

# JZ864 Mini Power Wireless Module

## User's Manual



## About JZ864

JZ864, the mini power wireless module Enveloped with Epoxy, 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 bidirectional data sign transmission, test and control.

It is used for Wireless meter reading, such as Water Meter, Ammeter 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.

If necessary, we can provide USB interface to make it easy to settle the question of Power Supply for Mini computer and PC users.

## JZ864 Feature

### 1. Ultra low power transmission

Transmission power: < 100mW, High receiving sensitivity: -110dbm,

Size: 47mm\*33mm\*14mm

### 2. Low power consumption

Receiving current<10mA, transmission current<100mA.

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

Carrier frequency of 428---433MHz, also capable of 868/915MHz.

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

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

### 5. Long transmission distance

Within the range of visibility, the reliable transmission distance is (BER= $10^{-3}$ /1200bps) >500m when the antenna height is greater than 2m (BER= $10^{-3}$ /9600bps).

### 6. 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.

### 7. Multi-channel and speed

The standard JZ864 configuration provides 8 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. The wireless transmission rate is direct ratio with baud rate of interface to meet user's equipment requirement.

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## 8. 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.

## 9. 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. JZ864 will automatically complete the other operations, such as transmission/receiving conversion in the air, control, etc.

## 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.

## 13. Encapsulation Structure, dustproof, waterproof and static proof

Comprised by plastic DOS shell, epoxy encapsulation, dustproof, waterproof and static proof, good anti-jamming.

# Application of JZ864

## 1、JZ864 User interface

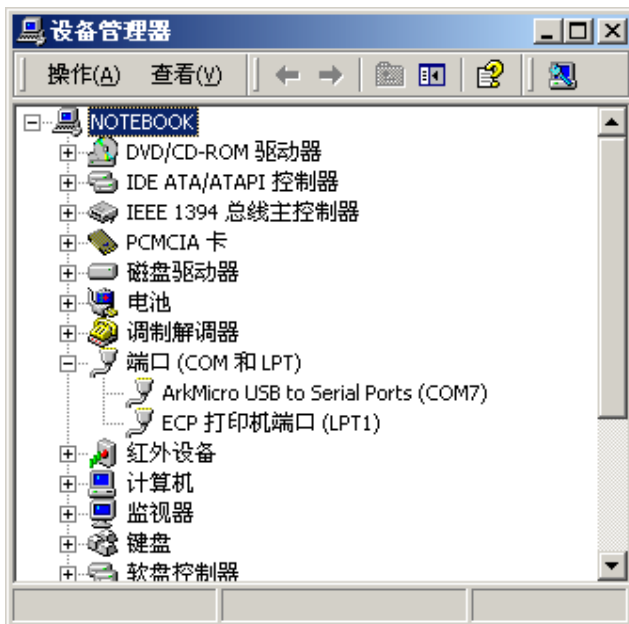
JZ864 provide USB interface.

User must install the USB driver before using JZ864. After installing the driver, PC can build one virtual serial port, User's soft can operate the serial port(for example COM4).

View the serial port: Desktop—Click 'My computer' on right button —Attribute---Hardware---device manager---COM and LPT, you can see the increased COM port in the branch, such as COM7 in the bellow picture.

Notice:

1. you must install the USB driver before you use it, then plug JZ864 into the PC's USB port, here the virtual serial port can display in Device Manager.
  2. After using, Please Close the program in advance, then draw out JZ864.
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## JZ864 parameters setting

JZ864 have the interface of USB. JZ864 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 (USB supply).

### Two JZ864 communicate must have condition as follows:

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

## Parameters default value:

Channel : 1  
 Interface speed rate : 9600BPS  
 Interface verify : none  
 Speed rate in air : 9600BPS

## Channel and frequency list

Channel	Frequency	Channel	Frequency
1	428.0028MHZ	5	432.1685MHZ
2	429.0012MHZ	6	431.5020MHZ
3	433.3020MHZ	7	430.0764MHZ
4	433.9164MHZ	8	434.5308MHZ

## Technical specification of JZ864

Modulation mode: FSK  
Working frequency: 428---433MHZ  
Transmission power:  $\leq 100\text{mW}$   
Receiving sensitivity:  $-110\text{dBm}$   
Transmitting current:  $<100\text{mA}$   
Receiving current:  $<10\text{mA}$   
Channel speed rate: 1200/2400/4800/9600/19200Bit/s User can choose  
Interface speed rate: 1200/2400/4800/9600/19200Bit/s User can choose  
Change time for receiving and sending:  $<10\text{ms}$   
Interface data format: 8E1/8N1/8O1  
Power supply:  $5\pm 0.5\text{V DC}$ (power supply from USB interface)  
Working temperature:  $-20^{\circ}\text{C} \sim 85^{\circ}\text{C}$   
Working humidity: 10% ~ 90% relative humidity without condensation  
Dimension: 47mm \*33mm \* 14mm (not include antenna)  
Attachable Communication with Model: JZ862/JZ863/JZ864/JZ866.

## Optional Antenna:



## Trouble and solve ways:

NO.	Trouble	Trouble causes and solve ways
1	No shine of Indicator light	<ul style="list-style-type: none"> <li>a、 Power Line badness touch .</li> <li>b、 Power is bad.</li> <li>c、 Power line meet in reverse, or diode of polarity protect is bad.</li> </ul>
2	No transmit or No receive	<ul style="list-style-type: none"> <li>a、 Radio is badness touch with PC/terminal.</li> <li>b、 Radio with TTL/RS232/RS485 not match terminal.</li> <li>c、 RX frequency and TX frequency is not same.</li> </ul>
3	Bit error rate High	<ul style="list-style-type: none"> <li>a、 antenna not match, or touch bad;</li> <li>b、 RF baud rate is not right. c、</li> <li>Power supply ripple is too great.</li> </ul>
4	Indicator light twinkling	<ul style="list-style-type: none"> <li>a、 Electromagnetism disturb in circumstance.</li> <li>b、 Same frequency disturb in the circumstance.</li> </ul>

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