 5.4, NFC, and featuring an onboard microphone and 6-axis IMU. Its ultra-low power consumption, lithium battery charging, and compatibility with Arduino, CircuitPython, and TinyML make it ideal for wearables, IoT, and DIY keyboard projects.

Key Features

- **Versatile Microcontroller:** Incorporate the **Nordic nRF52840** chip with FPU, operating up to 64 MHz, mounted multiple development ports
- **Embracing Open Source**: As an open source hardware, it also supports popular projects of Arduino / CircuitPython / Micropython / tinyGo / Zephyr / Meshtastic / Amazon Sidewalk / QMK / ZMK / ThingSpeak
- **Wireless Capabilities:** Supports Bluetooth Low Energy 5.4 with onboard antenna, also provides NFC connectivity
- **Elaborate Power Design:** Provide **ultra-low power consumption** as 5μA in deep sleep mode while supporting lithium **battery charge management**
- **Advanced onboard Functionality:** Assemble additional **digital microphone** and **6-axis IMU** in the tiny board for embedded Machine Learning applications
- **Thumb-sized Design:** 21 x 17.8mm, Seeed Studio XIAO series classic form-factor, suitable for wearable devices

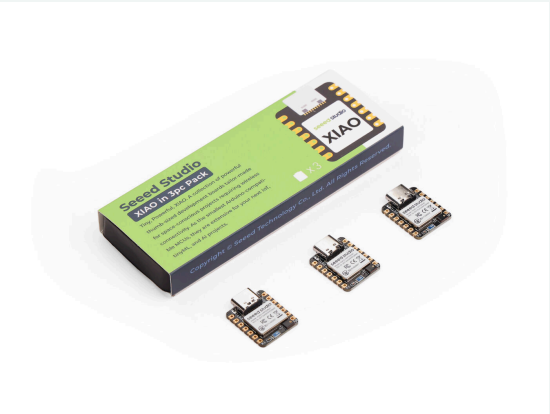
Production-Ready Design with Fusion PCBA Support

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.

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











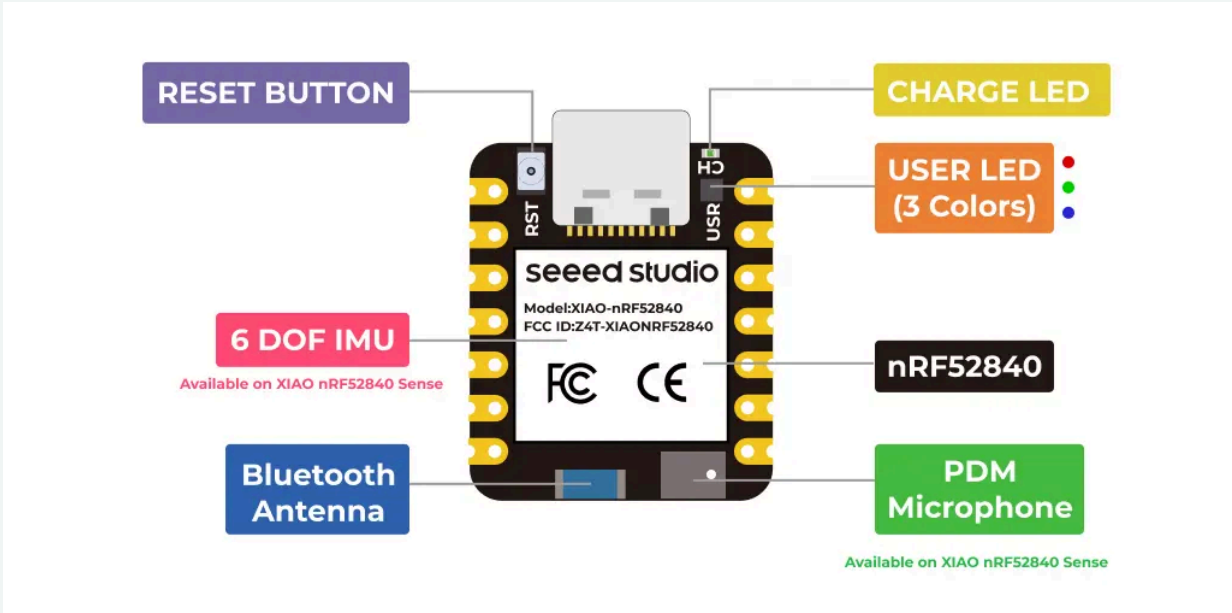


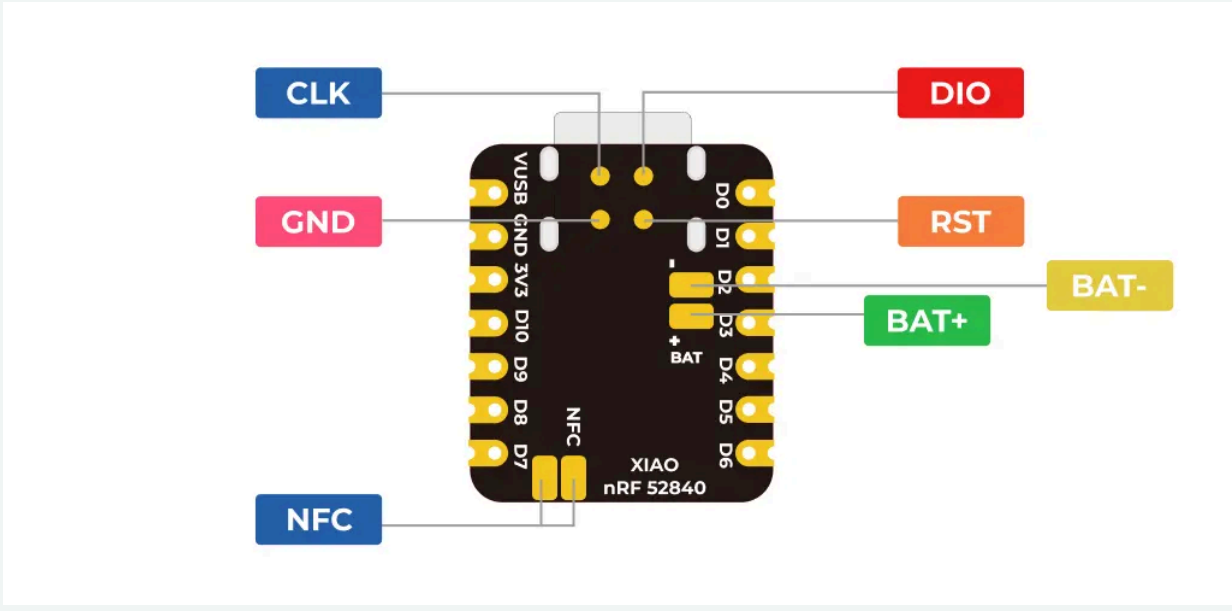
Specification

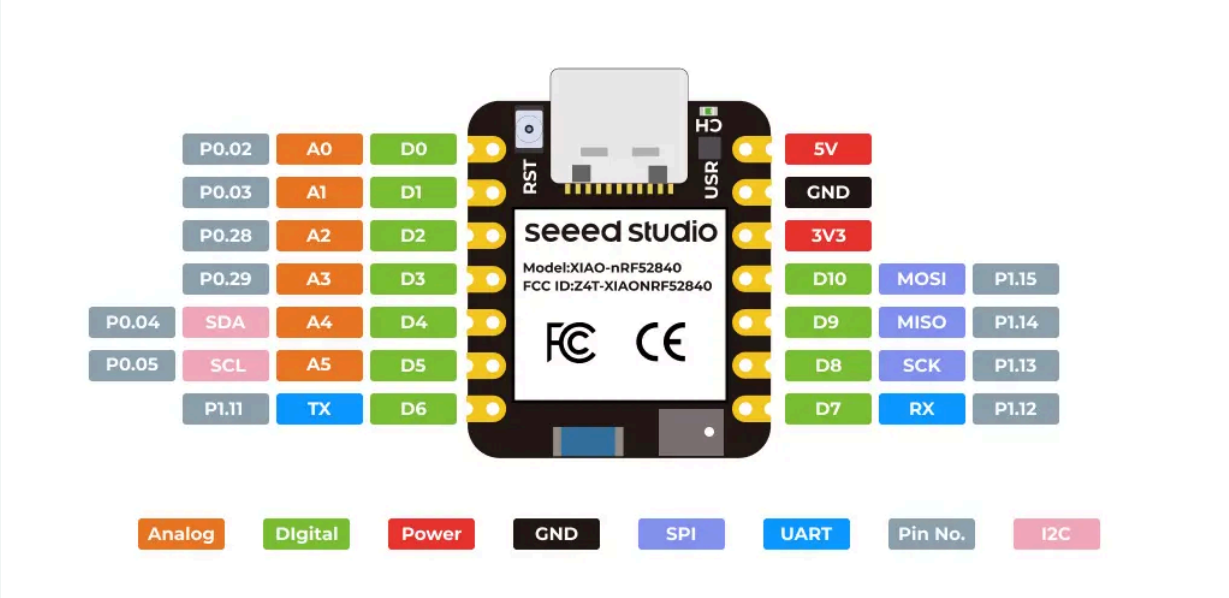
Item	Seeed Studio XIAO nRF52840 (3PCS)	Seeed Studio XIAO nRF52840 Sense (3PCS)

Processor	Nordic nRF52840	
	ARM® Cortex®-M4 with FPU runs up to 64 MHz	
Wireless	Bluetooth Low Energy 5.4/Bluetooth Mesh/NFC	
On-chip Memory	1 MB flash and 256 kB RAM	
Onboard Memory	2 MB QSPI flash	
Interface	1xUART 1xIIC 1xSPI 1xNFC 1xSWD	
	11xGPIO(PWM) 6xADC	
Sensors	/	1xOnboard PDM digital microphone
		1xOnboard 6-axis IMU
Dimensions	21 x 17.8mm	
Power(Typ.)	Circuit operating voltage: 3.3V@200mA	
	Charging current: 50mA(Fast) / 100mA(Trickle)	
	Input voltage (VIN): 5V Input voltage (BAT): 3.7V	
	Standby power consumption: <5μA	

Hardware Overview







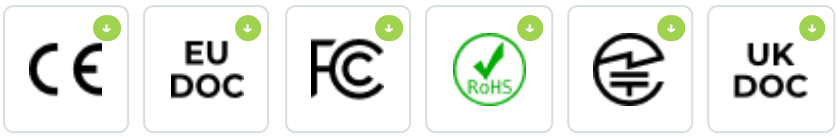
Applications

- **DIY mechanical keyboards thanks to its support of QMK and ZMK Firmware**
- **Small and flexible wearable device**
- **Wifi/Bluetooth controlled wireless connection project**
- **Embedded Machine Learning Project**
- **IoT and TinyML AI applications**
- **Mini Arduino projects**

Part List

Seeed Studio XIAO nRF52840 Sense	x3
7 pin header	x6

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-nRF52840-Sense-3PCS-p-5922.html
- Seeed Studio XIAO nRF52840 BLE Communication Distance Test Report
- TinyML Case Studies
- 3D Printing "Case" Studies
- Wiki-XIAO nRF52840 Series Resources
- Seeed Studio XIAO Use Case

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