

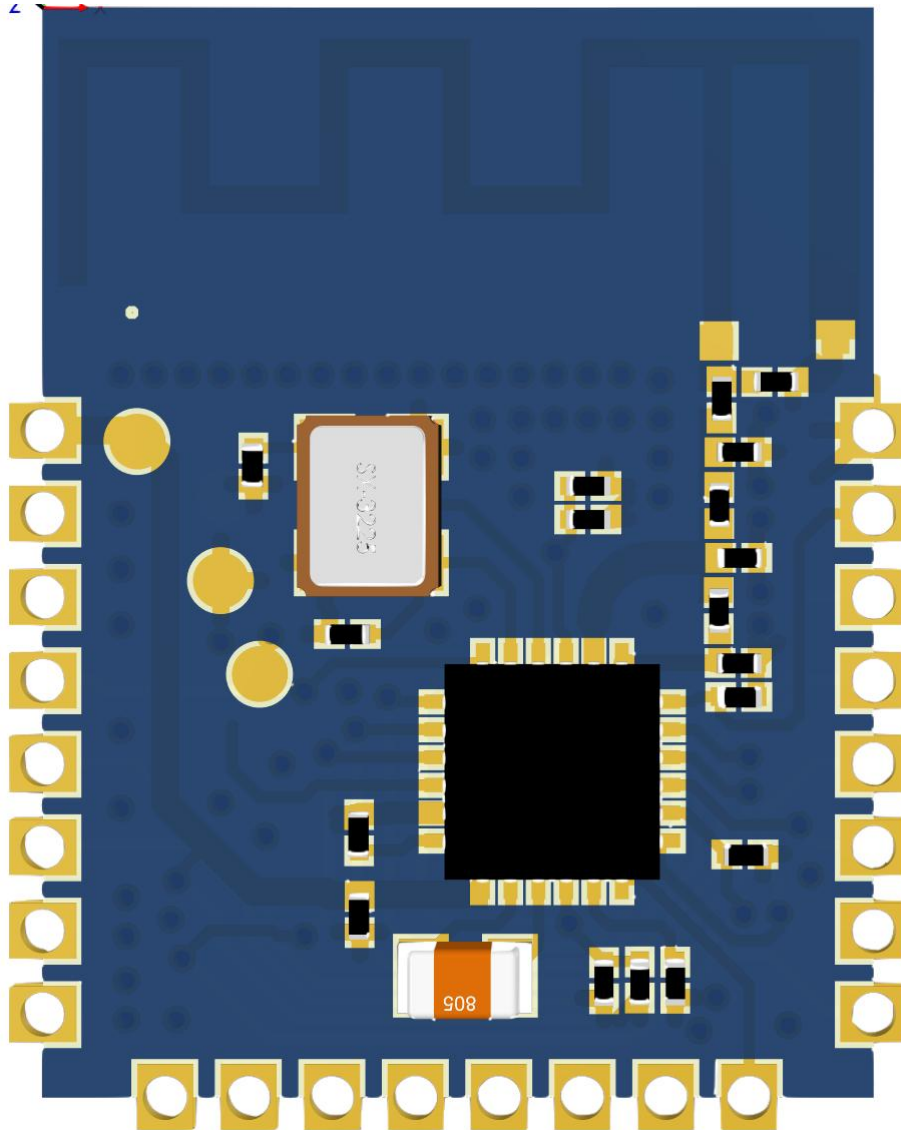
Product Specification

Name: BLE_MODULE
Type: YM23
Version: V1.31
Number: YTL-RD-202108002

Revision History

Number	Version	State	Comment	Editor	Date
1	V1.2	Establish		Peter	2021.08.10
5					

Product Picture



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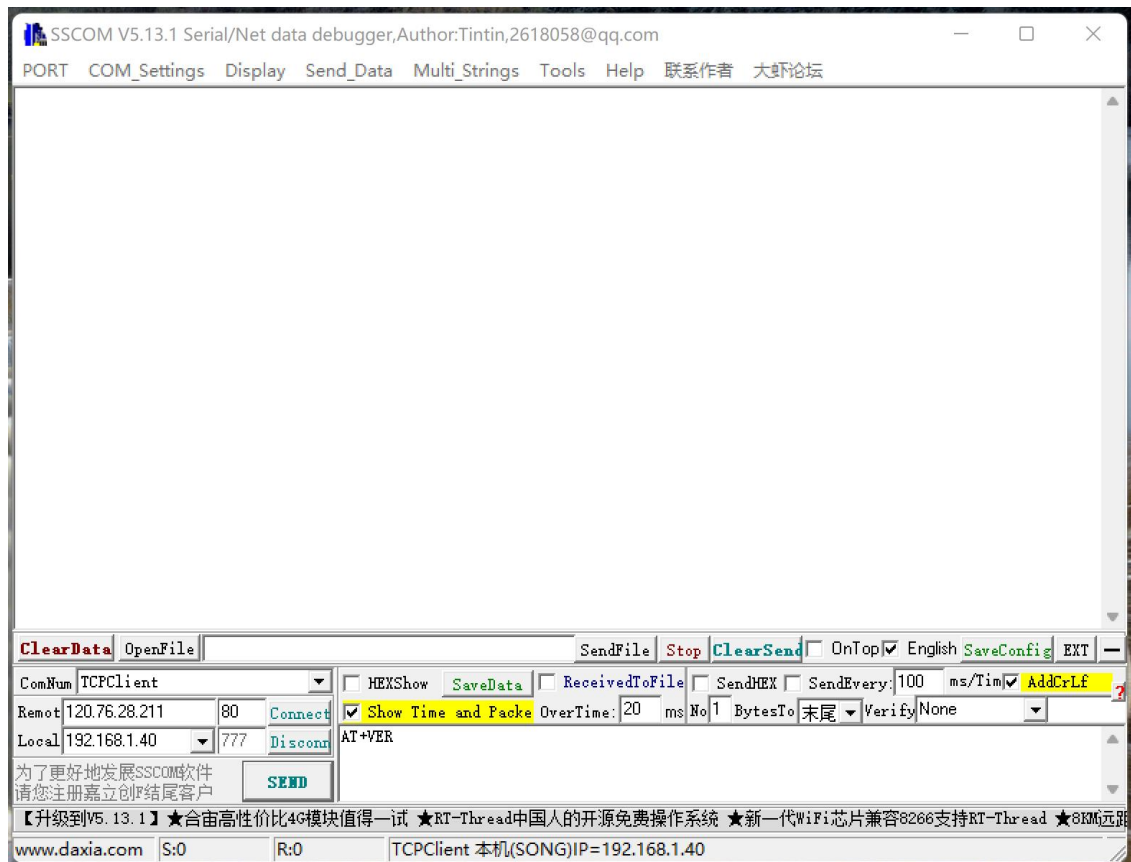
1、Product Introduction

YM23 is a Bluetooth-to-serial transceiver module based on Bluetooth protocol version 5.0, small size, low power consumption, and the working signal frequency band is 2.4GHz. The YM23 module is developed by Shenzhen YTL Technology Co., Ltd. The module Maximum support for data transmission at 115200bps baud rate. The module uses AT commands to set parameters, and the operation is simple and easy to use. Modules can be widely used in smart wear, smart home, automobiles, lighting, smart automation data collection, smart control, wireless sensing, electronic tags and other scenarios

Communication Schematic Diagram



2、Debugging Tool



Tips:

Select the function as shown above, You do not need to enter `\r\n` when `addCrLf` is checked

The default baud rate is 115200

3、Electrical Characteristics

3.1 Parameter

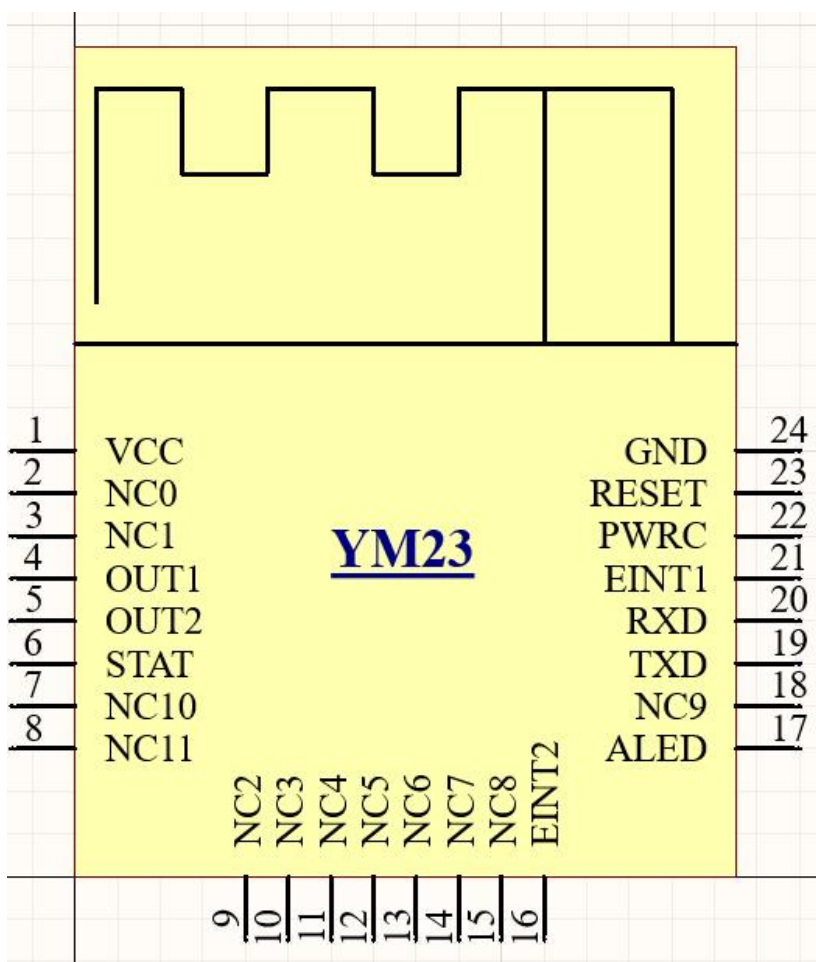
Name	YM23
Frequency band	2.4G
Transmitting power	10db (MAX)
Communication	UART
Supply voltage	1.8V - 3.6V
Temperature	-40°C - 85°C
Antenna	PCB Aerial
Receive sensitivity	-94.5dbm (1Mbps) -90dbm(2Mbps)
Free air	60 meter
Master-Slave Support	Slave
Module Size	19.6 * 14.94 *1.8 mm (LWH)
BLE_Version	BLE 5.0 (Compatibility BLE4.0、BLE4.2)
Wakeup Current	800uA (Radio)
Light Sleep Current	<50uA (Radio)
Deep Sleep Current	3uA (No Radio)
Parameter Save	Power-off preservation
SMT Temperature	<260°C
rf-TX/RX MAX Current	5mA

3.2 Work Current

Work Model	State	VAG Current	Comment
Wake Up serial	Disconnected	2.25MA	It is recommended that the broadcast time not be too long, which will affect the connection
Deep Sleep	No Radio	3uA	
Light Sleep (Radio)	100mS 广播间隔	139UA	

AVG Power Dissipation	200mS Radio Interval	94UA	time. If the power consumption is not required, the broadcast time can be set to the minimum
	300mS Radio Interval	80uA	
	400mS Radio Interval	70UA	
BLE Connect State	Connected	2.7MA	

3.3 Pin definition

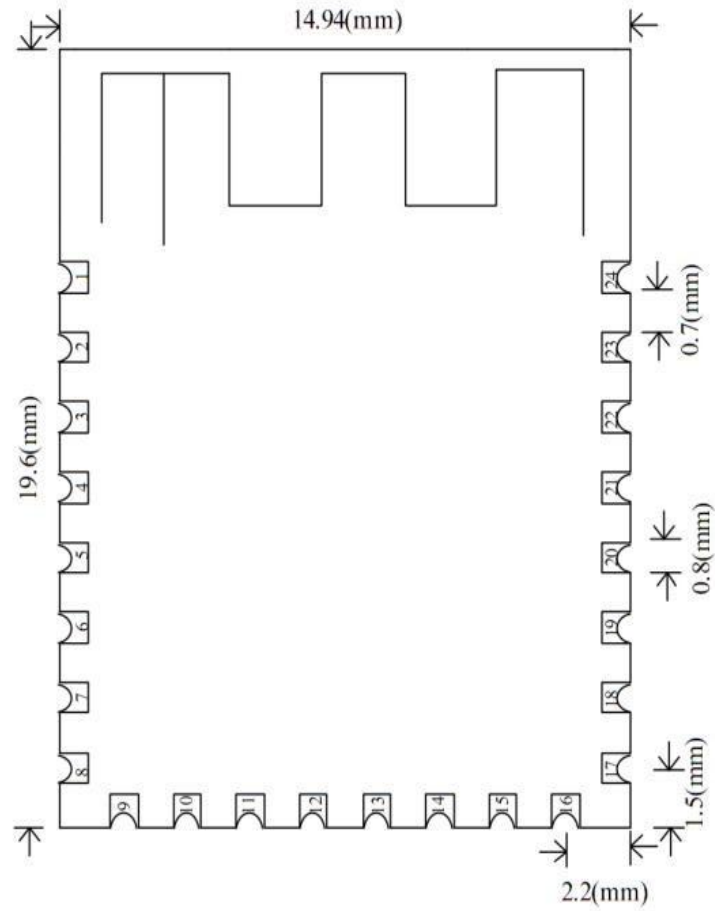


3.4 Pin Function

Pin	Function	Explain
1	VCC	Connect to the positive pole (1.8-3.6V)
2	NC0	Null
3	NC1	Null
4	OUTPUT1	GPIO
5	OUTPUT2	GPIO
6	STAT	Working status indicator pin (high-level output is broadcast state, low-level output is non-broadcast state)
7	NC10	Null
8	NC11	Null
9	NC2	Null
10	NC3	Null
11	NC4	Null
12	NC5	Null
13	NC6	Null
14	NC7	Null
15	NC8	Null
16	EINT2	GPIO
17	ALED	Radio status pin (low level when Radio, high level when No Radio)
18	NC9	Null
19	TXD	Module serial data transmission pin TXD (level voltage is up to 3.3V)
20	RXD	Module serial data receiving pin RXD (level voltage up to 3.3V)
21	EINT1	GPIO
22	PWRC	high level to wake up the Module low level to enable AT command (just when BLE connected)
23	RST	Module reset pin, low level reset, there is a pull-up resistor inside.

24	GND	Power Ground
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3.5 PCB Package



4、AT Command Set

All endings of the AT command must to add \r\n

In the Bluetooth connection, the PWRC pin must be pulled down for the AT command to be effective.

Query the firmware version number

Command	response	parameter
AT+VER	+VER:YM23-V1.2	Null

Reset

Command	response	parameter
AT+RST	+OK	Null

BLE Disconnect

Command	response	parameter
AT+DISC	+OK	Null

Query the BLE connect state

Command	response	parameter
AT+STAT	+STAT:<Param>	00: disconnect 01: connect

Query/Set MAC

command	response	parameter
AT+MAC<Param>	+OK	Param: (MAC code)
AT+MAC	+MAC:<Param>	

example: AT+MAC112233445566\r\n

Query/Set Baud rate

command	response	parameter
AT+BAUD<Param>	+OK	Param: (1-9)
		0——115200
		1——57600
		2——38400

AT+BAUD	+BAUD:<Param>	3——19200 4——9600 5——4800 6——2400 default: 0
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Query/Set Sleep Model

command	response	parameter
AT+SLEEP<Param>	+OK	Param: (1-2)
AT+SLEEP		1: light sleep (Radio) 2: Deep sleep (No radio)

Query/Set Radio Name

command	response	parameter
AT+NAME<Param>	+OK	Param: Module Name
AT+NAME	+NAME:<Param>	MAX: 24 BETY Default: YM23

Query/Set Start Sleep or Wake up

command	response	parameter
AT+STARTEN<Param>	+OK	Param: (0-1)
AT+STARTEN	+STARTEN:<Param>	1: Start Wake up 0: Start Sleep (connct auto wake up)

Query/Set Radio Interval

command	response	parameter
AT+ADVIN<Param>	+OK	Param: (0-9)
AT+ADVIN	+ADVIN:<Param>	0: 100ms 1: 200ms 2: 300ms 3: 400ms 4: 500ms 5: 600ms 6: 700ms 7: 800ms 8: 900ms 9: 1000ms 默认: 1

Query/Set Work Mode

command	response	parameter
AT+HOSTEN<Param>	+OK	Param: (0-3)

AT+HOSTEN	+HOSTEN:<Param>	0: Slave SerialNet mode 3: iBeacon mode Default:0
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Query/Set--iBeacon UUID

command	response	parameter
AT+IBUUID<Param>	+OK	Param: hexadecimal
AT+IBUUID	+IBUUID:<Param>	UUID default: FDA50693A4E24FB1AFCFC6EB07647825

example: AT+IBUUID FDA50693A4E24FB1AFCFC6EB07647825

Query/Set ----iBeacon Major

command	response	parameter
AT+MAJOR<Param>	+OK	Param: (0000-FFFF)
AT+MAJOR	+ MAJOR:<Param>	Default: 000A

example Major value is 10008, AT command: AT+MAJOR2718 2718 is 10008 HEX

Query/Set --iBeacon Minor

command	response	parameter
AT+MINOR<Param>	+OK	Param: (0000-FFFF)
AT+MINOR	+MINOR:<Param>	Default: 0007

Query/Set --iBeacon IBSING

command	response	parameter
AT+IBSING<Param>	+OK	Param: (00-FF)
AT+IBSING	+IBSING:<Param>	Default: 40

This parameter is applied to the iBeacon signal calibration value at 1 meter

Query/Set - ALED state on/off

command	response	parameter
AT+ALED<Param>	+OK	Param: (0-1)
AT+ALED	+ALED:<Param>	0: off 1: on Default: 1

Factory reset

command	response	parameter
AT+DEFAULT	+OK	null

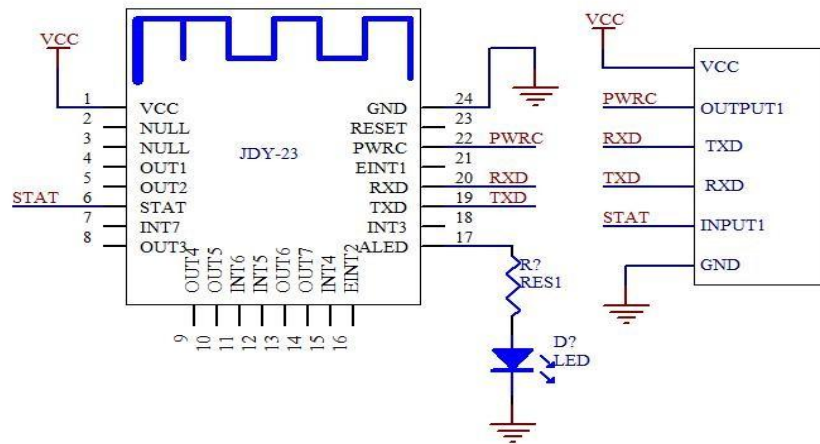
Query/Set- serial port displays status information

command	response	parameter
AT+ENLOG<Param>	+OK	Param: (0-1)
AT+ENLOG	+ENLOG:<Param>	0: No output 1: output Default: 0

Query/Set -MTU byte

command	response	parameter
AT+MTU<Param>	+OK	Param: (1-2)
AT+MTU	+MTU:<Param>	1: 20 byte 2: 128 byte Default: 2

5、YM23 Typical application circuit



6、Notes

- 1、 If the subsequent version is inconsistent with the actual version, the actual version shall prevail without prior notice. If you have any questions, please contact the relevant personnel of the company.
- 2、 Welcome to contact us (footer mailbox) to obtain web disk download related APP and source code and use guidance and other development information.

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