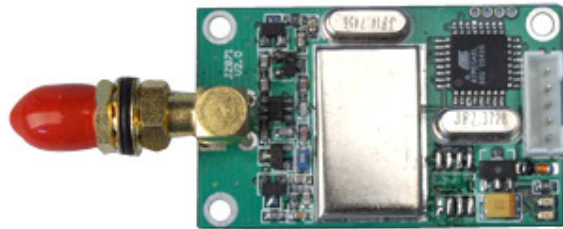


# **JZ871 Mini Power Wireless Module**

## **User's Manual**



Before using the product, please carefully read the user's manual.

## About JZ871

JZ871, the mini power wireless module, is used as the wireless data transmission in short distance. With the small size, weight and power consumption and good stability and reliability, it has the function of bi-directional data sign transmission, test and control. It is used for Wireless meter reading, such as water meter, electric meter and gas meter, parking meter, intellectual card, electronic weighing apparatus, meter for checking on work attendance, queue wireless meter, building control, shipping company control, alarm system, intelligent equipment, Automatic data collecting system; Industrial remote control and remote test building automation, safety and security, powerhouse equipment wireless monitor, entrance control system, etc. It provide the USB power interface to be convenient for the mini computer and PC users if necessary.

## JZ871 Feature

### 1. Ultra low power transmission

Transmission power less than of 35mW, high receiving sensitivity: -121dbm , size: 44mmX27mmX8mm.

### 2. ISM frequency band, not requiring on application of frequency point

Carrier frequency of 424-448MHz, also capable of providing 315/868/915MHz carrier frequency.

### 3. High anti-interference and low BER (Bit error Rate)

Based on the GFSK modulation mode, it adopts the efficient communication protocol. The actual bit error rate of  $10^{-5} \sim 10^{-6}$  can be achieved when channel bit error rate is  $10^{-2}$ .

### 4. Long transmission distance

Within the range of visibility, the reliable transmission distance is ( BER=10-3/1200bps ) >800m.

### 5. Transparent data transmission

Transparent data interface is offered to suit any standard or nonstandard user protocol. Any false data generated in the air can be filtrated automatically (What has

been received is exactly what has been transmitted). The charge time for receiving and sending <10ms.

#### **6. Multi-channel and speed**

The JZ871 configuration provides 46 channels. to meet the multiple communication combination mode of the users. It has baud rate to be chosen such as 1200bps、2400bps、4800bps、9600bps、19200bps、38400bps. The wireless transmission rate is direct ratio with baud rate of interface to meet user's equipment requirement. The rf baud rate is 1200bps、2400bps.

#### **7. High speed wireless communication and Large data buffer**

When the speed rate in the air is quicker than interface's, allowing to transmit unlimited length data at one time, when the speed rate is slower or equal the interface's, allowing the transmission of 255 Bytes long data frames at one time for more flexible programming by users.

#### **8. Intelligent data control and the user doesn't need to prepare excessive programs**

Even for semi duplex communication, the user doesn't need to prepare excessive programs, only receiving/transmitting the data from the interface. JZ871 will automatically complete the other operations, such as transmission/receiving conversion in the air, control, etc.

#### **9. Low power consumption**

Receiving current<30mA, transmission current<35mA, sleeping current <1uA.

#### **10. High reliability, small and light**

Single chip radio- frequency integrated circuit and single chip MCU are used for lessened peripheral circuits, high reliability, and low failure rate.

#### **11. Watchdog monitor**

Watchdog monitors the inner function, so that change the traditional product structure and improve the product reliability.

#### **12. antenna choose**

Users can choose various antenna setting project and antenna according to user's different need to achieve a optimal effect.

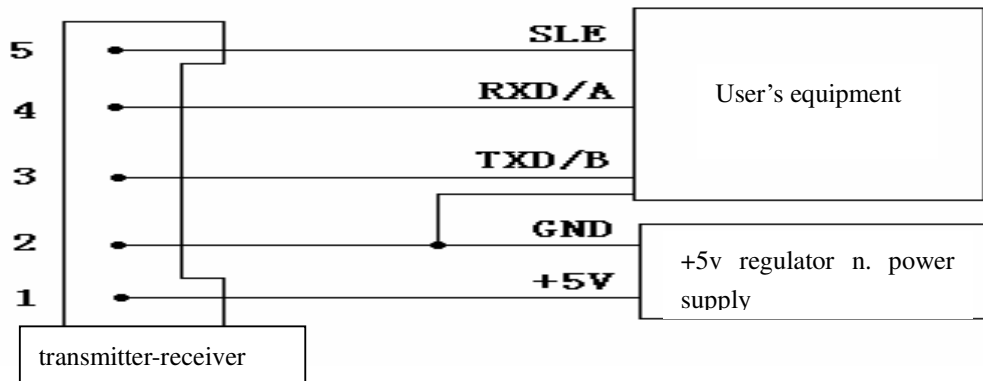


JZ871 can supply one 5-pin connector (JP1), and its definitions as well as connection method for terminals are shown in Table 1.

Table 1: Definition of connecting pins and connection method

Item no	PIN	Description Level Connected to the terminal	User terminal	Remarks
1	VCC	+5 ± 0.5V	+5 ± 0.5V	TTL 3V user's choose
2	GND	Power supply/Ground	DGND/AGND	RS232 interface: GND of Power and Data must be united.
3	RXD/ B (RS-485)	Serial data receiving end	TXD/ B (RS-485)	
4	TXD/ A (RS-485)	Serial data transmitting end	RXD/ A (RS-485)	
5	SLE	Sleep control (input) end		High level to sleep, Low level awake(sleep version is aviavailability)

Note: No sleeping is default, The Pin 5 of no-sleeping version is not be used, pin 5 must be hung.



Remarks: To avoid to connect the interface reversely and can not communicate, please check and assure the voltage of 3 and 4 pin is existing by using multimeter. If there is one pin that has the voltage, another has not voltage, which means the interface is connected reversely, pls. Change the connection wires between pin 3 and 4.

## JZ871 Power supply and sleep mode

### 1. Power supply

JZ871 uses DC power supply with voltage of +5V. It can also share power supply with other equipment, however, the high quality power supply with desirable ripple factor should be

selected. In addition, the reliable grounding must be used if there is other device in the system equipment. In case of failure to connect with the earth, it can form its own grounding but it must be absolutely separated from the municipal electric supply.

## 2. Sleeping function

JZ871 had sleeping and no-sleeping version. The current of JZ871 in the sleeping state is 1Ua. Users must tell which version will be chosen before place the order in advance(No sleeping is default). For sleeping version, users can open and close the sleeping function by themselves. JZ871 with the sleeping function has two awakening way, one is hardware awakening way, another is interface awakening way( air awakening will be reserved) Hardware awakening is achieved by the Pin 5 input to the high level and input low level to awake. Interface awakening is achieved by users send designate protocol data by JZ871 interface to open or awake. JZ871 with the function of sleeping is default in close state before leaving factory, so users must set by JZ871 software to set the awakening mode to hardware awakening or interface awakening. Users can also tell us to set in advance.

If users use JZ871 with the sleeping function, but hope not to apply the sleeping function, the users can set by JZ871 software to set for no-sleeping state or make JZ871 pin 5 to connect the ground in the mode of hardware awaken.

## JZ871 parameters setting

JZ871 have one interface of TTL、RS232、RS485, You must specify the interface when you buy. JZ871 main parameters: COM baud rate and verify, RF baud rate, Channel and frequency. You can change these parameters by our RF Module soft. When RF baud rate is faster than COM baud rate, One frame Can transmit limitless data. When RF baud rate is not faster than COM baud rate , One frame Can transmit 255 bytes most. You can set the rate according your need. The general Power supply is 5V DC.

Two JZ871 communication must have condition as follow:

1. Their channels(i.e. frequency) is same.
2. Their RF rates is same.
3. RF Module Com baud rate and verify is agree with its equipment or PC that it connects with.

### parameters default value:

Channel NO.: 1

Interface speed rate: 9600BPS

Interface verify: none

Speed rate in air: 2400BPS

**Channel and frequency list**

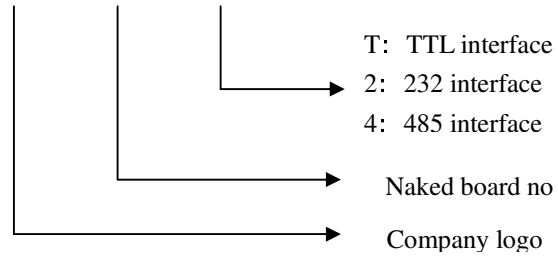
Channel	Frequency	Channel	Frequency
1	430.2000MHZ	9	458.5250MHZ
2	431.4288MHZ	10	459.1250MHZ
3	431.7360MHZ	11	459.5250MHZ
4	430.5072MHZ	12	460.1250MHZ
5	434.6940MHZ	13	460.5250MHZ
6	434.2332MHZ	14	461.1250MHZ
7	433.1580MHZ	15	461.5250MHZ
8	433.9260MHZ	16	462.1250MHZ

**Technical specification of JZ871**

Modulation mode: FSK/GFSK  
Working frequency: 424-448MHZ  
Transmission power: <10mW  
Receiving sensitivity: -121dBm  
Transmitting current:: <35mA,  
Receiving current: <30mA  
Sleeping current: <1uA  
Channel speed rate: 1200/2400Bit/s,User can Choose one  
Interface speed rate: 1200/2400/4800/9600/19200/38400Bit/s ,User can Choose one  
Change time for receiving and sending: <10ms  
Interface data format: 8E1/8N1/8O1  
Power supply: 5±0.5V( RS232/RS485), 2.7--3.6V or 3.6--5.5V( TTL) DC  
Working temperature: -20℃—65℃  
Working humidity: 10%—90% relative humidity without condensation  
Dimension: 44mmX27mmX8mm  
Attachable Communication with Model: JZ871/JZ872/JZ873/JZ878

**Model and name**

JZ	871	-T
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## Optional Antenna:



## Trouble and solve ways:

NO.	Trouble	Trouble causes and solve ways
1	No shine of Indicator light	a、Power Line badness touch . b、Power is bad. c、Power line meet in reverse, or diode of polarity protect is bad.
2	No transmit or No receive	a、Radio is badness touch with PC/terminal. b、Radio with TTL/RS232/RS485 not match terminal. c、RX frequency and TX frequency is not same.
3	Bit error rate High	a、antenna not match, or touch bad; b、RF baud rate is not right. c、Power supply ripple is too great.
4	Indicator light twinkling	a、Electromagnetism disturb in circumstance. b、Same frequency disturb in the circumstance.