User Manual

Product Name: Bluetooth module

Brand: HTYD

Model: JDY-08

Manufacture: Shenzhen City Hong Teng Yu Da Electronic

Technology Co. Ltd.

Product Overview

The JDY-08 Bluetooth module is based on Bluetooth 4 standard, the working frequency is 2.4GHZ, the modulation mode is GFSK, the maximum transmission power of 0dB, maximum transmission distance of 60 meters, using TICC2541 chip, support the user through the AT command to change the device name, service UUID, transmitting power, pairing password and other commands, convenient and flexible.

Function Brief

1: WeChat pass (support AirSync protocol, applied to WeChat H5 or manufacturer server communication)
2:APP transparent transmission (support for Android and IOS data transmission)
3:iBeacon mode (support for WeChat shake up protocol and apple iBeacon protocol)
4: sensor mode (temperature, humidity and many other sensors, data acquisition applications)
5: host pass mode (application data transmission between modules, host and slave communication)
6: host Viewer Mode (Applied sensors, indoor positioning)
7:PWM mode (used in motor speed control, LED light brightness adjustment)
8:IO mode (used for mobile control relay or LED lights out)
9: indoor location applications (the application of data acquisition iBeacon to achieve range positioning)
10:RTC function
11: supports LED light products (with 26 fixed modes, with custom mode, and panel mode), and how it works
Optional jump, gradient, strobe.
12: support massage products, the default comes with massage methods, there are warm massage, comfortable massage, pulse massage and so on
13: support iBeacon probe function
14: support RTC timing function

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Electrical characteristics

Working model	state	Electric current
Slave transmission model	Connection / connection / standby	0.8mA/300uA/1uA
Slave broadcast mode IBeacon sensor	Connection / connection / standby	0.5mA/300uA/1uA
Host transmission model	Connection / connection / standby	8mA/8.5mA/1uA
Host observer mode (sensor)	Connection / connection / standby	9mA
The test power supply voltage is 3.3V		

technical parameter

1: through the transmission, the serial port to write data, support hundreds of bytes of writing (such as 512 bytes)

Serial port Potter 115200, the serial port supports 712 bytes (Byte) write

57600, the serial port supports 712 byte (Byte) write

38400, the serial port supports 800 byte (Byte) write

19200, support 900 byte serial (Byte) write

9600, the serial port supports 3K byte (Byte) writing

2: effective communication distance 15 to 30 meters

3: working temperature -40 ~ +80 degrees centigrade

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Low power settings hint (enter sleep AT+SLEEP, wake on the falling edge of the PWRC pin)
Broadcast mode power saving scheme
Broadcast shallow sleep: serial port to send AT+SLEEP or AT+SLEEP1, the current can be set to lower through broadcast intervals
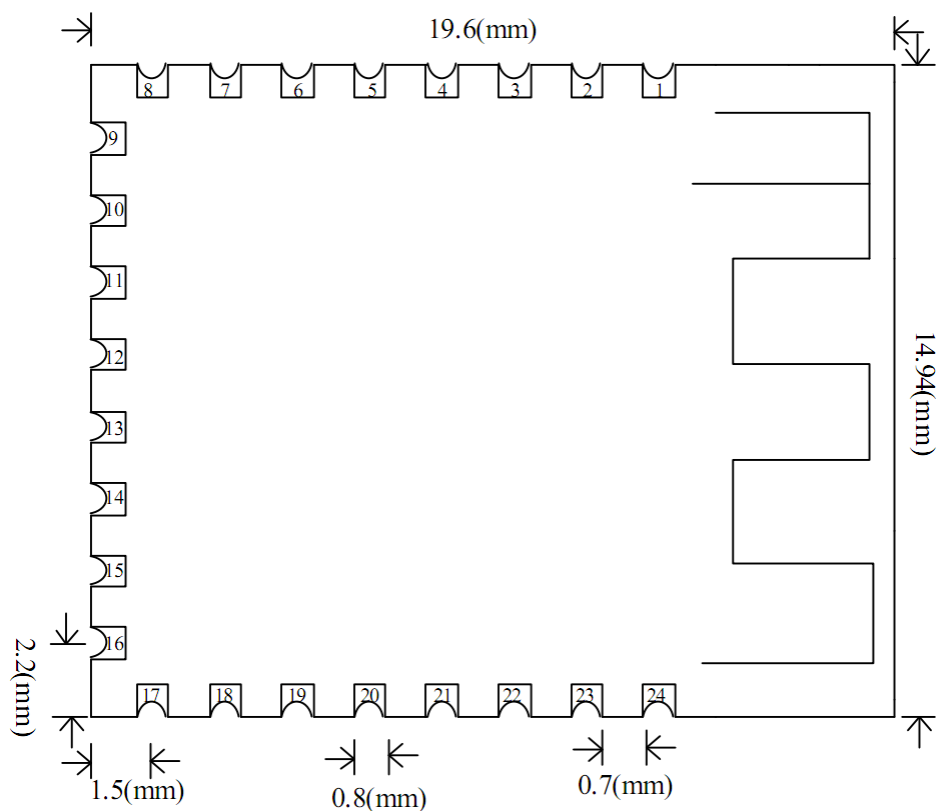**Deep sleep: serial send AT+SLEEP2, at this time the current in a few uA, this mode is not broadcast**
Connection mode power saving scheme
1: connection state needs low power consumption, the P01 pin is held low, AT AT+SLEEP or AT+SLEEP1 command module into MCU to make sleep, when the data will be P01 pulled high by the falling edge of the PWRC pin wake Bluetooth, so you can ensure that the case in connection to the Bluetooth power consumption is very low,
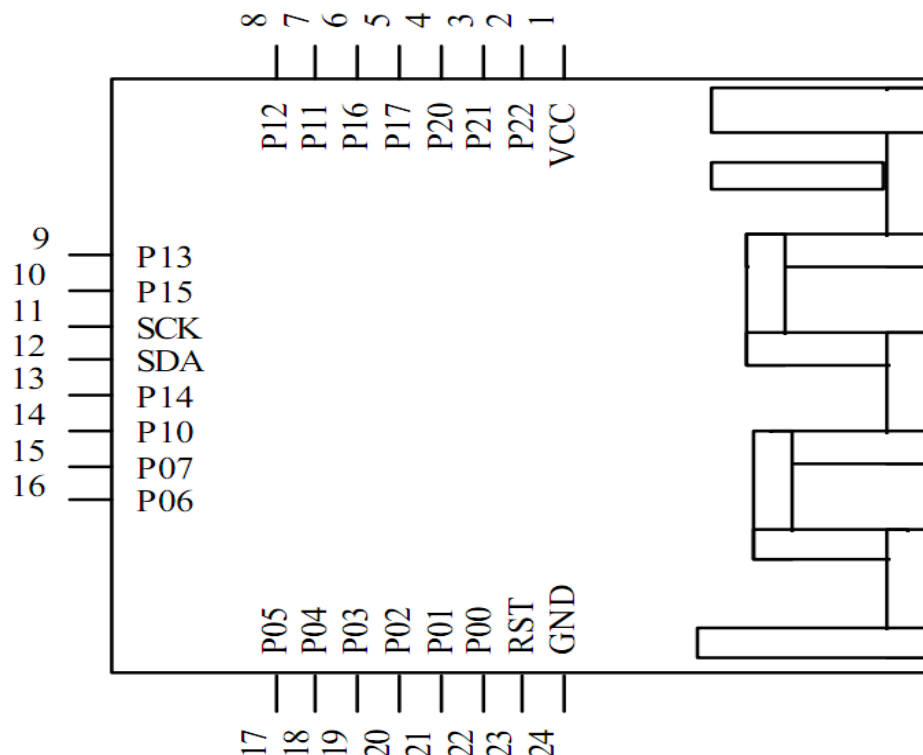**2: of course, you can also let the Bluetooth module and the user's MCU has been sleeping, through the Bluetooth module to wake up the user's MCU, this way to do more than 1 of the way to save power.**
3: to reduce power consumption by setting the connection interval, this mode is configured to save power by 1 and 2

Dimensionaldrawing

Pin definition

Pin function description

Pin	Definition	function	description
1	VCC	Power Supply	The power supply is 3V or 3.3 volts
2	P22		
3	P21		
4	P20		
5	**P17**	**RTC timed interrupt**	**RTC is high when it is turned on and the time is low** **Only when the timing value is clear will it become high level**
6	P16	Connection status pin	The connection is high and is not connected to the low level (valid) This is the default setting The user can set the connection status of the P16 pin or the pulse output and data delay through the AT command The user needs to wake up the user MCU via the P16 pin, and then send the data back to the user MCU, which can be set by the AT command For more details, please read the AT+REVERSE instruction function

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7	P11	PWM2	The PWM2 output pin can be controlled by the APP
8	P12	IO1	The output IO1 pin can be controlled level via the APP
9	P13	IO2	The output IO2 pin can be controlled level via the APP
10	P15	IO3	The output IO3 pin can be controlled level via the APP
11	SCK		The JDY-08D version supports IIC Communications
12	SDA		The JDY-08D version supports IIC Communications
13	P14	IO4	The output IO4 pin can be controlled level via the APP
14	P10	PWM1	The PWM1 output pin can be controlled by the APP
15	P07	PWM3	The PWM3 output pin can be controlled by the APP
16	P06	PWM4	The PWM4 output pin can be controlled by the APP
17	P05	Broadcast status pin	Broadcast flashing, often bright after the connection (master-slave effective)
18	P04		
19	P03	TXD	Serial output, the level is TTL level
20	P02	RXD	Serial port, level is TTL level
21	**P01**	**AT instruction control pin**	**Low level AT mode with default high level** **This pin does not need to be sent AT if it is connected** **When the AT instruction in the state of the connection request, the P01 pin is held low, in AT mode, the user can then send the AT command, to pass through the data when P01 will maintain a high level, immediately into transmission mode** **Is it necessary to send P01 to the low level if the AT command is not connected?** **Answer: No, the module is AT mode in an unconnected state. The user does not need to send the AT command in the case of**

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22	P00	PWRC	Not connected, sleep, press, wake up, After connection, wake up and press disconnect After connection, press awake when asleep
23	RST	reset	Hardware reset pin
24	GND	Power ground	

			connection, and the P01 pin is left unconnected
22	P00	PWRC	Not connected, sleep, press, wake up, After connection, wake up and press disconnect After connection, press awake when asleep
23	RST	reset	Hardware reset pin
24	GND	Power ground	

AT Instruction

sequence	instructions	Effect	Master / slave	Working model	default
1	AT+RST	reset	M/S	—	
2	AT+BOUD	Serial baud setting	M/S	—	115200
3	AT+HOSTEN	Master-slave setting	M/S	—	From the machine
4	AT+HOST	Read host status	M	—	
5	AT+DISC	Disconnect	M/S	—	
6	AT+ADVEN	Turn on the radio	S	—	open
7	AT+ADVIN	Broadcast interval	S	—	100ms
8	AT+NEIN	Connection interval	S	—	10ms
9	AT+POWR	Transmitted power	S	—	0db
10	AT+NAME	Broadcast name	S	—	JDY-08
11	AT+MAC	Read the MAC address	M/S	—	
12	AT+STRUUID	Set iBeacon UUID (string type UUID)	S	iBeacon	WeChat UUID
13	AT+HEXUUID	Set iBeacon UUID (sixteen hexadecimal type UUID)	S	iBeacon	WeChat UUID
14	AT+MAJOR	Set iBeacon Major (string type Major)	S	iBeacon	10
15	AT+MINOR	Set iBeacon Minor (string type Minor)	S	iBeacon	7
16	AT+VER	Read version number	M/S	—	JDY-08-2.1
17	AT+VID	Manufacturer identification number	S	iBeacon sensor	88
18	AT+TEMP	(used for factory identification)	S	iBeacon sensor	0

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19	AT+HUMID	Temperature setting	S	iBeacon sensor	0
20	AT+ISCEN	Temperature setting	S	—	Close
21	AT+PASS	Sets whether to open a password connection	S	—	123456
22	AT+SVRUUID	Change service UUID	M/S	—	FFE0
23	AT+CHRUUID	Change features UUID	M/S	—	FFE1
24	AT+SCAN	Host scanner slave	M	Host transmission	
25	AT+RSLV	Read slave scan to slave MAC	M	Host transmission	
26	AT+CONNET	Connect scan to slave MAC	M	Host transmission	
27	AT+BAND	Bind slave MAC	M	—	
28	AT+GETDCD	The number of machines to read from the host scan	M	—	
29	AT+GETSTAT	Find the working state of the module	M/S	—	
30	AT+PWMFRE	Set PWM frequency	M/S	—	1000HZ
31	AT+PWMOPEN	Open PWM	M/S	—	Close
32	AT+PWM1PUS	Set the pulse width of PWM1	M/S	—	50%
33	AT+PWM2PUS	Set the pulse width of PWM2	M/S	—	50%
34	AT+PWM3PUS	Set the pulse width of PWM3	M/S	—	50%
35	AT+PWM4PUS	Set the pulse width of PWM4	M/S	—	50%
36	AT+WXSVR	WeChat H5 and server communication settings	S	WeChat	H5
37	AT+RTCFLSH	RTC refresh time (seconds)	M/S	—	
38	AT+RTCDATE	RTC time reading and writing	M/S	—	
39	AT+RTCOPEN	RTC switch	M/S	—	
40	AT+RESTORE	Restore factory configuration	M/S	—	
41	AT+STARTEN	Does the boot wake up?	M/S		Wake mode

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42	AT+SLEEP	Sleep mode	M/S		
43	AT+KBYTE	Transfer speed setting	M/S		1K bytes/s
44	AT+REVERSE	P1_6 level and wake-up MCU delay	M/S		1
45	AT+CLSS	Set device type	S	passthrough	A0
46	AT+RTCALAM	RTC read and write timing value	M/S		
47	AT+ALAMEN	RTC timing switch	M/S		close
48	AT+RSSI	RSSI value	S		
49	AT+PIO	AT command control IO	M/S		
50	AT+PARITY	Serial parity bit setting			Parity bit
51	AT+WXINEN	WeChat automatic and manual test mode selection	S		Manual mode

AT instruction specification

Special instructions: JDY-08 module, serial AT command does not need to add terminator \r\n

Soft reset

Instruction	response	parameter
AT+RST, +OK, none	AT+RST, +OK, none	AT+RST, +OK, none

Settings / queries - P1_6 level mode (0-1 is only pin level change, and 2-6 is delayed transmission)

Instruction	response	parameter
AT+REVERSE<Param>	+OK	Param: (0-6)
AT+REVERSE	+REVERSE:<Param>	0: connect low, not connected high level
		1: connect high level, not connected low level
		(0-1) principal and subordinate are effective
		When the parameter is set from 2 to 6, the P16 pin is usually
		High level, delay XXms, recovery of high level and the output data from the APP, this method is not suitable for large data transmission, only suitable for small data transmission,

		mainly for Bluetooth MCU MCU wake up, usually in sleep, data APP, Bluetooth wakes up the user MCU, then output XXms delay data to the MCU, this will ensure that the APP sends data and can wake up the MCU, MCU and APP (2-6 can receive data from the machine) **2: delayed 50ms output data** **3: delayed 100ms output data** **4: delayed 200ms output data** **5: delayed 400ms output data** **6: delayed 1000ms output data** Default: 1

Special instructions: when set to 0-1, the connection pin P16 will have a change in the connection state

Set 2-6, P16 is usually high, there is connection or APP data down, the module generates a drop edge delay pulse, low level delay time, please according to the above delay parameters through the AT instruction adjustment

This instruction is very useful for low power consumption products require a higher, and this ensures that users of MCU can be normal in a sleep state, when the data is coming to wake the user's MCU, and then the output data to the user MCU

Settings / queries - device type

Instruction	response	parameter
AT+CLSS<Param>	+OK	Param (00-FF)
AT+ CLSS	+ CLSS：<Param>	IBeacon mode type 0XE0:iBeacon type 0XE1: temperature sensor 0XE2: humidity sensor 0XE3: temperature and humidity sensor 0XE4: fragrant machine 0XE5: intelligent water meter and meter reading 0XE6: voltage sensor 0XE0: current sensor 0XE0: weight scale 0XE0:PM2.5 sensor Transparent mode type 0XA0: transmission 0 (Universal)

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		0XA1: transmission 1 (serial output status)
		0XA2: pass through 2 (Security)
		0XA5: massage stick (AV stick)
		0XA6: massage bra
		0XA7: massage chair
		0XA8: tattoo machine
		0XB1:LED light band
		0XB2:LED bulb bulb
		0XB3:LED candle light
		0XC1: one way switch controller
		0XC2: dual switch controller
		0XC3: three way switch controller
		0XC4: four way switch controller
		0XD1: air purifier
		0XD5: water dispenser
		0XD6: Ordinary electronic locks
		0XD7: fingerprint electronic lock
		Default: pass through 0

AT+ CLSS description:

Where is the difference between AT+ CLSS and AT+HOSTEN (module work mode instructions)?

Answer: the AT+ CLSS device type is the device type of the AT+HOSTEN

Example 1: the user wants to configure the LED ribbon type to send AT instructions as follows

1:AT+HOSTEN0 / / configured transparent transmission mode

2: AT+ CLSSB1 / / LED configuration into the lamp type

3: send AT+RST / reset

You configure the LED device type through the 3 steps above

Example 2: the user wants to configure the iBeacon type to send the AT instruction as follows

1:AT+HOSTEN3 / / configured transparent transmission mode

2: AT+ CLSSE0 / / iBeacon type configuration

3: send AT+RST / reset

You configure the iBeacon device type through the 3 steps above

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transparent transmission type	Serial output status			APP features FFE2 function	PWRCPress function	
	Con nect	To brea k off	Boot print		awaken	sleep
AT+CLSSA 0	NO	NO	NO	response	Disconne ct	awaken
AT+CLSSA 1	YES	YES	YES	response	Nonfuncti onal	awaken
AT+CLSSA 2	NO	NO	NO	No response	Nonfuncti onal	awaken

Description: the factory default for AT+CLSSA0 type, this function is to pass through common functions, such as the user of the product safety requirements are very high, beware of other people use APP to modify the parameters can modify the module (broadcast, broadcast interval, interval connection etc.), users can consider using the AT+CLSSA2 model, some model of APP configuration parameters (no response radio, radio, etc.), the connection interval interval of these parameters can only be modified by AT instruction.

If the user MCU pins not much data, do not want to use MCU to determine the Bluetooth connection status, you can consider using the AT+CLSSA1 mode, in this mode, when a Bluetooth connected or disconnected from the serial output module, status information to the user MCU

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FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The modular can be installed or integrated in mobile or fix devices only. This modular cannot be installed in any portable device.

FCC Radiation Exposure Statement

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This modular must be installed and operated with a minimum distance of 20 cm between the radiator and user body.

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: 2AM2YJDY-08 Or ContainsFCC ID: 2AM2YJDY-08"

When the module is installed inside another device, the user manual of the host must contain below warning statements;

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

Any company of the host device which install this modular with limit modular approval should perform the test of radiated emissionand spurious emission according to FCC part 15C : 15.247 and 15.209 requirement,Only if the test result comply with FCC part 15C : 15.247 and 15.209 requirement，then the host can be sold legally.