MINEWSEMI

Development Board Instructions

MX25LE01

Datasheet

V 1.0.0

Version Note

Version	Details	Contributor(s)	Date	Notes
1.0.0	First edit	Vincle	2025.07.24	

Part Number

Model	Hardware Code
MX25LE01	-

Click the icon to view and download the latest product documents electronically.
https://en.minewsemi.com/file/Development_Board_MX25LE01_Datasheet_EN.pdf

INDEX

1 GENERAL DESCRIPTION

1.1 Development Board Description

The MX25LE01 is a functional development board for the ME25LS01 module. It supports direct power supply via a Type-C interface. To facilitate module development and usage, the board is equipped with several buttons, switches, control features, and indicator LEDs, making it more convenient for testing and other operations during the development process.

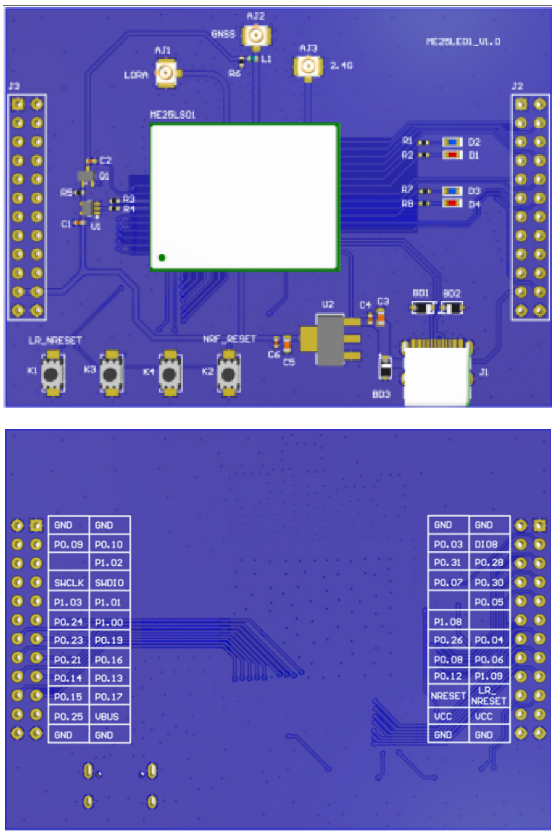
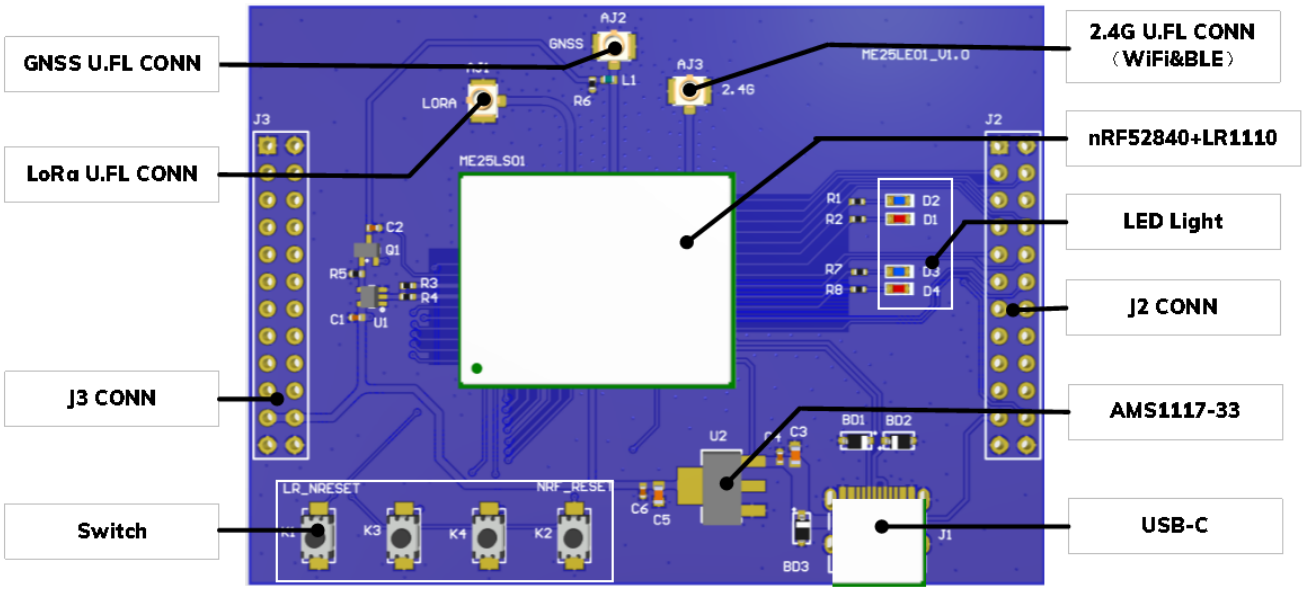


Figure 1 ME25LE01 Front/Rear

1.2 Parameter Description

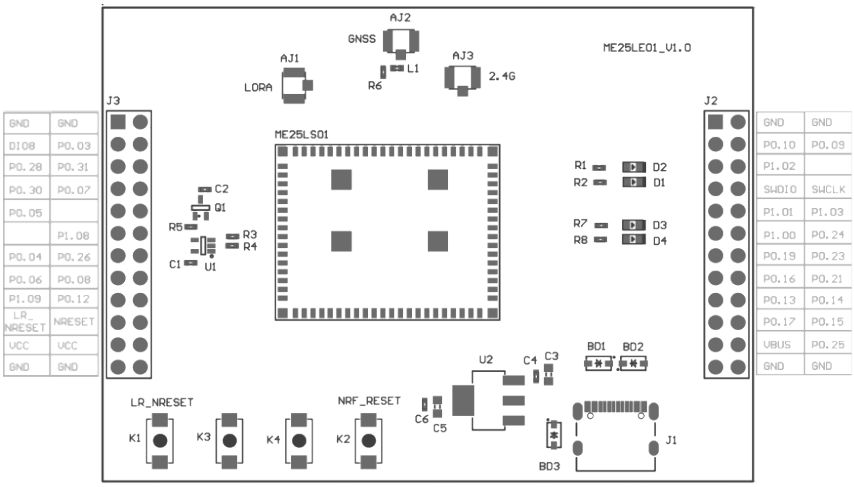
Parameter	Value	Notes
ME25LS01 Module Operating Voltage	1.7V - 5.5V	To ensure RF operation, a 3.3V power supply voltage is recommended, and the voltage should not be lower than 3V.
ME25LS01 Module Dimensions	25.5x20.0x2.5mm	Module dimensions: length x width x height (mm).
MX25LE01 Development Board Dimensions	74.0x54.0x13.0mm	Including pin header terminal and board thickness height; pin header terminal plus pin header maximum height dimensions are 74.0x54.0x13.0mm. The size of the PCB board is74.0x68.0x1.0mm.

2 MX25LE01 FUNCTIONAL ANNOTATION



Symbol	Type	Definition
K1	Reset key	LoRa reset key
K2	Reset key	BLE R reset key
K3	Key	Pin switch
K4	Key	Pin switch
D1	LED indicator light	Connection indicator light
D2	LED indicator light	Connection indicator light
D3	LED indicator light	Connection indicator light
D4	LED indicator light	Connection indicator light
J2	Module lead pins	Consistent with the pin function of the module
J3	Module lead pins	Consistent with the pin function of the module
AMS1117-33	LDO	3.3V LDO
USB-C	Type-C supply power interface	Type-C supply power interface, standard 5V power supply, support Nordic USB function

3 MX25LE01 PIN DEFINITION



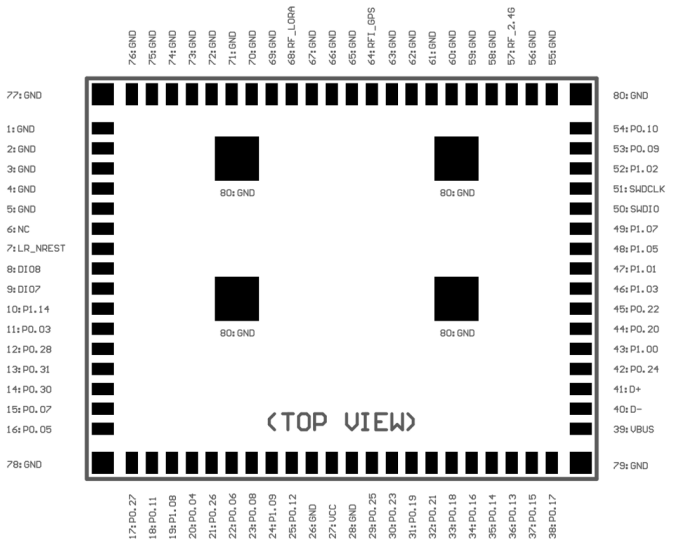
Pin Number	Symbol	Type	Definition
J2	GND	Ground	Grounding
J2	P0.10	I/O	General-Purpose I/O (GPIO) pin
J2	P1.02	I/O	General-Purpose I/O (GPIO) pin
J2	SWDIO	I/O, software download	Software download pin, data input and output pin
J2	P1.01	I/O	General-Purpose I/O (GPIO) pin
J2	P1.00	I/O	General-Purpose I/O (GPIO) pin
J2	P0.19	I/O	General-Purpose I/O (GPIO) pin
J2	P0.16	I/O	General-Purpose I/O (GPIO) pin
J2	P0.13	I/O	General-Purpose I/O (GPIO) pin
J2	P0.17	I/O	General-Purpose I/O (GPIO) pin
J2	VBUS	Power Supply	Power supply conversion access required for USB port
J2	GND	Ground	Grounding
J2	GND	Ground	Grounding
J2	P0.09	I/O	General-Purpose I/O (GPIO) pin
J2	NC	NC	Empty pin
J2	SWCLK	IO, software download	software download，Clock pin
J2	P1.03	I/O	General-Purpose I/O (GPIO) pin
J2	P0.24	I/O	General-Purpose I/O (GPIO) pin
J2	P0.23	I/O	General-Purpose I/O (GPIO) pin

Pin Number	Symbol	Type	Definition
J2	P0.21	I/O	General-Purpose I/O (GPIO) pin
J2	P0.14	I/O	General-Purpose I/O (GPIO) pin
J2	P0.15	I/O	General-Purpose I/O (GPIO) pin
J2	P0.25	I/O	General-Purpose I/O (GPIO) pin
J2	GND	Ground	Grounding
J3	GND	Ground	Grounding
J3	DI08	I/O	General-Purpose I/O (GPIO) pin
J3	P0.28	I/O	General-Purpose I/O (GPIO) pin
J3	P0.30	I/O	General-Purpose I/O (GPIO) pin
J3	P0.05	I/O	General-Purpose I/O (GPIO) pin
J3	NC	NC	Empty pin
J3	P0.04	I/O	General-Purpose I/O (GPIO) pin
J3	P0.06	I/O	General-Purpose I/O (GPIO) pin
J3	P1.09	I/O	General-Purpose I/O (GPIO) pin
J3	LR_NRESET	Reset	LoRa reset pin
J3	VCC	Power Supply	Power supply pin, 3.3V power supply voltage
J3	GND	Ground	Grounding
J3	GND	Ground	Grounding
J3	P0.03	I/O	General-Purpose I/O (GPIO) pin
J3	P0.31	I/O	General-Purpose I/O (GPIO) pin
J3	P0.07	I/O	General-Purpose I/O (GPIO) pin
J3	NC	NC	Empty pin
J3	P1.08	I/O	General-Purpose I/O (GPIO) pin
J3	P0.26	I/O	General-Purpose I/O (GPIO) pin
J3	P0.08	I/O	General-Purpose I/O (GPIO) pin
J3	P0.12	I/O	General-Purpose I/O (GPIO) pin
J3	NRESET	Reset	BLE reset pin
J3	VCC	Power Supply	Supply power
J3	GND	Ground	Grounding

Note: The pin definitions in the above table are based on the general-purpose passthrough firmware for module applications. Actual pin functions may vary depending on the specific module. Please refer to the module's datasheet for accurate information.

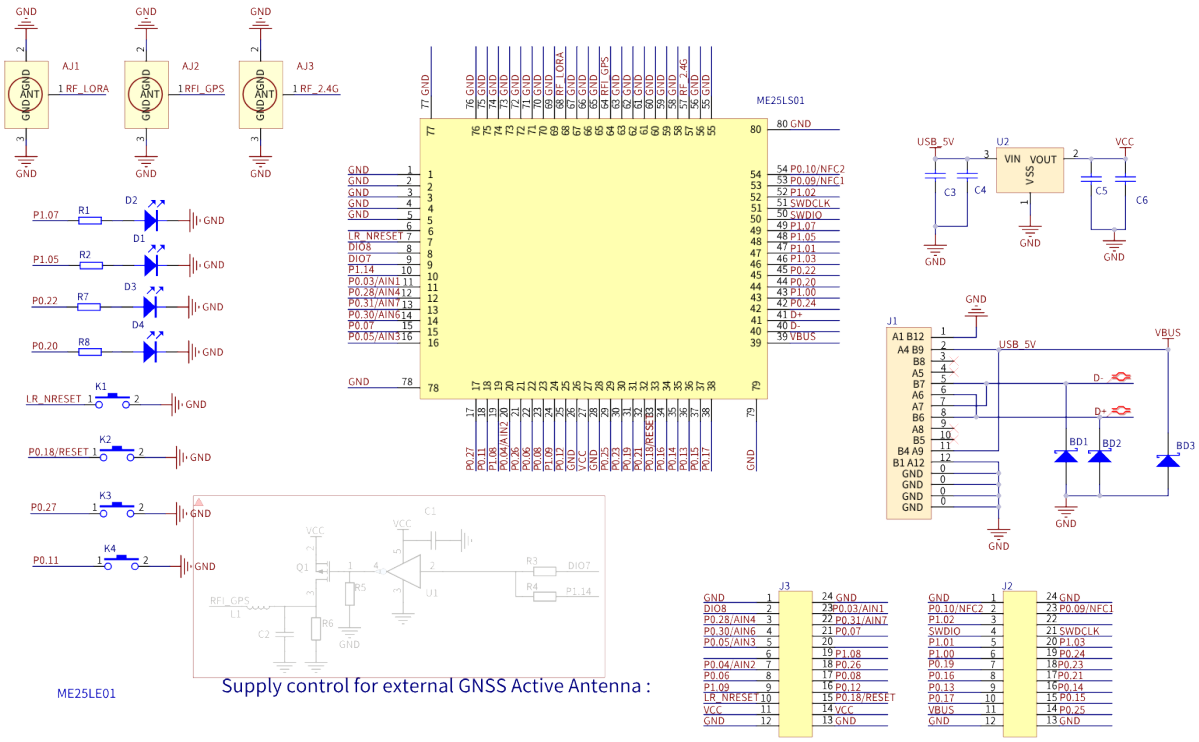
4 APPLICABLE MODULE PIN DEFINITION

4.1 ME25LS01 Pin Definition

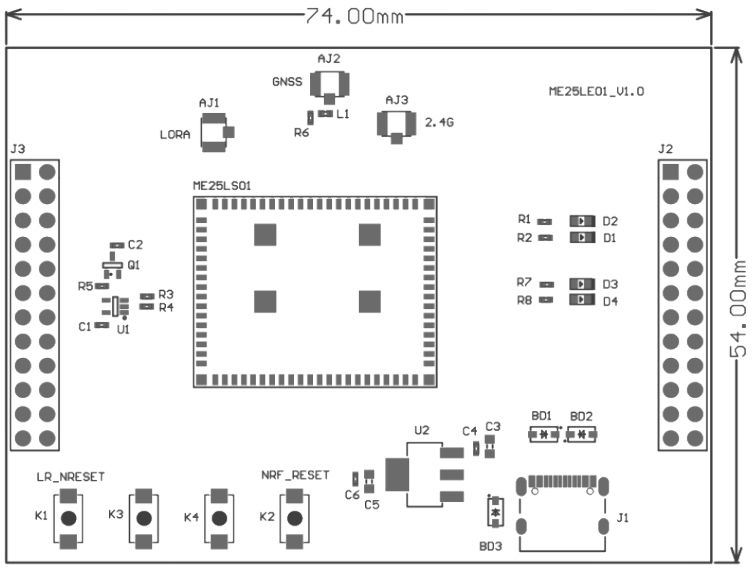


Symbol	Type	Definition
VCC	Power Supply	Power supply: 1.7V–3.6V, use this pin for power input (VDD and VDDH are internally connected)
VBUS	Power Supply	Power supply conversion access required for USB port
GND	Ground	Grounding
SWCLK/SWDIO	Programming Pins	Programming pin, when programming, just connect the power supply pin, ground, and these two pins
P0.03-P0.31	I/O	General-Purpose I/O (GPIO) pin (P0.18 is BLE reset pin)
P1.00-P1.03	I/O	General-Purpose I/O (GPIO) pin (P0.18 is BLE reset pin)
P1.07-P1.09-	I/O	General-Purpose I/O (GPIO) pin (P0.18 is BLE reset pin)
P1.05/P1.14	I/O	General-Purpose I/O (GPIO) pin (P0.18 is BLE reset pin)
DIO7-DIO8	I/O	General-Purpose I/O (GPIO) pin (P0.18 is BLE reset pin)
D+	Digital interface	USB D+
D-	Digital interface	USB D-
LR-NREST	Reset	LoRa reset pin
RF-LORA	RF	LoRa antenna pin
RF-GPS	RF	GNSS antenna pin (GPS/BDS)
RF-2.4G	RF	2.4G antenna pin
NC	NC	Empty pin

5 ELECTRICAL SCHEMATIC



6 MECHANICAL DRAWING



7 APPLICABLE PRODUCT MODELS

Order Model	Antenna Type
ME25LS01	Module
MX25LE01	Module Development Board

8 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, 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.

9 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.

10 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.

11 COPYRIGHT STATEMENT

This manual and all the contents contained in it are owned by Shenzhen Minewsemi Co., Ltd. and are protected by Chinese laws and applicable international conventions related to copyright laws.

The certified trademarks included in this product and related documents have been licensed for use by MinewSemi. This includes but is not limited to certifications such as BQB, RoHS, REACH, CE, FCC, BQB, IC, SRRC, TELEC, WPC, RCM, WEEE, etc. The respective textual trademarks and logos belong to their respective owners. For example, the Bluetooth® textual trademark and logo are owned by Bluetooth SIG, Inc. Other trademarks and trade names are those of their respective owners. Due to the small size of the module product, the "®" symbol is omitted from the Bluetooth Primary Trademarks information in compliance with regulations.

The company has the right to change the content of this manual according to the technological development, and the revised version will not be notified otherwise. Without the written permission and authorization of the company, any individual, company, or organization shall not modify the contents of this manual or use part or all of the contents of this manual in other ways. Violators will be held accountable in accordance with the law.

12 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**

MINEWSEMI
Innovative IoT Module Expert

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