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How are Nordic smart micro-modules



Overview

It''s designed for smart meters, trackers, labels, industrial sensors, and wearables with multi-year battery life.

Key Takeaways

Nordic smart micro-modules are compact, highly integrated IoT modules offering ultra-low-power cellular connectivity, edge AI, GNSS positioning, and seamless integration with MicroMod ecosystems.Overview

Nordic Semiconductor's smart micro-modules, such as the nRF9151 MicroMod Processor, are designed to simplify IoT development by combining multiple functionalities into a single compact module. These modules integrate LTE-M, NB-IoT, satellite NTN, DECT-NR+, and GNSS capabilities, enabling global connectivity for applications like asset tracking, smart meters, industrial sensors, and wearables with multi-year battery life .

Key Features
• Connectivity: Supports LTE-M, NB-IoT, Cat 1 bis, and satellite non-terrestrial networks (NTN), ensuring reliable communication even in remote areas .

• Edge AI: Equipped with Nordic's Axon Neural Processing Unit (NPU) for on-device AI processing, allowing intelligent sensor data handling without cloud dependency .

• GNSS & Locationing: Multi-constellation GNSS receivers and Wi-Fi positioning provide precise location tracking for IoT devices .

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• Power Efficiency: Ultra-low-power design enables long battery life, critical for devices deployed in the field for years .

• Integration: Compatible with SparkFun's MicroMod standard, allowing easy swapping of processor modules without redesigning the carrier board .

• Memory & Expansion: Includes external flash for over-the-air firmware updates and GPIO expanders to access nearly all MicroMod pins .

Development and Ecosystem

Nordic smart micro-modules are designed for rapid prototyping and scalable deployment. They can be paired with carrier boards in Arduino UNO-style or MicroMod form factors, providing additional interfaces like USB-UART bridges, Qwiic headers, and debug support. The modules are compatible with nRF Cloud for device management, firmware updates, and location services, streamlining IoT deployment .

Applications

These modules are ideal for:

• Industrial IoT: Sensors, trackers, and smart meters with long battery life and edge AI processing .

• Wearables: Compact, low-power devices requiring global connectivity .

• Remote Infrastructure: Satellite-enabled modules maintain connectivity in areas without public networks .

• Hobbyist and Open-Source Projects: MicroMod compatibility allows flexible experimentation and easy upgrades .

Conclusion

Nordic smart micro-modules provide a highly integrated, power-efficient, and versatile solution for modern IoT applications. Their combination of cellular connectivity, edge AI, GNSS, and MicroMod ecosystem compatibility makes them suitable for both professional and hobbyist developers seeking scalable, long-lasting, and globally connected devices .

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Article Content

Products

Low-power cellular IoT modules and SoCs supporting LTE-M and NB-IoT. Accelerate development with Nordic''s secure, scalable

Low power cellular IoT

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Nordic Semiconductor Modules

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ALMA-B2 Bluetooth LE Modules for Edge ML IoT

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Nordic debuts multiple cellular IoT products

It combines a high-performance application MCU with Axon neural processing units, a multi-constellation GNSS

Nordic Cellular IoT Solutions | Avnet

The Nordic Thingy:91 is an easy-to-use battery-operated prototyping platform for cellular IoT using LTE-M, NB-IoT and GNSS. It is

Nordic Semiconductor Unveils Its Most Complete Low-Power Cellular

Nordic Semiconductor launched its nRF92 and nRF93 Series at MWC 2026, expanding its low-power cellular IoT

Nordic Semiconductor Expands Cellular IoT Portfolio

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It combines a high-performance application microcontroller with ultra-low-power edge AI processing enabled by

nRF9160 SiP

Nordic''s nRF9160 SiP offers a wide selection of general interfaces and peripherals for compact, complete, and energy

3rd-party modules

Today, many of the world''s best-known module manufacturers offer modules/modems based on Nordic

nRF9160

For new design projects we recommend selecting the nRF9151 The nRF9160 is a compact, highly

Feature-packed smart ring modules integrate Nordic''s nRF54L15 SoC ...

Bravechip, a developer of chiplet chip-level solutions for the AIoT (Artificial Internet of Things), has launched a suite of modules

nRF52832

The nRF52832 is a general-purpose multiprotocol SoC. It meets the challenges of a broad range of applications that need advanced

Cellular IoT

Build and scale with versatile cellular IoT features: ultra-low power connectivity, global LTE-M and NB-IoT, satellite NTN access,

nRF52840

The nRF52840 is a multiprotocol Bluetooth SoC supporting Bluetooth LE, Bluetooth Mesh, NFC, Thread

nRF5340 Development Kit

Current consumption can be measured by using the dedicated current measurement pins, for example by using Nordic''s Power

Nordic Semiconductor extends NR+ non-cellular 5G mesh networking

Sub-GHz software specifically for smart grids and utility meters The support for 915 MHz operation combines Nordic''s nRF9151 SiP

Nordic Semiconductor drives successful 5G NB-IoT satellite demo with ...

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Nordic Semiconductor, a global leader in low-power wireless connectivity solutions, has participated in a successful 5G NB-IoT trial

Panasonic modules built on Nordic''s nRF54L15 SoC promise high ...

Panasonic Industry Europe''s PAN B511-1C module integrates nRF54L15 SoC to deliver enhanced functionality for Matter smart

About Nordic Semiconductor

About Nordic Semiconductor Nordic Semiconductor plays a key role in the realization of the wireless future. We remain passionately

Power Management ICs

Nordic''s PMIC technology platform consists of a broad set of power management building blocks, all

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We would like to show you a description here but the site won''t allow us.

Wi-Fi

Nordic Semiconductor is a leading provider of low-power wireless communication solutions, utilizing decades of ultra-low-power

Smart metering

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Nordic''s nRF9151: The smallest and lowest ...

Nordic Semiconductor, a global leader in low power wireless IoT solutions, today announces the availability of its smallest and lowest

Nordic Semiconductor simplifies edge AI for billions of IoT devices

Meet Nordic at CES Experience live demos of Nordic Semiconductor''s new ultra-low-power edge AI solutions at CES 2026, booth

Wearables

Wi-Fi Nordic Semiconductor is a leading provider of low-power wireless communication solutions, utilizing decades of

DECT NR+

DECT NR+ (NR+) is a non-cellular radio standard recently included as part of the 5G standards by the ITU. Thus, making it the

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nRF52840

Everything you need to get started with the nRF52840 Bluetooth 5.4 SoC supporting Bluetooth Low Energy, Bluetooth mesh, NFC,

Wireless

Wi-Fi Nordic Semiconductor is a leading provider of low-power wireless communication solutions, utilizing decades of ultra-low

nRF9151

The nRF9151 module sets a new standard for highly integrated and compact System-in-Package (SiP) solutions, specifically

Nordic Semiconductor accelerates cellular IoT leadership with major

Nordic is also introducing the nRF91M1 module - a compact, easy-to-use Smart Modem solution for customers seeking

nRF52840

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