E15-LW-T2 User Manual

GNSS LoRaWAN Adapter Board



Chengdu Ebyte Electronic Technology Co.,Ltd.

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1. Module Introduction

1.1 Features Introduction

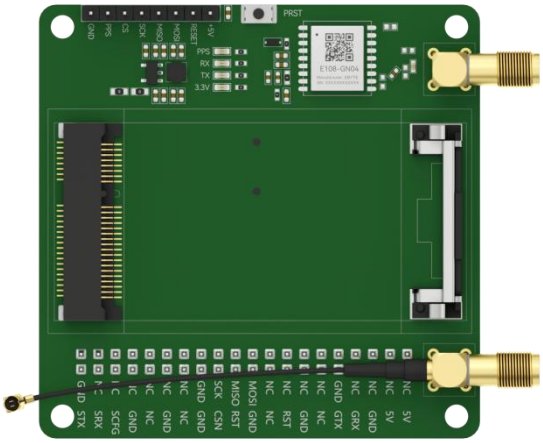


Figure 1: Module physical drawing

The E15-LW-T2 is a test board developed by Chengdu Ebyte Electronic Technology for Mini PCI - e interface modules. It is mainly designed for embedded applications of our E106- series LoRa gateway modules. It is equipped with ESD protection and supports multiple systems and various baud rates. Developers can easily connect a variety of peripheral devices via jumpers according to practical requirements..

1.2 Specifications

NO.	Parameter	Value	Notes
1	Support Modules	E106-433G27P2 E106-868G27P2 E106-470G27P2 E106-915G27P2 E106-470G27P2 (1303) E106-915G27P2 (1303)	LoRa gateway modules
2	Test Board Dimension	64.5 * 56 mm	Tolerance ±0.2mm
3	Manufacturing Process	Lead-free, SMT assembly	SMT assembly is mandatory for wireless products to guarantee batch consistency and reliability
6	Operating Temperature	-40 ~ +85℃	Industrial grade
7	Operating Humidity	10% ~ 90%	Relative humidity, no condensation
8	Storage Temperature	-40 ~ +125℃	Industrial grade

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2. Functional Overview

2.1 Component Introduction

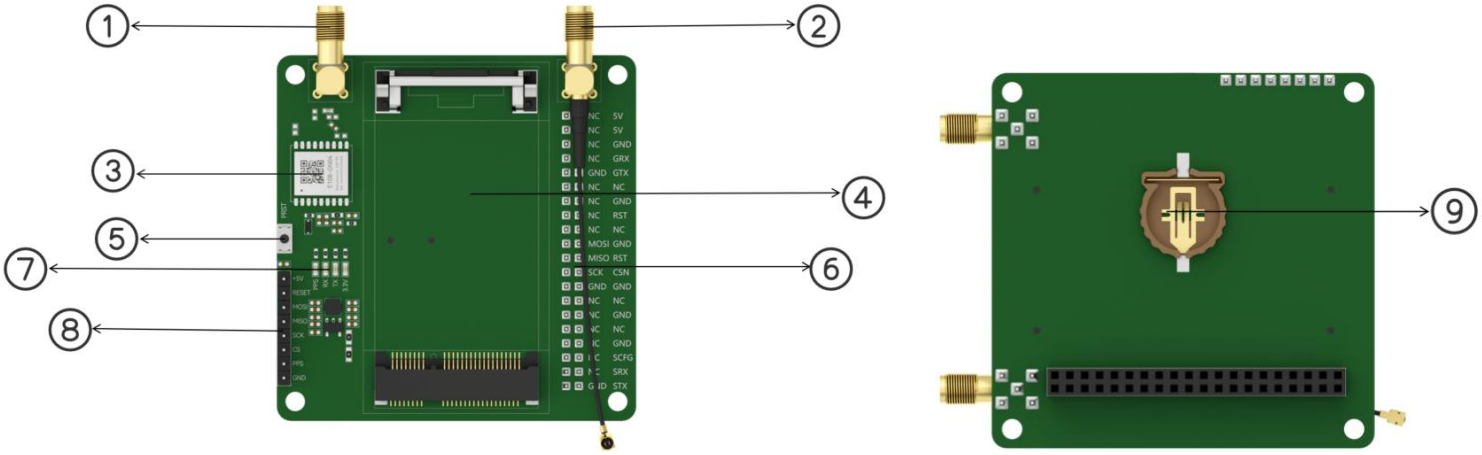


Figure 2: Main-component diagram

No.	Component Name	Description
1	GNSS antenna	SMA-K antenna mount
2	LoRa antenna	SMA-K antenna mount
3	E108-GN04	The E108-GN04 series is a high-performance, highly-integrated, low-power, low-cost multi-mode satellite positioning module. It supports BDS / GPS / GLONASS / GALILEO satellite positioning, featuring compact size and low power consumption.
4	E106-433G27P2 E106-868G27P2 E106-470G27P2 E106-915G27P2 E106-470G27P2 (1303) E106-915G27P2 (1303)	The E106- series modules are LoRa gateway RF modules built on the Semtech SX1302 / SX1303 chip solution. They adopt standard Mini PCI-e form-factor packaging with SPI interface. Modules integrate built- in PA and LNA, half-duplex design, enabling users to rapidly develop LoRa gateway equipment. The SX1302 is a new-generation LoRa gateway baseband chip from Semtech, paired with front-end SX1250, supporting spreading factors SF5 ~ SF12.
5	RESET button	Reset button
6	Female socket	2×20-2.5mm, all usable GPIO pins are brought out ; see the official schematic for details.
7	indicator lights	①3.3V: Power indicator light ②TX: Transmission indicator light ③RX: Receiver indicator light ④PPS: Satellite positioning/time synchronization status indicator
8	pin header	2.5mm pitch communication test header
9	Button battery holder	CR1220/3V button cell battery can be used

Note: For detailed functional descriptions, please refer to the E106-series module user manual, downloadable from Ebyte official website: https://www.cdebyte.com/

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2.2 Pin Definitions

The following diagram shows the dimensions and pin definitions of the E15-LW-T2:

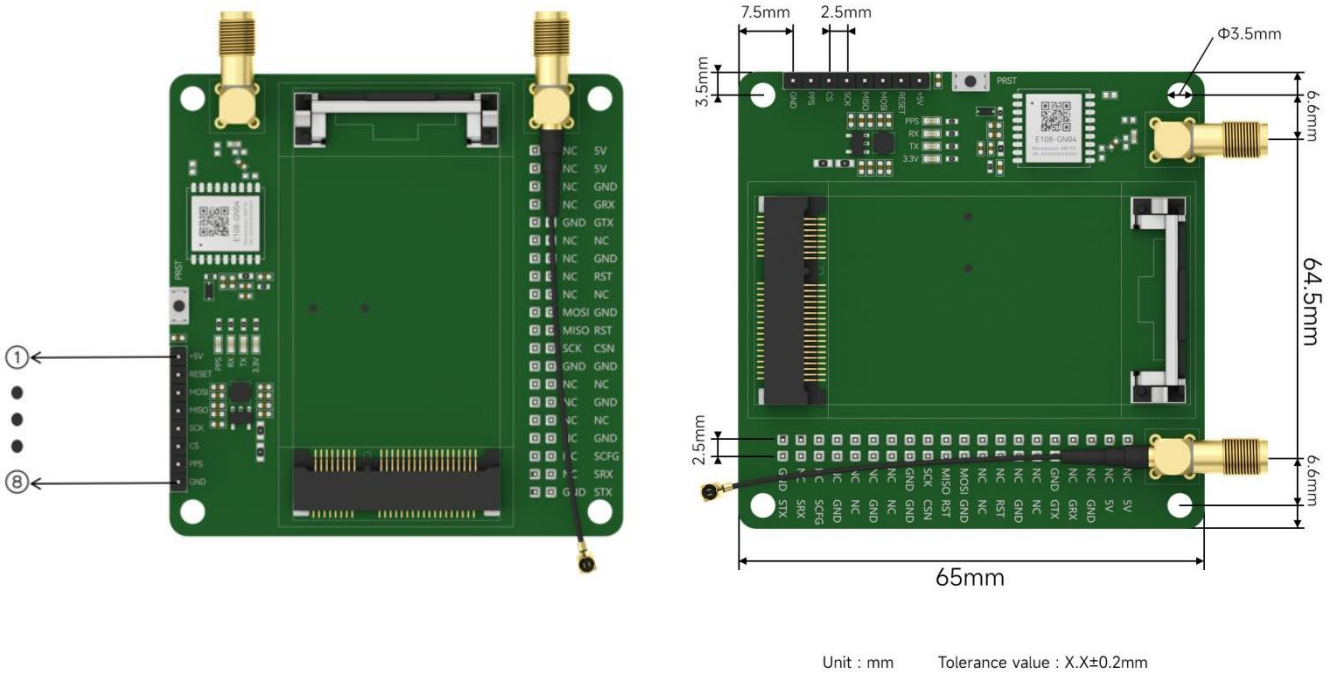


Figure 3: Current-test interface drawing

No.	Pin Name	Type	Pin Function
1	+5V	enter	Power input
2	RESET	enter	Reset button
3	MOSI	enter	SPI data input
4	MISO	Output	SPI data output
5	SCK	enter	SPI clock signal input
6	CS	enter	SPI chip select input
7	PPS	Output	GNSS time pulse signal
8	GND	-	Grounding

Note: The corresponding design schematic diagram is available for download on the Ebyte website.

3. Revision history

Version	Revision Date	Revision Notes	Maintainer
1.0	2024-4-10	Initial version	Hao

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