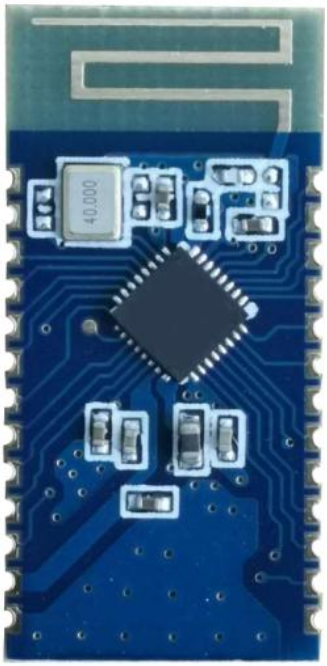
Dual-mode Bluetooth Serial Port Transparent Transmission Module

JDY-33 Bluetooth Module Manual



Version

Version	Date	Description
V1.2	2019-05-15	Release version
V1.4	2019-06-01	Added AT+STTS instruction
V1.6	2019-06-15	This version has been validated by a large number of customers and been largely produced. It is very stable. It is recommended to use V1.6 version.

I. Product Introduction and Application

JDY-33 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, 6 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-33 has obvious advantages. It supports Bluetooth communication between SPP and computer, APP or Wechat applet, and communication between master and slave of JDY-18.

MODULE SUPPORTS BLUETOOTH COMMUNICATION WITH MOBILE APP, WECHAT APPLET OR COMPUTER.

MODULE MASTER-SLAVE COMMUNICATION

II. Product Application

JDY-33 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

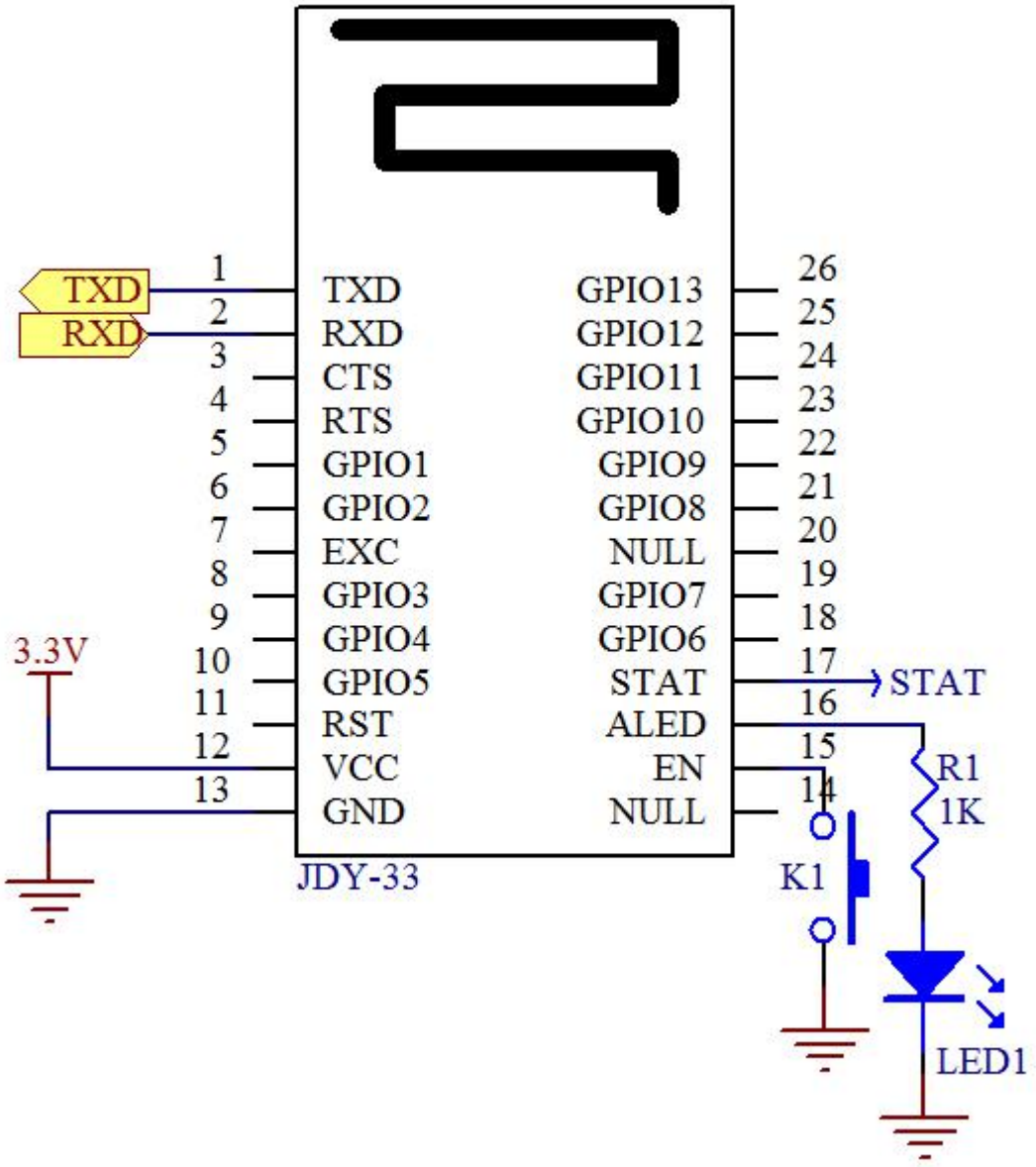
- ◆ Bluetooth POS
- ◆ Thermal printer
- ◆ Smart home control
- ◆ Automobile ODB detection equipment
- ◆ Application of Bluetooth transparent transmission products
- ◆ Shared chargers, weight scale

Ⅲ. Detailed Module Parameters

Model	JDY-33
Working frequency band	2.4GHZ
Communication interface	UART
Working voltage	1.8-3.6V(3.3V recommended)
Working temperature	-40℃ - 80℃
Antenna	Built-in PCB antenna
Transmission distance	30 meters
Master-slave support	Slave machine
Module size	26.7 * 13 *1.7 mm(Length, width and height)
Bluetooth version	Bluetooth 3.0 SPP + BLE4.2
SMT Welding Temperature	<260℃
Working Current	6.5mA
Deep sleep current	<10uA
Transmitting power	6db(Maximum)
Receiving sensitivity	-96dbm
SPP maximum throughput	16K bytes/s(android、windows) When connected with Android and computer Bluetooth, the communication speed can reach 16K bytes/s, and there is no loss of packets (supporting serial port to receive and send data

	continuously).
BLE	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



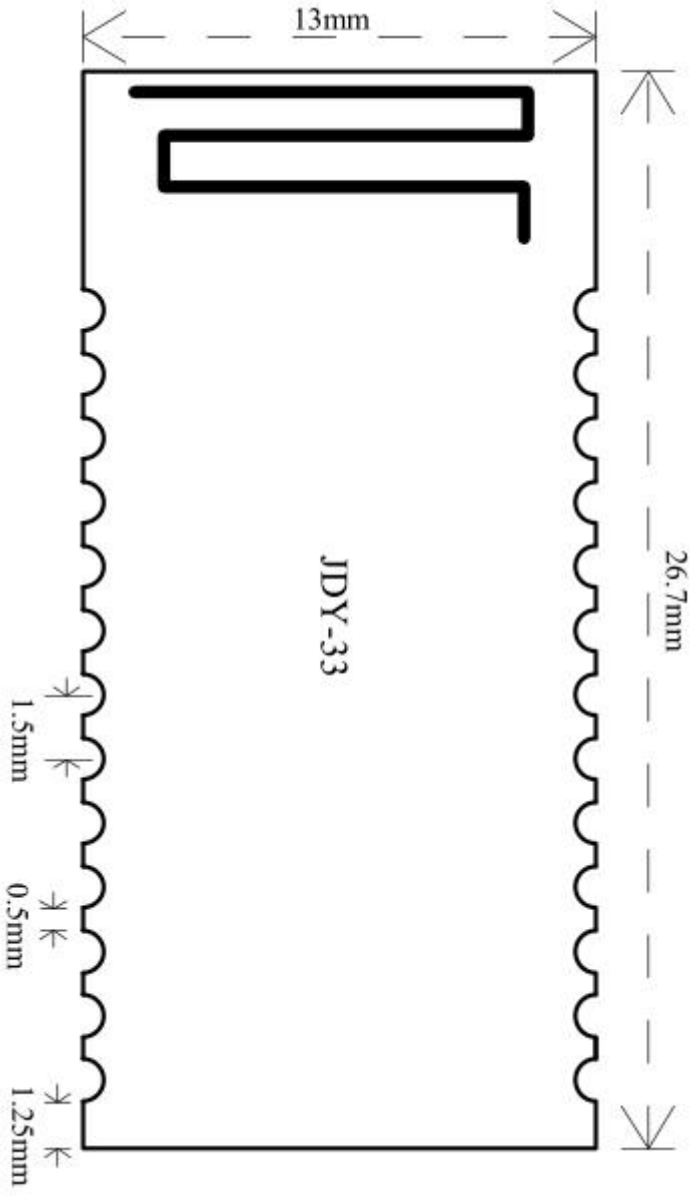
JDY-33 applications only need to connect VCC, GND, RXD and TXD pins. The connection state requires a disconnect, send AT+DISC\r\n. Send AT+SLEEP\r\n for deep SLEEP in unconnected state. Deep sleep can be awakened by the falling edge of EN pin, or by sending data through serial port. It is generally recommended to use serial port to send AT+VERSION\r\n instruction to wake up.

V. Pin function description

Pin No.	Pin function	Pin function description
1	TXD	Serial port output in (TTL Level)
2	RXD	Serial port input pin (TTL level)
3	CTS	Serial port flow control CTS pin
4	RTS	Serial port flow control RTS pin
5	GPIO1	Default no function (Input and output of IO control can be customized according to customer needs)
6	GPIO2	Default no function (Input and output of IO control can be customized according to customer needs)
7	EXC	Default no function (Input and output of IO control can be customized according to customer needs)
8	GPIO3	Default no function (Input and output of IO control can be customized according to customer needs)
9	GPIO4	Default no function (Input and output of IO control can be customized according to customer needs)
10	GPIO5	Default no function (Input and output of IO control can be customized according to customer needs)
11	RST	Reset (Low level effective)
12	VCC	Power supply (1.8-3.6V)
13	GND	Ground
14	NULL	
15	EN	Input pin for sleep awakening (falling edge valid)
16	ALED	Broadcast status pin (Flash when not connected, output high level after connected)
17	STAT	Connection status pin (Low level when not connected, output high level after connected)
18	GPIO6	Default no function (Input and output of IO control can be customized according to customer needs)
19	GPIO7	Default no function (Input and output of IO control can be customized according to customer needs)
20	NULL	
21	GPIO8	Default no function (Input and output of IO control can be customized according to customer needs)
22	GPIO9	Default no function (Input and output of IO control can be customized according to customer needs)
23	GPIO10	Default no function (Input and output of IO control can be customized according to customer needs)
24	GPIO11	Default no function (Input and output of IO control can be customized according to customer needs)
25	GPIO12	Default no function (Input and output of IO control can be

		customized according to customer needs)
26	GPIO13	Default no function (Input and output of IO control can be customized according to customer needs)

VI. PCB Package Size



PCB package is fully compatible with JDY-30, JDY-31, JDY-09, JDY-32

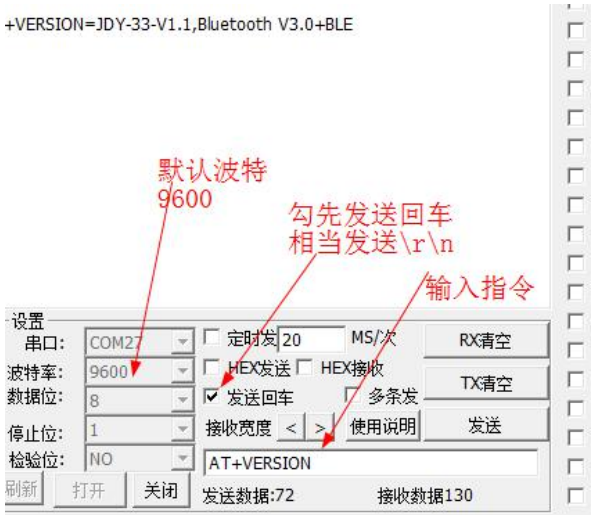
Ⅶ. Serial Port AT Instruction Set

JDY-33 module serial port must add \r\n when sending AT instruction

No.	Instruction	Function	Default
1	AT	Test	
2	AT+VERSION	Version number	JDY-33-V1.1
3	AT+STAT	Query connection status	00
4	AT+SLEEP	Sleep	-
5	AT+BAUD	Baud rate setting and query	9600
6	AT+NAME	Broadcast name setting and query	JDY-33-SPP
7	AT+NAMB	BLE broadcast name setting and query	JDY-33-BLE
8	AT+PIN	Connection password setting and query	1234
9	AT+LADDR	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	FFE2

		query	
19	**AT+UARTMODE**	**Serial port parity bit setting and query**	**No check bit**
20	**AT+STTS**	**STAT pin function setting and query**	**0**

Application of AT instruction serial port tool



Method of sending disconnection instructions in connection state

1、Test instruction

Instruction	Response	Parameter
AT	+OK	None

2、Query version number

Instruction	Response	Parameter
AT+VERSION	+VERSION=JDY-33-V1.1,Bluetooth V3.0+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.

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

JDY-33 supports 128000 baud rate continuous data transmission without losing packets, and the transmission speed can reach 16K bytes per second.

6、SPP Broadcast Name Setting/Query

Instruction	Response	Parameter
AT+NAME<Param>	+OK	Param：SPP Broadcast Name Maximum: 18 bytes Default broadcast name: JDY-33-SPP
AT+NAME	+NAME=<Param>	

7、BLE Broadcast Name Setting/Query

Instruction	Response	Parameter
AT+NAMB<Param>	+OK	Param：BLE Broadcast Name Maximum: 18 bytes Default broadcast name: JDY-33-BLE
	+NAME=<Param>	

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+LADDR<Param>	+OK	Param:MAC address is a hexadecimal string
AT+LADDR	+LADDR=<Param>	

Query MAC address: AT+LADDR\r\n

Setting MAC address: AT+LADDR112233445566\r\n

Setting MAC address: AT+LADDR11:22:33:44:55:66\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

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>	

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>	

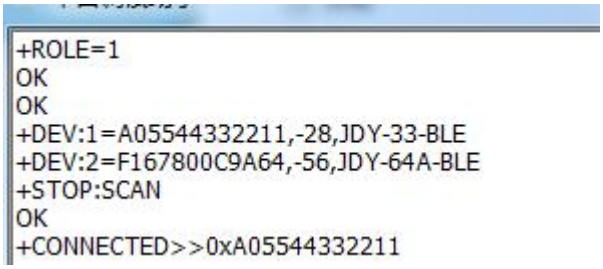
19、Serial port parity bit setting and query

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>**	

20、STAT pin function setting and query

Instruction	Response	Parameter
AT+STTS<Param>	+OK	Param：0 to 1 0: STAT pins are low level when not connected, high level after connection, low level after disconnection 1: STAT pins are low level when not connected, high level after connection, and output low level after receiving data. If no data is received, high level is output after delay of 1.5s, and low level is output after disconnect Default: 0
AT+STTS	+STTS=<Param>	

Ⅷ. Master-slave communication between JDY-18 and JDY-33



JDY-18 is configured as a master: AT+ROLE1

JDY-18 search slave: AT+INQ

JDY-18 connection search gets slave machine: AT+CONNA05544332211

Output slave MAC address after successful connection: +CONNECTED>>0xA05544332211