

Bluetooth LE Module **ME54BS12**



Datasheet

V 1.0.0



ME54BS12-nRF54L05

Highly Flexible, Cost-effective, Ultra-low Power Bluetooth Module

The ME54BS12 is a highly flexible, ultra-low-power, and cost-effective Bluetooth module based on the nRF54L05. It features a powerful Arm® Cortex®-M33 CPU running at up to 128 MHz, along with 0.5 MB of NVM and 96 KB of RAM. The hardware includes an onboard antenna with an integrated design that highlights the enhanced performance of the nRF54 series. It also offers more GPIOs for development, ultra-low system power consumption, excellent RF performance, and a range of powerful supporting resources, making it an ideal solution for Bluetooth connectivity.

FEATURES



Bluetooth 6.0



High cost
Performance



Ultra-low
Power



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

KEY PARAMETER

ME54BS12			
Chip Model	nRF54L05	Antenna	PCB
Module Size	15.8×12×2mm	GPIO	29
Flash	0.5MB	RAM	96 KB
Receiving Sensitivity	-96dBm	Transmission Power	-40 ~ +7dBm
Current(TX)	0dBm-5mA	Current(RX)	3.2mA

APPLICATION



Smart Home



Computer Accessories



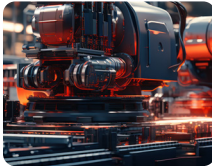
Virtual reality and Augmented reality



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 solder ability 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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RELATED DOCUMENTS

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