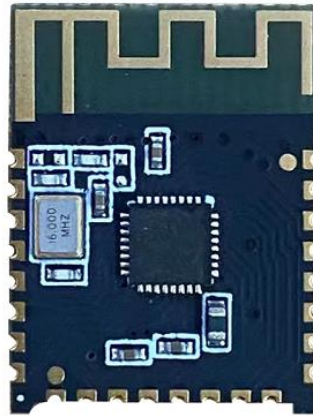


# **Dual-mode Bluetooth Serial Port Transparent Transmission Module**

## **JDY-23A Bluetooth Module Manual**



## JDY-23A Bluetooth SPP Serial Port Transparent Transmission Module

### **Version**

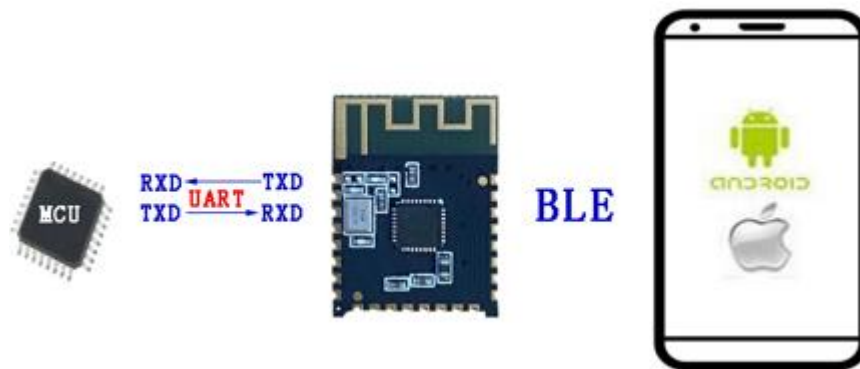
Version	Date	Description
V2.221	2020-08-08	Release version

# JDY-23A Bluetooth SPP Serial Port Transparent Transmission Module

## **I. Product Introduction and Application**

JDY-23A Bluetooth is designed based on Bluetooth 3.0 SPP+BLE, which can support data transmission of Windows, Linux, Android, and IOS, with 2.4 GHZ working frequency band, GFSK modulation mode, 4 db maximum transmission power, 30 meters of maximum transmission distance. It supports users to modify device name, baud rate and other instructions through AT commands, which is convenient, fast and flexible.

**Jdy-23a has obvious advantages. It supports communication with computer Bluetooth, mobile app or wechat. It can also use jdy-34 as host to connect with jdy-23a, or use jdy-34 multi connection mode to connect seven jdy-23a slaves at the same time.**



Module supports bluetooth communication with mobile app,wechat applet or computer

### **II. Product Application**

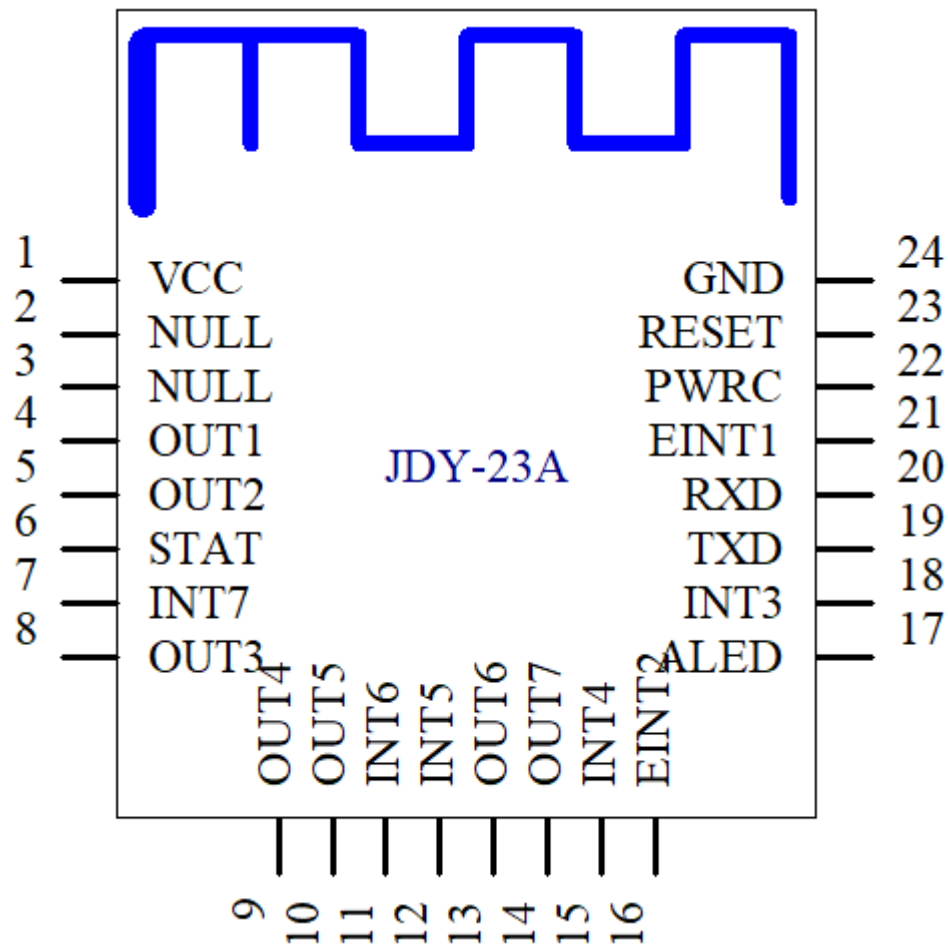
JDY-23A is a classic Bluetooth+BLE dual-mode Bluetooth, which can communicate with Bluetooth-enabled computers (desktop, notebook), mobile phones (Android), and IOS. It can be applied to

- ◆ Bluetooth POS
- ◆ Thermal printer
- ◆ Smart home control
- ◆ Automobile OBD detection equipment
- ◆ Application of Bluetooth transparent transmission products
- ◆ Shared chargers, weight scale

### III. Detailed Module Parameters

<b>Model</b>	JDY-23A
<b>Appearance color</b>	JDY-23a is the same as the hardware of JDY-23. Pay attention to color differentiation. JDY-23a is black, and JDY-23 is blue
<b>Working frequency band</b>	2.4GHZ
<b>Communication interface</b>	UART
<b>Working voltage</b>	1.8-3.6V(3.3V recommended)
<b>Working temperature</b>	-40°C - 80°C
<b>Antenna</b>	Built-in PCB antenna
<b>Transmission distance</b>	30 meters
<b>Master-slave support</b>	Slave machine
<b>Module size</b>	20 * 15 *1.8 mm (Length, width and height)
<b>Bluetooth version</b>	Bluetooth 3.0 SPP + BLE5.0
<b>SMT Welding Temperature</b>	<260°C
<b>Working Current</b>	6.5mA
<b>Deep sleep current</b>	<10uA
<b>Transmitting power</b>	6db(Maximum)
<b>Receiving sensitivity</b>	-96dbm
<b>SPP maximum throughput</b>	60K bytes/s(android、 windows) When connected with Android and computer Bluetooth, the communication speed can reach 18K bytes/s, and there is no loss of packets (supporting serial port to receive and send data continuously).
<b>BLE</b>	4K bytes/s(android、 IOS) The communication speed is 4K bytes/s when BLE connects with IOS or Android (supporting 38400 baud rate to continuously send and receive data. If the baud rate is higher than 38400, the data cannot be sent continuously, and delay shall be added in the middle)

#### IV. Pin function and Application

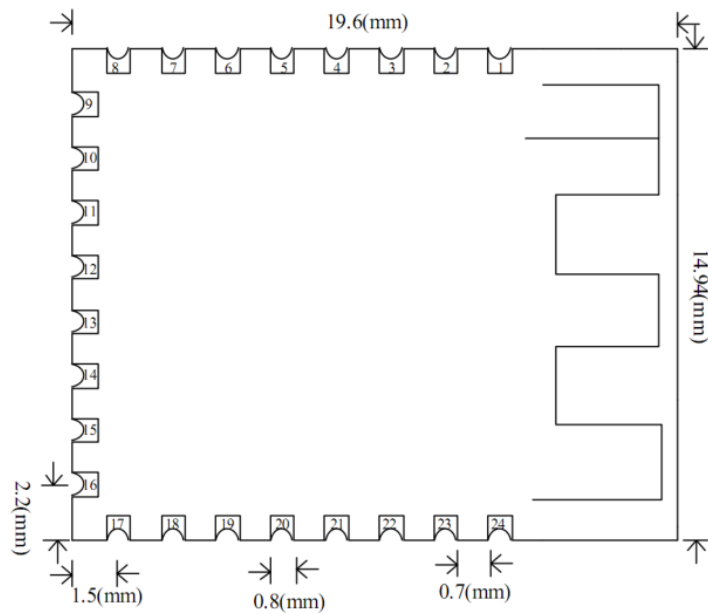


JDY-23A applications only need to connect VCC, GND, RXD and TXD pins. The connection state requires a disconnect, send AT+DISC\r\n. Send AT+SLEEP\r\n for deep SLEEP in unconnected state. Deep sleep can be awakened by the falling edge of PWRC pin,

## V. Pin function description

Pin No.	Pin function	Pin function description
1	<b>VCC</b>	<b>Power supply (1.8-3.6V)</b>
2	NULL	NC
3	NULL	NC
4	OUTPUT1	Output pin, no function by default
5	OUTPUT2	Output pin, no function by default
6	<b>STAT</b>	<b>Connection status pin (Low level when not connected, output high level after connected)</b>
7	INPUT7	Input pin, default no function
8	OUTPUT3	Output pin, no function by default
9	OUTPUT4	Output pin, no function by default
10	OUTPUT5	Output pin, no function by default
11	INPUT6	Input pin, default no function
12	INPUT5	Input pin, default no function
13	OUTPUT6	Output pin, no function by default
14	OUTPUT7	Output pin, no function by default
15	INPUT4	Input pin, default no function
16	EINT2	Interrupt input pin, default no function, customizable function
17	<b>ALED</b>	<b>Broadcast status pin (Flash when not connected, output high level after connected)</b>
18	INPUT3	Input pin, default no function
19	<b>TXD</b>	<b>Serial port output in (TTL Level)</b>
20	<b>RXD</b>	<b>Serial port input pin (TTL level)</b>
21	EINT1	Interrupt input pin, default no function, customizable function
22	<b>PWRC</b>	<b>Input pin for sleep awakening (falling edge valid)</b>
23	<b>RST</b>	<b>Reset (Low level effective)</b>
24	<b>GND</b>	<b>Ground</b>

## VI. PCB Package Size



PCB package is fully compatible with JDY-08、JDY-16、JDY-19、JDY-23、JDY-25M



## VII. Serial Port AT Instruction Set

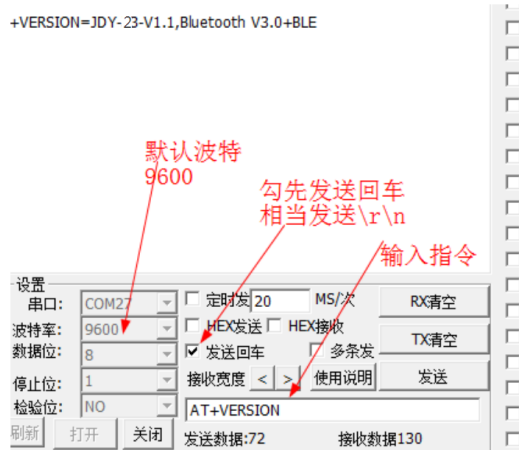
JDY-23A module serial port must add \r\n when sending AT instruction

No.	Instruction	Function	Default
1	AT	Test	
2	AT+VER	Version number	JDY-23A-V2.221
3	AT+STAT	Query connection status	00
4	AT+SLEEP	Deep Sleep	-
5	AT+BAUD	Baud rate setting and query	9600
6	AT+NAME	Broadcast name setting and query	JDY-23A-SPP
7	AT+NAMB	BLE broadcast name setting and query	JDY-23A-BLE
8	AT+PIN	Connection password setting and query	1234
9	AT+MAC	MAC address of module query	
10	AT+RESET	Soft reset	-
11	AT+DEFAULT	Restore factory settings	-
12	AT+DISC	Disconnect (valid in connection state)	-
13	AT+TYPE	Setting and query paired password switch	0
14	AT+ENLOG	Serial port state output enable	1
15	AT+UUIDLEN	Setting and query UUID length	0
16	AT+SVRUUID	BLE service UUID setting and query	FFE0
17	AT+CHRUUID	BLE feature UUID setting and query	FFE1
18	AT+CRXUUID	BLE feature UUID setting and query	FFE2

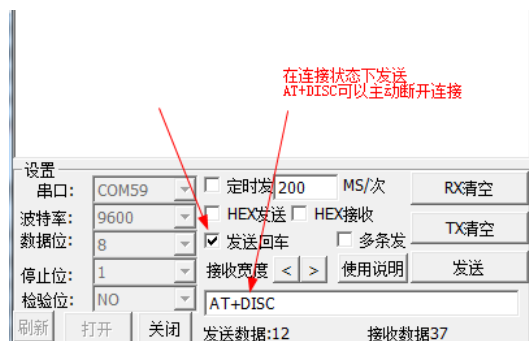
## JDY-23A Bluetooth SPP Serial Port Transparent Transmission Module

19	AT+UARTMOD E	Serial port parity bit setting and query	No check bit
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### Application of AT instruction serial port tool



### Method of sending disconnection instructions in connection state



## JDY-23A Bluetooth SPP Serial Port Transparent Transmission Module

### 1、Test instruction

Instruction	Response	Parameter
AT	+OK	None

### 2、Query version number

Instruction	Response	Parameter
AT+VER	+VERSION=JDY-23A-V2.221,BluetoothV3.0+BLE	None

### 3、Query connection status

Instruction	Response	Parameter
AT+STAT	+STAT=<Param>	Param(01-02) 01: Indicates BLE connected 02: Indicates SPP connected

Connection status can be queried by this instruction in connection state.

### 4、Setting deep sleep

Instruction	Response	Parameter
AT+SLEEP	+OK	None

No broadcasting after deep sleep, the current is about 3uA.

## JDY-23A Bluetooth SPP Serial Port Transparent Transmission Module

### 5、Baud Rate Setting/Query

Instruction	Response	Parameter
AT+BAUD<Param>	+OK	Param:(4 to 9)
AT+BAUD	+BAUD=<Param>	2: 2400 3: 4800 4: 9600 5: 19200 6: 38400 7: 57600 8: 115200 9: 128000 A: 230400 B: 256000 C: 512000 D: 750000 E: 921600 <b>Default: 9600</b>

### 6、SPP Broadcast Name Setting/Query

Instruction	Response	Parameter
AT+NAME<Param>	+OK	Param: SPP Broadcast Name
AT+NAME	+NAME=<Param>	Maximum: 18 bytes <b>Default broadcast name: JDY-23A-SPP</b>

### 7、BLE Broadcast Name Setting/Query

Instruction	Response	Parameter
AT+NAMB<Param>	+OK	Param: BLE Broadcast Name
	+NAME=<Param>	Maximum: 18 bytes <b>Default broadcast name: JDY-23A-BLE</b>

## JDY-23A Bluetooth SPP Serial Port Transparent Transmission Module

### 8、SPP Bluetooth Paired Password

Instruction	Response	Parameter
AT+PIN<Param>	+OK	Param: 4 bit password  Defaulted PIN: 1234
AT+PIN	+PIN=<Param>	

### 9、Bluetooth MAC address

Instruction	Response	Parameter
AT+MAC<Param>	+OK	Param:MAC address is a  hexadecimal string
AT+MAC	+MAC=<Param>	

Query MAC address: AT+MAC\r\n

Setting MAC address: AT+MAC112233445566\r\n

Setting MAC address: AT+MAC11:22:33:44:55:66\r\n

### 10、Reset

Instruction	Response	Parameter
AT+RESET	+OK	None

### 11、Restore factory configuration

Instruction	Response	Parameter
AT+DEFAULT	+OK	None

### 12、Disconnect

Instruction	Response	Parameter
AT+DISC	+OK	None

Effective after connection

## JDY-23A Bluetooth SPP Serial Port Transparent Transmission Module

### 13、Setting/Query SPP Password Connection

Instruction	Response	Parameter
AT+TYPE<Param>	+OK	Param(01-02)  1: SPP connection with password  0: SPP connection with no password  Default: 0
AT+TYPE	+TYPE=<Param>	

### 14、Serial port state output enable setting/query

Instruction	Response	Parameter
AT+ENLOG<Param>	+OK	Param: 1 or 0  1: Open serial port status output  0: Close serial port status output  Default: 1
AT+ENLOG	+ENLOG=<Param>	

### 15、UUID Length Setting/Query

Instruction	Response	Parameter
AT+UUIDLEN<Param>	+OK	Param: 1 or 0  1: UUID length 128  0: UUID length 16  Default: 0
AT+UUIDLEN	+UUIDLEN=<Param>	

### 16、BLE Service UUID Setting/Query

Instruction	Response	Parameter
AT+SVRUUID<Param>	+OK	Param: UUID string  Default: FFE0
AT+SVRUUID	+SVRUUID=<Param>	

## JDY-23A Bluetooth SPP Serial Port Transparent Transmission Module

### 17、BLE feature UUID Setting/Query

Instruction	Response	Parameter
AT+CHRUUID<Param>	+OK	Param: UUID string  Default: FFE1
AT+CHRUUID	+CHUUUID=<Param>	

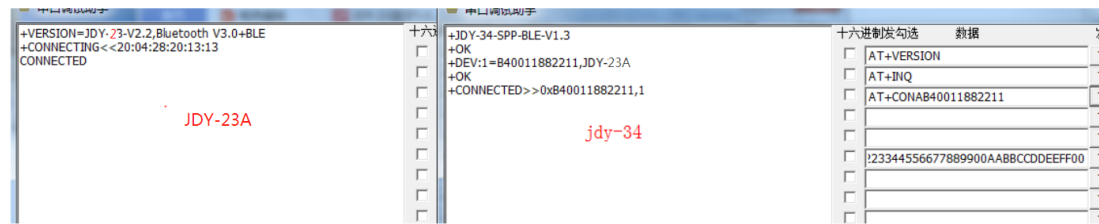
### 18、BLE feature UUID Setting/Query

Instruction	Response	Parameter
AT+CRXUUID<Param>	+OK	Param: UUID string  Default: FFE2
AT+CRXUUID	+CRXUUID=<Param>	

### 19、Serial port parity bit setting and query

Instruction	Response	Parameter
AT+UARTMODE<Param1>,<Param2>	+OK	Param1: Fixed to 0 Param2: 0 to 2 0: No check bit 1: Odd 2: Even Default: 0
AT+UARTMODE	+UARTMODE=<Param1>,<Param2>	

### VIII. Master-slave communication between JDY-34 and JDY-23A



Sent by jdy-34 module

Search slave command send: at + inq

Search to from printout: + DEV:1=B4FE11882008 ,JDY-23A-SPP

After searching for jdy-23a-spp slave, send the connection command to connect:

at + conab4001882211

After connection, the master-slave transmission of SPP between jdy-34 and jdy-23a can be realized

Note: when jdy-34 communicates with jdy-23a slave, jdy-34 needs to set at + mtu1 to set the speed to low speed,

After connecting jdy-23a and jdy-34, it will support serial port bidirectional sending and receiving data without byte limit

Jdy-34 is spp master-slave integrated module. Jdy-34 supports master-slave and multi connection.

Jdy-34 supports simultaneous connection of seven jdy-23a