E77-915MBH-01 User Manual

STM32WLE5 915MHz LoRaWAN Protocol

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1. Module Introduction

1.1 Features Introduction

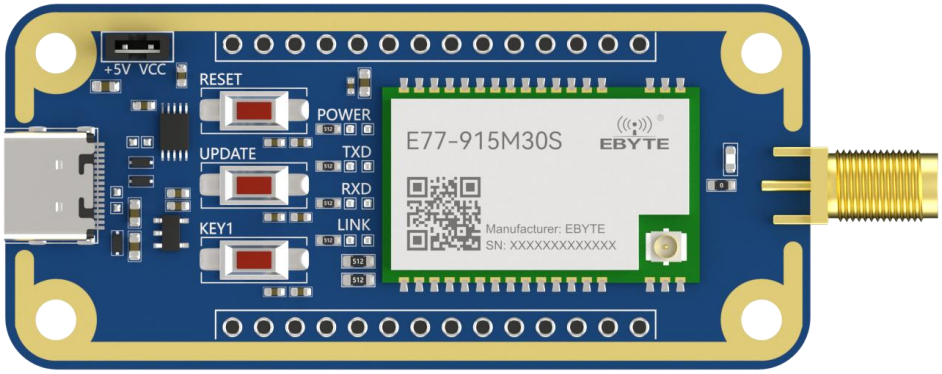


Figure 1 Module Physical Diagram

The E77 - 915MBH - 01 is an entry - level development board equipped with a high - power LoRaWAN node module, the E77 - 915M30S. This development board has complete module functionality, is pre - installed with LoRaWAN protocol firmware, and most of the module pins are brought out to the side headers. This allows developers to easily connect various peripheral devices via jumpers as needed. The development board can also be used on a breadboard.

1.2 Introduction to Basic Parameters

Serial Number	Parameter name	Parameter value	Notes
1	Support Module	E77-915M30S	LoRaWAN node module
2	Size	65 * 30 mm	Antenna connector not included
3	Production process	Lead-free process, machine mounting	Wireless products must be machine-mounted to ensure batch consistency and reliability.
4	Power interface	USB	-
5	Communication interface	TTL	-
6	Operating temperature	-40 to +85℃	Industrial grade
7	Operating humidity	10% ~ 90%	Relative humidity, no condensation
8	Storage temperature	-40 to +125℃	Industrial grade

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2. Functional Overview

2.1 Mechanical Dimension Drawing

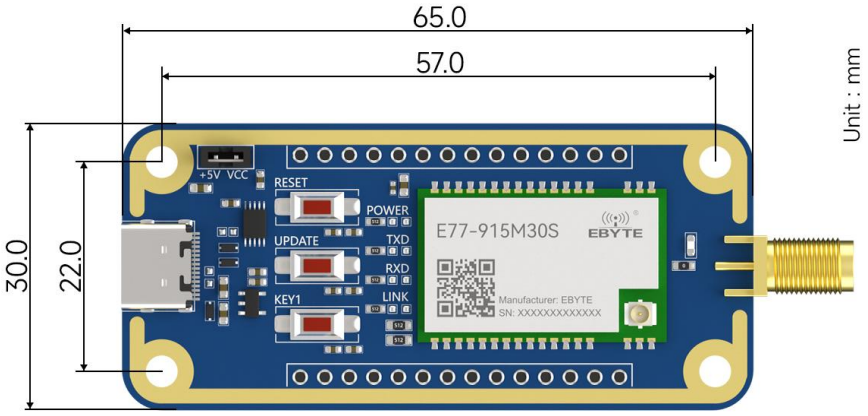


Figure 2 Dimension Diagram

Note: Mounting hole diameter is 3.2mm, pin spacing is 2.54mm.

2.2 Component Introduction

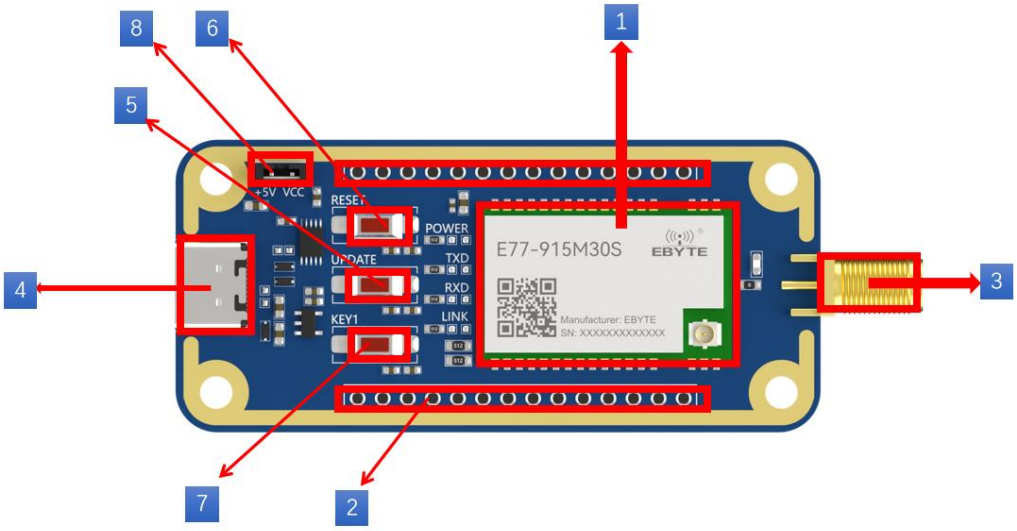


Figure 3 Main Component Diagram

Serial Number	Main firmware	Introduction
1	E77-915M30S	The E77-915M30S is a standard LoRaWAN node module independently developed and manufactured by Chengdu Ebyte Electronic Technology Co., Ltd. It is fully compatible with the 1.0.4 (US915/AU915) protocol standard, supports Class

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Serial Number	Main firmware	Introduction
		A/Class C dual node types, and is compatible with OTAA/ABP dual network access modes . For more information, please refer to the E77-915M30S datasheet.
2	Pin Header	All available GPIO pins are brought out to the development board's header.
3	Antenna Interface	SMA-K, External Thread with Internal Hole
4	USB Type-C to UART interface	It can be used as a power supply interface for development boards, for burning firmware to chips, and also as a communication interface to communicate with the E77-915M30S module via an onboard USB to UART bridge.
5	RESET	Reset enable, jumper cap connected: Reset is pulled up to 3.3V through 100K resistor.
6	UPDATE	
7	KEY1	
8	Module current test header	Use a jumper cap to short the header pins as shown in the diagram. It comes pre-installed with the jumper cap.

Note: For specific function instructions, please refer to the E77-915M30S user manual.

2.3 Pin Definitions

The image below shows the front view of the E77-915MBH-01:

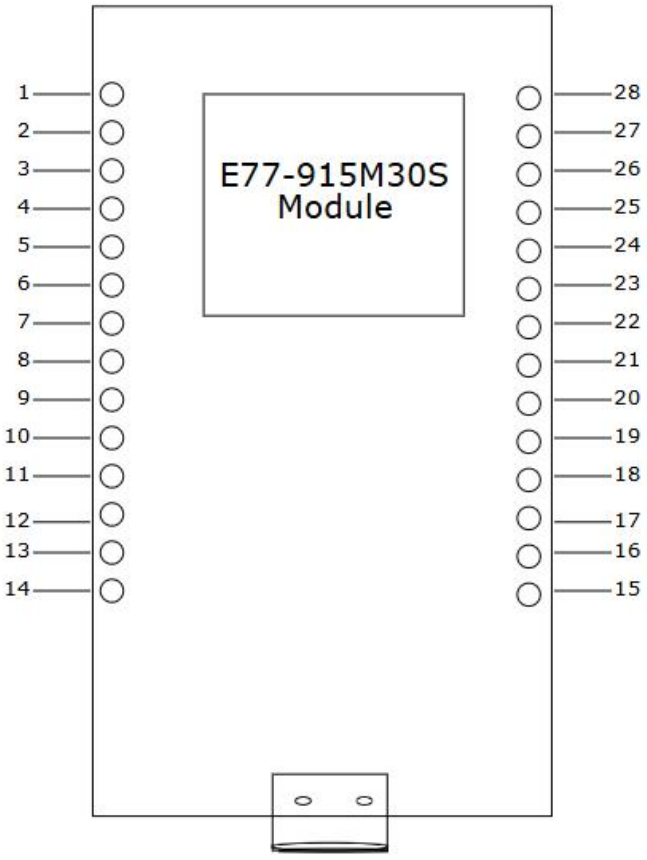


Figure 4 Pin Sequence Diagram

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Pin number	Pin Name	Type	Pin Applications
1	NC	-	-
2	PB2	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)
3	PB12	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)
4	PA10	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)
5	PA11	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)
6	PA12	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)
7	GND	Input/Output	Ground wire, connected to power reference ground
8	PA15	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)
9	PC13	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)
10	NRST	Input	Chip reset trigger input pin, active low.
11	SWDIO	Input	Program Download
12	SWCLK	Input	Program Download
13	VCC	Input	Power supply range: 3.3 V to 5.5 V
14	GND	Output	Ground wire, connected to power reference ground
15	PB3	Input/Output	TX_LED, data transmission indicator pin, outputs a high level upon completion of transmission.
16	PB4	Input/Output	RX_LED, receive data indicator pin, outputs high level upon completion of reception.
17	PB5	Input/Output	LINK_LED, network access status indicator pin, outputs a high level when network access is successful.
18	PB6	Input/Output	USART1_TX (The built-in firmware is not in use; it is reserved.)
19	PB7	Input/Output	USART1_RX (The built-in firmware is not in use; it is reserved.)
20	PB8	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)
21	PA0	Input/Output	Soft boot pin, power on and continuously pull it down for 1 second to enter IAP upgrade mode.
22	PA1	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)
23	TXD	Input/Output	LP_USART 2_TX (AT command serial port transmit pin)
24	RXD	Input/Output	LP_USART 2_RX (AT command serial port receive pin)
25	PA4	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)
26	PA5	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)
27	PA8	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)
28	PA9	Input/Output	Configurable general-purpose I/O ports (see STM32WLE5CCU6 manual for details)

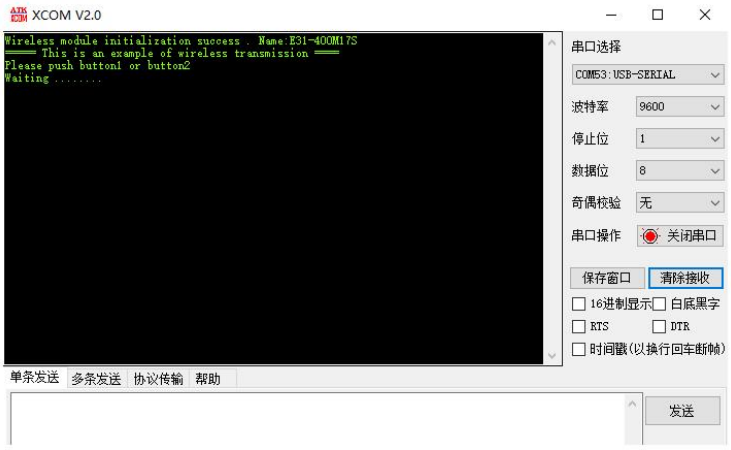
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Note: For detailed pin definitions, please refer to the E77-915M30S user manual.

2.4 Functional Testing

E77-915MBH-01 The detailed content of the functional test is as follows :

Serial Number	Item	Illustrate
1	Device Manager-View serial port number	
2	Serial port software	
3	Communication Example	Use AT commands to read the version number and check if the module is connected correctly. The "Send Newline" option should be selected for AT commands. 

Note: For more usage instructions, please refer to the "E77-xxxMxxS_Usermanua" manual.

3. Precautions for Development and Application

- There are two power supply options:
  A. USB Type-C to UART interface, the default power supply (recommended);
  B. 5V and GND header power supply.

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- If this is the first time using the CH340X interface converter module, your PC will prompt you to install a new device driver. You can search online for the driver or download it from Driver Genius.

4. Version Information

Version	Revision Date	Revision Notes	Maintainer
1.0	2026-3-6	Initial version	Hao

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