

seeed studio

INDUSTRIAL PRODUCT DATASHEET

Seeed Studio XIAO nRF52840 Sense Plus

Seeed Studio XIAO nRF52840 Sense Plus: a compact Bluetooth 5.4 dev board with onboard IMU, microphone, and 20 GPIOs for embedded ML and IoT edge applications.

SKU

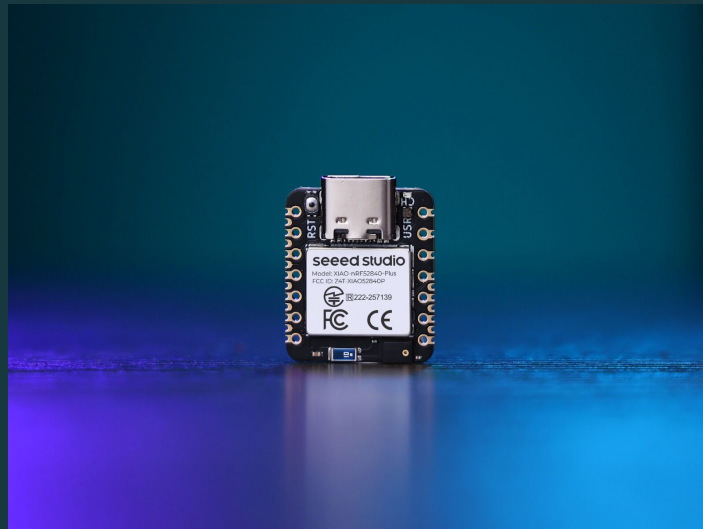
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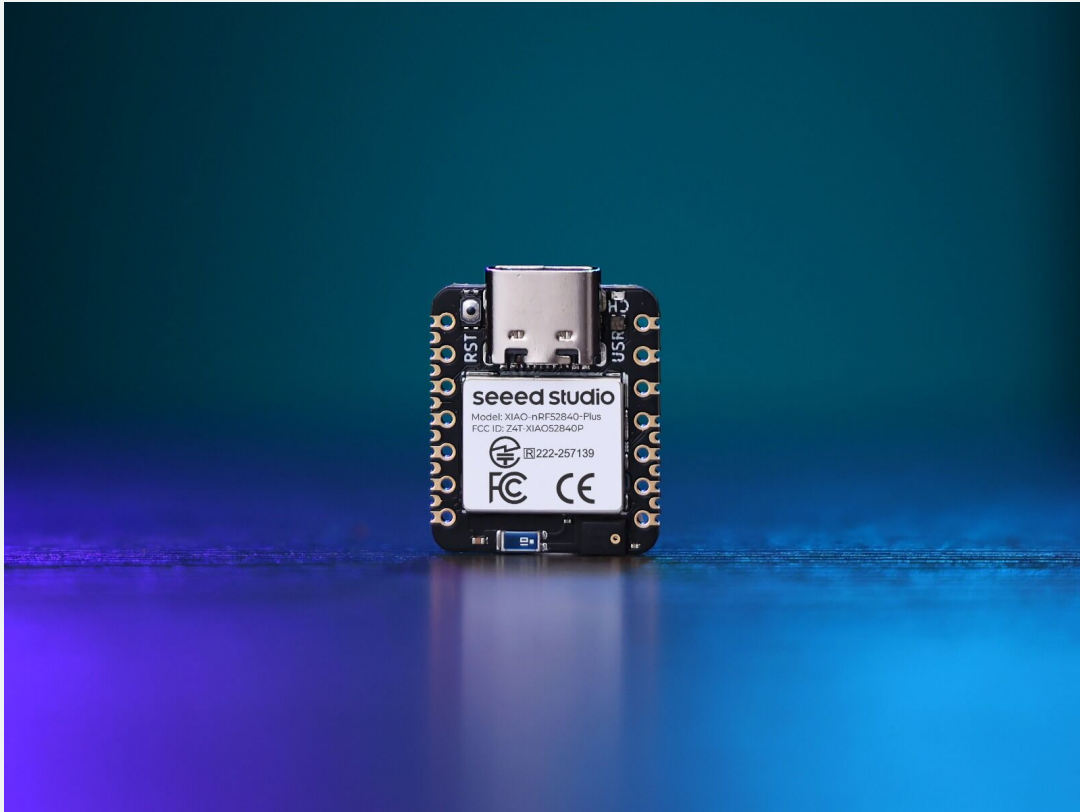
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PRICE

\$16.40(Excl. VAT)



Overview



The Seeed Studio XIAO nRF52840 Sense Plus is a tiny Bluetooth development board powered by Nordic nRF52840 with FPU, featuring onboard 6-axis IMU and PDM microphone, BLE 5.4, NFC, and low power consumption. It expands I/O with 9 additional SMD castellation pins, making it ideal for advanced Bluetooth projects, wearables, and embedded machine learning applications.

Key Features

Inspired by the unique SMD pins design of [the RICK TNY](#), we're now introducing the Seeed Studio XIAO Plus boards (available in XIAO nRF52840 Plus, XIAO nRF52840 Sense Plus, and XIAO ESP32-S3 Plus) to include an updated design of more castellations and a new pad layout on the back.

Seeed Studio XIAO nRF52840 Sense Plus, powered by Nordic chipset with FPU, brings more SMD pins to this tiny Bluetooth sensor dev board. While maintaining all the capabilities of the standard version including onboard IMU and PDM microphone, Bluetooth Low Energy 5.4, NFC, and low power consumption, this Plus variant features redesigned castellations and pad layout on the back, offering 9 additional GPIOs specifically for advanced Bluetooth projects requiring expanded I/Os via SMD board-to-board soldering. With native TensorFlow Lite, it's your ideal development platform for advanced embedded Machine Learning and AIoT projects.

- **High-Performance MCU:** [Nordic Semiconductor's nRF52840](#) chip with FPU at 64 MHz, multiple development ports, compatible with Arduino/CircuitPython/MicroPython
- **Onboard Sensing:** Integrated 6-axis IMU and PDM microphone enable motion sensing and audio input, ideal for wearable devices and compact ML applications
- **Advanced Wireless Connectivity:** Bluetooth Low Energy 5.4 with built-in antenna and NFC support
- **Efficient Power Management:** 5 μ A deep sleep consumption with integrated Li-ion battery charging
- **Expanded 20 GPIOs:** 9 extra 1.27mm pitch SMD castellation pins beyond standard XIAO nRF52840
- **Universal Compatibility:** Standard backside layout (with aligned battery pads, and debugger pads) for more to-be-released XIAO expansion boards
- **Classic XIAO Form Factor:** 21 x 17.8mm design with 2.54mm pin headers, single-sided mounting for wearables and space-constrained projects
- **XIAO Accessory Add-ons Compatibility:** Natively compatible with all the [XIAO accessory add-ons of expansion, connectivity modules](#) (LoRa, CAN_Bus, RS-485), sensors (2-Mic Array, Vision AI, mmWave Motion, Environmental sensing), and actuators (ePaper display, LED Matrix, relay and more).

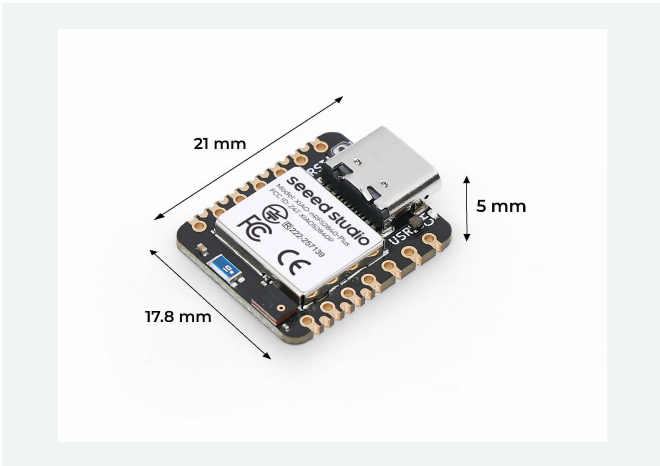
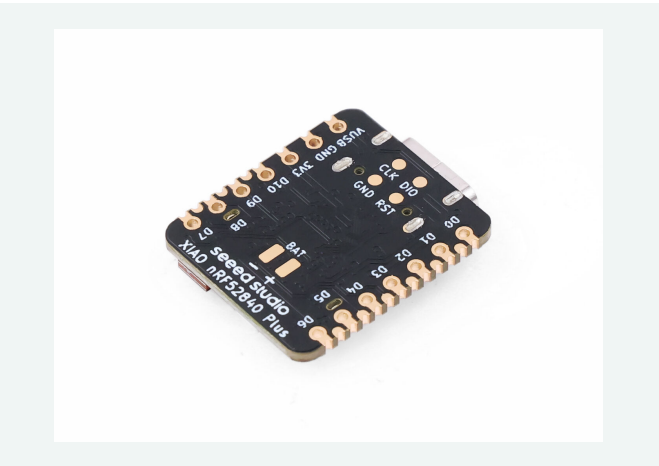
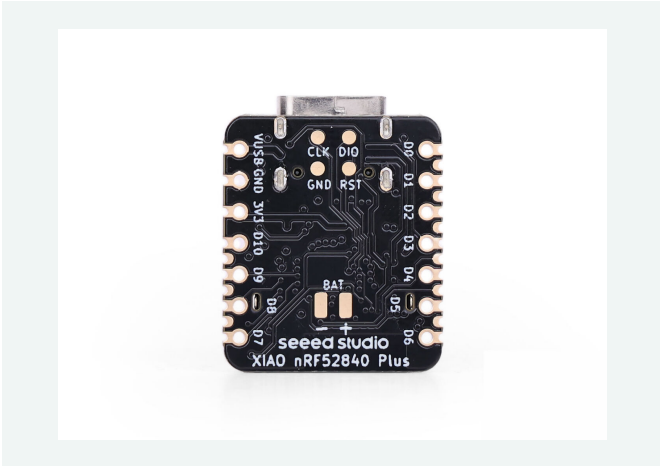
Production-Ready Design with Fusion PCBA Support

As a new addition to the [Seeed Studio XIAO family](#), the XIAO nRF52840 Plus remains the classic XIAO design (thumb-size, SMD, stamp holes). All these features make it a perfect fit for either space-limited applications, or a production-ready System on Module (SoM) 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.

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

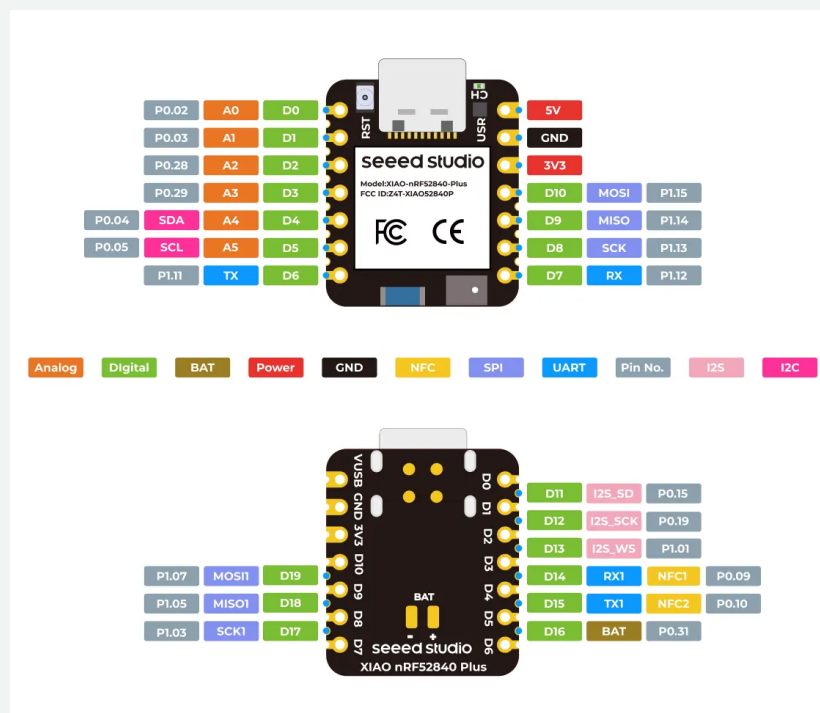
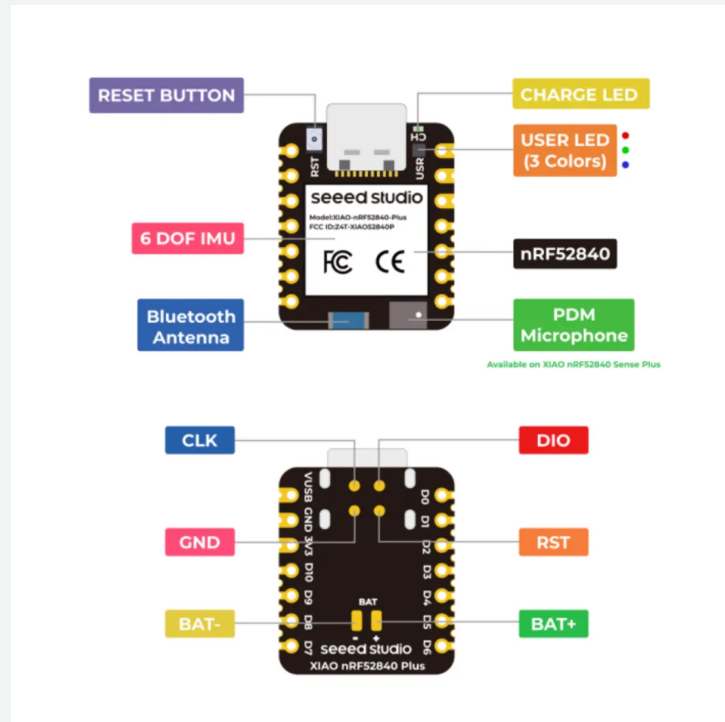


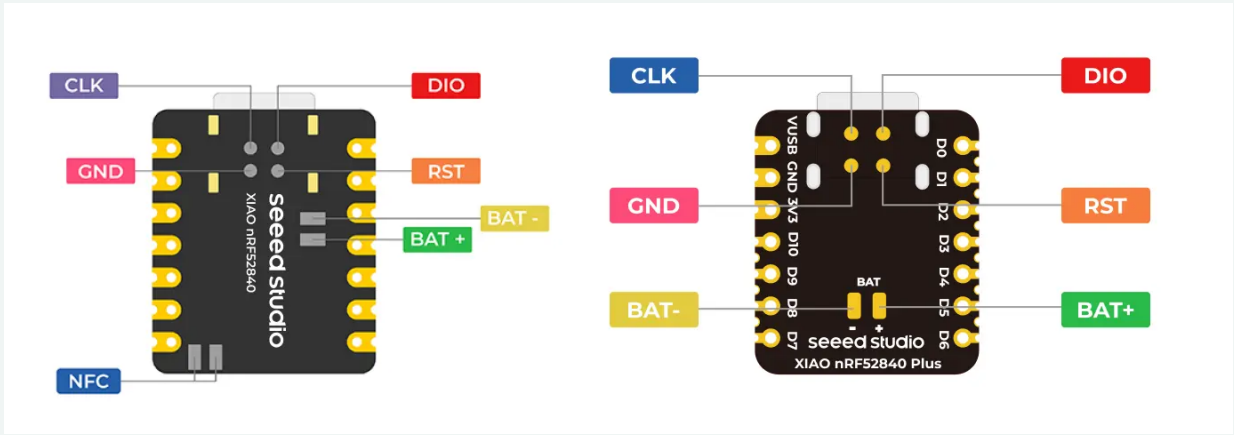
Specification

Item	Seeed Studio XIAO nRF52840	Seeed Studio XIAO nRF52840 Sense Plus	Seeed Studio XIAO nRF52840 Plus
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Processor	Nordic nRF52840, ARM® Cortex®-M4 32-bit processor with FPU, 64 MHz		
Wireless Connectivity	Bluetooth Low Energy 5.4/Bluetooth Mesh/NFC		
Memory	256KB RAM,1MB Flash 2MB onboard Flash		
Built-in Sensors	N/A	1x6 DOF IMU (LSM6DS3TR-C) 1xPDM Microphone	N/A
Interfaces	1xI2C 1xUART 1xSPI	1xI2C 2xUART 2xSPI 1xI2S	
PWM/Analog Pins	11/6	20/6	
Onboard Buttons	1x Reset Button 1x User Button		
Onboard LEDs	1x 3-in-one LED 1x Charge LED		
Battery Charge Chip	BQ25101		
Programming Languages	Arduino/MicroPython/ CircuitPython		

Hardware Overview





Applications

- 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 Plus	x1
7 Pin Header	x2

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-Plus-p-6360.html>
- [PCN-XIAO Series Packaging Upgrade.pdf](#)
- [Wiki-XIAO nRF52840 Series Resources](#)
- [Seeed Studio XIAO Use Case](#)

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