EWT104-BT01 User Manual

Bluetooth Test Kit



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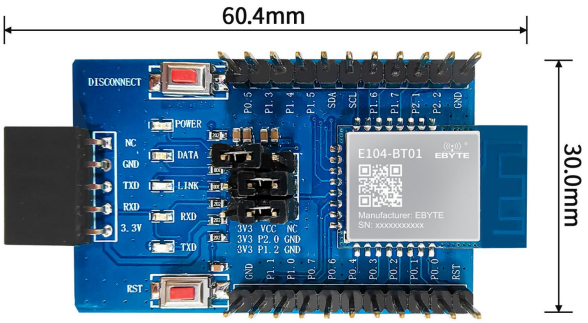
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1. Overview

1.1 Product Introduction

E WT104-BT01 is a Bluetooth test kit based on the E 104-BT01 module , which can significantly reduce the user's development cycle. For detailed information about E104-BT01, please visit the official website to download relevant information about this model .



1.2 Module Features

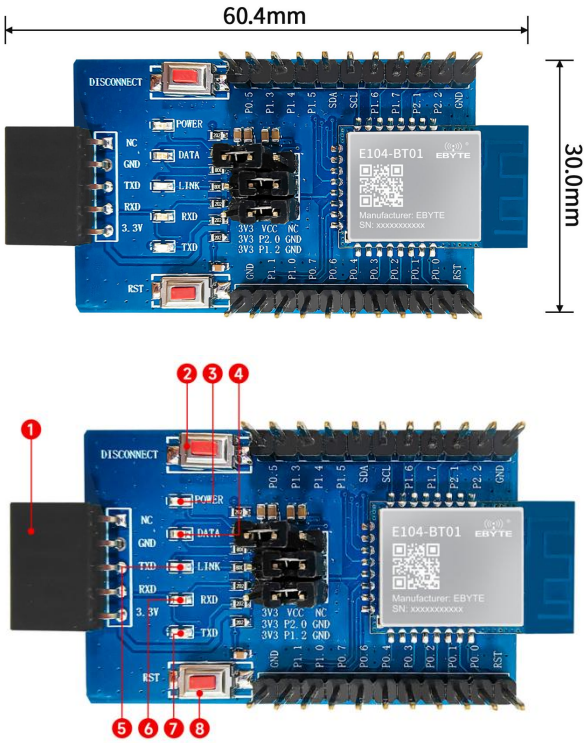
- Support BLE 4.2;
- Support three modes: host, slave and observer;
- The module as a host only supports connecting to one slave;
- Support low power consumption;
- Supports normal broadcast and ibeacon broadcast;
- Supports over-the-air configuration, etc.
- Communication interface: UART.

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2. Hardware Description

2.1 Product size and pin definition

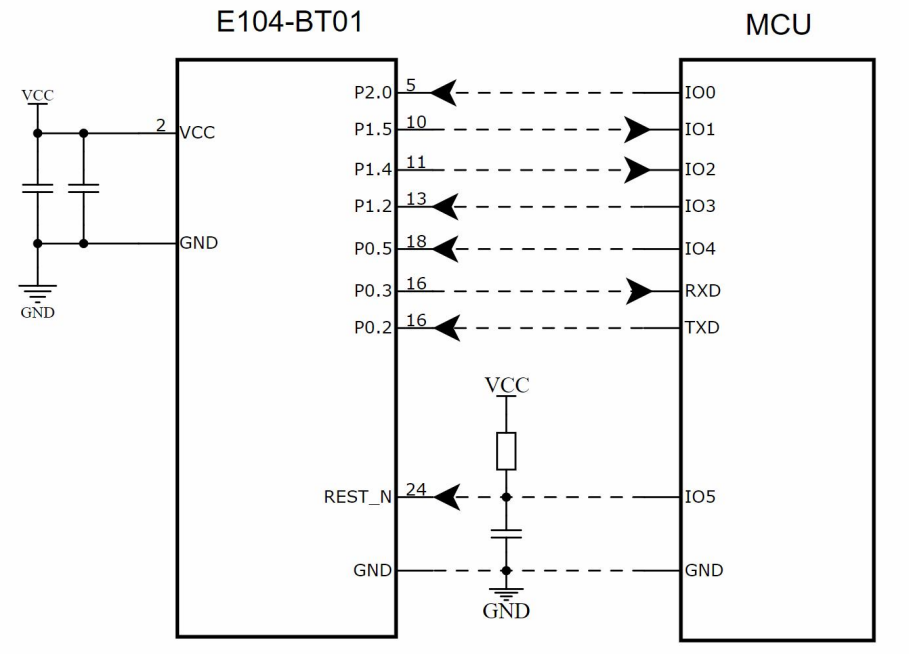


Serial number	definition	illustrate	Remark
1	NC	-	2.54mm pitch female header
	GND	Power Ground	
	TXD	Serial port output pin	
	RxD	Serial port input pin	
	3.3V	DC 3.3V input pin	
2	DISCONNECT	Disconnect button	-
3	POWER	Power indicator	-
4	DATA	Data sending indicator	-
5	LINK	Connection status indicator	-
6	RxD	Serial port receiving indicator	-
7	TXD	Serial port sending indicator	-
8	RST	Reset button	-

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2.2 Module recommended wiring diagram



2.3 Special pin function description

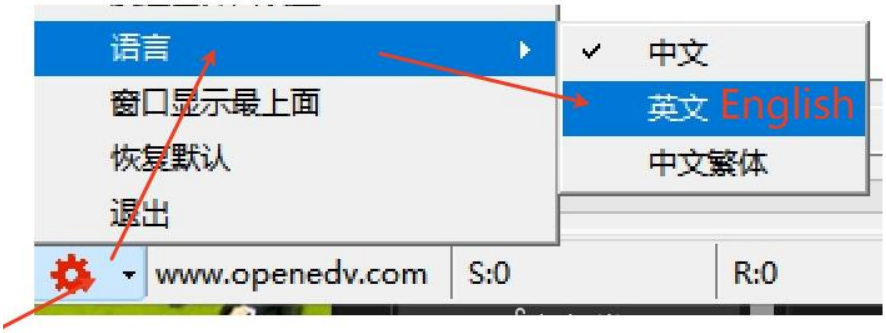
Level / PIN	Falling edge	Rising edge
MOD	Enter configuration mode (configuration mode is the default when not connected)	Enter transparent mode
LINK	Output low level after establishing connection	Output high level after disconnection
DATA	10ms before the serial port outputs data, it outputs low level	Usually output high level when there is no data
WKP	Wake up the module from sleep mode	The module enters sleep mode
DISC	Disconnect the current connection	
RESET_N	Input low level module reset	Normal operation is high level state

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3. Software Functions

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



3.1 Common instructions

- Restore factory settings

  Send: AT+RESTORE
  Return: +OK

- Restart your device

  Send: AT+RESET
  Return: +OK

- Open log information

  Send: AT+LOGMS=1
  Return: +OK

- Set the module to host role

  Send: AT+ROLE=1
  Return: +OK

- Start Scanning

  Send: AT+SCAN=1
  Return: +OK

- Add the device mac() that needs to be connected

  Send: 41 54 2B 42 4F 4E 44 4D 41 43 3D F0 E1 D2 C3 B4 A5 (the last 6 bytes in hexadecimal are the corresponding slave MAC address)
  Return: +OK

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- Query the bound mac address

  Send: AT+BONDMAC?
  Return: 2B 4F 4B 3D F0 E1 D2 C3 B4 A5 0D 0A (displayed in hexadecimal)

- Enable host binding

  Send: AT+BOND=1
  Return: +OK

- Set the module to slave role

  Send: AT+ROLE=0
  Return: +OK

- Set the module to enable broadcast function

  Send: AT+ADVEN=1
  Return: +OK

- Modify the module broadcast name

  Send: AT+NAME=quick_start
  Return: +OK

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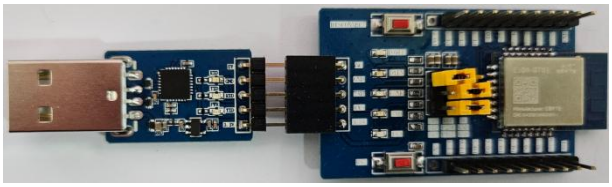
4 Quick Use

This introduces how the module acts as a slave to connect and communicate with the mobile phone ; the modules act as a host and a slave to achieve communication between modules .

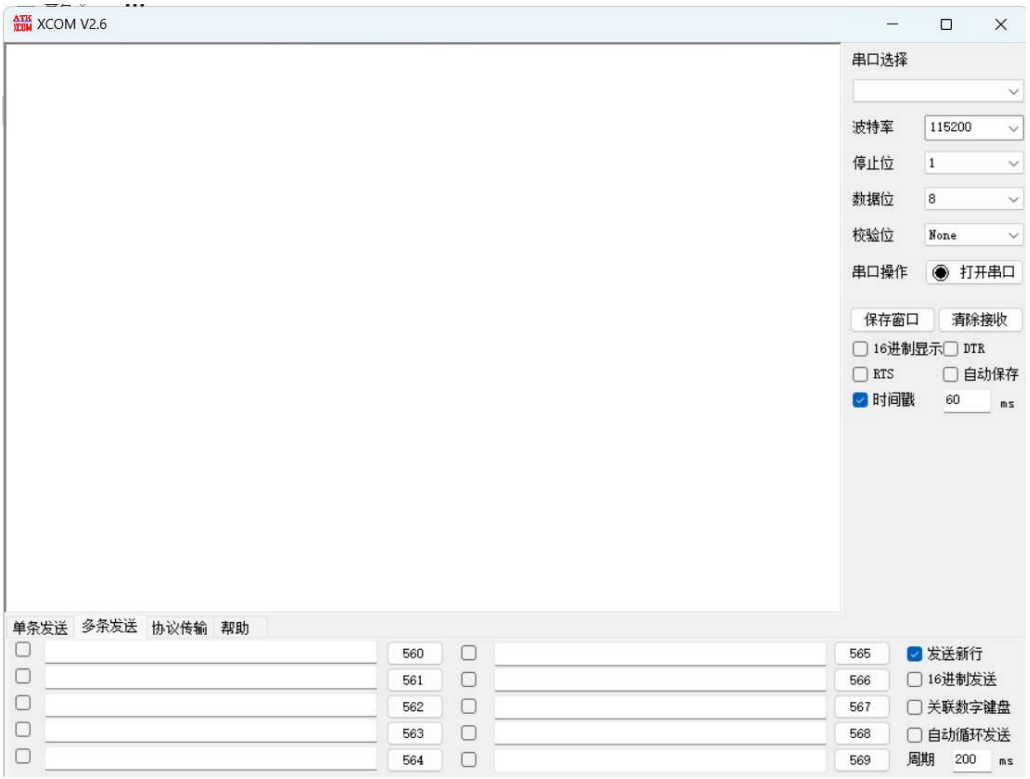
4.1 The module communicates with the mobile phone nrf connect app as a slave

4.1.1 Preparation

- Prepare 2pcs E WT 104-BT01 kits and 2pcs E15-USB-T3 serial converters and connect them as shown below .



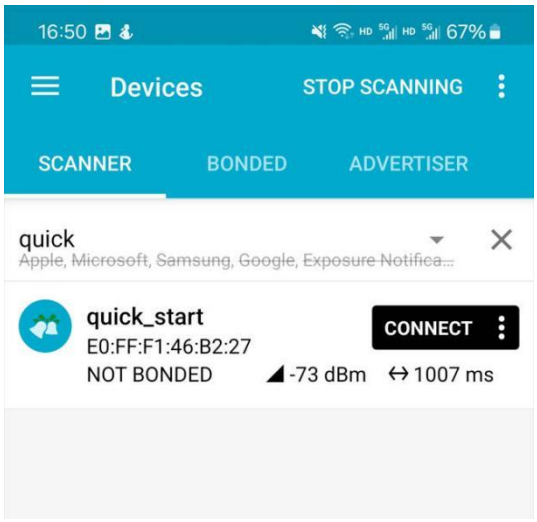
- Open the X com serial port debugging assistant .



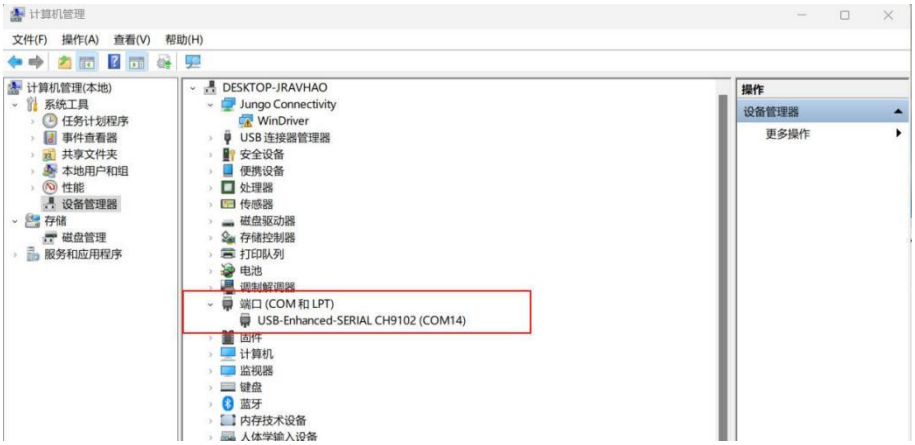
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- Mobile phone and nrf connect app



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



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

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4.1.2 Connection steps

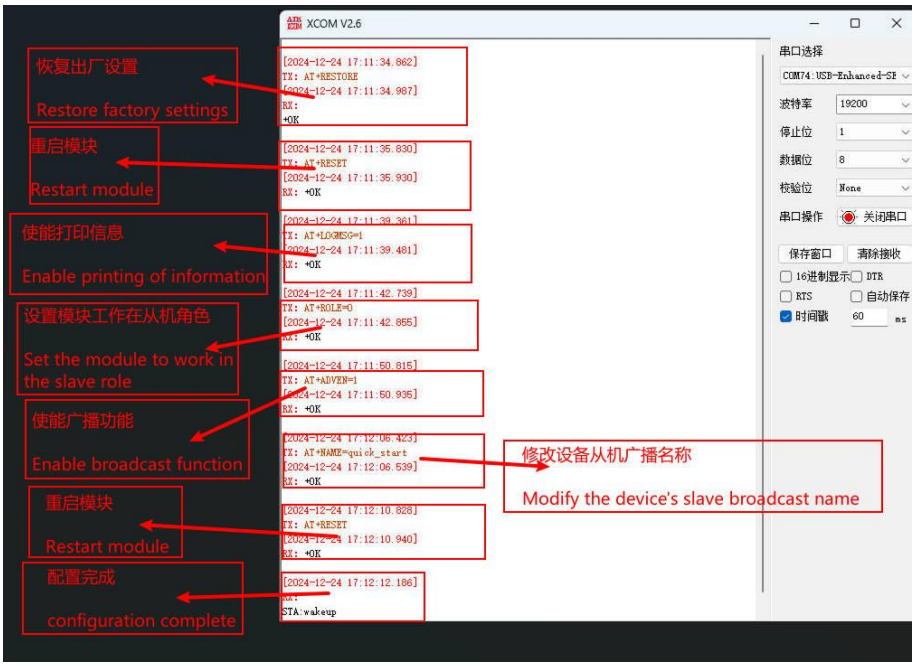
1. Connect the test kit to the computer via the USB port. After the test is connected to the computer, you can see the corresponding port number in "My Computer->Properties->Device Management->Port"
2. Open the xcom assistant, select the corresponding port number , select the serial port parameters,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

   Baud rate: 19200

   Stop bit: 1 bit

   Data bits: 8 bits

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

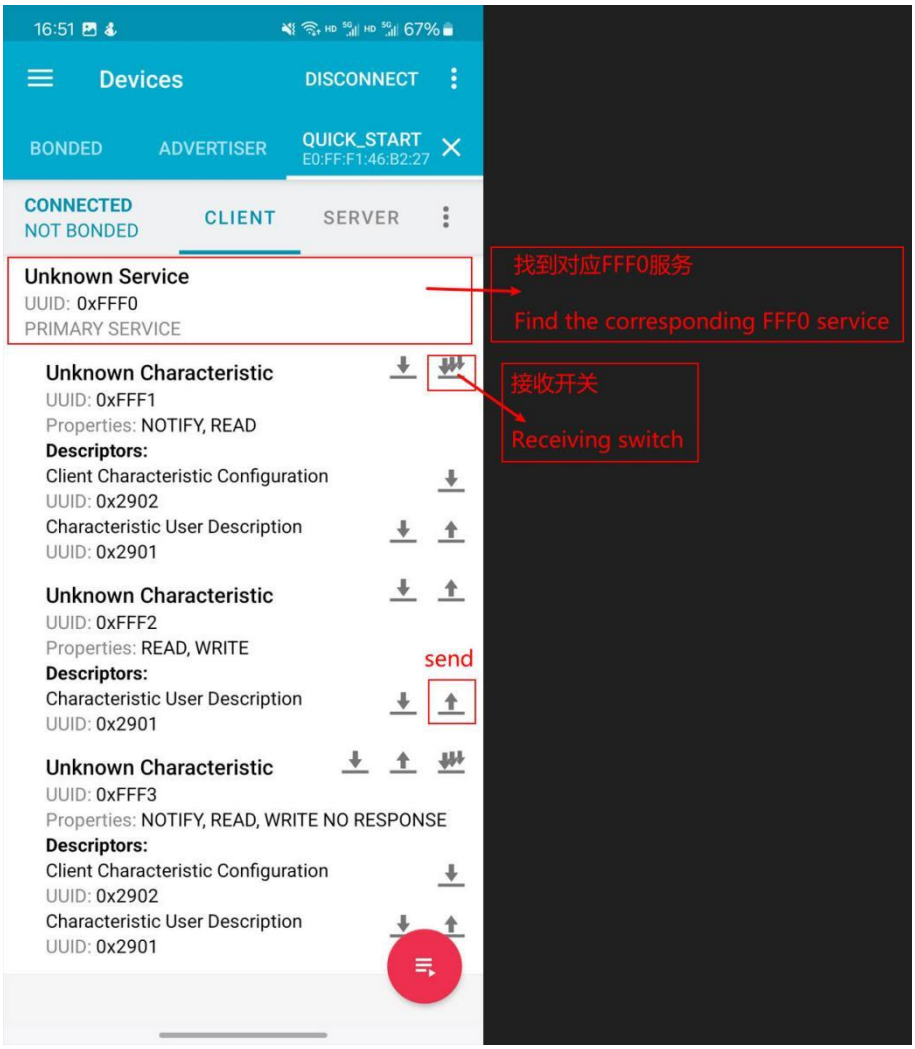


4. Open the "nrf connect" app on your phone .
5. Find the corresponding Bluetooth module and click the "connect" button to connect the module.

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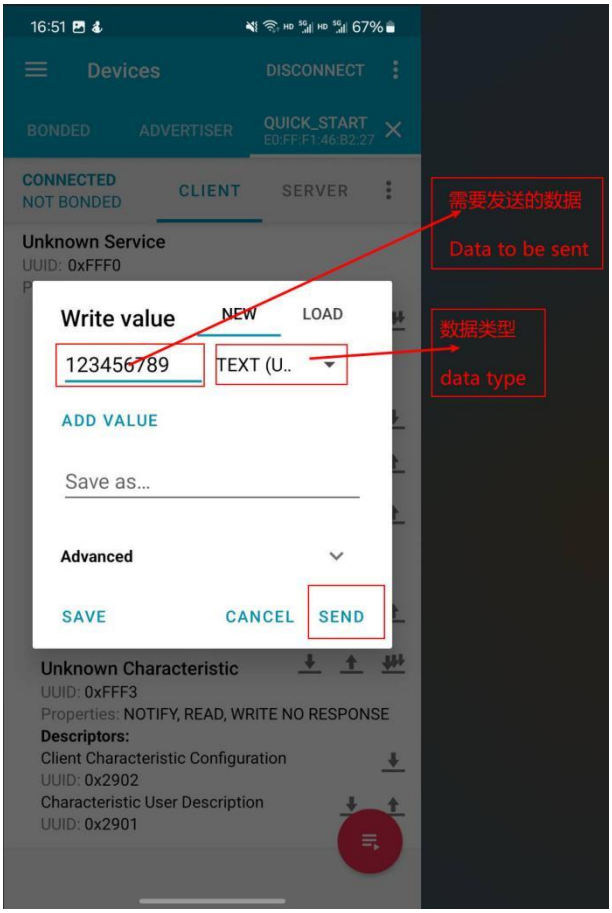
6. Find the corresponding service , turn on the corresponding receiving switch , and click "send" .



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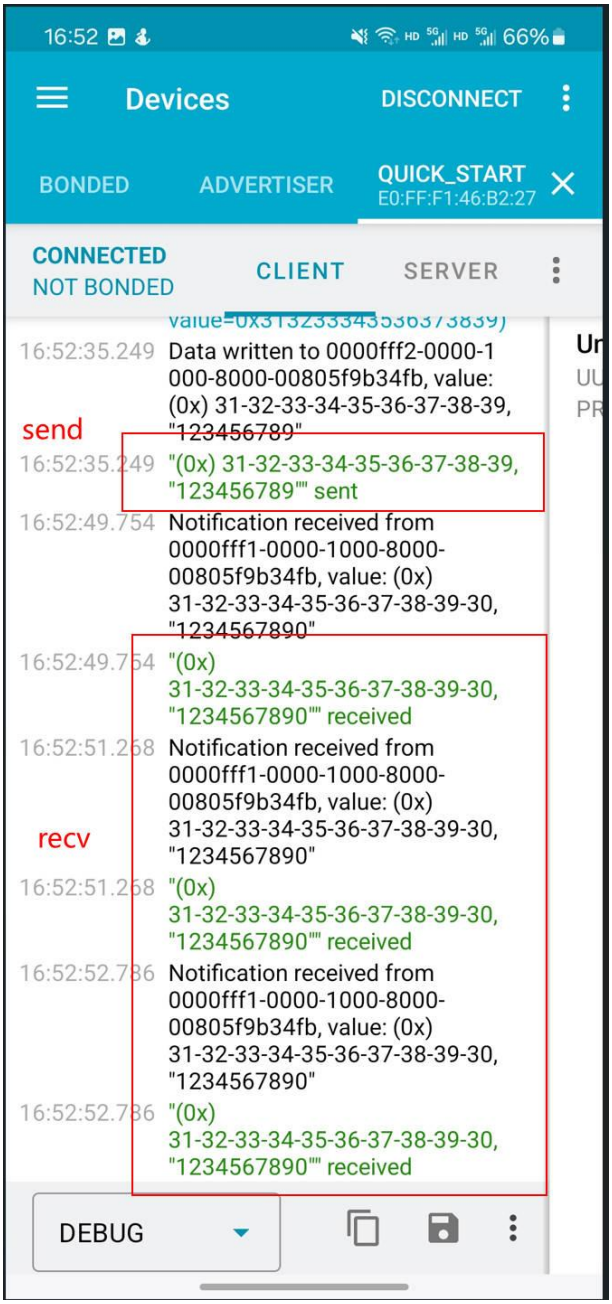
7. Enter the data 123456789, select the data type, and click the Send button



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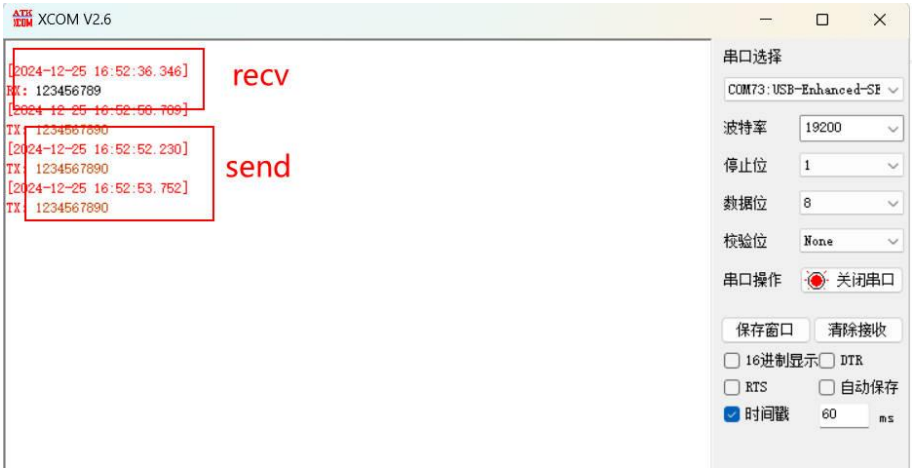
8. Swipe right on the interface to enter the log interface .



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9. Kit receiving and sending display .

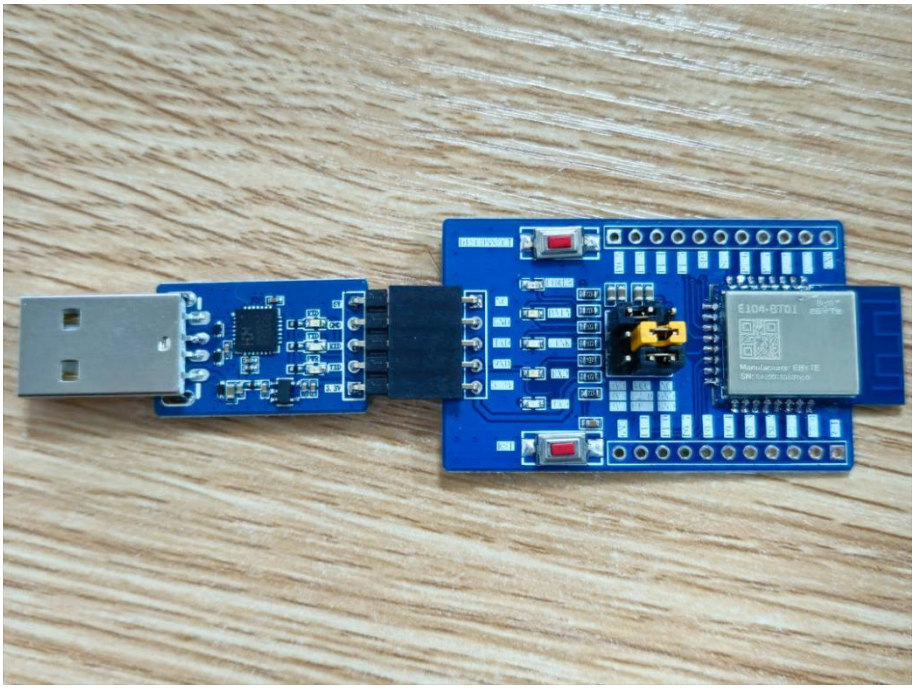


4.2 Transparent transmission demonstration

the data transmission between modules . The following describes the process of connection and communication between modules.

4.2.1 Preparation

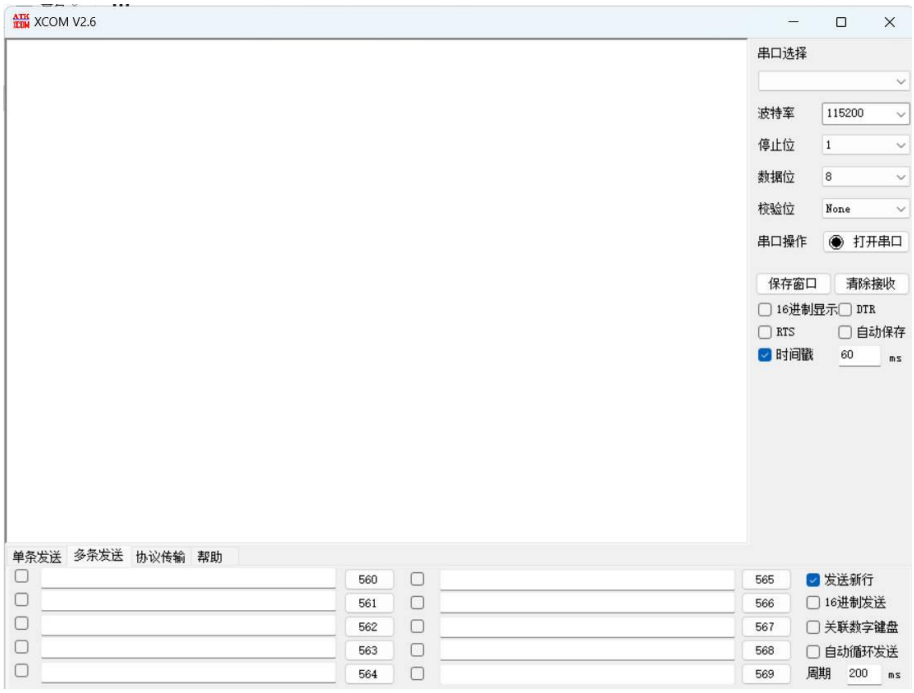
- Prepare 2pcs E104-BT01 test kit and 2pcs E15-USB-T3 , and connect them as shown below .



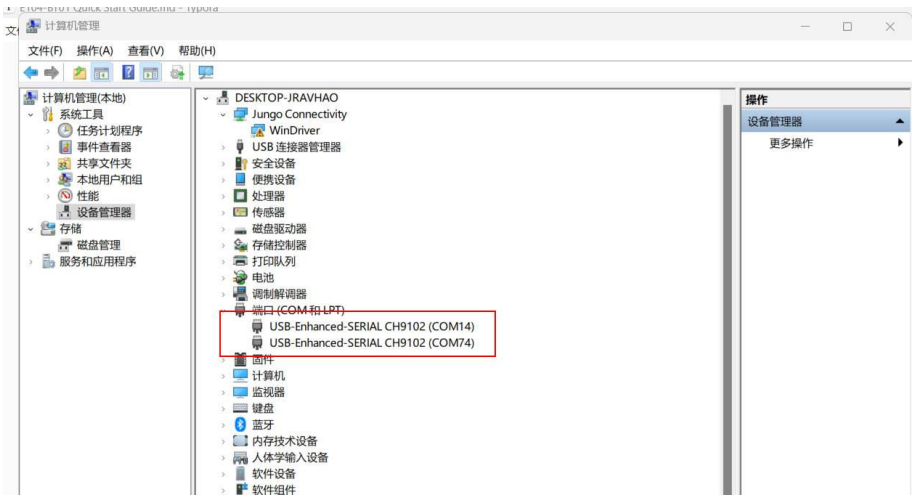
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- Open X com serial port debugging assistant



- 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.

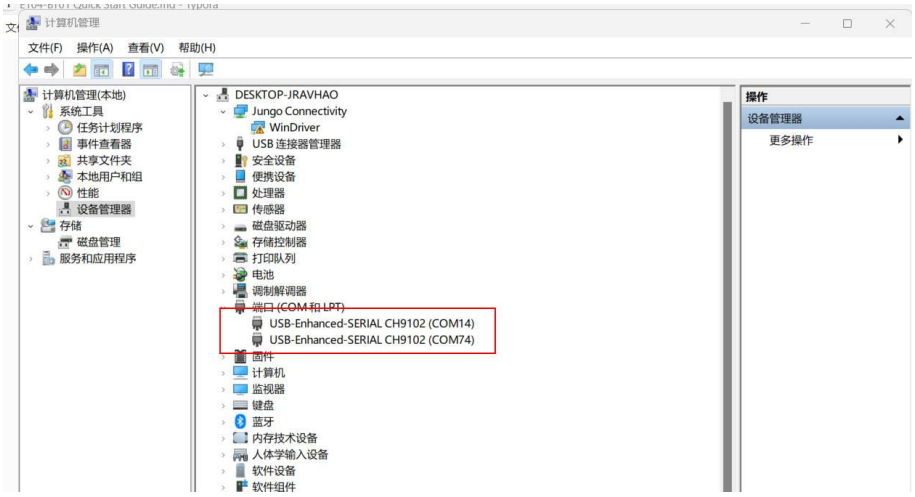
- Communication between modules does not require the participation of mobile phones

4.2.2 Connection steps

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

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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.

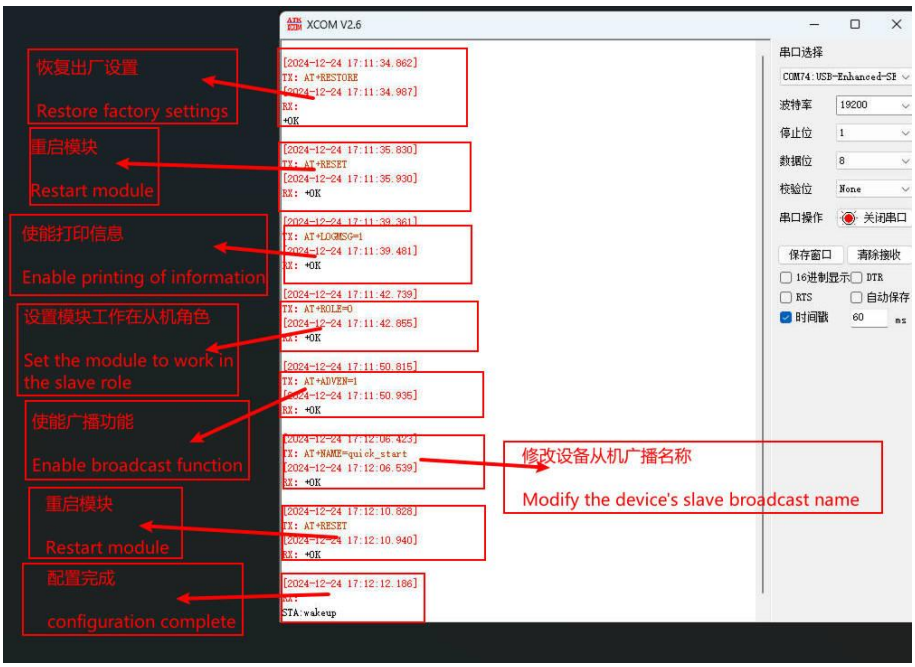
   Baud rate: 19200

   Stop bit: 1 bit

   Data bits: 8 bits

   Check digit: NONE

3. Follow the steps in the figure below to configure test suite B as a slave .



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4. Follow these steps to configure test suite B as a slave .



① Factory reset

② Restart module

③ Enable functional information output

④ Set the module to work in the host role

⑤ Open the scanning function of the module

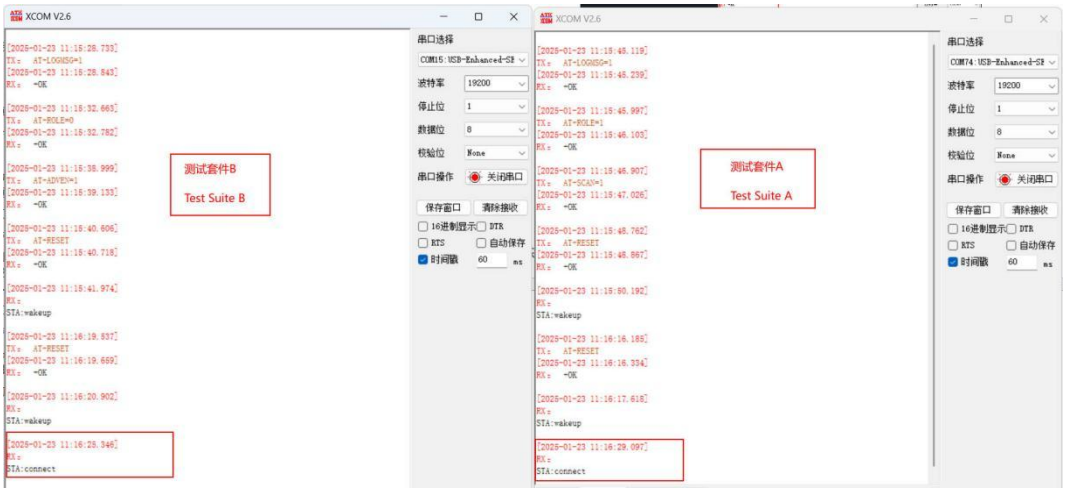
⑥ Restart module

⑦ The host function configuration of test suite A is now complete

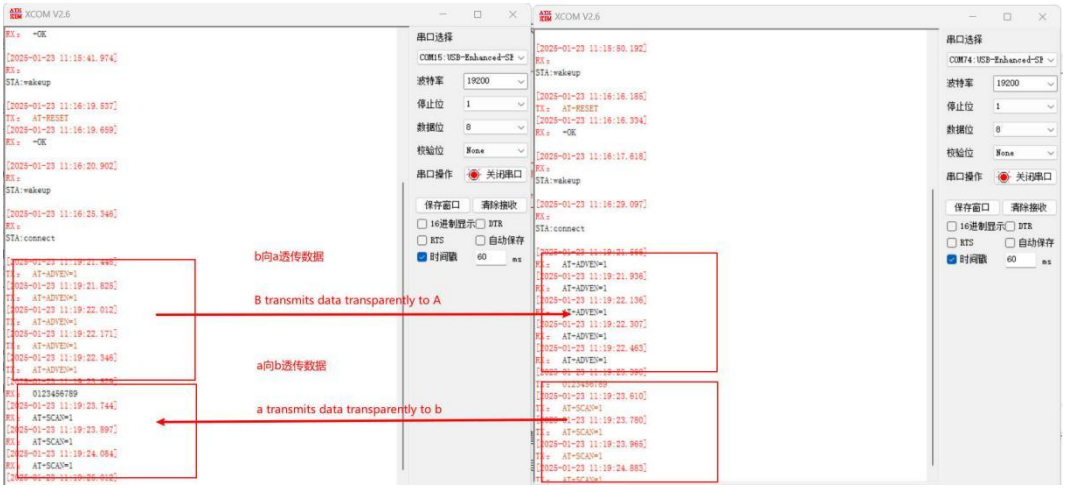
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5. After configuration is complete, wait for the module to automatically connect .



6. Data transmission test.



7. When there is no level jump on the MOD pin , the module will enter the transparent mode by default after automatic connection. At this time, all the data of the serial port will be transparently transmitted through Bluetooth .

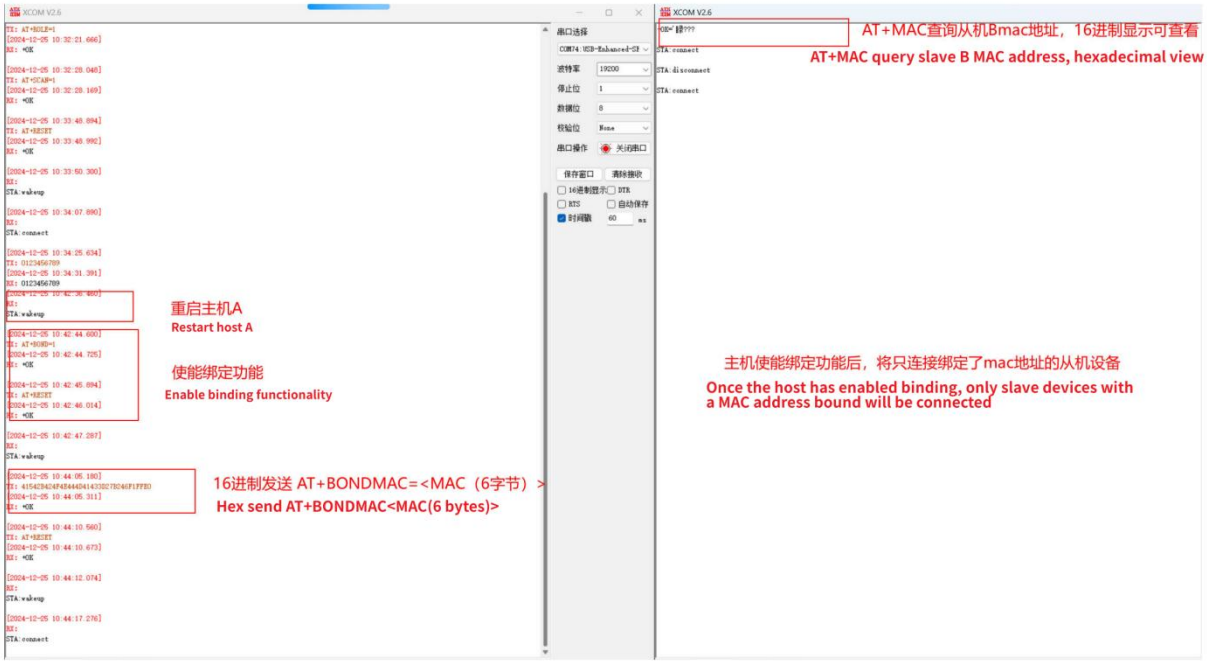
8. To enter the configuration mode in transparent transmission mode, the MOD pin needs to be pulled down .

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4.3 Host bond function, use MAC address to filter slaves

on Section 4.2 , host 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 E104-BT01 module is 19200 ;
- When the command displays an ERR prompt, you can refer to the E104-BT01 user manual. If you use other serial port assistants for debugging, please check the string length ;
- When the module does not respond to commands, please note whether the module has entered transparent transmission mode and whether the MOD pin needs to be operated at a level .
- The switching of the MOD pin function is level edge triggered ;
- Note that this module is a BLE 4.2 version module, the maximum MTU is 23 bytes , and the maximum single packet data is 20 bytes ;
- 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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6 Revision History

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

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