MINEWSEMI

LoRaWAN Module

ME25LS03

Datasheet

V 1.0.0

ME25LS03-SX1262/LLCC68+nRF54L15

Compact, long-range, ultra-low-power, supporting BLE 6.0 and LoRaWAN

ME25LS03 is a high-performance, long-range, ultra-low-power, and compact wireless module that supports multiple protocols, including BLE 6.0 and LoRaWAN. It features 256 KB RAM and 1.5 MB Flash, providing ample storage for complex applications.

The module offers excellent receiver sensitivity, reaching -104 dBm (BLE) and -146 dBm (LoRa), with a maximum transmit power of +8 dBm (BLE) and +22 dBm (LoRa), enabling reliable long-distance communication. Powered at 3.3 V, the ME25LS03 includes a built-in 32 kHz crystal and provides a rich set of GPIO interfaces.

Additionally, it is supported by a fully open development platform, making it suitable for customization and secondary development to meet diverse application requirements.

FEATURES

- Dual-Core Architecture: Arm® Cortex-M33 + RISC-V
- Ultra-Low-Power Design: Optimized dual-chip low-power architecture
- High Reliability: Integrated TXCO ensures stable and accurate frequency performance
- Rich Interfaces: USB, UART, I2C, and multiple GPIOs for flexible expansion
- Open Development Support: Fully open-source platform enables secondary development and customized applications

KEY PARAMETERS

ME25LS03			
Chip Model	SX1262/LLCC68 +nRF54L15	**Antenna**	2.4G:PCB/U.FL LoRa:ANT PIN
Module Size	25x15x3.2mm	**GPIO**	25
Flash	1.5MB	**RAM**	256KB
Receiving Sensitivity	BLE:-104dB，125Kbps LoRa:-146dBm(SX1262) -125dBm(LLCC68)	**Transmission Power**	BLE:-40-+8dBm LoRa: +15~+22dBm
Current(TX)	159mA	**Current(RX)**	16.59mA

APPLICATION

Agricultural Automation

Asset Tracking

Inventory Management

Livestock Tracking

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 (CI2, NH3, SO2, NOx, 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℃;
  2、90℃ +8/-0℃, 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, OHSA18001, 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.

COPYRIGHT STATEMENT

RELATED DOCUMENTS

- MinewSemi_Product_Naming_Reference_Manual
  https://en.minewsemi.com/file/MinewSemi_Product_Naming_Reference_Manual_EN.pdf
- MinewSemi_Connectivity_Module_Catalogue
  https://en.minewsemi.com/file/MinewSemi_Connectivity_Module_Catalogue_EN.pdf

For product change notifications and regular updates of Minewsemi documentation, please register on our website: **www.minewsemi.com**

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