

**MINESMI**

# LoRaWAN Module

## ME25LS03



### Datasheet

v 1.0.0

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# 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 develop-  
ment and customized  
applications

## KEY PARAMETERS

### ME25LS03

<b>Chip Model</b>	SX1262/LLCC68 +nRF54L15	<b>Antenna</b>	2.4G:PCB/U.FL LoRa:ANT PIN
<b>Module Size</b>	25x15x3.2mm	<b>GPIO</b>	25
<b>Flash</b>	1.5MB	<b>RAM</b>	256KB
<b>Receiving Sensitivity</b>	BLE:-104dB, 125Kbps LoRa:-146dBm(SX1262) -125dBm(LLCC68)	<b>Transmission Power</b>	BLE:-40~+8dBm LoRa: +15~+22dBm
<b>Current(TX)</b>	159mA	<b>Current(RX)</b>	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 (Cl<sub>2</sub>, NH<sub>3</sub>, SO<sub>2</sub>, NO<sub>x</sub>, 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  $\leq 30^{\circ}\text{C}/<60\%\text{RH}$ . 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  $<30^{\circ}\text{C}$  and 60%RH. Refer to MSL2 for exposure criteria for moisture sensitivity level. If exposed to ( $\geq 168\text{h}@85^{\circ}\text{C}/60\%\text{RH}$ ) conditions or stored for more than one year, recommended baking conditions.
  1.  $120^{\circ}\text{C} +5/-5^{\circ}\text{C}$ , 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  $120^{\circ}\text{C}$ ;
  2.  $90^{\circ}\text{C} +8/-0^{\circ}\text{C}$ , 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

- MinewSemi\_Product\_Naming\_Reference\_Manual  
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