

Article Overview

Nordic Micro Modules, such as the nRF9151 MicroMod Processor, are compact, highly integrated IoT modules offering versatile connectivity and easy integration into the MicroMod ecosystem.

Overview

Nordic Micro Modules, particularly the nRF9151 MicroMod Processor, are built around Nordic Semiconductor's nRF9151 System-in-Package (SiP). These modules are designed for cellular IoT applications and support a wide range of connectivity options, including LTE-M, NB-IoT, NB-NTN (satellite IoT), DECT NR+, and GNSS for precise location tracking . The module measures 22 x 22 mm and uses an M.2 E-Key connector, making it compatible with SparkFun's MicroMod carrier boards and allowing developers to swap processor modules without redesigning the entire board .

Key Features

- o Processor and Memory: Arm Cortex-M33 core, 8 MB flash storage for over-the-air (OTA) updates, and 256 kB SRAM .
- o Connectivity: Global LTE-M, NB-IoT, NB-NTN, DECT NR+, and GNSS support, enabling both terrestrial and satellite IoT applications .
- o Power Efficiency: Low-power design suitable for battery-operated devices, with support for multiple power classes (Power Class 3 23 dBm and Power Class 5 20 dBm) for flexible design .
- o GPIO and Expansion: Includes a 16-bit open-drain GPIO expander, providing access to nearly all MicroMod pins despite the compact form factor .
- o Development Support: Compatible with MicroMod Dev Carrier boards and supports debugging via SWD interface and CMSIS-DAP, simplifying prototyping and firmware development .

Advantages

- o Modular Design: The MicroMod standard allows developers to swap processor modules without replacing the entire development board, reducing waste and accelerating prototyping .
- o Versatility: Supports multiple wireless standards and GNSS, making it suitable for industrial automation, asset tracking, smart cities, and agriculture .
- o OTA Updates: External flash memory enables reliable firmware updates in deployed devices, critical for IoT applications .
- o Open Ecosystem: The MicroMod standard is open, allowing third-party developers to create compatible modules and carriers .

Development and Software



Nordic Micro-Module Solutions

Nordic Micro Modules are supported by Zephyr RTOS, providing examples for battery measurement, dynamic pin control, Bluetooth Mesh, and other IoT functionalities . This makes them suitable for both hobbyist and professional embedded projects.

Summary

Nordic Micro Modules, particularly the nRF9151 MicroMod Processor, offer a compact, low-power, and highly connected solution for IoT applications. Their modular design, broad connectivity options, and development support make them ideal for rapid prototyping and scalable deployment in both hobbyist and industrial contexts .

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Electronic and embedded engineer Christian Hirsch is preparing to launch a MicroMod Processor based around the

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nRF9151 System-in-Package Low power SiP with integrated LTE-M/NB-IoT/NTN and DECT NR+ modem, and GNSS The nRF9151



Nordic Micro-Module Solutions

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Sercomm Corporation, a global leading provider of embedded connectivity and integrated networking solutions, has launched a high

SDK and Android app source codes are available for download in the Bluetooth 5 Codes section of Download BlueNor Document.

Based on Nordic Semiconductor's ultra-low-power wireless nRF54LM20 series, the u-blox

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