EWT104-BT09SP User Manual

Bluetooth Test Board



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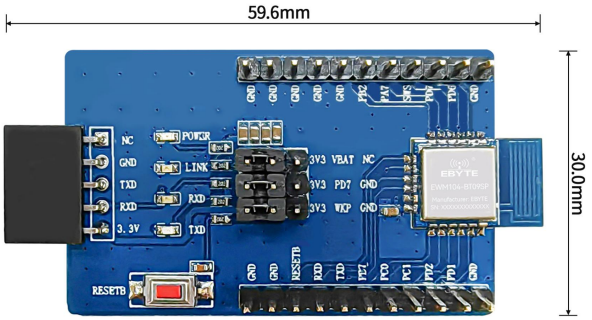
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1 Overview

1.1 Product Introduction

EWT104-BT09SP is a Bluetooth test kit based on the EWM104-BT09SP module, which can significantly reduce the user's development cycle. For detailed information about EWM104-BT09SP, please visit the official website to download relevant information about this model .



1.2 Module Features

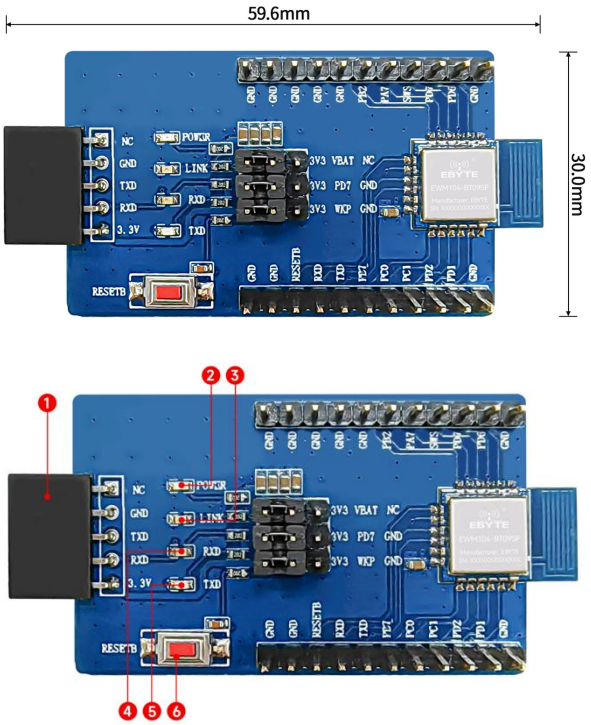
- Support BLE5.0;
- Support slave role only;
- Support IBeacon and normal broadcast switching;
- Support transmission power modification, the maximum transmission power is 11.5dBm ;
- The maximum MTU is 200 bytes;
- Communication interface: UART.

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2 Hardware Description

2.1 Product size and pin definition

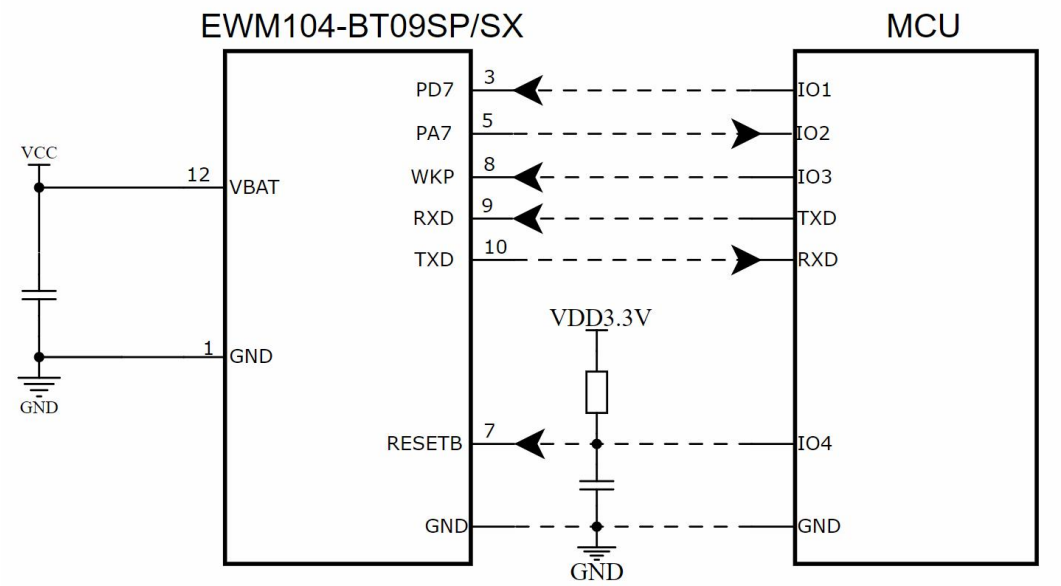


Serial number	Definition	Illustrate	Remark
1	NC	-	2.54mm pitch female header
	GND	Power Ground	
	TXD	Serial port output pin	
	RXD	Serial port input pin	
	3.3V	DC 3.3V input pin	
2	POWER	Power indicator	-
3	LINK	Connection status indicator	-
4	RxD	Serial port receiving indicator	-
5	TXD	Serial port sending indicator	-
6	RESETB	Reset button	-

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2.2 Module recommended wiring diagram



2.3 Special pin function description

Level / PIN	High level	Low level
LINK	Output high level after establishing connection	Output high level after disconnection
RESTORE	The default is internal pull-up.	After the falling edge and then maintaining a low level for at least 5 seconds, all parameters are restored to factory settings and the module is automatically restarted.
WKP	High level, the module enters wake-up mode and the serial port starts working	Default low level, low power consumption mode, serial port cannot communicate
RESET	Normal operation is high level state	Input low level module reset (maintain 500ms)

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3 Software Functions

It is recommended to use Xcom serial port debugging assistant for communication testing.

3.1 Common instructions

- Test Instructions

  Send: AT?
  Return: AT

- Restore factory settings

  Send: AT+FACTPRY (the command will restart the module)
  Return: DEVICE_NAME:EBYTEBLE MAC:180D0238C1A4 / DEVICE_NAME:<NAME> MAC:<MAC> (actually power-on printing)

- Set the module to enable broadcast function

  Send: AT+ADV=1
  Return: OK+ADV

- Modify the module broadcast name

  Send: AT+NAME=quick_start
  Return: OK+NAME

- Modify the module broadcast name

  Send: AT+SAVE
  Return: DEVICE_NAME:quick_start MAC:180D0238C1A4 / DEVICE_NAME:<NAME> MAC:<MAC> (actually printed when powered on)

- Restart your device

  Send: AT+RESET
  Return: DEVICE_NAME:EBYTEBLE MAC:40050238C1A4

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4 Quick Use

This chapter introduces the module working mode ; the process of the module communicating with the mobile phone as a slave .

4.1 Working Mode

The modules are mainly divided into:

- AT command description

  The module is always in the state of responding to AT commands, so when connecting the module for transparent transmission, the data sent needs to avoid data related to AT commands .

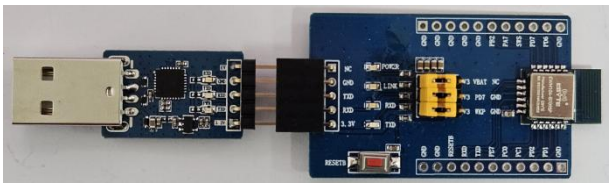
- The transmission mode

  When module is connected, the data sent through the serial port will be forwarded to the Bluetooth mode switch:

4.2 The module communicates with the mobile phone nrf connect app as a slave

4.2.1 Preparation

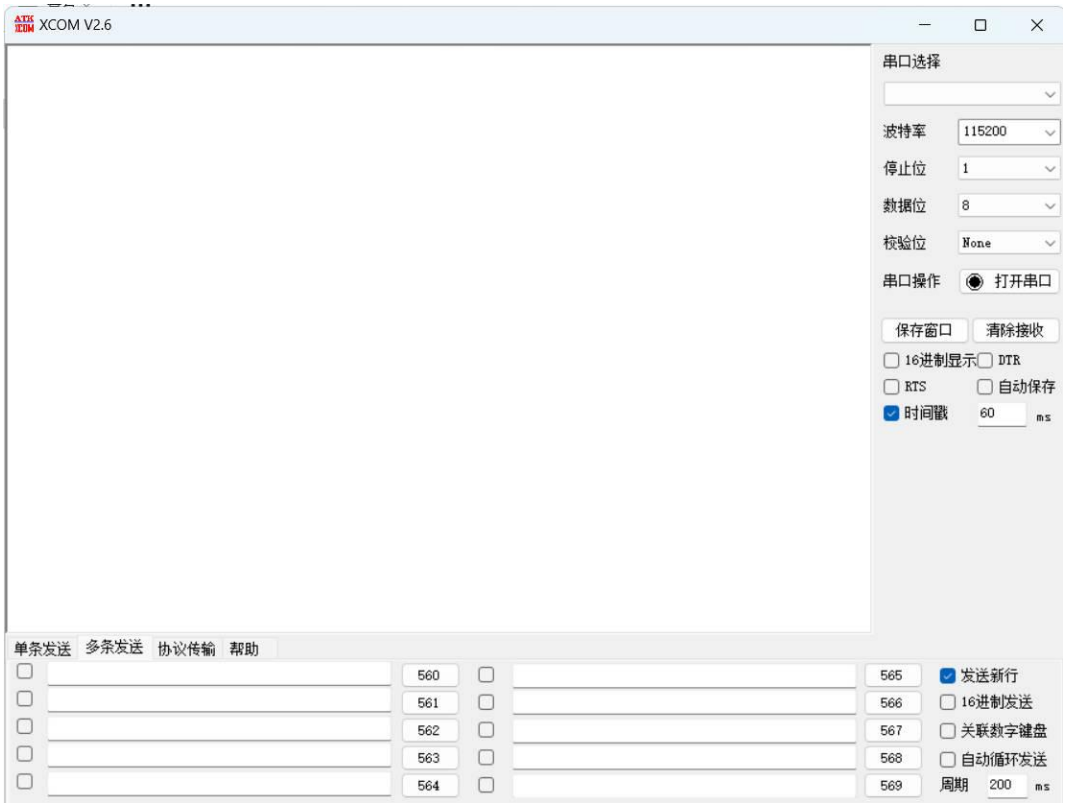
- Prepare 2pcs EWT104-BT09SP kit and 2pcs E15-USB-T3 serial converter , and connect them as shown below .



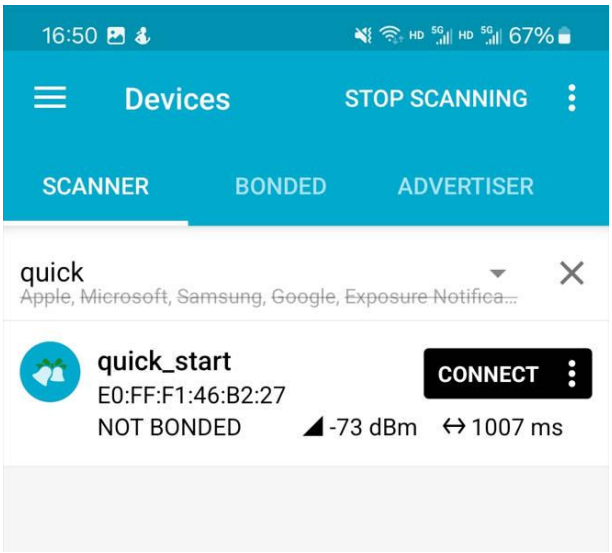
- Open the Xcom serial port debugging assistant .

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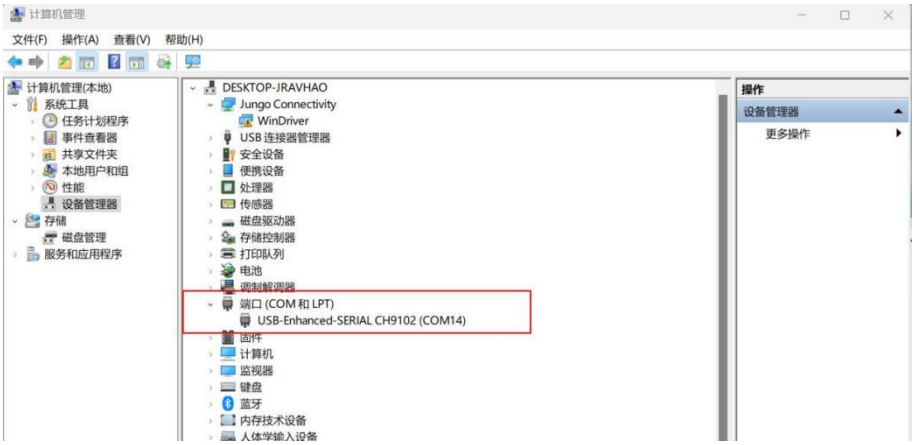
- Mobile phone and nrf connect app



- After connecting the test kit to the computer, you can see the following ports in the device manager

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- Usually, Windows 10 and above will automatically install the serial port driver, but if no corresponding port appears after the test board is connected to the computer through the USB port, you can try to install the serial port driver first .

4.2.2 Connection steps

1. Connect the test kit to the computer via the USB port. After the test is connected to the computer, you can see the corresponding port number in "My Computer->Properties->Device Management->Port"
2. Open the Xcom assistant, select the corresponding port number, select the serial port parameters, and click to open the serial port .

   Baud rate: 115200

   Stop bit: 1 bit

   Data bits: 8 bits

   Check digit: NONE
3. Configure the module according to the steps below:

   ① Factory reset

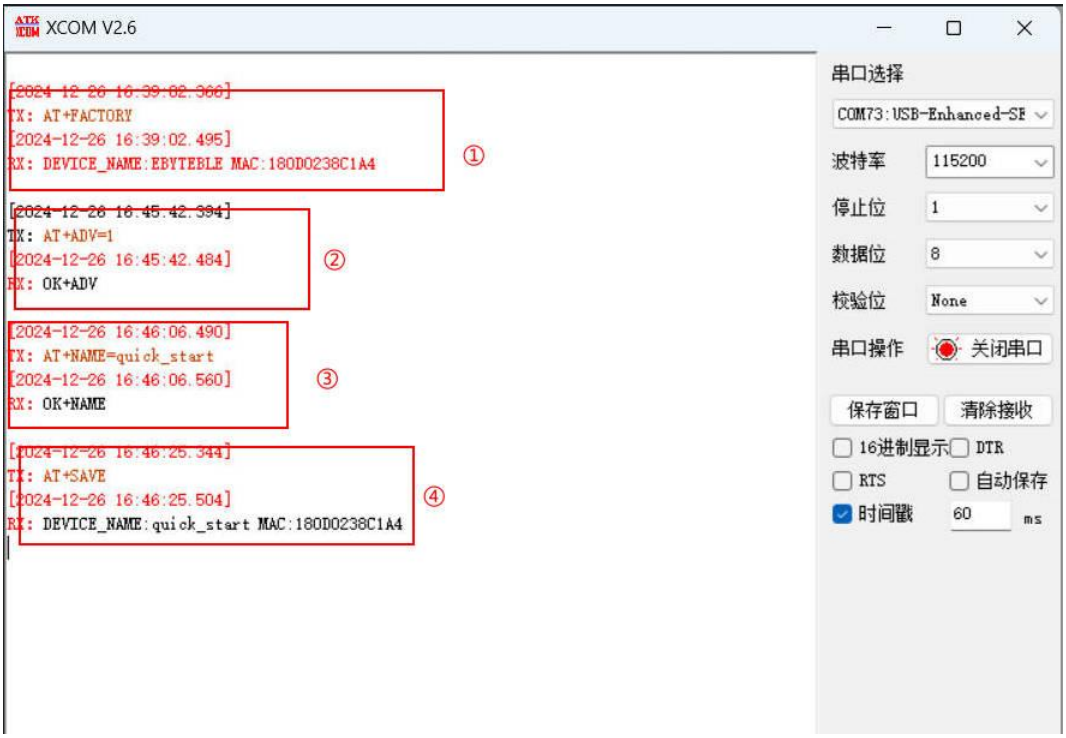
   ② Open the normal broadcast function of the slave device

   ③ Modify the name of the slave broadcast

   ④ Save configuration

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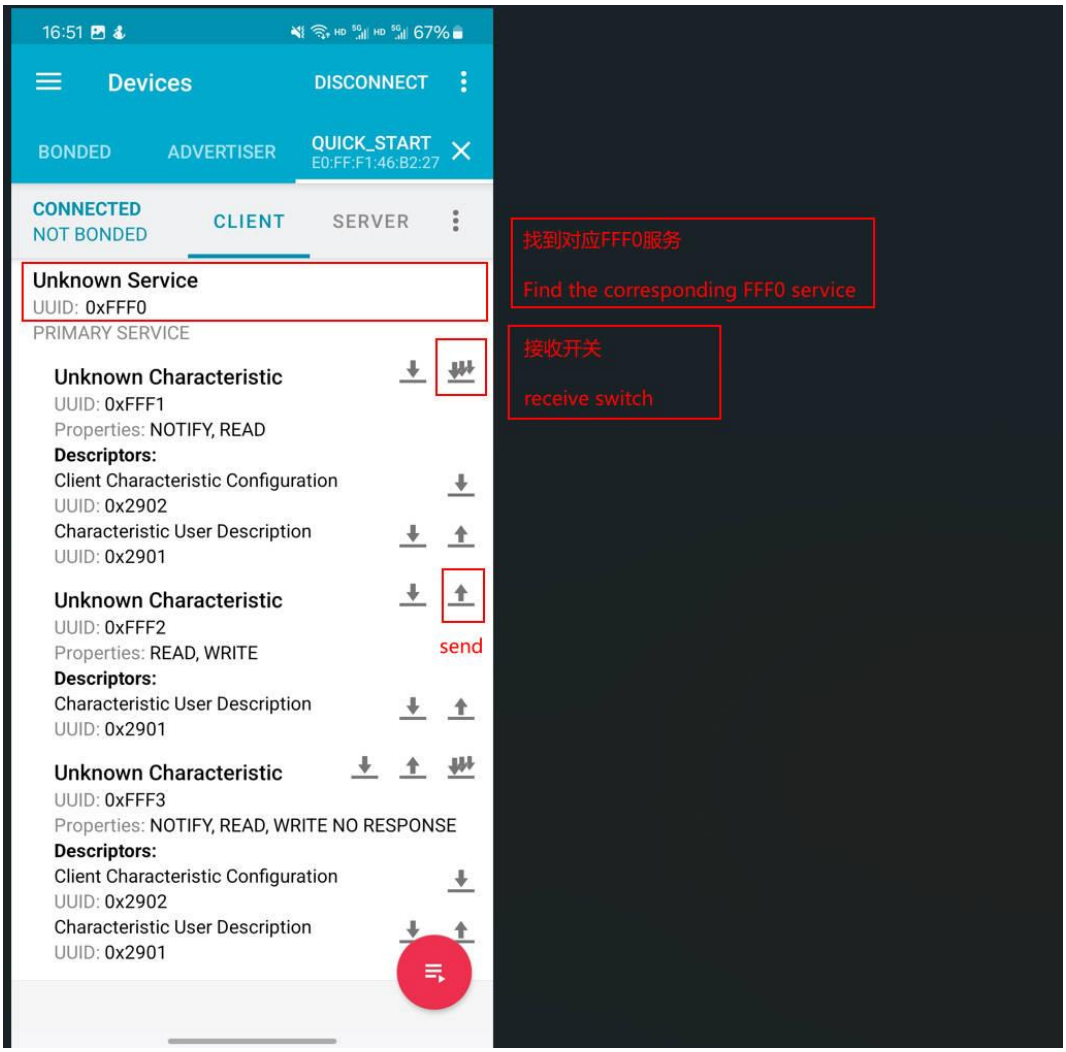
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4. Open the "nrf connect" app on your phone .
5. Find the corresponding Bluetooth module and click the "connect" button to connect the module.
6. Find the corresponding service, turn on the corresponding receiving switch , and click "send" .

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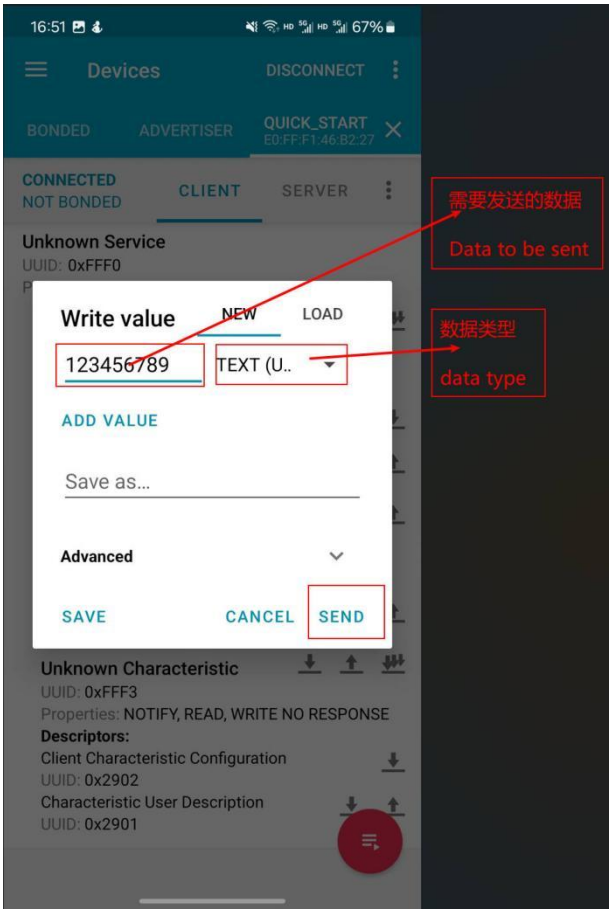
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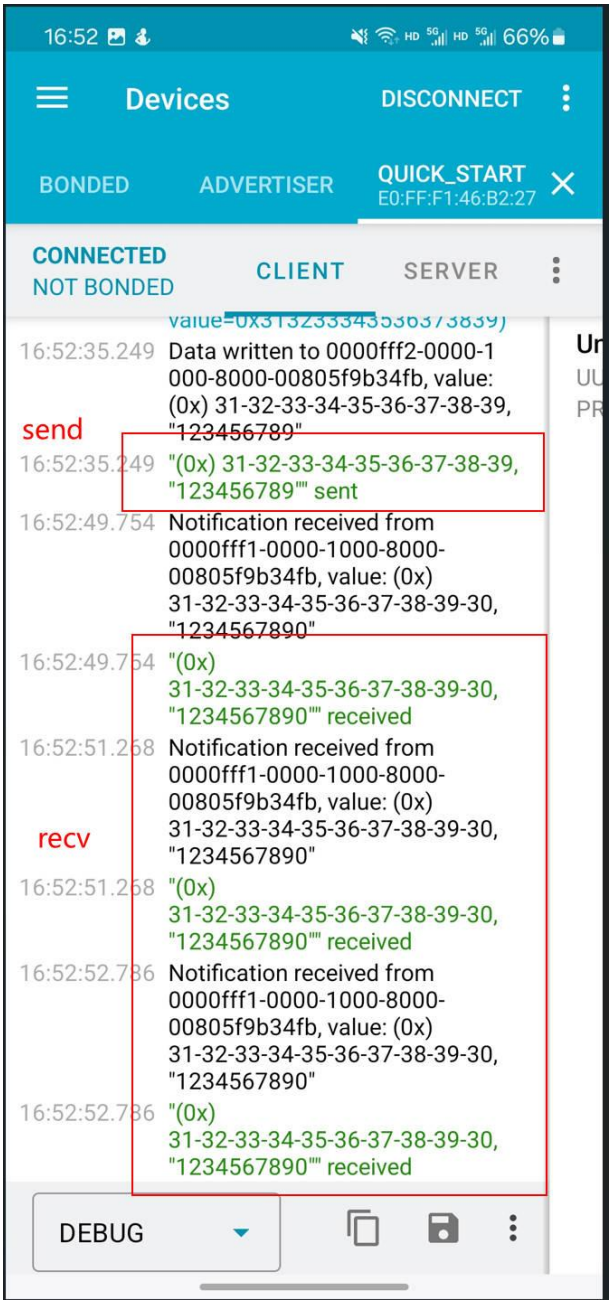
7. Enter the data 123456789, select the data type, and click the Send button



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8. Swipe right on the interface to enter the log interface .



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9. Test kit receiving and sending display.

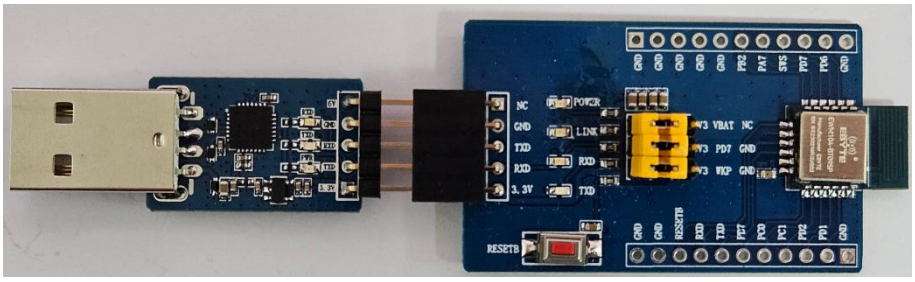


4.3 Transparent transmission demonstration

The modules are configured as the host and slave roles respectively to complete the data transmission between modules . The following describes the process of connection and communication between modules.

4.3.1 Preparation

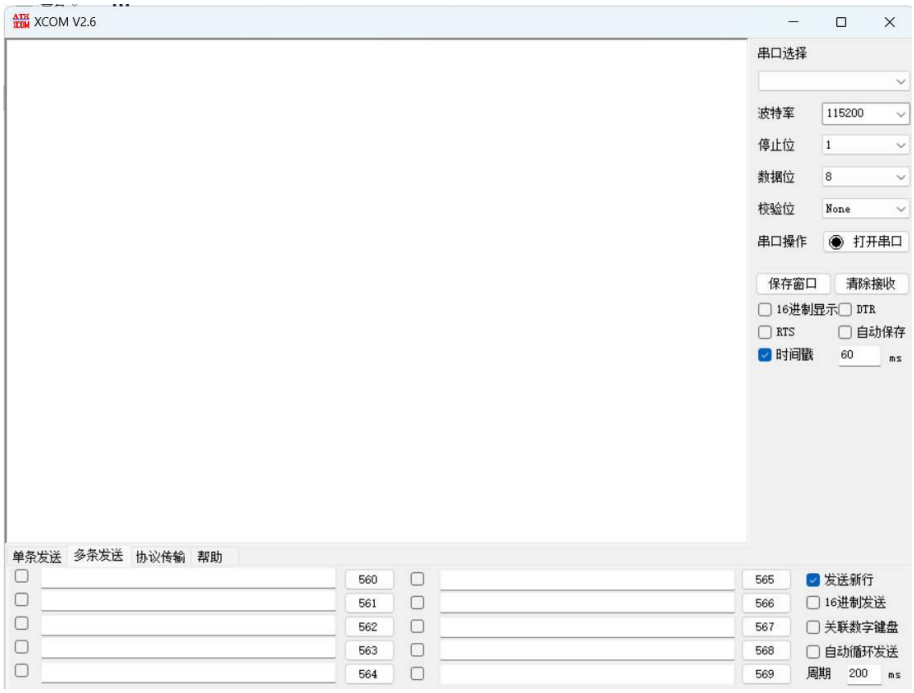
- Prepare 2pcs E104- BT09SP test kit and 2pcs E15-USB-T3 , and connect them as shown below .



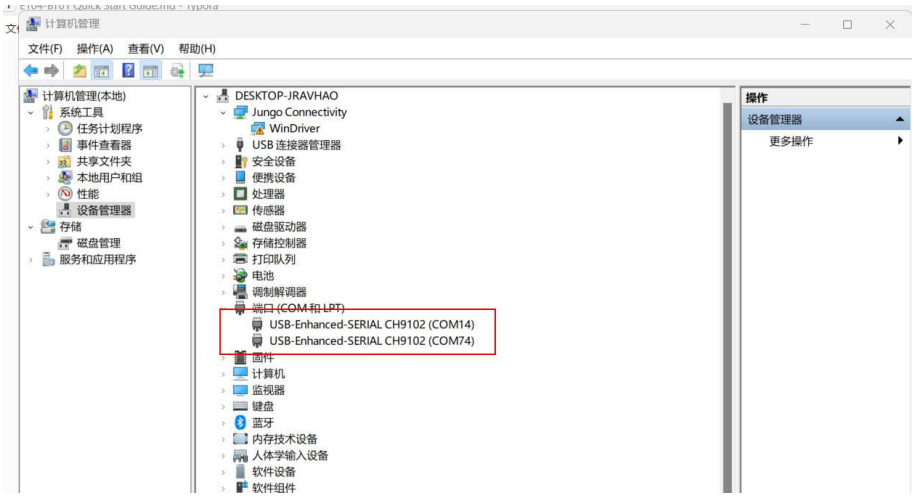
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- Open Xcom serial port debugging assistant



- After connecting the test kit to the computer, you can see the following ports in the device manager



- Usually, Windows 10 and above will automatically install the serial port driver, but if the test kit is connected to the computer through the USB port and no corresponding port appears, you can try to install the serial port driver first.

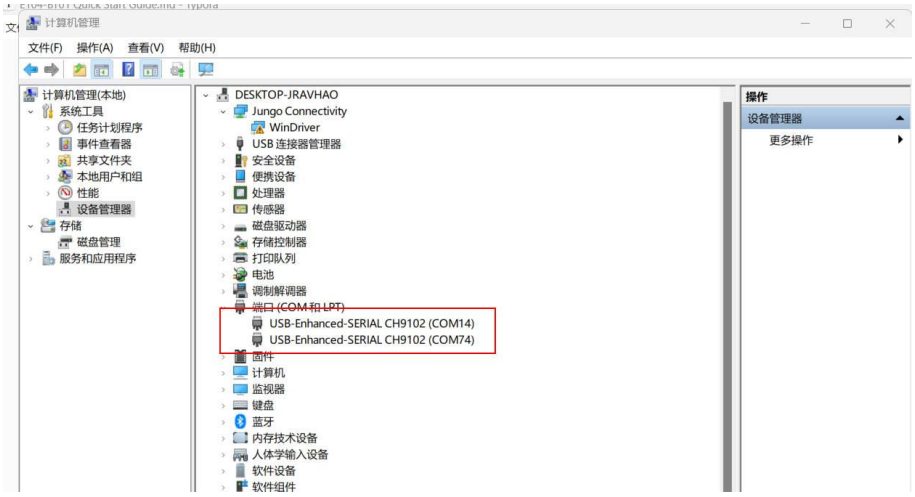
- Communication between modules does not require the participation of a mobile phone.

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4.3.2 Connection steps

1. Connect the test board to the computer via the USB port. After the test board is connected to the computer, you can see the corresponding port number in "My Computer->Properties->Device Management->Port". Here, connect test board A and test board B to the computer and you can see two ports .



2. Open two Xcom serial port debugging assistant software, select two corresponding serial port numbers respectively, select serial port parameters, and click to open the serial port.

   Baud rate: 115200

   Stop bit: 1 bit

   Data bits: 8 bits

   Check digit: NONE

3. Follow the steps in the figure below to configure Test board B as a slave .

   ① Test instructions, check if the instruction functions properly

   ② Factory reset

   ③ Restart module

   ④ Set the module to work in slave mode

   ⑤ Enable functional information output

   ⑥ Open the normal broadcast function of the slave device

   ⑦ Modify the name of the slave broadcast

   ⑧ Restart module

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4. Follow these steps to configure Test board A as the master role .

① Test instructions, check if the instruction functions properly

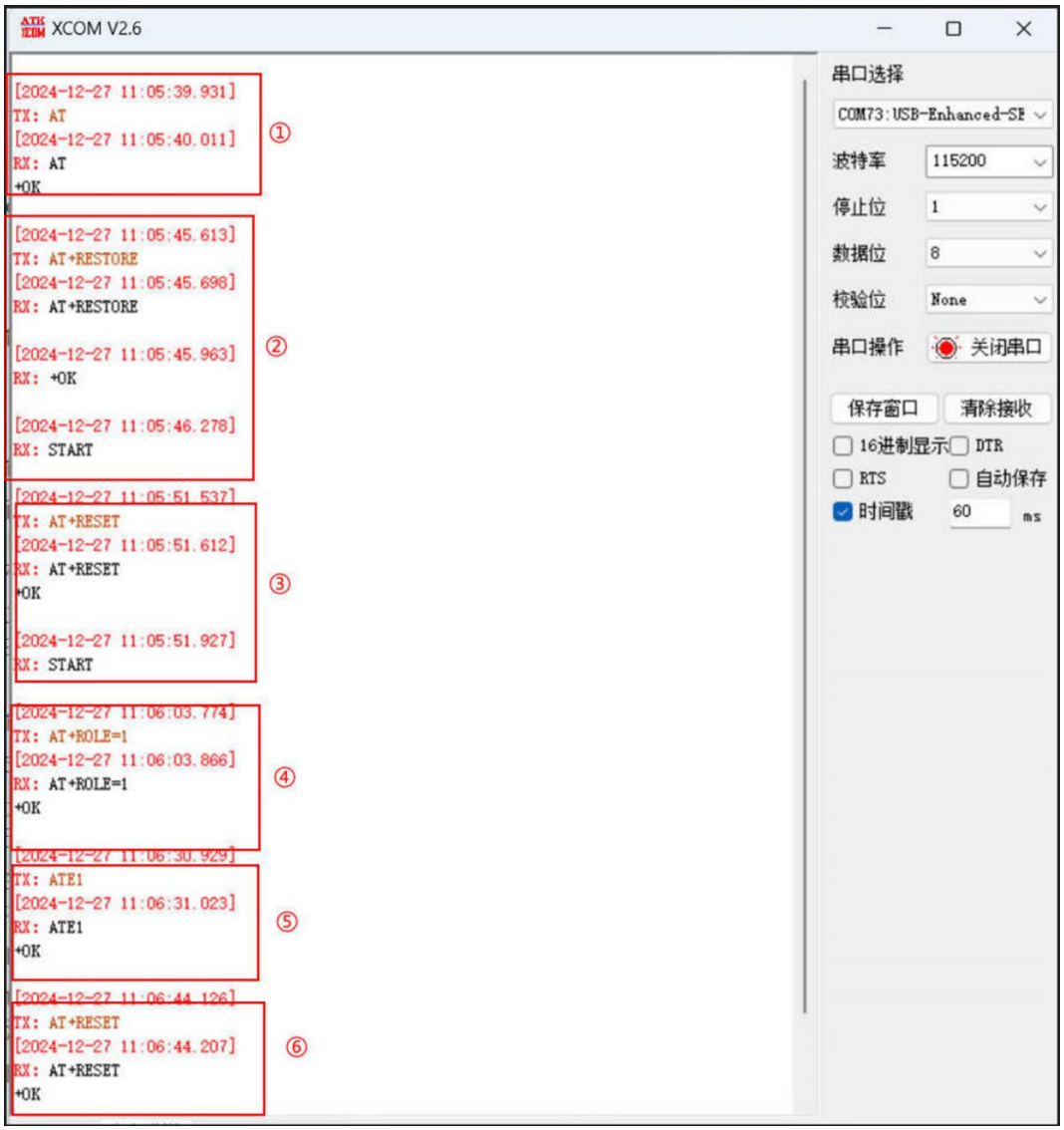
② Factory reset

③ Restart module

④ Set the module to work in the master role

⑤ Enable functional information output

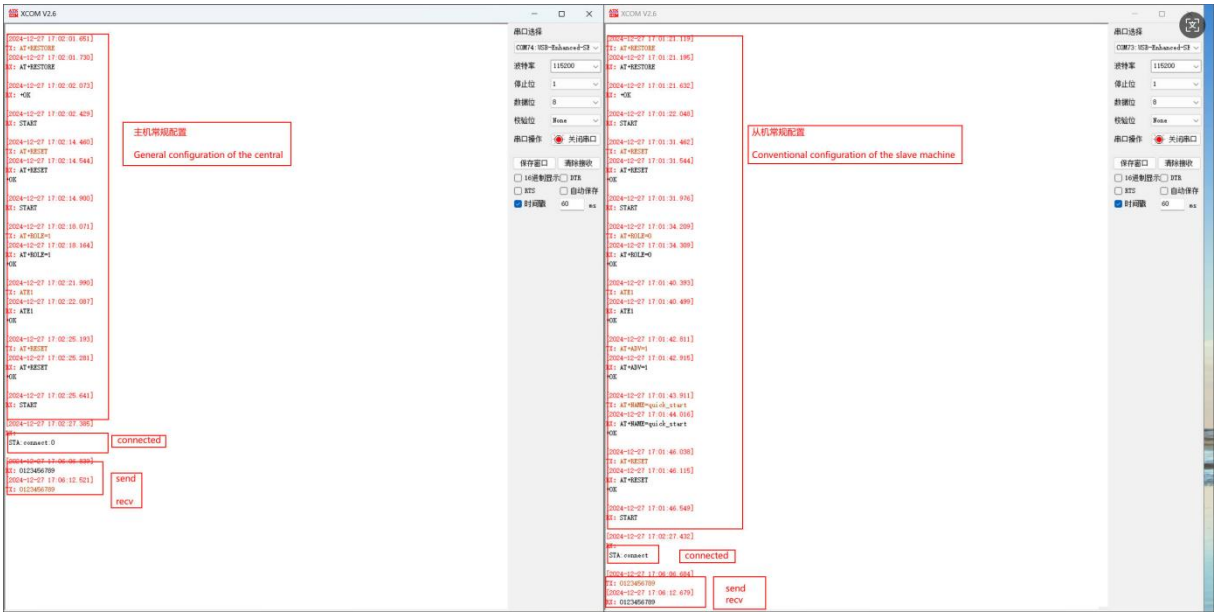
⑥ Restart module



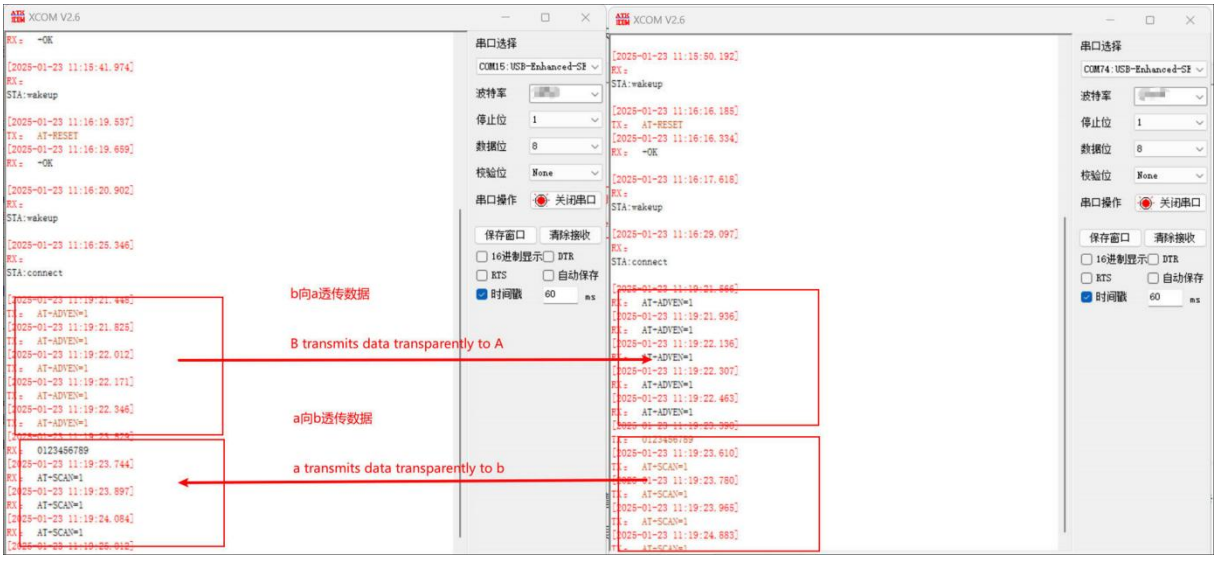
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5. After configuration is complete, wait for the module to automatically connect .



6. Data transmission test.

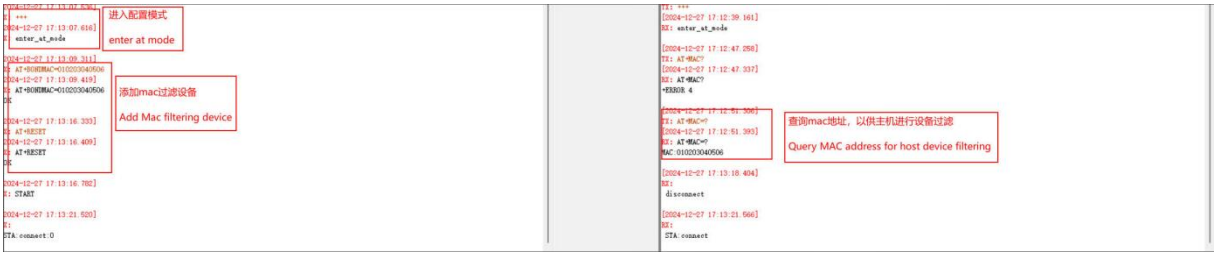


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4.4 Master bond function, use MAC address to filter slaves

Based on Section 4.3, master A enables the binding function, as shown in the figure :



Display: STA: connect style output

5 Frequently Asked Questions

- Serial port baud rate of the EWM104-BT09SP module is 115200;
- When the command displays an ERR prompt, you can refer to the E104- BT09SP user manual. If you use other serial port assistants for debugging, please check the string length;
- Note that this module only supports one master when acting as a master;
- Note that there are no other symbols at the end of the command (some serial port assistants, or the user has checked the send new line function, which will cause the software to automatically add special symbols to the end of the command) .

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Revision History

Version	Revision Date	Revision Notes	Maintainer
1.0	2025-03-26	Initial release	Bin

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