EWM104-BT13 Series Product Specifications

BLE5.0 Low Power SMD Bluetooth Proximity Switch Module



Chengdu Ebyte Electronic Technology Co.,Ltd.

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

Contents

1 Overview . . . 3
1.1 Introduction . . . 3
1.2 Features . . . 3
1.3 Application Scenario . . . 3
2 Specifications . . . 5
2.1 Limit parameters . . . 5
2.2 Working Parameters . . . 5
2.3 Switch lock reference distance . . . 6
3 Mechanical dimensions and pin definition . . . 7
4 Basic Applications . . . 9
4.1 Recommended Circuit . . . 9
5 Function Description . . . 10
5.1 Role Description . . . 10
5. 2 Power Mode . . . 10
5.3 Configuration . . . 10
6 AT Commands . . . 11
6.1 Instruction Description . . . 11
6.2 Error Code . . . 11
6.3 Status Printing . . . 11
6.4 Instruction List . . . 12
7 Quick Use . . . 21
7.1 Mobile phone connection module guide . . . 21
7.2 Configuration Mode Quick Start Guide . . . 22
7.3 Proximity switch function description . . . 27
8 Frequently Asked Questions . . . 28
8.1 The transmission distance is not ideal . . . 28
8.2 Modules are vulnerable to damage . . . 28
8.3 The bit error rate is too high . . . 28
9 Welding Operation Instructions . . . 29
9.1 Reflow temperature . . . 29
9.2 Reflow Oven Curve . . . 30
10 Related Models . . . 31
11 Bulk packaging method . . . 32
Revision History . . . 34
About us . . . 34

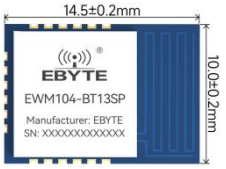
Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

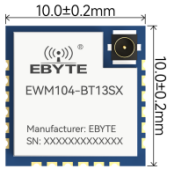
1 Overview

1.1 Introduction

The EWM104-BT13 series is a Bluetooth proximity switch module designed based on Bluetooth protocol version 5.0. It is small in size, low in power consumption, and operates in the 2.4GHz frequency band. The module uses common AT commands to set parameters, and the operation is simple and fast. It can be applied to smart door locks, smart car locks, smart homes, consumer electronics, industrial control and other scenarios.



EWM104-BT13SP



EWM104-BT13SX

1.2 Features

- Bluetooth BLE 5.0 protocol;
- Automatic broadcasting upon startup ;
- Support serial port wake-up ;
- Support multiple serial port modes and baud rates;
- Support PCB onboard antenna (EWM104-BT13SP), 3rd generation IPEX (EWM104-BT13SX) ;
- Support air parameter configuration ;
- Provide WeChat applet, easy to use;
- Support low power consumption;
- Support transmission power modification ;
- The maximum transmit power is 11.5dBm;
- Supports saving up to 10 binding pairing information ;
- Support two-way IO control;
- Support 1 set of PWM complementary output ;
- Support unlocking and locking inching and long-acting modes, and the inching trigger time is configurable ;
- Support battery voltage detection function ;
- Support BLE HID.

1.3 Application Scenario

- Smart door locks;
- Smart home ;
- Smart buildings, intelligent architecture ;
- Smart car locks, etc.
- Safety protection and other applications.

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

2 Specifications

2.1 Limit parameters

Table 2-1 Limit parameter table

Main parameters	performance		Remark
	Minimum	Maximum	
Supply voltage (V)	0	4.2	Over 4.2V will permanently burn the module
Blocking power (dBm)	-	10	The probability of burning is lower when used at close range
Operating temperature (°C)	-40	+85	Industrial Grade

2.2 Working Parameters

Table 2-2 Working parameters

Main parameters	performance			Remark
	Minimum	Typical Value	Maximum	
Operating voltage (V)	2.0	3.3	4.2	≥3.3V can guarantee output power
Communication level (V)	-	3.3	-	Using 5V level may cause burnout
Operating temperature (°C)	-40	-	+85	Industrial-grade design
Operating frequency band (MHz)	2402	-	2480	Support ISM band
Transmit power (dBm)	-30	0	11.5	-
Receiving sensitivity (dBm)	-	-97	-	The air rate is 1Mbps
Sleep broadcast current	-	208	-	Unit: uA. Default broadcast interval 1S
Sleep connection current	-	1	-	Unit: mA .
Wake-up broadcast current	-	3	-	Unit: mA. The default broadcast interval is 1S
Wake-up connection current	-	3.58	-	Unit: mA.

Main parameters	describe	Remark
Bluetooth Protocol	BLE5.0	-
Communication interface	UART	-
EWM104-BT13SP Communication distance	60m	-
EWM104-BT13SX Communication distance	70m	-

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

Packaging	SMD	-
EWM104-BT13SP Dimensions	14.5*10mm	±0.2mm
EWM104-BT13SX Dimensions	10*10mm	
EWM104-BT13SP RF Interface	Onboard antenna	Equivalent impedance is about 50Ω
EWM104-BT13SX RF Interface	IPEX 3rd Generation	
weight	0.5±0.1g	-

2.3 Switch lock reference distance

Unlocking action distance reference:

power / RSSI value	0dBm（default）	4dBm	8dBm
-40（default）	5m	6m	5m
-60	10m	12m	12m
-100	16m	15m	17m

Locking action distance reference:

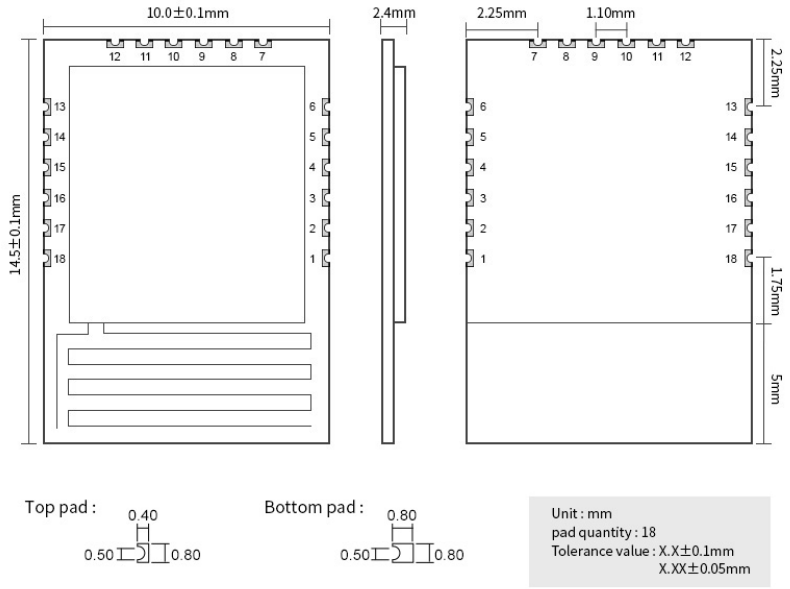
power / RSSI value	0dBm（default）	4dBm	8dBm
-50	9m	10m	12m
-70	15m	15m	16m
-80（default）	16m	15m	15m
-90	20m	18m	20m

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

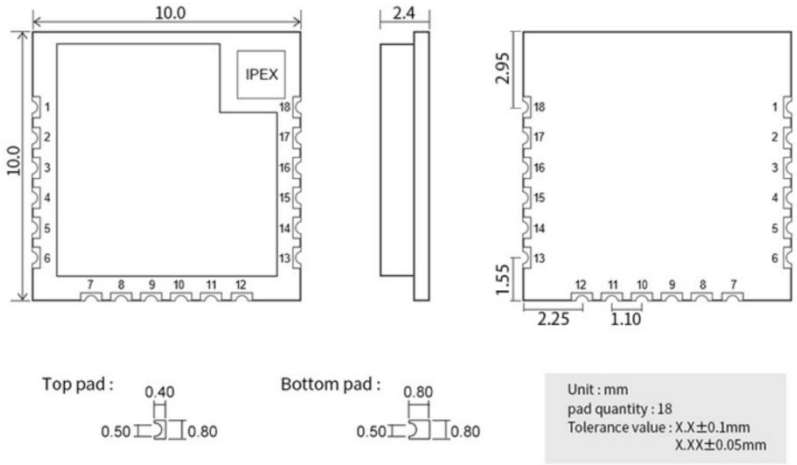
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3 Mechanical dimensions and pin definition

EWM104-BT13SP



EWM104-BT13SX



Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

Serial number	Pin Definition	Pin Direction	illustrate
1	GND	--	Power Ground
2	PD6	--	Reserved GPIO, users do not need to care
3	PD7	Input	By default, an external pull-up is required. When a falling edge is detected and the low level is maintained for at least 5 seconds, all parameters will be restored to factory settings and the module will automatically restart.
4	PA3	--	SWS; program download pin; users do not need to care;
5	PA7	Output	Connection status indication pin, high level indicates connected, low level indicates disconnected
6	PB2	Input	Battery voltage detection pin
7	RST	Input	Reset pin, low level reset
8	WKP	Input	Low level low power mode High level enter working mode
9	RXD	Input	Serial port input
10	TXD	Output	Serial port output
11	GND	--	
12	VBAT	--	Positive power supply, 2.0 V~4.2 V, 3.3 V power supply is recommended
13	PB7	Output	The default is low level, the effective level is high Two modes: long-acting and inching; can be configured through the serial port or WeChat applet; the pulse width of the inching mode supports the configuration of 10~65535ms
14	PC0	Output	The default is low level, the effective level is high Two modes: long-acting and inching; can be configured through the serial port or WeChat applet; the pulse width of the inching mode supports the configuration of 10~65535ms
15	PC1	Output	Complementary PWM output; can be configured through the serial port or WeChat applet; long-term or electric mode, frequency, duty cycle, (dead time), PWM duration (10~65535ms in inching mode);
16	PD2	Output	
17	PD1	--	Reserved GPIO, users do not need to care
18	GND	--	Power Ground

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

4 Basic Applications

4.1 Recommended Circuit

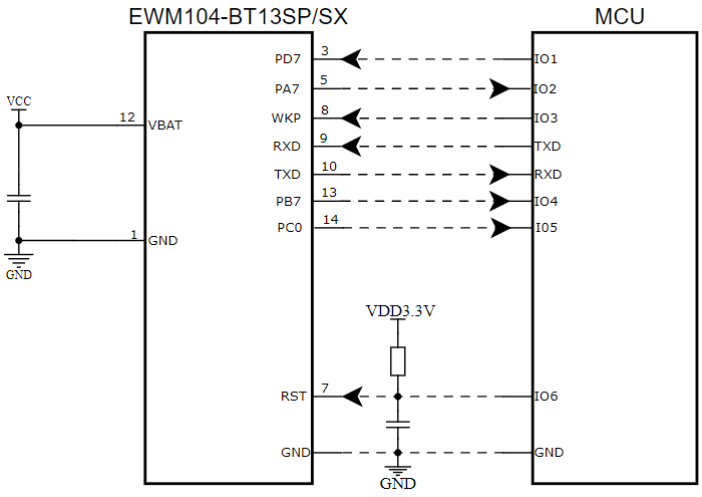


Figure 4-1 Recommended circuit

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

5 Function Description

5.1 Role Description

The module only supports slave mode and can only work after being paired with a computer or mobile phone.

5. 2 Power Mode

The module supports two power modes: low power mode and wake-up mode.

- Low power mode: BLE function is maintained in low power mode, but the relevant Bluetooth function parameters can only use the system setting parameters
- Wake-up mode: The module MCU starts working and the Bluetooth parameters take effect according to your settings (the module can be woken up using the WKP pin or serial port)

5.2.1 Low Power Mode

The so-called low power mode means that after the module enters this mode, the BLE function continues to run, and the module's peripherals except the wake-up pin are turned off. Entering low power mode:

1. The AT command "AT+SLEEP" immediately enters low power consumption mode;

After the module enters low power mode, it outputs "STA: sleep" through the serial port.

5. 2 .2 Wake-up mode

The so-called wake-up mode means that the module's peripherals are in normal working state in this mode. After the module wakes up, the output status is "STA: wake".

Wake-up method:

1. Wake up immediately through the falling edge of the WKP pin;
2. Serial port RX pin wake up.

5.3 Configuration

The module supports two configuration methods: serial port configuration and WeChat applet configuration.

5.3.1 Serial port configuration

Serial port configuration using commands

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

5.3.2 WeChat applet configuration

The so-called format transmission means that the data sent to the module through the serial port and the data sent by the module through the serial port must conform to the defined format transmission method before they can be transmitted.

6 AT Commands

Note: Before sending operation instructions, first ensure that the module is in wake-up mode, otherwise it will not be able to receive configuration instructions.

6.1 Instruction Description

- All AT commands do not need to add carriage return (\r) or line feed (\n)
- All AT commands are case insensitive
- The return result of AT command ends with \r\n (except HEX return)
- Command error response format +ERR=[NUM]. (NUM is ACSII)

6.2 Error Code

NUM	illustrate	Cause	Workaround
1	Instruction does not exist	AT command characters are incorrect	Check AT specified string
2	Parameter length error	1、 The total length of the AT command is incorrect; 2. The data length does not meet the range	Check parameters
3	Invalid parameters	1. The parameter exceeds the value range	Check the parameter values by comparing the instructions
5	Execution Error	1. Module working status error	/

Figure 0-1Error code table

6.3 Status Printing

state	Print information
Connection successful	STA:connected\r\n
Disconnection	STA:disconnect\r\n
System wake-up	STA: wake\r\n
Sleep Mode	STA:sleep\r\n

Chart 0-2Status Printing Table

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

6.4 Instruction List

6.4.1 AT test command

instruction	answer
AT	**+OK**
Description: None	

6.4.2 AT+RESET Reset Command

instruction	answer
AT+RESET	**+OK**
Description: Effective immediately	

6.4.3 AT+RESTORE restore factory command

instruction	answer
AT+RESTORE	**OK**
illustrate: 1、 After the reset is completed, it will restart automatically; 2、 During the factory reset process, any form of reset is prohibited, and power off before the operation is completed is prohibited; 3、 This will cause all binding information to be deleted	

6.4.4 AT+BAUD Serial port baud rate

instruction		answer
Query	**AT+BAUD?**	**+OK=[para]**
set up	**AT+BAUD=[para]**	**+OK: Success** **+ERR=[NUM]: Error**

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

parameter	para (ASCII)	Baud rate (bps)
	0	2400
	1	4800
	2	9600
	3	14400
	4	19200
	5	38400
	6	57600
	7	115200 (default)
	8	230400
illustrate	Restart to take effect	
Example	AT+BAUD=7. Set the baud rate to 115200 HEX: 41 54 2B 42 41 55 44 3D 37	

6.4.5 AT+PARI Serial port check bit

instruction		answer
Query	**AT+PARI?**	**+OK=[para]**
set up	**AT+PARI=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para(ASCII)	describe
	0	No inspection (default)
	1	Even parity
	2	Odd Parity
illustrate	Restart to take effect, save after power off	
Example	AT+PARI=0	

6.4.6 AT+STOPB Serial port stop bit

instruction		answer
Query	**AT+STOPB?**	**+OK=[para]**
set up	**AT+STOPB=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para(ASCII)	describe
	0	1 stop bit
	1	1.5 stop bits
	2	2 stop bits
illustrate	Restart to take effect, save after power off	

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

Example	AT+PARI=0

6.4.7 AT+ADVEN Broadcast Enable

instruction		answer
Query	**AT+ADVEN?**	**+OK=[para]**
set up	**AT+ADVEN=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	Para(ASCII) | describe 0 | Turn off broadcasting 1 | Enable broadcasting (default)	
illustrate	Restart to take effect, save after power off	

6.4.8 AT+NAME Modify broadcast name

instruction		answer
Query	**AT+NAME?**	**+OK=[para]**
set up	**AT+NAME=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para (string): device broadcast name Factory default: ebyte_switch	
illustrate	1、 Restart to take effect, save after power off 2、 The maximum length of a string is 16 bytes	

6.4.9 AT+ADVINTV connection gap configuration

instruction		answer
Query	**AT+ADVINTV?**	**+OK=[para]**
set up	**AT+ADVINTV =[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	[para] (ASCII): broadcast interval, value range: 32~16000; Default value: 32	
illustrate	The settings will take effect after restart and will be saved after power off.	
Example	**AT+ADVINTV=1000**	

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

6.4.10 AT+DISCON Disconnection Command

instruction		answer
implement	**AT+DISCON**	**STA: disconnected successfully** **+ERR=[NUM]: Error**
illustrate	Effective immediately.	

6.4.11 AT+MAC local MAC address

instruction		answer
Query	**AT+MAC?**	**+OK=[para]**
parameter	para（ASCII）:MAC address Example: F0E1D2C3B4A5	
illustrate	Effective immediately	
Example	Command: AT+MAC? Return: +OK=a4:c1:38:ec:ee:ba	

6.4.12 AT+CONSTA connection device information

instruction		answer
Query	**AT+CONSTA?**	**+OK=[para] connected**
parameter	para（ASCII）： +OK=Connected 4d:aa:1f:42:ce:f2 - Connected Disconnected	

6.4.13 AT+SLEEP The module immediately enters sleep mode

instruction		answer
set up	**AT+SLEEP**	STA:sleep
parameter	none	
illustrate	Effective immediately.	

6.4.14 AT+PWR Transmit power

Note: EWM104-BT13 and EWM104-BT13 X can set the transmit power through commands; EWM104-BT13 PX cannot set the transmit power and maintains 20dBm transmit power.

instruction		answer
Query	**AT+PWR?**	**+OK=[para]**
set up	**AT+PWR =[para]**	**+OK: Success** **+ERR=[NUM]: Error**

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

parameter	**para(ASCII)**	**val**
	0	11.5 dBm
	1	8 dBm
	2	4 dBm
	3	0 dBm (default)
	4	-4 dBm
	5	-8 dBm
	6	-10 dBm
	7	-14 dBm
	8	-18 dBm
	9	-24 dBm
	10	-30 dBm
illustrate	Restart to take effect, save after power off	

6.4.15 AT+PIN module and mobile phone pairing password

instruction		answer
Query	**AT+PIN?**	**+OK=[para]**
set up	**AT+PIN=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para(ASCII): Password for pairing with the phone 100000 - 999999 Default: 123456	
illustrate	Restart to take effect, save after power off;	

6.4.16 AT+BOND Enable the pairing and binding function of the module

instruction		answer
Query	**AT+BOND?**	**+OK=[para]**
set up	**AT+BOND[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para (ASCII)	describe
	0	Disable host pairing
	1	Allow host to pair (default)
illustrate	Restart to take effect, save after power off;	

6.4.17 AT+OLTIME Inching unlocking duration

instruction		answer
Query	**AT+OLTIME?**	**+OK=[para]**
set up	**AT+OLTIME=[para]**	**+OK: Success**

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

		+ERR=[NUM]: Error
parameter	para(ASCII): unlocking action duration in jog mode 10 – 65535 (ms)	
illustrate	Restart to take effect, save after power off;	

6.4.18 AT+CLTIME Jog lock duration

instruction		answer
Query	**AT+CLTIME?**	**+OK=[para]**
set up	**AT+CLTIME=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para(ASCII): Locking action duration in jog mode 10 – 65535 (ms) Default: 100	
illustrate	Restart to take effect, save after power off;	

6.4.19 AT+OLRSSI RSSI threshold for unlocking action triggering

instruction		answer
Query	**AT+OLRSSI?**	**+OK=[para]**
set up	**AT+OLRSSI=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para(ASCII): RSSI threshold value that triggers unlocking action 0 - 100 Note that this value needs to be less than the threshold for the lock action. Default: 40	
illustrate	Restart to take effect, save after power off;	

6.4.20 AT+CLRSSI RSSI threshold triggered by lock action

instruction		answer
Query	**AT+CLRSSI?**	**+OK=[para]**
set up	**AT+CLRSSI=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para(ASCII): RSSI threshold value that triggers the lock action 0 - 100 Note that this value needs to be greater than the unlock threshold. Default: 80	
illustrate	Restart to take effect, save after power off	

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

6.4.21 AT+OLMODE Unlocking mode setting

instruction		answer
Query	**AT+OLMODE?**	**+OK=[para]**
set up	**AT+OLMODE=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para (ASCII)	describe
	0	Unlock mode is inching
	1	Unlock mode is long action (default)
illustrate	Restart to take effect, save after power off	

6.4.22 AT+CLMODE Locking action mode setting

instruction		answer
Query	**AT+CLMODE?**	**+OK=[para]**
set up	**AT+CLMODE=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para (ASCII)	describe
	0	Lock mode is inching
	1	Lock mode is long motion (default)
illustrate	Restart to take effect, save after power off;	

6.4.23 AT+PWMTIME duration of pwm inching output mode

instruction		answer
Query	**AT+PWMTIME?**	**+OK=[para]**
set up	**AT+PWMTIME=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para(ASCII): Output duration in pwm jog mode 10 – 65535 (ms) Default: 1000	
illustrate	Restart to take effect, save after power off	

6.4.24 AT+PWMMODE pwm output mode setting

instruction		answer
Query	**AT+PWMMODE?**	**+OK=[para]**
set up	**AT+PWMMODE=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para (ASCII)	describe

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

	0	Output pwm wave in jog mode
	1	Output pwm wave in long-term mode (default)
illustrate	Restart to take effect, save after power off	

6.4.25 AT+PWMFREQ PWM frequency setting

instruction		answer
Query	**AT+PWMFREQ?**	**+OK=[para]**
set up	**AT+PWMFREQ=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para(ASCII): pwm wave period 3 – 1000 (Hz) Default: 100	
illustrate	Restart to take effect, save after power off	

6.4.26 AT+PWMCYCLE PWM duty cycle setting

instruction		answer
Query	**AT+PWMCYCLE?**	**+OK=[para]**
set up	**AT+PWMCYCLE=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para(ASCII): pwm duty cycle 0 – 100 (%) Default: 50	
illustrate	Restart to take effect, save after power off	

6.4.27 AT+PEERRSSI Query the RSSI value of the connected device

instruction		answer
Query	**AT+PEERRSSI?**	**+OK=[para]**
parameter	para(ASCII): rssi value of the connected device +OK=-43	

6.4.28 AT+GETADC Get the voltage value of PB2 pin

instruction		answer
Query	**AT+PIN?**	**+OK=[para]**
parameter	para(ASCII): Get the level on the PB2 pin (0 – 4.2V. Note that the supply voltage must be 4.2V	

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

	when detecting 4.2V)

6.4.29 AT+SETBATTERY Battery service characteristic value setting

instruction		answer
set up	**AT+PIN=[para]**	**+OK: Success** **+ERR=[NUM]: Error**
parameter	para(ASCII): ble value in the battery service 0 - 100	
illustrate	Takes effect immediately and will not be saved if power is turned off	

6.4.30 AT+VER Query software version number

instruction		answer
Query	AT+VER?	+OK=[para]
parameter	Para: Current software version number	
illustrate	1、 Only query function is supported.	
Example	Send: AT+VER? Return: +OK=7508-0-10	

6.4.31 AT+GETBONDINFO Get bound device information

instruction		answer
Query	AT+GETBONDINFO ?	[para]\r\n . . . +OK
parameter	para: The saved mac address of the peer device	
illustrate	Only query function is supported.	
Example	Send: AT+GETBONDINFO ? Returns: 4a:18:9f:8a:6c:c1 +OK	

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

7 Quick Use

Recommended software for debugging/testing:

- PC serial port tool - XCOM.exe;
- Mobile BLE debugging APP - nRF connect.
- WeChat applet, use WeChat to scan the QR code to enter:

7.1 Mobile phone connection module guide

- Open the Bluetooth function interface of the mobile phone system
- Wait for the system to scan for the device named Ebyte_switch



Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

- Click on the device to connect and wait for the pairing code verification interface to appear



- Enter a 6-digit password (default 123456) and click Pair.
- Pairing successful



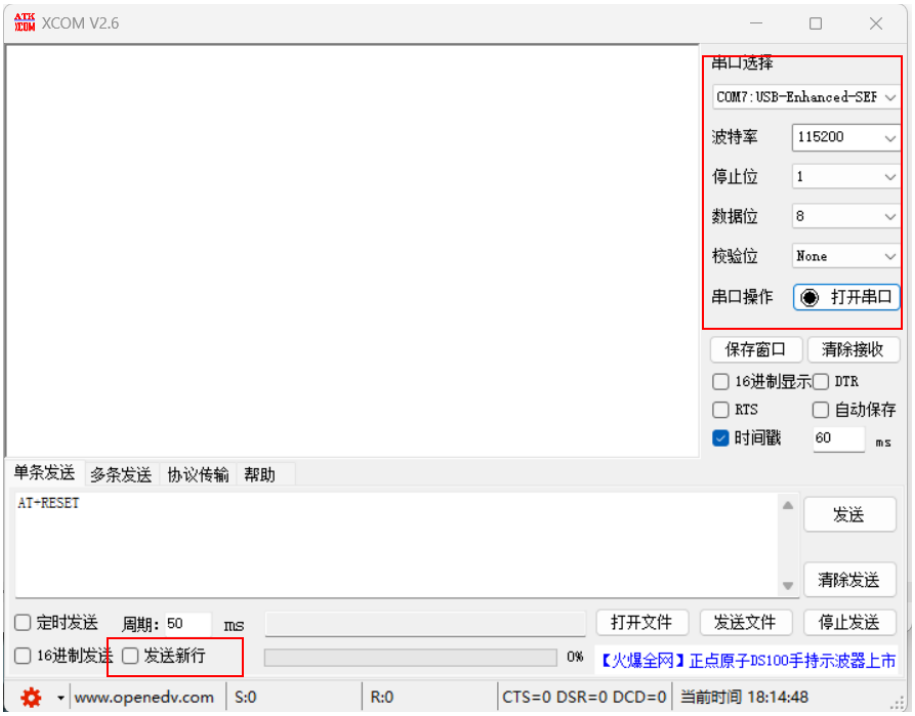
7.2 Configuration Mode Quick Start Guide

7.2.1 Serial port configuration

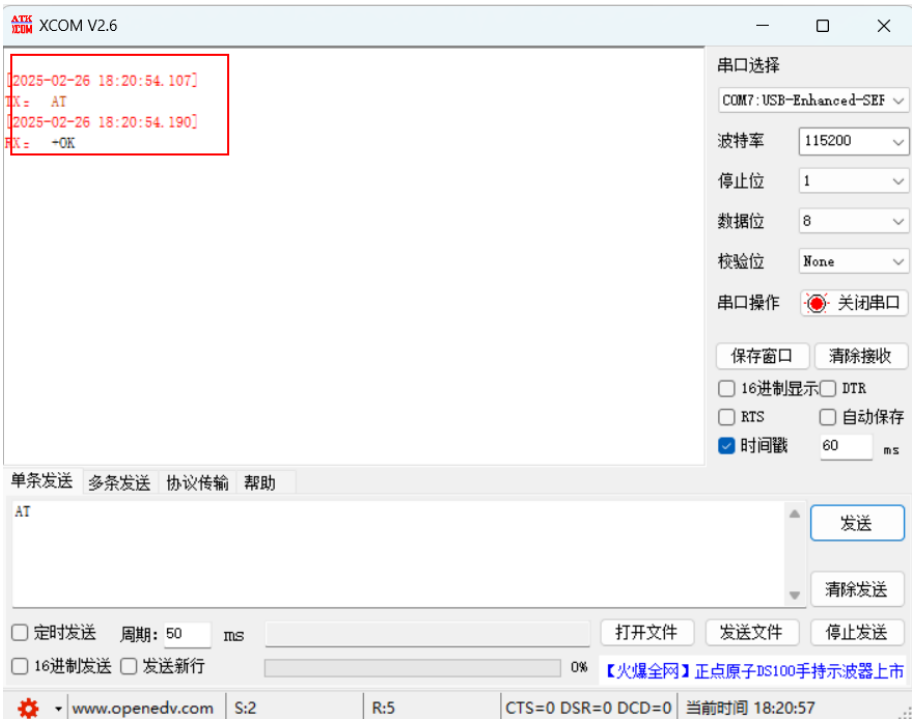
- Set the XCOM string related configuration (default configuration: 115200, 8, 1, none, no stream empty), as **错误!未找到引用源。**;

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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



- 6.4 Instruction List6.4 ;



Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

7.2.2 WeChat applet configuration

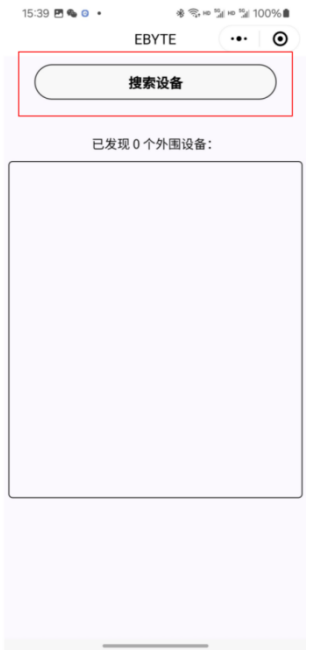
- You need to confirm that the module has been paired with the phone



- Use WeChat to scan the QR code to open the WeChat applet :



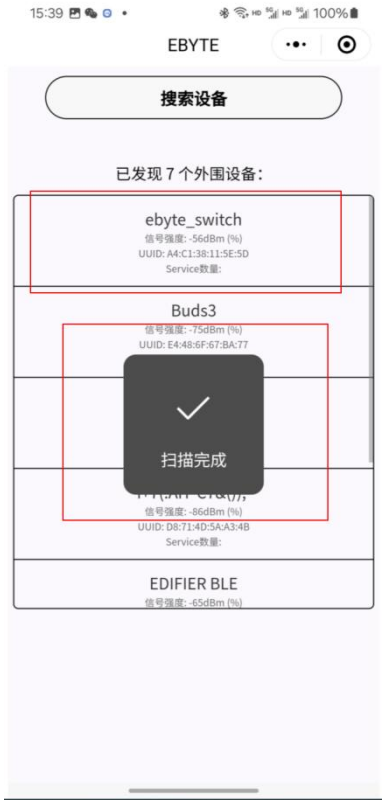
- Click Search Device



Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

- Wait for the applet to prompt that the scan is complete, and then find the device with the corresponding name (the default is ebyte_switch)



- Click the device name and wait for connection
- After the connection is completed, as shown in the figure



- Click Configure
- Enter the pairing password for verification

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

- After successful verification, enter the configuration interface



Figure 0-6 WeChat applet parameter interface

- After modifying the data as prompted, click Modify to improve the module configuration.
- Modification successful



Figure 0-7 WeChat applet modification success diagram

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

7.3 Proximity switch function description

When the phone is paired with the module, the phone will automatically connect to the module (if you do not actively disconnect the module). When the phone is close to the module, the module's unlocking function io and pwm will be triggered. When the phone is far away from the module to a certain extent (or the module is directly disconnected), the module's locking function io will be triggered.

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

8 Frequently Asked Questions

8.1 The transmission distance is not ideal

- When there is a straight-line communication obstacle, the communication distance will be attenuated accordingly ;
- Temperature, humidity, and co-channel interference can increase the communication packet loss rate ;
- The ground absorbs and reflects radio waves, so the test results are poor when close to the ground ;
- Seawater has a strong ability to absorb radio waves, so the test results at the seaside are poor ;
- If there are metal objects near the antenna, or the antenna is placed in a metal shell, the signal attenuation will be very serious ;
- The power register is set incorrectly, or the air rate is set too high (the higher the air rate, the closer the distance) ;
- The power supply voltage at room temperature is lower than the recommended value. The lower the voltage, the lower the power output .
- The antenna used does not match the module well or the antenna itself has quality issues.

8.2 Modules are vulnerable to damage

- Please check the power supply to ensure that it is within the recommended power supply voltage. If it exceeds the maximum value, the module will be permanently damaged .
- Please check the stability of the power supply. The voltage should not fluctuate greatly or frequently .
- Please ensure anti-static operation during installation and use, as high-frequency components are sensitive to static electricity ;
- Please ensure that the humidity is not too high during installation and use, as some components are humidity sensitive devices ;
- If there is no special requirement, it is not recommended to use it at too high or too low temperature.

8.3 The bit error rate is too high

- There is interference from the same frequency signal nearby. Stay away from the interference source or change the frequency or channel to avoid interference.
- Unsatisfactory power supply may also cause garbled characters, so the reliability of the power supply must be ensured;
- Extension cables or feeder cables that are of poor quality or are too long can also cause a high bit error rate.

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

9 Welding Operation Instructions

9.1 Reflow temperature

During reflow soldering, all temperatures refer to the center temperature of the package, measured on the upward package surface (leads facing down, i.e. live worm direction). If the reflow soldering does not use the live worm direction (leads facing up, i.e. dead worm direction) to measure the module temperature, the measured Tp temperature is within ±2°C of the Tp temperature measured in the live worm direction, and still meets the Tc requirement. Otherwise, the temperature curve should be adjusted to meet the Tc requirement. In order to accurately measure the actual peak temperature of the package body, it is recommended to use the method recommended by JEP140 to perform furnace temperature testing.

In order to obtain better welding results, the production workshop recommends controlling the temperature at 25°C. When the temperature curve of the welded parts needs to be reset, the same structure of the load fixture should be used for reflow soldering, or it should be verified to have an equivalent heat load.

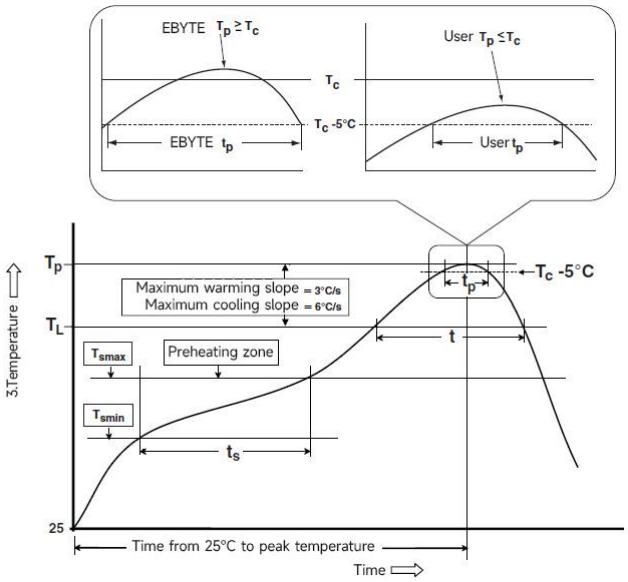
The reflow soldering curve in this document is a suggestion for soldering Ebyte modules only, and cannot be used to confirm the actual assembly curve of the user. The actual production process of the user should be based on the specific production process, needs and circuit board design to develop the actual production assembly curve, and should not exceed the following table:

Reflow profile characteristics		Leaded process assembly	Lead-free assembly
Preheating/keeping	Minimum temperature (Tsmin)	100℃	150℃
	Maximum temperature (Tsmax)	150℃	200℃
	Time (Tsmin~Tsmin)	60-120 seconds	60-120 seconds
Heating slope (TL~Tp)		3℃/sec, max.	3℃/sec, max.
Liquidus temperature (TL)		183℃	217℃
Keep time above TL		60~90 seconds	60~90 seconds
Package peak temperature Tp		Users must not exceed the temperature stated on the product's "Moisture Sensitivity" label.	Users must not exceed the temperature stated on the product's "Moisture Sensitivity" label.
The time (Tp) within 5°C of the specified classification temperature (Tc) is shown in the figure below.		20 seconds	30 seconds
Cooling slope (Tp~TL)		6℃/sec, max.	6℃/sec, max.
Time from room temperature to peak temperature		6 minutes, longest	8 minutes, longest
※The peak temperature (Tp) tolerance of the temperature curve is defined as the upper limit of the user			

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

9.2 Reflow Oven Curve



Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

10 Related Models

Product Model	Chip Solution	Operating frequency Hz	emission power dBm	Communication interface	Support Agreement B L	Product size mm	antenna form	Features
E72-2G4M05S1B	CC2640	2.4G	5	I/O	4.2	1 7.5 * 28.7	PCB/IPX	Hardware Resources Secondary Development
E73-2G4M04S1A	nRF52810	2.4G	4	I/O	4.2/5.0	1 7.5 * 28.7	PCB/IPX	Hardware Resources Secondary Development
E73-2G4M04S1B	nRF52832	2.4G	4	I/O	4.2/5.0	1 7.5 * 28.7	PCB/IPX	Hardware Resources Secondary Development
E73-2G4M08S1C	nRF52840	2.4G	8	I/O	4.2/5.0	1 3 * 18	PCB/IPX	Hardware Resources Secondary Development
E73-2G4M04S1D	nRF51822	2.4G	4	I/O	4.2	1 7.5 * 28.7	PCB/IPX	Hardware Resources Secondary Development
E104-BT01	CC2541	2.4G	0	I/O	4.0	14*22	PCB	Hardware Resources Secondary Development
E104-BT02	DA14580	2.4G	0	TTL	4.2	14*22	PCB	The industry's lowest power consumption High-speed continuous transmission sniffing
E72-2G4M04S2B	CC2640	2.4G	2	TTL	4.2	14*2 3	PCB/IPX	Built-in A RM dual core Multi-role mode
E104-2G4U04A	CC2540	2.4G	0	USB	4.0	1 8 * 59	PCB	Dongle Protocol

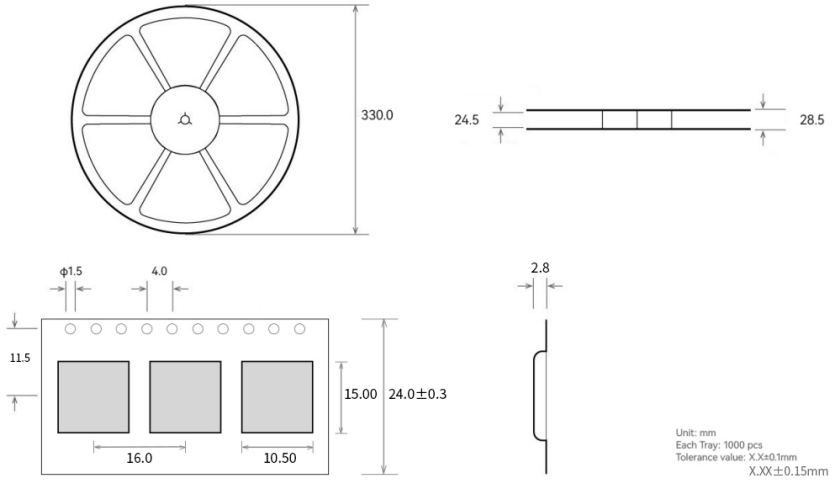
Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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

								Analyzer
E104-BT5010A	nRF52810	2.4G	0	UART	5.0	1 1.5 * 16	Ceramic Antenna	Low power consumption, transparent transmission

11 Bulk packaging method

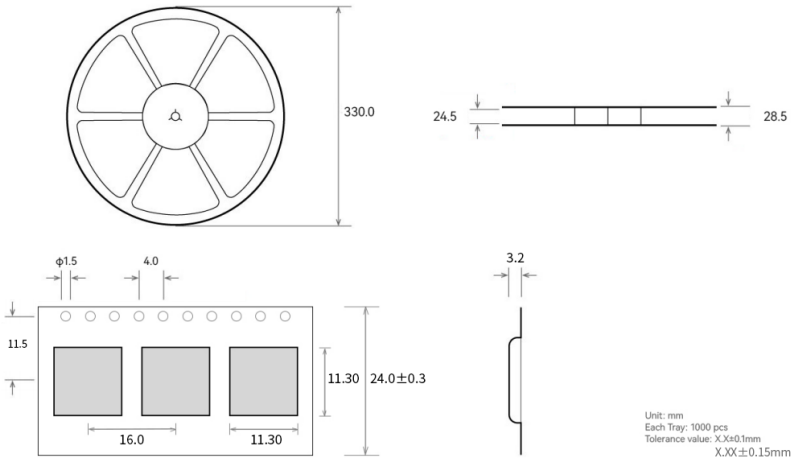
EWM104-BT13SP



EWM104-BT13SX

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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



Copyright © 2012–2025 , 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
1.0	2025-03-11	First edition	Bin
1.1	2025-07-01	Modify the description of the PD7 pin definition.	Bin

About us

Hot linne:4000-330-990
Technical support: support@cdebyte.com
Documents and RF Setting download link: www.cdebyte.com
Thank you for using Ebyte products! Please contact us with any questions or suggestions: info@cdebyte.com
Address: B2 Mould Park, 199# Xiqu Ave, High-tech District, Sichuan, China

Chengdu Ebyte Electronic Technology Co.,Ltd.

Copyright © 2012–2025 , Chengdu Ebyte Electronic Technology Co.,Ltd.

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