

Bluetooth LE Module **ME54BS0A**



Datasheet

V 1.0.0



ME54BS0A

High-Sensitivity, Multi-Protocol Bluetooth 6.0 PA Module (PCB / U.FL Antenna Options)

The ME54BS0A is an ultra-low-power and high-performance Bluetooth module built on the Nordic nRF54L15 SoC and nRF21540 RF FEM. It integrates an Arm® Cortex-M33 processor running at 128 MHz, along with 1.5 MB NVM and 256 KB RAM, providing strong computing and storage capability for advanced wireless applications.

With the nRF21540 RF FEM, the module supports up to +20 dBm transmit power, delivering extended wireless range with excellent RF performance. It offers selectable PCB or U.FL antenna options, abundant GPIO resources, and a compact integrated hardware design optimized for multi-protocol operation.

Featuring ultra-low power consumption and support for Bluetooth 6.0, Bluetooth Mesh, Matter, Thread, and other protocols, the ME54BS0A is a reliable and versatile solution for next-generation, long-range Bluetooth connectivity.

FEATURES



Built-in PA/LNA



The communication distance can reach up to 800 meters



Power output up to +20 dBm



Optional PCB antenna or U.FL connector



Multi-Protocol supports: Bluetooth LE 6.0 Channel Sounding, Bluetooth Mesh, Thread, Matter, and proprietary 2.4 GHz protocols

KEY PARAMETERS

ME54BS0A

Chip Model	nRF54L15	Antenna	PCB/U.FL (MHF 1)
Module Size	18×10×1.7mm	GPIO	30
Flash	1.5MB	RAM	256 KB
Receiving Sensitivity	-96dBm	Transmission Power	~ +20dBm
Current(TX)	20dBm-150mA	Current(RX)	7mA

APPLICATIONS



Smart Home



Computer Accessories



Virtual reality and Augmented reality



Game controllers and Remotes



Medical Devices



Industrial IoT

STORAGE CONDITIONS

- **Please use this product within 6 months after signing the receipt.**
 - This product should be stored without opening the package at an ambient temperature of 5~35°C and a humidity of 20~70%RH.
 - This product should be left for more than 6 months after receipt and should be confirmed before use.
 - The product must be stored in a non-corrosive gas (Cl₂, NH₃, SO₂, NO_x, etc.).
 - To avoid damaging the packaging material, do not apply any excessive mechanical shocks, including but not limited to sharp objects adhering to the packaging material and product dropping.
- **This product is suitable for MSL2 (based on JEDEC standard J-STD-020).**
 - After opening the package, the product must be stored at ≤30°C/<60%RH. It is recommended to use the product within 3-6 months after opening the package.
 - When the color of the indicator in the package changes, the product should be baked before welding.
- **Baking is not required for one year if exposure is limited to <30°C and 60%RH. Refer to MSL2 for exposure criteria for moisture sensitivity level. If exposed to (≥168h@85°C/60%RH) conditions or stored for more than one year, recommended baking conditions.**
 1. 120 +5/-5°C, 8 hours, 1 time
Products must be baked individually on heat-resistant trays because the materials (base tape, reel tape, and cover tape) are not heat-resistant, and the packaging material may be deformed at temperatures of 120°C;
 2. 90°C +8/-0°C, 24hours, 1times
The base tape can be baked together with the product at this temperature. Please pay attention to the uniformity of heat.

HANDLING CONDITIONS

- Be careful in handling or transporting products because excessive stress or mechanical shock may break products.
- Handle with care if products may have cracks or damages on their terminals. If there is any such damage, the characteristics of products may change. Do not touch products with bare hands that may result in poor solderability and destroy by static electrical charge.

QUALITY

Cognizant of our commitment to quality, we operate our own factory equipped with state-of-the-art production facilities and a meticulous quality management system. We hold certifications for ISO9001, ISO14001, ISO27001, OHSAS18001, BSCI.

Every product undergoes stringent testing, including transmit power, sensitivity, power consumption, stability, and aging tests. Our fully automated module production line is now in full operation, boasting a production capacity in the millions, capable of meeting high-volume production demands.

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SHENZHEN MINEWSEMI CO., LTD.



0086-755-2801 0353



<https://minewsemi.com>



minewsemi@minew.com



<https://store.minewsemi.com>



Gangzhilong Technology Park, Qinglong Road, Longhua District, Shenzhen