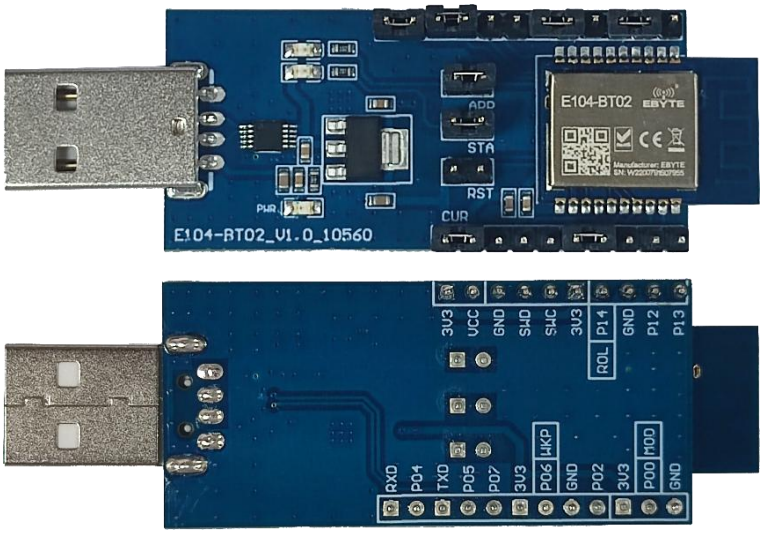
1. Introduction

1.1 Feature introduction



E104-BT02-TB test board adapts USB interface, which can quickly sets the Bluetooth related features and functions

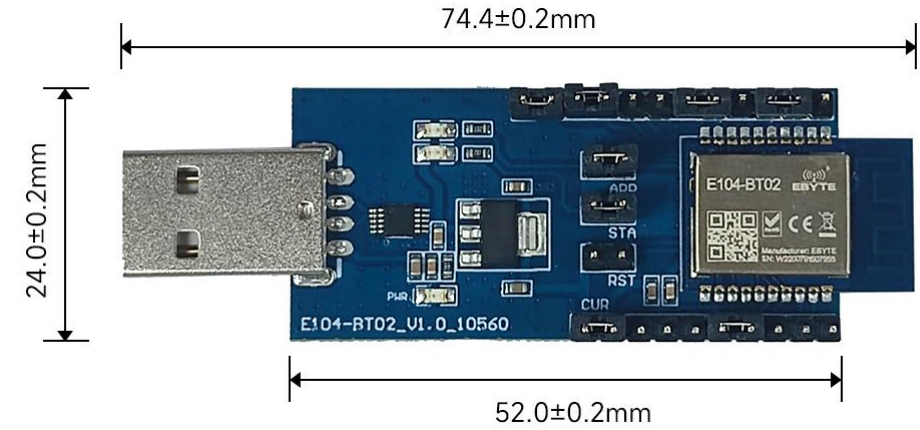
1.2 Electrical parameters

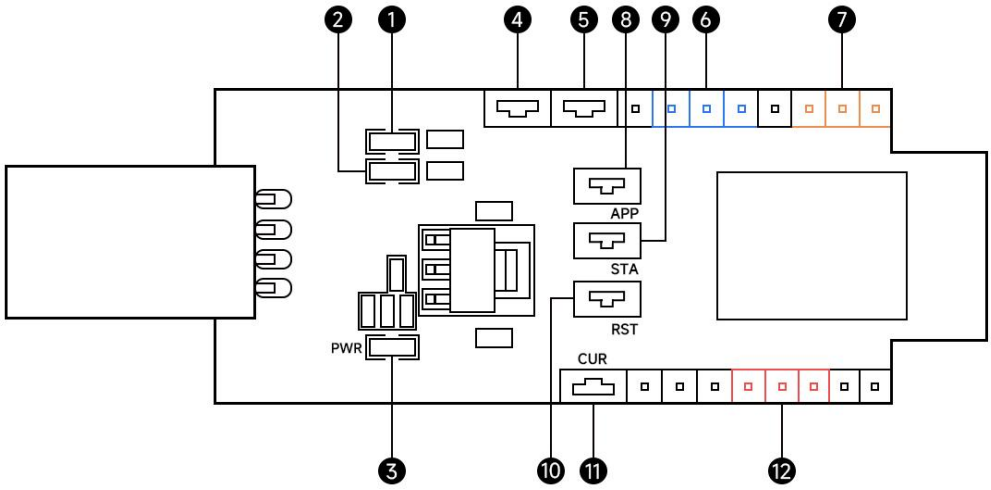
No.	Parameter name	Parameter value	Comment
1	Support module	E104-BT02	Low-power consumption Bluetooth to serial port module
2	Module size	74.4 * 24.4 mm	With USB connector
3	Production process	Lead-free process,SMT	Batch consistency and reliability are ensured via SMT
4	Power supply interface	USB	-
5	Communication Interface	USB	-
6	Operating temperature	-40 ~ +85℃	Industrial grade
7	Operating humidity	10% ~ 90%	Relative humidity, non-condensing
8	Storage temperature	-40 ~ +125℃	Industrial grade

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2. Function description

2.1 Pin definition





Pin No.	Pin name	Pin direction	Use
1	APP_LED	-	APP indicator, indicating the current serial port data output, indicator on indicates that data is being sent.
2	STA_LED	-	STA indicator, indicating the current Bluetooth connection status, the indicator is steady on, indicating that the Bluetooth connection is successful, the indicator is off, indicating that the Bluetooth connection is disconnected.
3	PWR_LED	-	power light
4	J-RXD	Input	Short jumper cap, Bluetooth module RX(receiving pin) and test board

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			serial chip send pin connection
5	J-TXD	Output	Short jumper cap, Bluetooth module TX(send pin) is connected to the receiving pin of the serial chip of the test board.
6	WKP	Input	The module wakes up in low-power mode and shortens the GND pin wake up module. Short the 3V3 pin and enter low power mode.
7	MOD	Input	Working mode configuration, short-connect the GND pin, enter the configuration mode; Short the 3V3 pin and enter transparent transmission mode.
8	APP	Output	Bluetooth data output pin, in the short-connection state, the indicator APP indicates the current serial port data output, the indicator light indicates that the data is being sent.
9	STA	Output	Bluetooth status output pin, in the short-circuit state, the indicator STA indicates the current Bluetooth connection status, the indicator is steady on, the Bluetooth connection is successful, the indicator is off, the Bluetooth connection is disconnected.
10	RST	Input	Module reset pin, input high level reset.
11	CUR	-	Current detection, used to test the current characteristics of the module in low power mode.
12	ROLE	Input	Bluetooth role configuration, short-connect the GND pin, enter the Bluetooth host mode; Short-connect the 3V3 pin and enter Bluetooth slave mode.

2.2 Functional testing

Test function	Description
Test Bluetooth slave current in low power mode	Disconnect all jumper caps, ammeter directly into the CUR, the test board is inserted into the computer USB interface, the power light is on, the module is powered on normally. The default module works in slave sleep mode and broadcasts at 1-second intervals. The low-power current of the module can be read by ammeter.
Test for transparent transmission	Prepare two test baseboards, one working in host mode and the other working in slave mode, and establish a Bluetooth master-slave connection to realize transparent data transmission. 1) The host works in the wake up transparent transmission mode, and connects the jumper cap CUR/STA/APP/J-TXD/J-RXD respectively, WKP connects to the GND pin, MOD connects to the 3V3 pin, and ROLE connects to the GND pin. 2) The slave works in the wake through transmission mode, and shorts the jumper cap CUR/STA/APP/J-TXD/J-RXD respectively, WKP is connected to the GND pin, MOD is connected to the 3V3 pin, and ROLE is connected to the VCC pin. 3) The master and slave modules are plugged into the USB port of the computer, the power indicator is steady on, and the module is powered on normally. The module automatically

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	starts to broadcast data from the machine, and the host module synchronously starts to scan until the slave is connected successfully, and the STA indicator light corresponding to the master and slave modules is steady on, indicating that the Bluetooth connection is successful. 4) Open the serial port debugging assistant, open the corresponding COM port of the host module, send ASCII data "12345678980", the data indicator "APP" of the slave module is blinking, and output "1234567890" of the corresponding COM port of the slave module.
Parameter modification	1) The module works in the wake up configuration mode, and connects the jumper cap CUR/STA/APP/J-TXD/J-RXD respectively. WKP connects to the GND pin, MOD connects to the GND pin, and ROLE is arbitrary (Bluetooth role). 2) Insert the test board into the computer USB, use the serial port debugging tool to open the corresponding COM port (factory baud rate is 19200bps, no check, 1 stop bit). 3) Send configuration instructions to complete function configuration (for specific instructions, please refer to E104-BT02 data manual).

2.3 CH340 Driver installation

The USB to TTL chip used in this test board is CH340. If it is used for the first time, the PC will prompt you to install the new device driver. You can download the driver software provided by our company or search and download it on the Internet.

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