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INDUSTRIAL PRODUCT DATASHEET

Seeed Studio XIAO nRF54L15 Sense

XIAO nRF54L15Sense is a powerful yet compact development board built around Nordic's nRF54L15 SoC, featuring a 128 MHz Arm Cortex-M33 core with 1.5 MB NVM.

SKU	UPDATED	PRICE
101991422	2026-11-11 09:19:28	$15.90(Excl. VAT)



Overview



XIAO nRF54L15Sense is a powerful yet compact development board built around Nordic's nRF54L15 SoC, featuring a 128 MHz Arm Cortex-M33 core with 1.5 MB NVM. This thumb-sized board excels in modern IoT applications with comprehensive wireless connectivity including BLE 6.0, Matter, Thread, Zigbee, and Amazon Sidewalk protocols. With ultra-low power consumption, it's ideal for battery-powered IoT devices. The tiny board offers 14 GPIOs, USB Type-C interface, and onboard battery charging capabilities. This version integrates an onboard digital microphone and a 6-axis IMU for audio and motion sensing.Enhanced security features ensure robust protection for IoT deployments. Developers can leverage the Nordic nRF Connect SDK and PlatformIO with Zephyr RTOS support for efficient development workflows.

Key Features

01 **Powerful SoC with Advanced Connectivity & Security**

02 **Ultra-Low Power Efficiency**

03 **Audio and Motion Sensing**

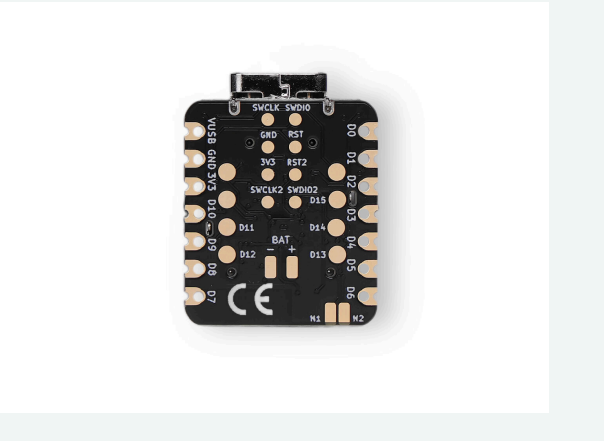
04 **Streamlined Development Experience**

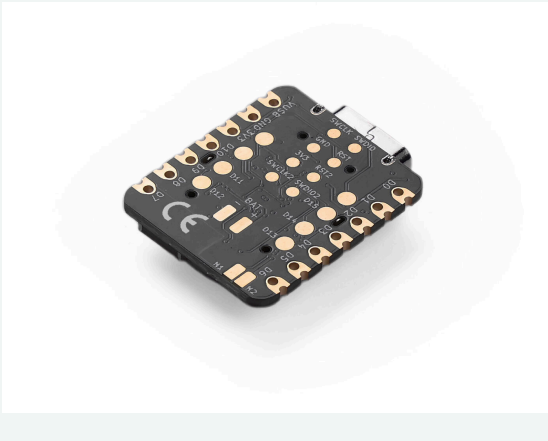
05 **Production-Ready Design with PCBA Support**

Product Gallery



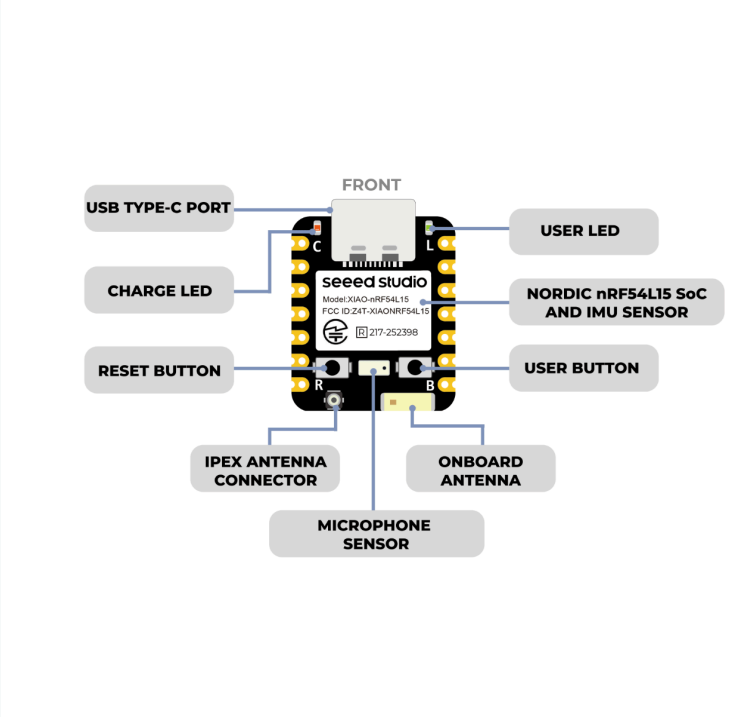


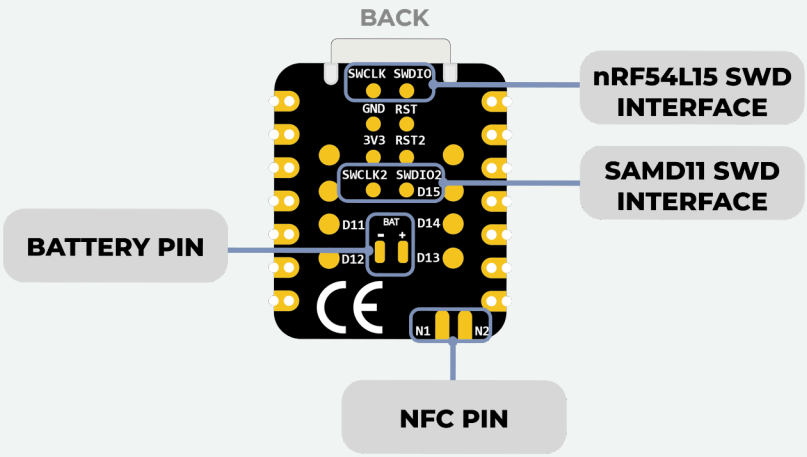


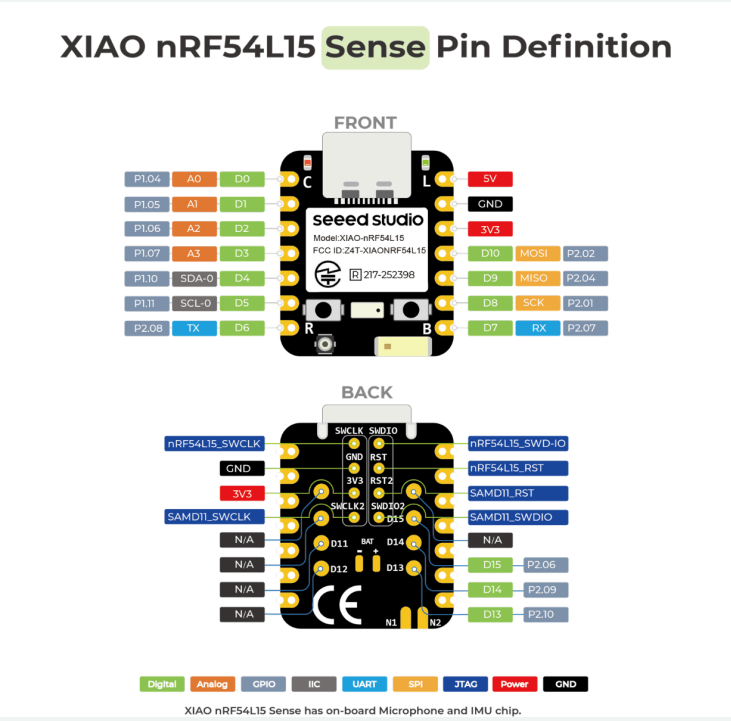




Hardware Overview







XIAO nRF54L15 Sense has on-board Microphone and IMU chip.

Applications

- **Wearable Devices:** Create intelligent wearables for all-day use, from fitness trackers that perform complex sensor fusion to secure smart rings that support gesture control and NFC payments.
- **Smart Home & IoT Hubs:** Build a secure Matter-Thread border router or a central hub that bridges multiple wireless protocols, with the capability to handle voice commands via wake-word detection.
- **Industrial IoT (IIoT) Sensors:** Develop intelligent industrial sensors that perform on-device TinyML for predictive maintenance, while ensuring data integrity and device security with hardware-level protection.
- **Advanced Prototyping:** Function as a versatile developer tool for debugging multi-protocol networks or rapidly creating proof-of-concept designs for secure, low-power wireless products.

Resource Links

- https://www.seeedstudio.com/XIAO-nRF54L15-Sense-p-6494.html
- Wiki-XIAO nRF54L15 Series Resources
- Seeed Studio XIAO Use Case

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