E104-BT15 Series Product User Manual

SIG Grid V1.1 Bluetooth MESH Module



成都亿佰特电子科技有限公司
Chengdu Ebyte Electronic Technology Co.,Ltd.

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Table of contents

Disclaimer and Copyright Notice 1
Chapter 1 Product Overview 2
1.1 Product Introduction 2
1.2 Features and Functions 2
1.3 Application Scenarios 2
Chapter 2 Specifications 3
2.1 Comparison of Product Selection Parameters 3
Chapter 3 Mechanical Dimensions 4
Chapter 4 Basic Applications 6
4.1 Recommended Circuit 6
Chapter 5 Functional Description 6
5.1 Character Description 6
5.2 Transmission Mode 6
5.2.1 Standard SIG Mesh Model Communication 6
5.2.2 Native Format Transmission 7
5.2.3 Transparent Transmission 7
5.2.4 Transmission Precautions 7
5.3 Network topology 7
5.4 Configuration Method 7
5.5 Functional pins 7
5.5.1 Networking Indicator Pin 8
5.5.2 Restore factory settings for pins 8
5.5.3 I/O Functions 8
5. 6 Status or event printing 8
5.9 OTA Upgrade 8
Chapter 6 AT commands 8
6.1 Command Description 8
6.2 Error Code Value Explanation 9
6.3 Command List 9
6.3.1 AT Test Commands 9
6.3.2 +++ Enter AT command mode 9
6.3.3 AT+EXIT Exit AT command mode 9
6.3.4 AT+RESET Reset Command 10
6.3.5 AT+RESTORE factory reset command 10
6.3.6 AT+DISC Exit the network 10
6.3.7 AT +VER Query software version 10
6.3.8 AT + TXPOWER Transmit power 10
6.3.9 AT + Baud Rate Serial port baud rate 11
6.3. 10 AT+PARITY parity bits 11
6.3.11 AT +STOPBIT Serial Port Stop Bit 11
6.3.12 AT + ALI_MAC MAC address 12

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

6.3.13 AT +ALI_PROD_ID Alibaba three key elements (product ID) 12
6.3.14 AT +ALI_SEC Alibaba's Three Key Elements 12
6.3.15 AT + IO IO Control 13
6.3.16 AT + WS2812_RGB RGB Attributes in WS2812 Mode 13
6.3.17 AT + PWM_CFG Configure PWM Clock 14
6.3.18 AT + PWM Configuring PWM Parameters 14
6.3.19 AT + HDC2010 Query temperature and humidity 14
6.3. 20 AT+ ELE_ADDR Query network address 15
6.3.21 AT+TRANMD Configuration of TRANMD Parameters 15
6.3.22 AT +IO_WRITE I/O Operations 15
6.3.23 AT + IO_Read IO Reading 15
Chapter 7 Quick Start Guide 16
7.1 Quickly build a network using TelinkSigMesh 16
7.2 Private transmission 19
7.2.1 Format Transmission 19
7.2.2 Transparent Transmission 21
7.3 Tmall Genie 21
Chapter 8 Frequently Asked Questions 24
8.1 Transmission distance is not ideal 24
8.2 Easy to damage 24
8.3 Too high error rate 25
Chapter 9 Welding Operation Instructions 25
9.1 Reflow soldering temperature 25
9.2 Reflow Soldering Profile 26
Chapter 10 Related Models 26
Revision History 28
About Us 28

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Disclaimer and Copyright Notice

The information contained herein, including URLs provided for reference, is subject to change without notice. This document is provided "as is" without liability, including but not limited to liability for merchantability, fitness for a particular purpose, or non-infringement of rights, and any liability for any tips, specifications, or samples mentioned elsewhere. This document assumes no liability whatsoever for any infringement of any patent rights arising from the use of the information contained herein. This document does not imply any permission to use any intellectual property rights, whether express or implied, by estoppel or otherwise.

The test data presented in this article were obtained from tests conducted by EBYTE Labs, and actual results may differ.

All trademark names, trademarks and registered trademarks mentioned in this article are the property of their respective owners.

This product is strictly prohibited from being used in military or life-threatening scenarios. Users are solely responsible for any liability arising from its use .

The final interpretation right belongs to Chengdu Ebyte Electronic Technology Co.,Ltd .

Notice:

Due to product version upgrades or other reasons, the content of this manual may change. Chengdu Ebyte Electronic Technology Co.,Ltd reserves the right to modify this manual without notice or warning. This manual is for guidance only. Chengdu Ebyte Electronic Technology Co.,Ltd makes every effort to provide accurate information in this manual, but cannot guarantee that the content is completely error-free. All content, information, and suggestions in this manual do not constitute any express or implied advice.

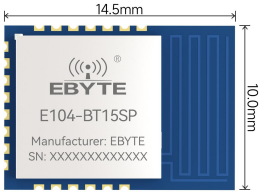
Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

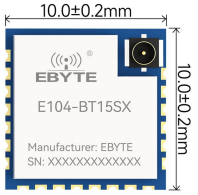
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Chapter 1 Product Overview

1.1 Product Introduction

E104-BT1 5 series module is a Bluetooth MESH module based on Bluetooth Mesh V1.1 . It supports MESH ordinary nodes (friends, proxies, relays) , data pass-through, OTA and other functions , and is suitable for smart wearables, home automation, smart home appliances, automobiles, lighting, industrial Internet, smart data acquisition, smart control and other fields.





1.2 Features and Functions

- SIG Mesh v1.1 ;
- The network capacity reaches 3072 nodes;
- Bluetooth bag length is adjustable;
- Supports transparent transmission within the park ;
- Supports GATT OTA and Mesh OTA firmware upgrades ;
- Supports 4-channel I/O and 4-channel PWM control;
- Supports WS2812 RGB control;
- It supports integration with Tmall Genie and supports Tmall Genie voice control.

1.3 Application Scenarios

- Smart home ;
- Smart building construction ;
- Automated data acquisition ;
- Health sensors;
- Smart wearable devices ;
- Intelligent robots ;
- Intelligent control;

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Chapter 2 Specifications

2.1 Comparison of Product Selection Parameters

Product Model	E104-BT1 5 SP	E104-BT1 5 SX
Bluetooth standard	SIG MESH V1.1	SIG MESH V1.1
Work Deviation	2402～2480MHz	2402～2480MHz
Transmit power	-3～8 dBm	-3～8 dBm
Receive the same	-97dBm	-97dBm
Transmission distance ①	150m	300m
Power supply voltage ②	2.2~3.6V	2.2 ~3.6V
Emission current ③	≈25 mA	≈25 mA
Operating current ④	≈13 mA	≈13 mA
Product Dimensions ⑤	10*14.5 mm	10*10 mm
Antenna type	Onboard PCB antenna	IPEX 3rd generation base
Interface method	stamp perforation	stamp perforation
Operating temperature ⑥	-40～+85℃	-40～+85℃
Product weight ⑦	0.5g	0.4g

Note:

(1)Test conditions: Clear and open environment, antenna height 2m.

(2)Power supply voltage: 3.3V is recommended.

(3)Transmitting current: DC 3.3V power supply, instantaneous current.

(4)Operating current: DC 3.3V power supply, average current.

(5)Product dimensions: Paper thickness ±0.2mm. Please see Chapter 3 for detailed dimensions .

(6)Operating temperature: Industrial grade standard.

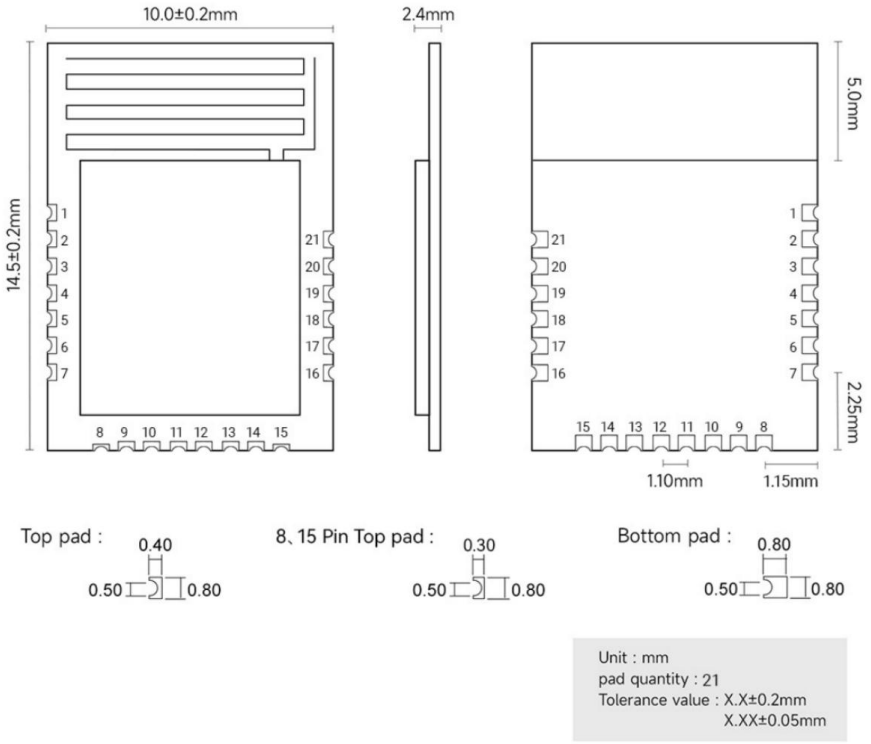
(7)Product weight: tray ±0.1g .

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

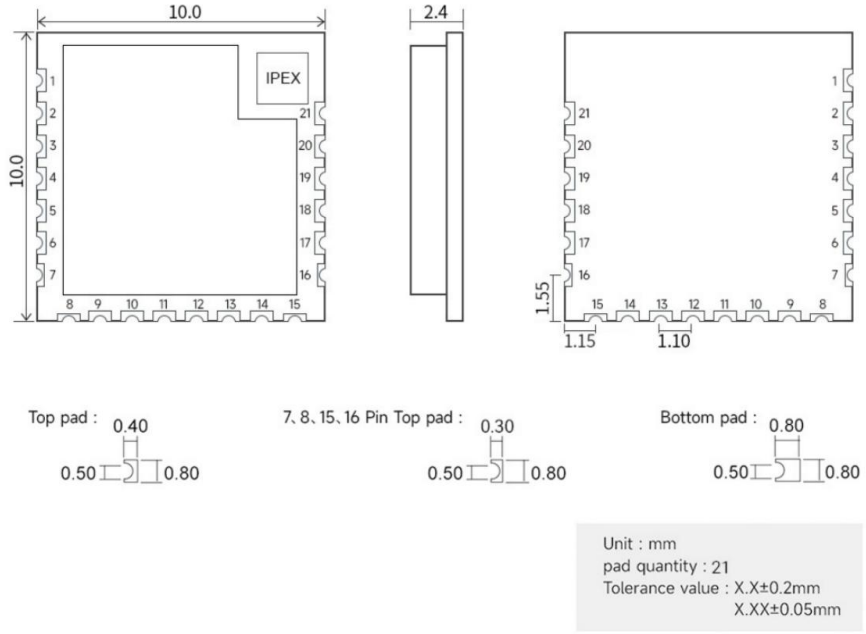
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Chapter 3 Mechanical Dimensions

E104-BT15SP:



E104-BT15SX:



Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

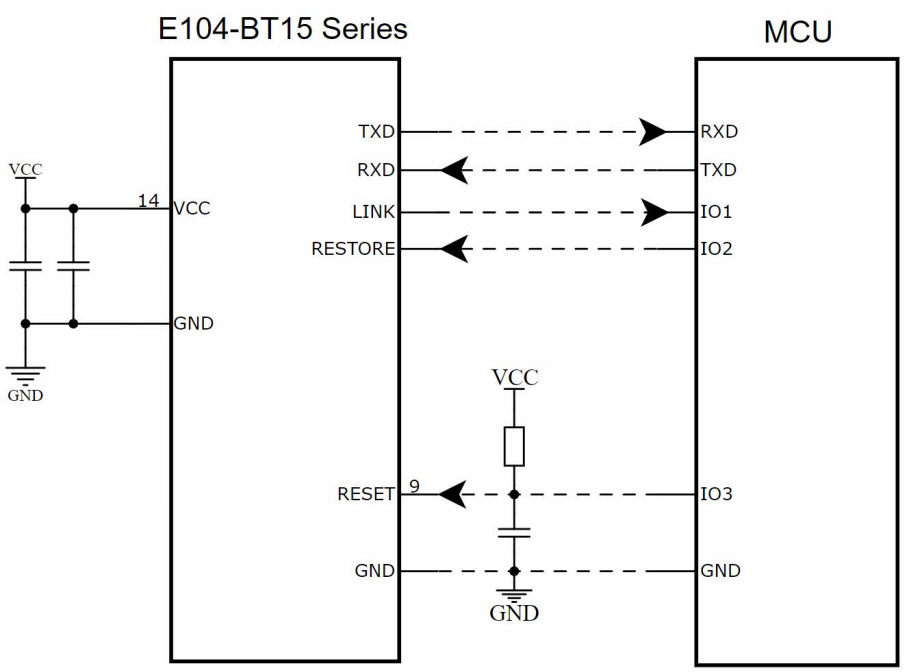
Serial Number	Pin Definitions	Pin direction	Description
1	IO1	Output	Switch control or single-line return-to-zero code output
2	Grounding	-	power ground
3	carbon monoxide	Output	Switch control or single-line return-to-zero code output
4	recover	Input	The module is internally pulled up, then pulled down on the falling edge, and held low for at least 5 seconds. After that, all parameters are reset to factory settings and the module is automatically restarted.
5	SWS	Input/Output	Programming pins
6	Related	Output	Connection status indicator pin: a high level indicates that the connection is active.
7	IO3	Output	Switch control or single-line return-to-zero code output
8	IO4	Output	Switch control or single-line return-to-zero code output
9	Reset	Input	Reset pin, low level reset
10	North Carolina	-	User attention consumption
11	RXD	Input	Serial port input
12	TXD	Output	Output of results
13	Grounding	-	power ground
14	VCC	Input	Power supply voltage: 1.7V~3.6V, 3.3V power supply recommended.
15	PWM 1	Output	PWM control pin
16	PWM 2	Output	PWM control pin
17	PWM 3	Output	PWM control pin
18	PWM 4	Output	PWM control pin
19	Seventh-day Adventist Church	Input/Output	I2C_SDA (Serial Data Line)
20	south coast	Input/Output	I2C_SCL (Serial Clock Line)
21	Grounding	-	power ground

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Chapter 4 Basic Applications

4.1 Recommended Circuit



Chapter 5 Functional Description

5.1 Character Description

This module supports SIG Mesh regular nodes (friend, proxy, relay).

5.2 Transmission Mode

5.2.1 Standard SIG Mesh Model Communication

Module hardware resources, or feature support

Targeted forwarding model	Supports (targeted warehousing and transportation)
Universal Switch Model	Supports (startup control I/O and PWM switching)
General level model	Supports (auxiliary control PWM duty cycle adjustment)
Mesh OTA model	Supports MESH OTA functionality for initialization control

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

	module.
Lighting model	Supports (using control PWM)

The above are standard models available only to listed customers.

5.2.2 Native Format Transmission

When using formatted transmission, please send the hexadecimal format, with the first two bytes representing the target object's mesh primary addr. You need to configure " AT+TRANMD=0 " when using this format.

Target address	Payload
2 bytes	1-243

5.2.3 Transparent Transmission

Data transmission is performed using the broadcast address of the SIG Mesh. When using this mode, " AT+TRANMD=1 " needs to be configured . In this mode, the module will broadcast all data received from the serial port via the broadcast channel.

5.2.4 Transmission Precautions

- It should be noted that SIG Mesh has relatively low data transmission efficiency; a transmission interval of 500ms is recommended, making it unsuitable for scenarios requiring high data rates.
- SIG Mesh transmission is broadcast-based, and packet loss is reduced by performing multiple retransmissions internally. However, packet loss is still possible during transmission within the clear module.

5.3 Network topology

It supports two networking modes: pb-gatt and pb-adv.

5.4 Configuration Method

The module only supports serial port configuration. For detailed steps, please refer to Section 7.1.

Serial port configuration: When the module is powered on and not connected, it can be directly configured via the AT configuration mode. However, after the module group successfully connects to the Internet, it will enter the transmission mode by default . You need to enter "+++" on the serial port to enter the AT command mode before you can configure the serial port.

5.5 Functional pins

Indicator pins are divided into two categories: 1. Connection indicator pins; 2. Data indicator pins.

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

5.5.1 Networking Indicator Pin

The Link pin is pulled low by default, and outputs a high level after successful networking.

5.5.2 Restore factory settings for pins

The recovery pin is pulled high by default. If the recovery edge is triggered and the pin is held low for 5 seconds, the module's parameters will be restored to factory settings.

5.5.3 I/O Functions

The module supports 4 I/O channels and 4 PWM outputs. The I/O channels also support the WS2812 drive capability; see the instruction list for details.

5. 6 Status or event printing

After the upper-layer module completes the protocol stack initialization, it will output " ready " .

5.9 OTA Upgrade

Supports both gatt OTA and mesh OTA methods:

- Gatt OTA, Single Fast Device OTA;
- Mesh OTA supports multiple devices, but its OTA speed is relatively slow.

See the quick start guide for details.

Chapter 6 AT commands

6.1 Command Description

Notice:

1. Default serial port baud rate 115200 , 8N1;
2. All AT commands consume a carriage return and line feed (\r\n);
3. All AT commands are case-insensitive ;
4. The result returned by the AT command ends with a newline character (\r\n);
5. The error response format is "+ERR=[NUM]", see section 6.2 for details.

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

6.2 Error Code Value Explanation

Error return value	illustrate	Error reason	Solution
- 1	The instruction was not found.	The instruction is incorrect or the instruction is missing.	Check if the AT commands in the manual are correct.
- 2	Parameter length out of range	Parameter length exceeds limit	Check if the parameters are correct.
- 3	parameter	Invalid parameter value setting	Please enter the parameters specified in the parameters.
-5	Error execution	The command was executed under abnormal conditions.	Please check if the instructions and status match.

6.3 Command List

Note: In the table below, "\r\n" means "carriage return and line feed".

Note: In transparent transmission mode, sending " ++ " will enter configuration mode.

Note: In network mode, sending the command " AT+EXIT " will exit configuration mode and enter transmission mode.

6.3.1 AT Test Commands

Command		Answer
Implement	exist	+Confirm\r\n
Description	Used to test whether the serial port AT commands are working properly.	

6.3.2 +++ Enter AT command mode

Command		Answer
Implement	+++	Input pattern\r\ n
Description	The default command mode upon power-on when not connected to a network	

6.3.3 AT+EXIT Exit AT command mode

Command		Answer
Implement	AT+ Export	+Confirm \r\n
Description	Exit AT command mode and enter data transfer mode.	

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

6.3.4 AT+RESET Reset Command

Command		Answer
Implement	AT+ Reset	+Confirm\r\n
Description	Effective immediately.	

6.3.5 AT+RESTORE factory reset command

Command		Answer
Implement	AT+ recovery	+Confirm\r\n
Description	1. Automatic restart after reset; 2. When restoring factory settings, any form of reset is prohibited, and no operation is allowed if the power was not turned off.	

6.3.6 AT+DISC Exit the network

Command		Answer
Implement	AT+ CD	+Confirm\r\n
Description	1. Automatic restart after reset; 2. When the factory settings are restored, any form of reset is prohibited, and no operation is allowed if the power is off before the operation is completed.	

6.3.7 AT +VER Query software version

Command		Answer
Implement	AT+ version?	+OK =[VER] \r\n
Description	Send: AT+VER? Return: +OK=FW-xxxx-x-xx	

6.3.8 AT + TXPOWER Transmit power

Command			Answer
Query	AT+TXPOWER=?		+OK=[TXPOWER] \r\n
set up	AT+TXPOWER=[TXPOWER]		+Confirm\r\n
parameter		TXPOWER (ASCII)	describe
		0	8dBm (default)
		1	5dBm
		2	3dBm
		3	-3dBm

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Description	Restart to take effect; save after power failure.
Example	Send : AT+TXPOWER= 1 Return: +OK\r\n

6.3.9 AT + Baud Rate Serial port baud rate

Command		Answer
Query	AT + baud rate = ?	+OK=[Baud Rate] \r\n
set up	AT + Baud Rate = [Baud Rate]	+Confirm\r\n
parameter	Baud rate (ASCII): 2400 ~ 921600 describe: Baud rate (bps)	
Description	Default is 115200bps; Restart to take effect; save after power failure.	
Example	Send : AT + baud rate = 230400 Return: +OK\r\n	

6.3. 10 AT+PARITY parity bits

Command		Answer
Query	AT + Parity Check = ?	+OK=[Parity Check] \r\n
set up	AT + parity check = [parity check]	+Confirm\r\n
parameter	Parity check (ASCII) / describe: 0 — None (default) 1 — even 2 — Strange	
Description	Restart to take effect; save after power failure.	
Example	Send : AT + Parity = 0 Return: +OK\r\n	

6.3.11 AT +STOPBIT Serial Port Stop Bit

Command		Answer
Query	AT + stop bit = ?	+OK=[Parity Check] \r\n
set up	AT + stop bit = [stop bit]	+Confirm\r\n
parameter	Paragraph (ASCII) / describe: 0 — 1 (default) 1 6 — 1.5 digits 32 — 2 people	
Description	Restart to take effect; save after power failure.	

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Example	Send: AT+ STOPBIT = 0 Return: +OK\r\n

6.3.12 AT + ALI_MAC MAC address

Command		Answer
Query	AT+ ALI_MAC =?	+OK=[ALI_MAC] \r\n
set up	AT+ ALI_MAC = [ALI_MAC]	+Confirm\r\n
parameter	Paragraph (ASCII) / describe ac84fa27bde2 / 16-byte ASCII string	
Description	Restart to take effect; save after power failure.	
Example	Send: AT+ ALI_MAC = ac84fa27bde2 Return: +OK\r\n	

6.3.13 AT +ALI_PROD_ID Alibaba three key elements (product ID)

Command		Answer
Query	AT+ ALI_PROD_ID ?	+OK=[ALI_PROD_ID] \r\n
set up	AT+ ALI_PROD_ID =[ALI_PROD_ID]	+Confirm\r\n
parameter	Paragraph (ASCII) / describe 22192517 / Uint32 numbers	
Description	Restart to take effect; save after power failure.	
Example	Send: AT+ ALI_PROD_ID = 22192517 Return: +OK\r\n	

6.3.14 AT +ALI_SEC Alibaba's Three Key Elements

Command		Answer
Query	AT + ALI_SEC ?	+OK=[ALI_SEC] \r\ n
set up	AT+ ALI_PROD_ID = [ALI_SEC]	+Confirm\r\n
parameter	ALI_SEC (ASCII) / describe e16fac5b1aaad1a364f59ae8ee30f14e / A 32-byte hexagonal string	
Description	Restart to take effect; save after power failure.	
Example	Send: AT + ALI_SEC = e16fac5b1aaad1a364f59ae8ee30f14e Return: +OK\r\n	

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

6.3.15 AT + IO IO Control

<table>
<tr><th colspan="2">Command</th><th colspan="2">Answer</th></tr>
<tr><td>Query</td><td colspan="2">AT+ IO ?</td><td>+OK=io_ 1 : mode , pullLevel\r\n
io_2 : Mode , pull level\r\n
io_3 : Mode , pull level\r\n
io_4 : Mode , pull level\r\n</td></tr>
<tr><td>set up</td><td colspan="2">AT+ IO =[idx,mode,pull,level]</td><td>+Confirm\r\n</td></tr>
<tr><td>parameter</td><td colspan="2"><table><tr><td>ALI_SEC (ASCII)</td><td>describe</td></tr><tr><td>index</td><td>IO Index (1-4)
ID:5 (Batch set all IO)</td></tr><tr><td>model</td><td>0: GPIO output
1: GPIO Input
2:WS2812</td></tr><tr><td>pull</td><td>O: Drop-down menu
1: Pull up</td></tr><tr><td>grade</td><td>0: Low/Off
1: High/Open</td></tr></table></td><td></td></tr>
<tr><td>Description</td><td colspan="3">Restart to take effect; save after power failure.</td></tr>
<tr><td>Example</td><td colspan="3">Send: AT+IO = 1,0,1,0
Return: +OK\r\n</td></tr>
</table>

6.3.16 AT + WS2812_RGB RGB Attributes in WS2812 Mode

<table>
<tr><th colspan="2">Command</th><th colspan="2">Answer</th></tr>
<tr><td>Query</td><td colspan="2">AT+ WS2812_RGB ?</td><td>+OK=io_idx : mode , r ,g,b\r\n</td></tr>
<tr><td>set up</td><td colspan="2">AT+ IO = [idx,r,g,b]</td><td>+Confirm\r\n</td></tr>
<tr><td>parameter</td><td colspan="2"><table><tr><td>ALI_SEC (ASCII)</td><td>describe</td></tr><tr><td>index</td><td>IO Index (1-4)
Idx:5 (Batch setting all)</td></tr><tr><td>model</td><td>2:WS2812</td></tr><tr><td>r</td><td>Red (0-255)</td></tr><tr><td>gram</td><td>Green (0-255)</td></tr><tr><td>b</td><td>Blue (0-255)</td></tr></table></td><td></td></tr>
<tr><td>Description</td><td colspan="3">Effective immediately; this feature is available only for IOs configured in WS2812 mode.</td></tr>
<tr><td>Example</td><td colspan="3">Send: AT+WS2812_RGB=4,10,10,10
Return: +OK\r\n</td></tr>
</table>

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

6.3.17 AT + PWM_CFG Configure PWM Clock

Command		Answer
Query	AT+ PWM_CFG ?	+OK= [PWM_CLK]\r\n
set up	AT+ PWM_CFG = [PWM_CLK]	+Confirm\r\n
parameter	PWM_CLK (ASCII) / describe 200000-1000000 / Clock unit Hz	
Description	Restart to take effect	
Example	Send: AT+PWM_CFG=1000000 Return: +OK\r\n	

6.3.18 AT + PWM Configuring PWM Parameters

Command		Answer
Query	AT+ PWM ?	+OK= idx : Unit , Period , Duty Cycle , On\r\n 1:0,1000,50,1 \r\n 2:0,1000,50,1 \r\n 3:0,1000,50,1 \r\n
set up	AT+ PWM= idx : unit, period , duty cycle , eopn	+Confirm\r\n
parameter	Parameters (ASCII) / describe index / Pulse width modulation coefficients (1-4) Idx:5 (Batch setting all) unit / PWM period unit 0: We 1: milliseconds cycle / cycle responsibility / Occupancy (%) Open / 0: Disable PWM output 1: Enable PWM output	
Description	Restart to take effect	
Example	Send: AT+PWM_CFG=1000000 Return: +OK\r\n	

6.3.19 AT + HDC2010 Query temperature and humidity

Command		Answer
implement	AT+ HDC2010?	+OK =[Temperature],[Humidity] \r\n

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Description	Send: AT+HDC2010? Returned: +OK= 28.84505,39.60632 \r\n Note: Current temperature 28.84505℃, humidity 39.60632%; The HDC2010 sensor needs to be integrated into the hardware or the EWT104-BT15SP needs to be used.

6.3. 20 AT+ ELE_ADDR Query network address

Command		Answer
implement	AT+ ELE_ADDR?	+OK =[ELE_ADDR] \r\n
Description	Send: AT+ELE_ADDR? Return: +OK=0010\r\n Note: The correct value will only be returned after successful network setup; otherwise, 0000 will be returned.	

6.3.21 AT+TRANMD Configuration of TRANMD Parameters

Command			Answer
Query	AT+ TRANMD ?		+OK= TRANMD \r\n
set up	AT + TRANMD = 1		+Confirm\r\n
parameter		Parameters (ASCII)	describe
		transfer	0: Formatted transmission (specified address) 1: Transmit (broadcast method)
Description	Restart to take effect		
Example	Send: AT+PWM_CFG=1000000 Return: +OK\r\n		

6.3.22 AT +IO_WRITE I/O Operations

Command		Answer
implement	AT+IO_WRITE=<IDX>,<VALUE>	+Confirm\r\n
Description	IDX:<1-5> Values: 0, 1	

6.3.23 AT + IO_Read IO Reading

Command		Answer
implement	AT+IO_READ=<IDX>	+OK =<VALUE> \r\n

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

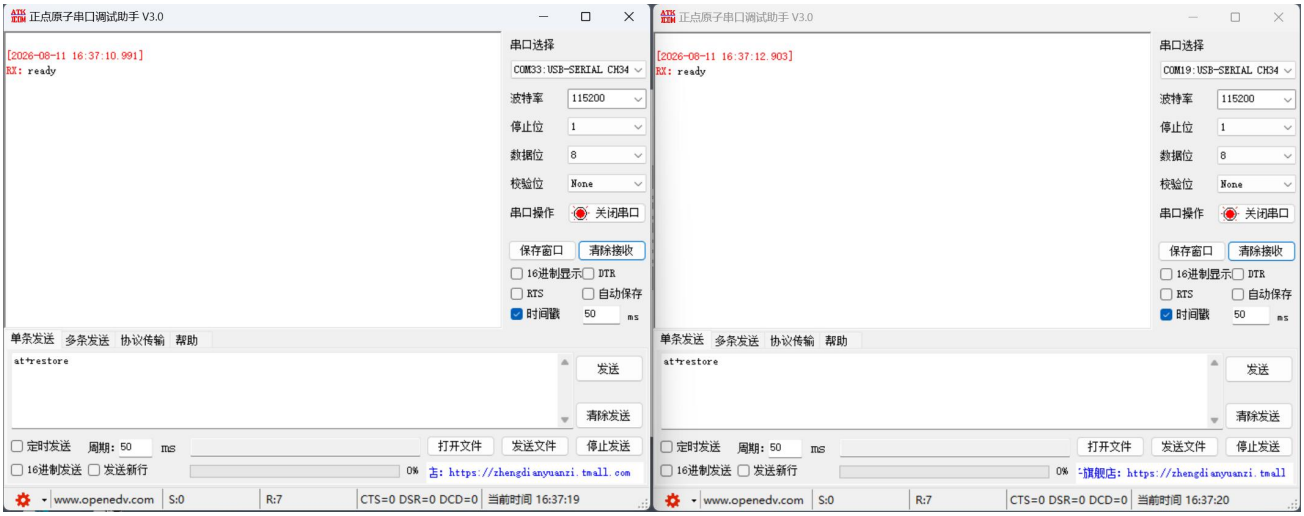
Description	IDX:<1-5> Values: 0, 1 Note: Only IO configured as input can be read.

Chapter 7 Quick Start Guide

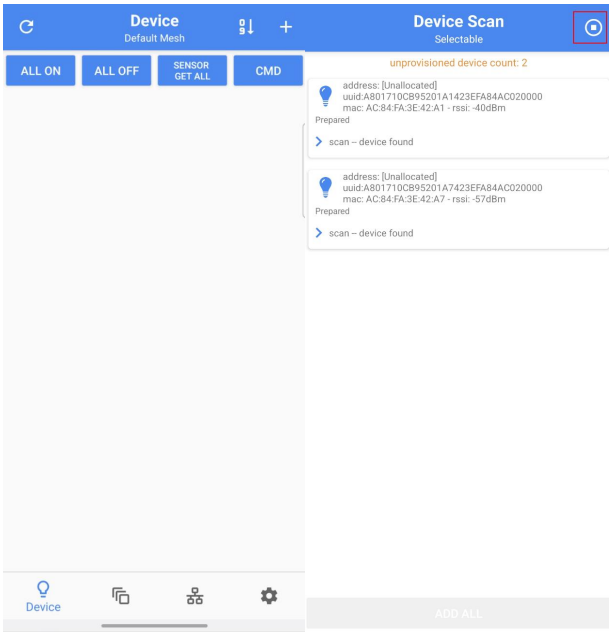
7.1 Quickly build a network using TelinkSigMesh

I prepared two EWT104-BT15SP chips and installed TelinkBleMeshDemo-V4.1.0.5-20260205.apk on the Android platform.

1） Test platform electricity



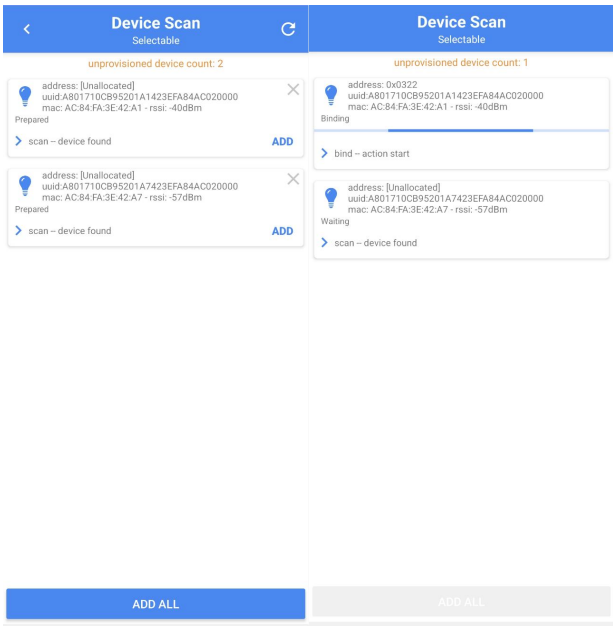
2） After installing the app, open it. The interface is shown in the image. Click the "+" sign in the upper right corner to enter the device addition interface.



3） Scan complete, click ADD ALL

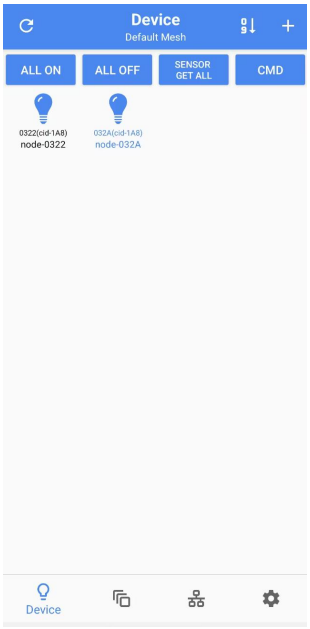
Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



4） Network successfully established

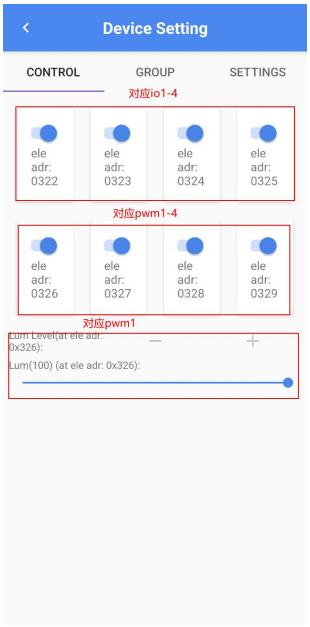
5） Return to the homepage, long press the light icon to enter individual device control.



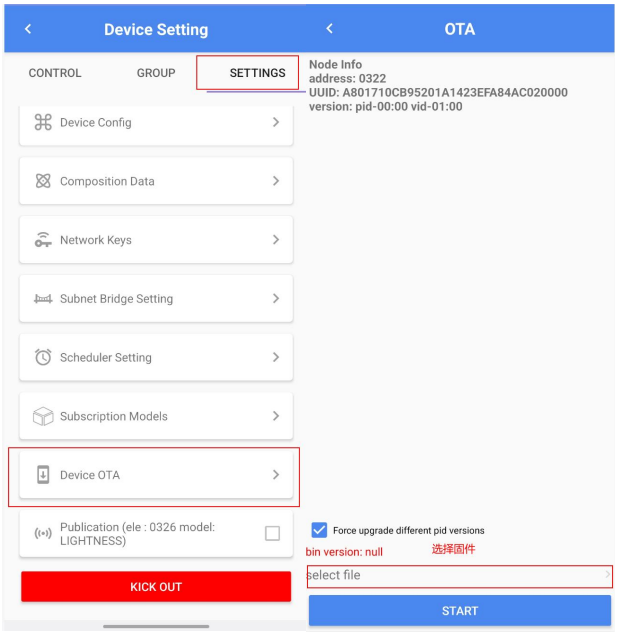
Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

6） IO control interface



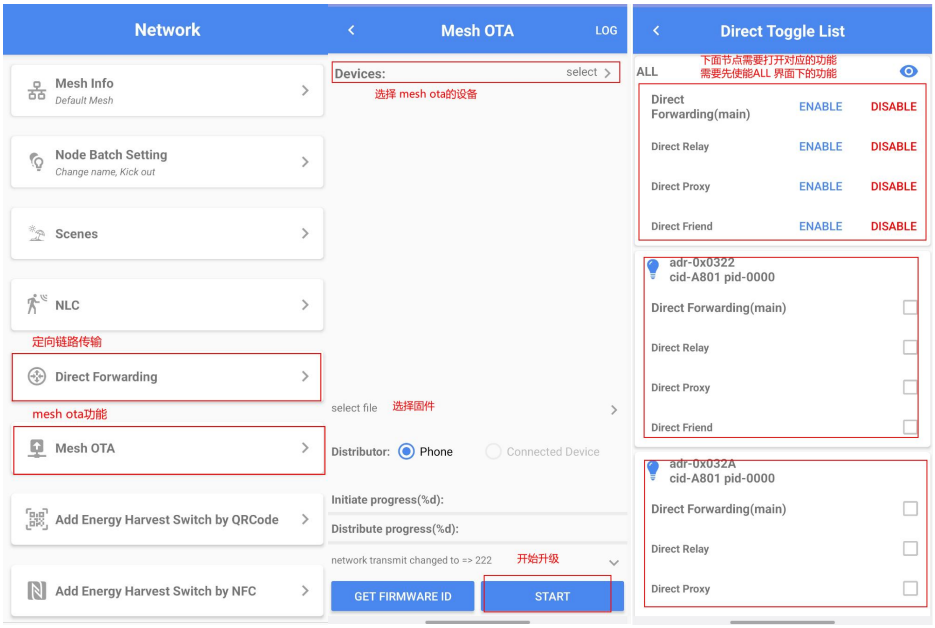
7） For GATT OTA functionality, select firmware, click START, and begin the upgrade.



Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

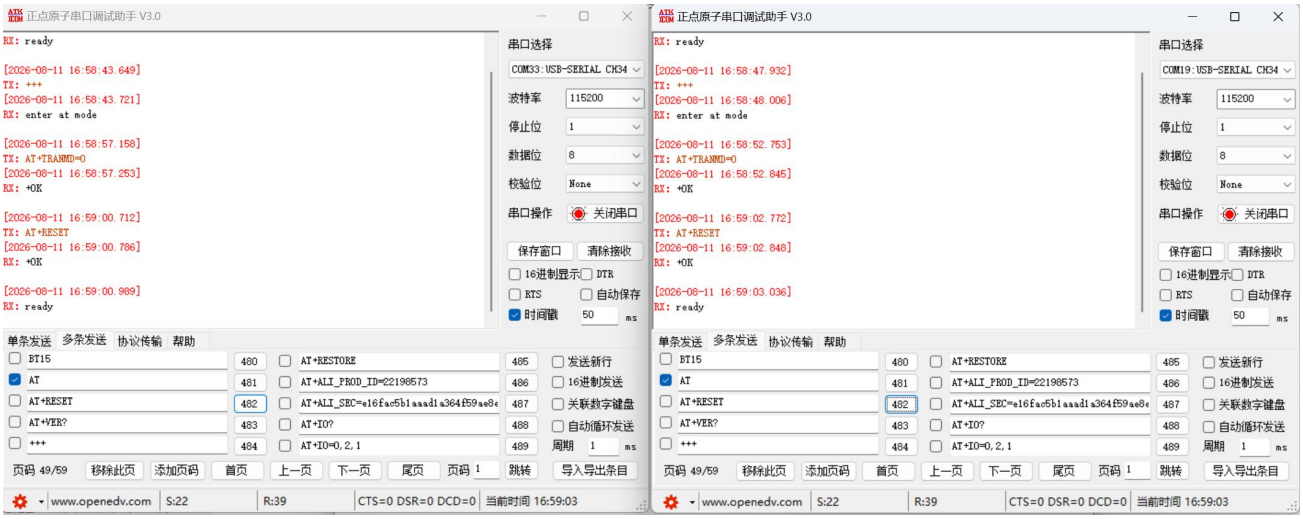
8） Mesh OTA sequential transmission function



7.2 Private transmission

7.2.1 Format Transmission

1) Based on version 7.1, set the transmission format to AT+TRANMD=0.



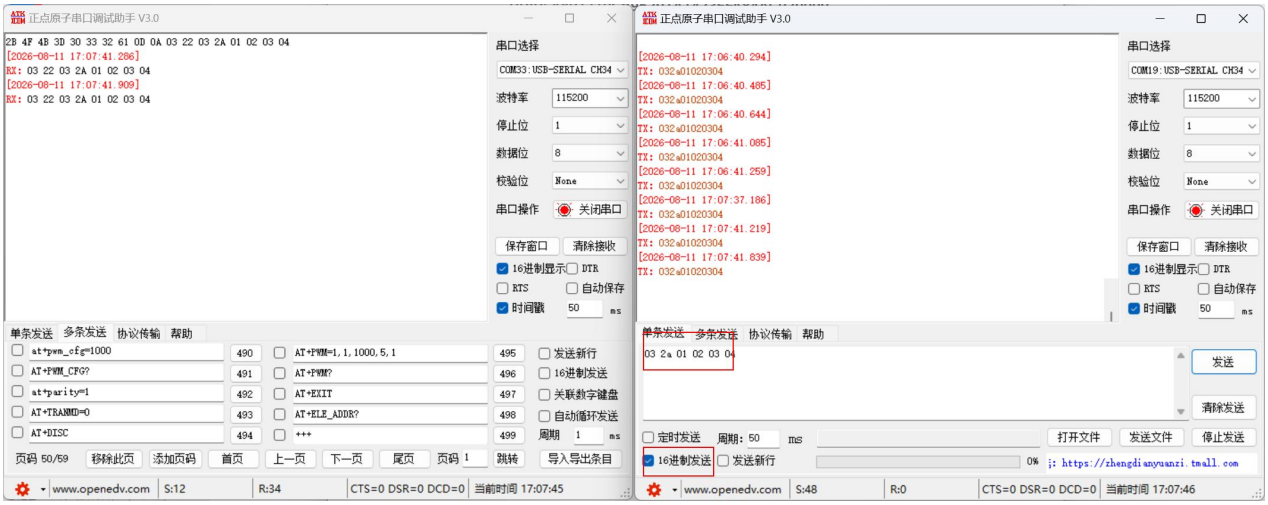
2) Query main address

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



3) In another module, the 032a is used for output transmission.



4) Data parsing at the receiving end

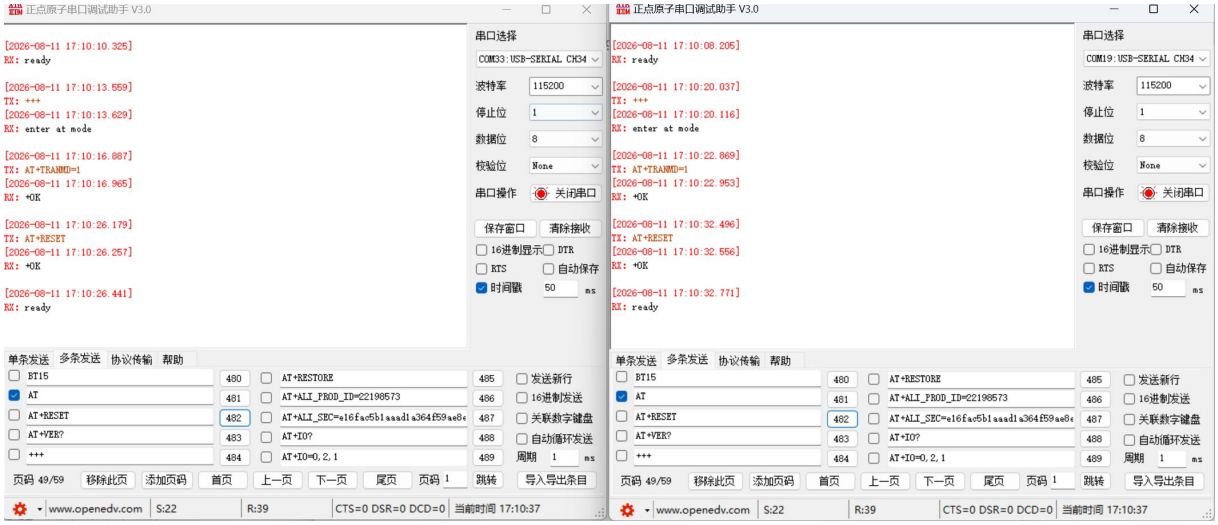
Source address	Target address	Payload
2 bytes	2 bytes	1-243 bytes

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

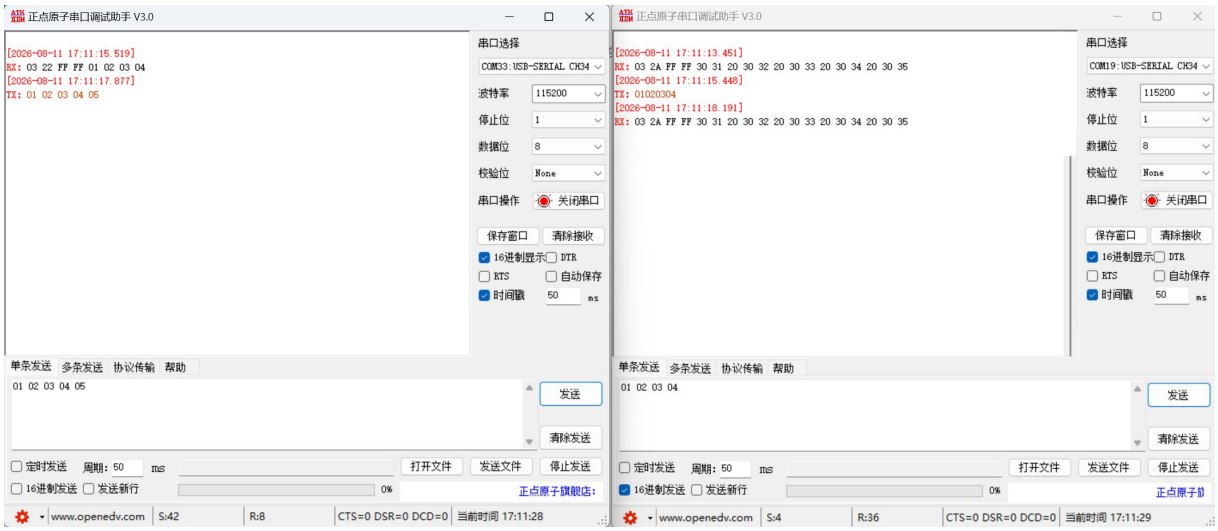
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

7.2.2 Transparent Transmission

1) Set to transparent transmission AT+TRANMD= 1



2) Transmission test

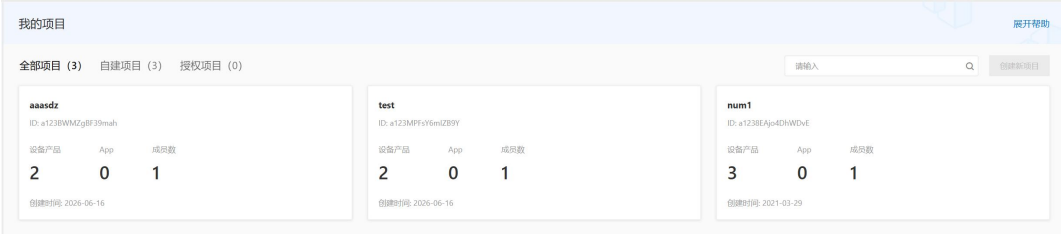


7.3 Tmall Genie

Alibaba Life IoT Platform

Alibaba Cloud login page

1） The first step is to create a project.



2） When creating a new product, note that Alibaba already has some products; you need to find a modified piece of equipment

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

for development.

3） This example uses a 4-button switch, with the four switches being vehicle IO1-IO4.



4） Note that after creating the product, you need to open Tmall Genie in the human-computer interaction interface; otherwise, you will not be able to control it through Tmall Genie.

5） Please also fill in the product description; otherwise, Tmall Genie will not be able to reach the search device.



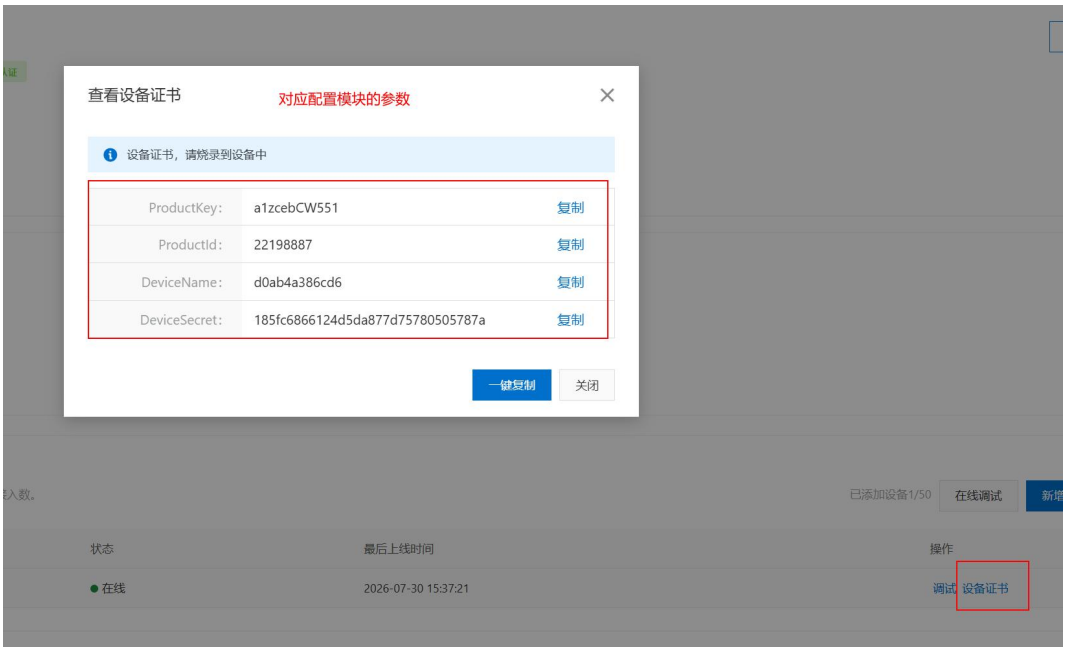
6） Add device in device debugging interface



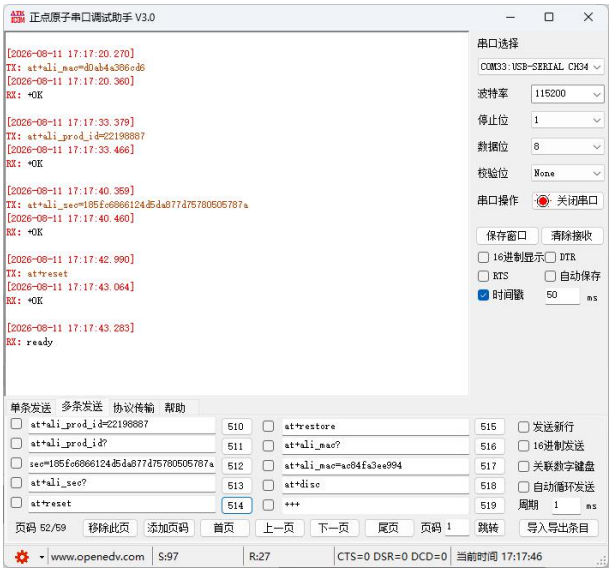
7） The certificate is one of the three essential elements we need for **Alibaba devices.**

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



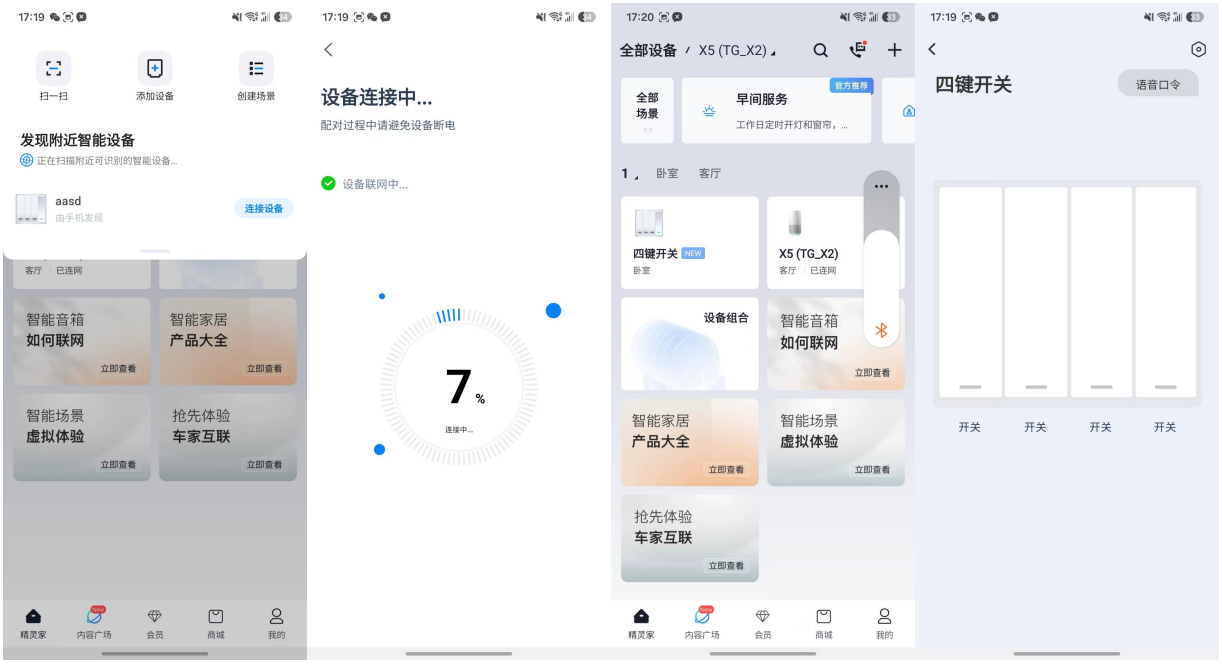
8） Use AT commands to modify the corresponding configuration.



9） After that, you can create a network using the Tmall Genie app module, and then remotely or by voice control the module.

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



Chapter 8 Frequently Asked Questions

8.1 Transmission distance is not ideal

- When there are obstacles in line-of-sight communication, the communication distance will be reduced accordingly ;
- Temperature, humidity, and co-channel interference can all lead to increased packet loss rates in communications .
- The ground absorbs and reflects radio waves, and the detector is tested near the ground.
- Seawater has a strong ability to absorb radio waves, so the test results are poor near the shore .
- If there are metal objects near the antenna, or if it is placed inside a metal casing, the signal attenuation will be very severe .
- Power preset setting error, air speed setting too high (air speed gain, the closer the distance) ;
- Last week, the low voltage of the power supply was lower than the recommended value; the lower the voltage, the lower the power output .
- The issue may stem from the compatibility between the antenna and the module, or from problems with the antenna's own quality.

8.2 Easy to damage

- Please check the power supply and ensure it is within the recommended voltage range. Exceeding this range will cause permanent damage to the module .
- Please check the power supply stability; the voltage should not fluctuate significantly .
- Please ensure anti-static operation during installation and use, and avoid electrostatic discharge from high-electrostatic components .
- Please ensure that the humidity is not too high during installation and use, as some components are humidity-sensitive .
- Unless there are special requirements, it is not recommended to use it at excessively high or low temperatures.

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

8.3 Too high error rate

- There is interference from a nearby signal on the same frequency. Move away from the source of interference or change the frequency to counteract the interference.
- An inadequate power supply can also cause garbled characters, so it is essential to ensure the reliability of the power supply.
- Poor quality or excessive length of extension lines and feeders can lead to a higher bit error rate.

Chapter 9 Welding Operation Instructions

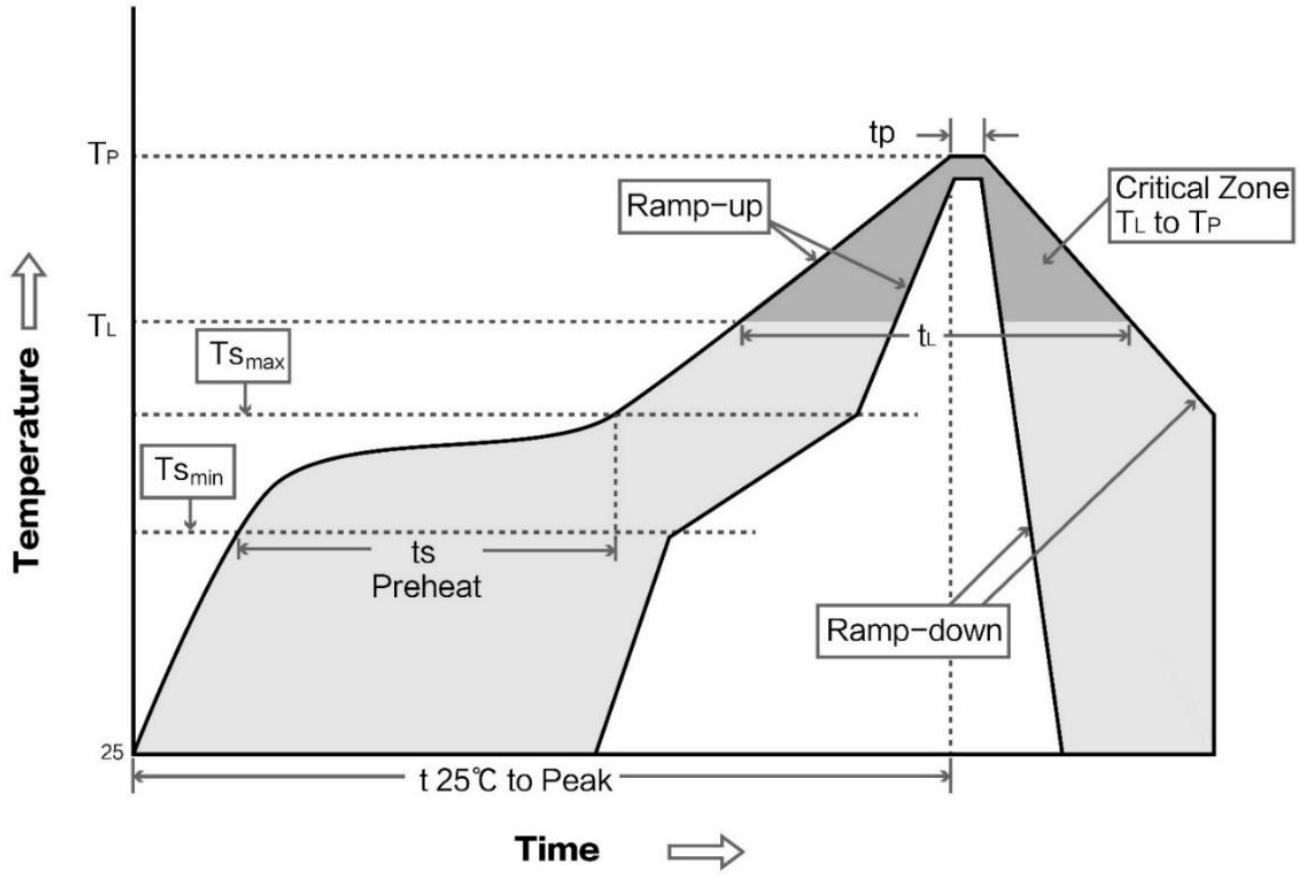
9.1 Reflow soldering temperature

Personal profile function	Oval	Tin-lead components	Lead-free assembly
solder paste	Solder paste	Sn63/Pb37	Sn96.5/Ag3/Cu0.5
Preheating temperature (Tsmin)	Minimum preset temperature	100 ℃	150 ℃
Maximum preheating temperature (Tsmax)	Maximum expected temperature	150 ℃	200 ℃
Preheating time (Tsmin to Tsmax) (ts)	Appointment time	60-120 seconds	60-120 seconds
Average heating rate (Tmax to Tp)	Average rate of ascent	3 ℃ / second	3 ℃ / second
Liquid temperature (TL)	Key Temperature	183 ℃	217 ℃
The time (tL) remains above (TL).	Time above the mission line	60-90 seconds	30-90 seconds
Peak temperature (Tp)	highest temperature	220-235 ℃	230-250 ℃
Average rate of descent (Tp to Tsmax)	Average rate of descent	6 ℃ / second	6 ℃ / second
Time required to reach peak temperature: 25 ℃	Time to reach the highest temperature of 25 ℃	Maximum 6 minutes	Maximum 8 minutes

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

9.2 Reflow Soldering Profile



Chapter 10 Related Models

Product Model	Chip solutions	Operating frequency hertz	emission power decibels	Communication interface	Support Protocol Bluetooth Low Energy	Product Dimensions millimete	antenna form	Features

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

						rs		
E72-2G4M05S1B	CC2640	2.4G	5	Input/Output	4.2	17.5*28.7	PCB/IPX	Hardware resources Secondary development
E73-2G4M04S1A	nRF52810	2.4G	4	Input/Output	4.2/5.0	17.5*28.7	PCB/IPX	Hardware resources Secondary development
E73-2G4M04S1B	nRF52832	2.4G	4	Input/Output	4.2/5.0	17.5*28.7	PCB/IPX	Hardware resources Secondary development
E73-2G4M08S1C	nRF52840	2.4G	8	Input/Output	4.2/5.0	13*18	Ceramic antenna	Hardware resources Secondary development
E73-2G4M04S1D	nRF51822	2.4G	4	Input/Output	4.2	17.5*28.7	PCB/IPX	Hardware resources Secondary development
E104-BT02	DA14580	2.4G	0	TTL	4.2	14*22	Printed Circuit Board	Lowest power consumption on the market High-speed continuous transmission sensing and detection
E72-2G4M04S2B	CC2640	2.4G	2	TTL	4.2	14*23	PCB/IPX	Built-in ARM dual-core Multi-role mode
E104-2G4U04A	CC2540	2.4G	0	USB	4.0	18*59	Printed Circuit Board	dongle Protocol Analyzer
E104-BT5010A	nRF52810	2.4G	0	UART	5.0	11.5 * 16	Ceramic antenna	Low power consumption, transparent transmission

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Revision History

Version	Revision Date	Revision Notes	maintainer
V 1.0	2026-09-14	first edition	Bin

About Us

Hotline：4000-330-990

Technical support: service@cdebyte.com

Documents and RF Setting download link: https://www.cdebyte.com

Thank you for using Ebyte products! Please contact us with any questions or suggestions: info@cdebyte.com

Address: B5 Mold Park, 199# Xiqu Ave, High-tech District, Sichuan, China

成都亿佰特电子科技有限公司
Chengdu Ebyte Electronic Technology Co.,Ltd.

Copyright © 2012–2026, Chengdu Ebyte Electronic Technology Co.,Ltd

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000