Jizhuo

Technology

SHENZHEN JIZHUO TECHNOLOGY CO., LTD

JZ861 Mini Power Wireless Module

User's Manual

DVER 2.0

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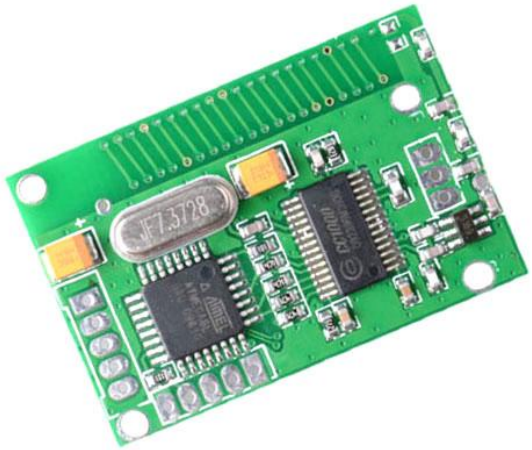
JZ861 Mini Power Wireless Module

JZ861 data transmission module is highly integrated micro-power half-duplex, and with the PCB antenna for wireless data transmission module, which uses "TI" high-performance radio frequency chip and "AVR" high-speed microcontroller. Module provides four channels, and is equipped with professional set-up software for the user to change parameters, the module with transparent transmission mode, no user-written set and transmission procedures, you can transmit data of any size. Module is small, the use of voltage is wide, easy to use.



Applications：

※ Water, electricity, gas, heating automatic meter reading system

※Wireless smart terminal PDA

※Wireless Queue System

※Wireless alarm and security system

※Smart Card

※Medical and electronic instrumentation automation control

※Intelligent teaching equipment

※ Intelligent home automation and lighting control

※Wireless electronic scale

Features：

※Frequency: 428-434MHz

※Distance:100m(9600Bps)

※Modulation:FSK

※Transparent transmission

※ Built-in watchdog to ensure long-term reliable operation

※UART/TTL Interface

※Convenient and flexible

※Almost 512bytes data buffer

※Suitable for built-in installation

JZ861 module is built with the PCB antenna wireless module, the use of ISM frequency band, without application frequency; can be set to four communication channels, transmit power of 10mW (10dB), high receiver sensitivity-110dbm, size 38mm * 25mm * 6mm (with PCB antenna), the industry's smallest PCB board antenna with a wireless module, is very convenient for users to do the embedded wireless systems.

JZ861 the use of transparent transmission, in order to ensure the reliability and stability of the user's system, plus the transmission checksum or CRC checksum error detection mode, the error data retransmission. Transceiver module buffer of 512bytes, means that users can be in any state 512bytes of data transfer 1, when the speed is greater than the serial port is set to air rate, is theoretically unlimited length can send information packets, but does not recommend users to send long data packets, the proposed length of each packet data between 60 ~ 100B, generally not longer than the 120B, and recommended user program using the ARQ mode, the error data packets retransmission. As follows:

If the actual error rate 10-4, users need to send 1KB about 10000bit information, if the 1KB data as a packet, sent at least theoretically, there will be a data error in the receiver, then the 1KB data can never be received correctly. If it is divided into 10 packages, each package 100B, then send 10 packets, the packets according to a probability of only 1 error, the error in the form of a packet retransmission by ARQ 1, although it took more than 1 packet and the efficiency decreased by about 10%, but it can guarantee all the information is correctly received.

In the work on, JZ861 There are two ways of working, first for the conventional model, which Module is powered On, is in receive mode; you also can be sending data. The second is sleep mode, that is, through the power module in a dormant state, to be awakened by the user's foot control module, the module can send and receive data.

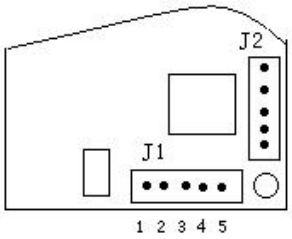
In the application of JZ861 module, the module uses a wide voltage range, but also be divided into two kinds of voltage, the first for the 5V power supply module, also known as conventional modules, voltage DC 3.3-5.5V. The second is 3V power supply modules, custom module for the user, the voltage of DC 2.7-3.3V; users in the use of power to DC power supply, the current must

be greater than 50mA, the power to choose good ripple coefficient.

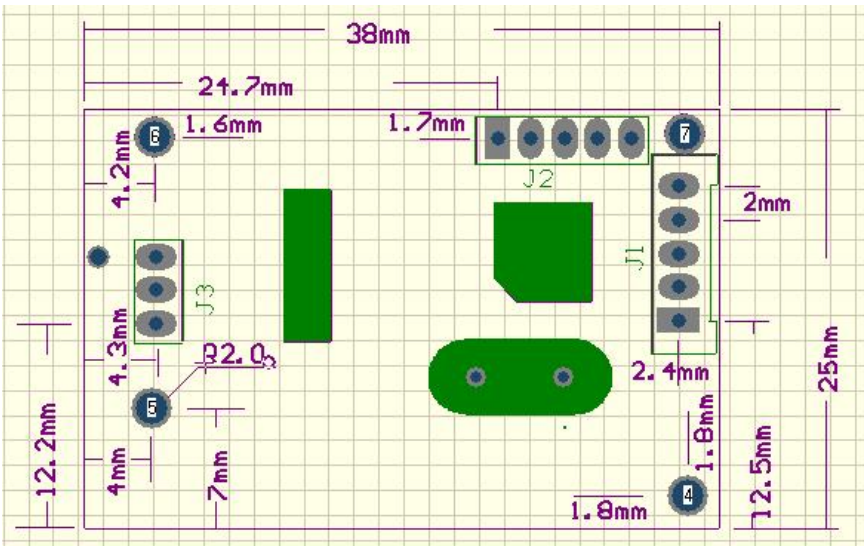
Module pin definition

JZ861 module with J1, J2, J3, Block three interfaces, which J1 is the communication interface module and power interface; J2 expansion interface for users, general users will not use (the user will use a special custom-made); J3 holes for the installation . J1 has five pins, detailed definitions of the following table：

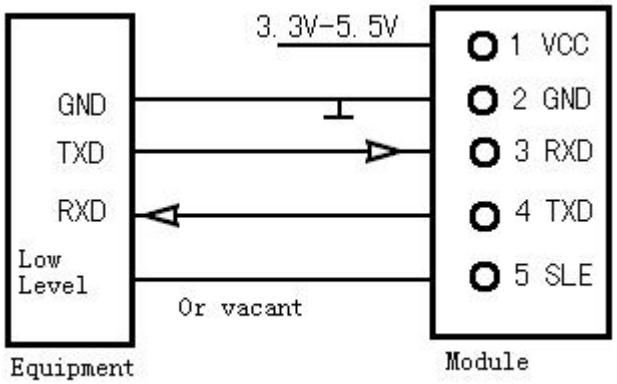
JZ861Pin definition					
pin	**definition**	**specification**	**User terminal**	**Level**	**Note**
1	VCC	+5V	+5V	DC5V	3Vuser need to choose
2	GND	power / terminal place	DGND/AGND	Ground	
3	RXD	Serial data receiving end	TXD		User transmitting
4	TXD	Serial data sending end	RXD		User receiving
5	SLE	Sleep mode control input		TTL	Not open



Size:

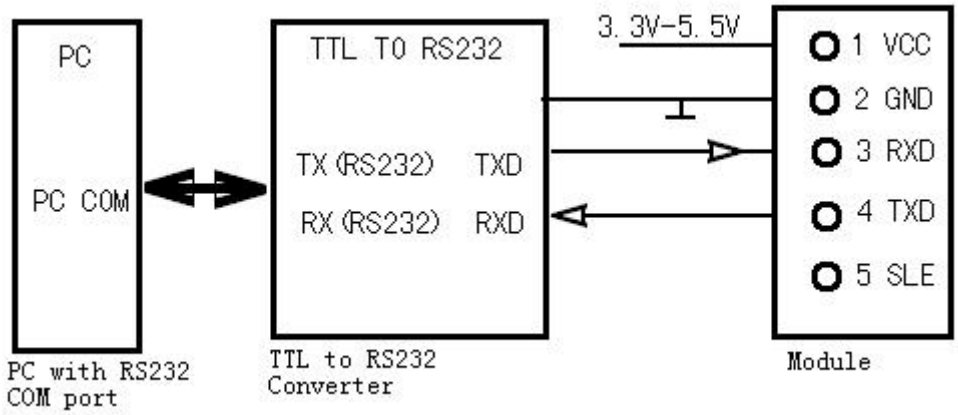


Module with customer equipment connections



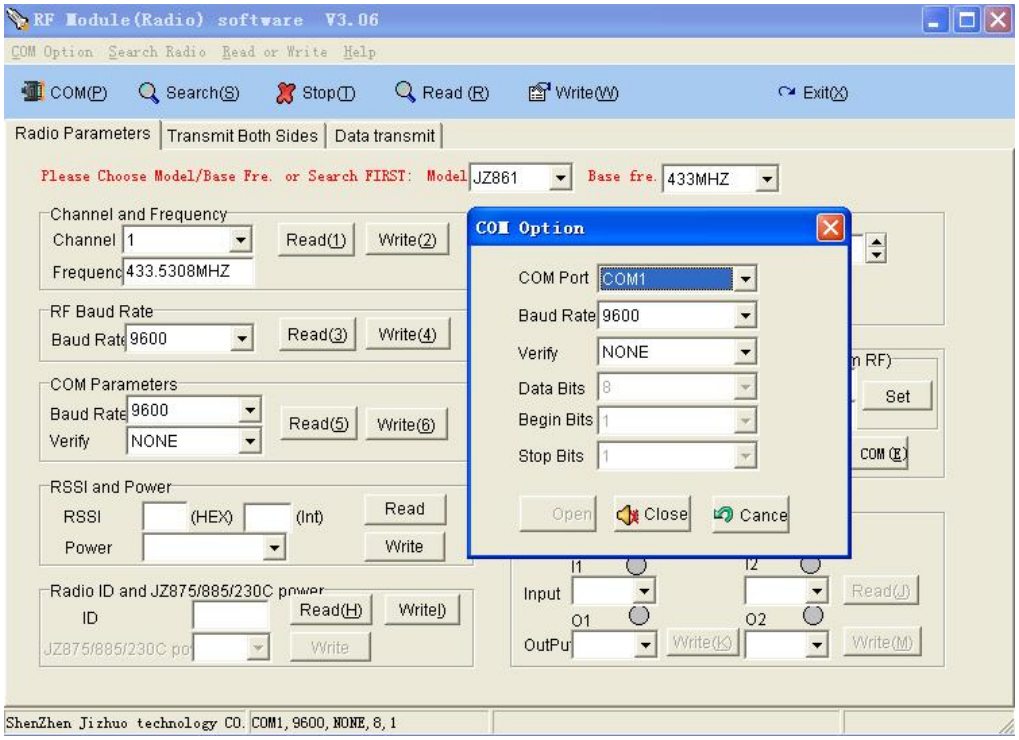
Note: JZ861 did not sleep in the state, the module of the SLE feet must be vacant. In the sleep state when the module must be low, the module can send and receive data.

Module with PC connections



Note: As JZ861 mode TTL interface module, so the PC must be added to connect the TTL to RS232 converter, and converter must supply DC 5V of electricity.

For software testing and change parameters



A, between the JZ861 module and connect a PC RS-232 to TTL adapter, and plug in the power, select the serial port used.

B, the radio detection, when the check to the station (the software will prompt detection success), you can read or change a single parameter.

C, change parameters, when you select a parameter you want to set, after set up to read again, to see the parameters of the module is not what you want.

Note: Two or more modules to communicate, then the frequency of the station modules and air rate must be consistent.

Module to communicate with user equipment, the module's serial port parameters and user settings must be consistent.

Communicated Module

JZ861 ultra-compact wireless module with all the JZ86 series of models to communicate with each other. Communications as long as you pay attention to the following:

A, select all the modules to communicate with each other for 2 to 4 channels of a channel.
B, you have the same communication module of the air rate.
C, the communication module, power supply, interface connection is connected.

Sleep Mode

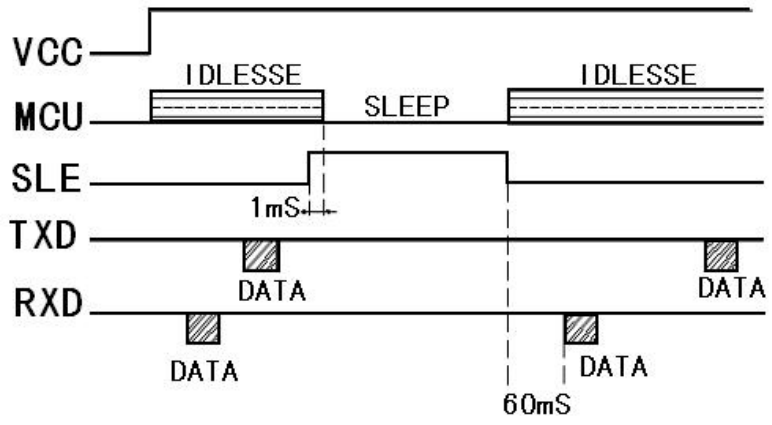
JZ861 divided into dormancy release version with no sleep.JZ861 sleep after the current is 15uA. JZ861 hibernation wake-up mode for the hardware. Wake is the fifth through the interface hardware input pin high to sleep, wake-up input low.

If the user has a sleep function JZ861, but do not want to use the hibernate feature, available through JZ861 pin 5 to ground, then achieve.

Details as followings

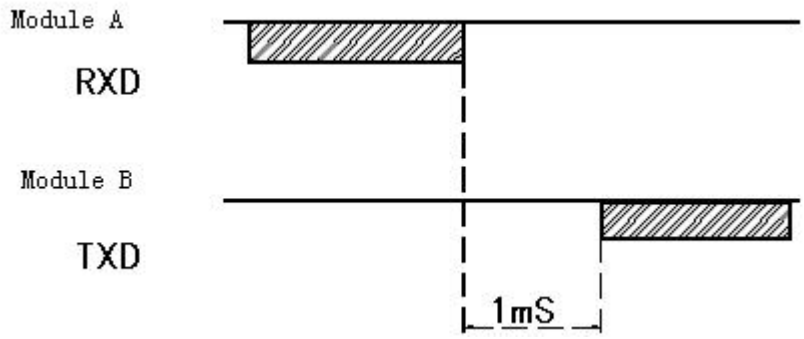
Module in the working state to sleep state, it is necessary to SLE pin from low to high, if the module is idle (no transmit / receive data) MCU to sleep within about 1ms; If you are in the collection and development data, the data will be processed the frame side to sleep.

Module in sleep state to work state, it is necessary to SLE pin from high to low, MCU is working on several ms to enter into the state, but in order to send data to the stability of the user side should be more than 60ms latency available for data transmission.



Transform on transceiver and receiver

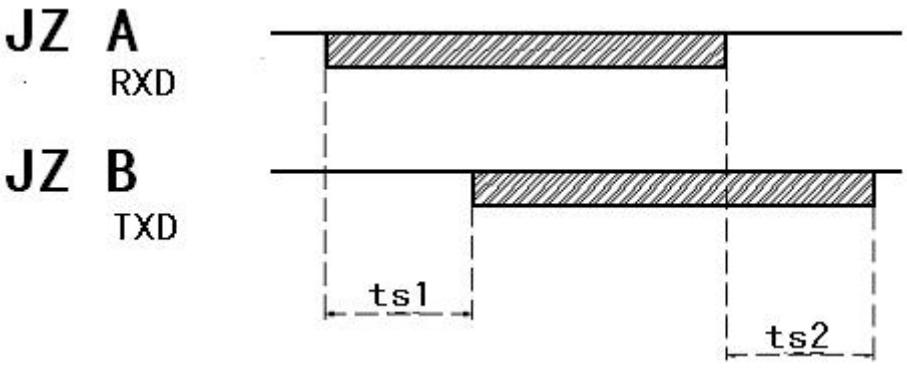
End user devices receiving the data sent by the module, and then transferred to the data center must have sent more than 1ms delay.



From Module A(transmit) to Module B(receive)

When the user is doing data transfer, the data must take into account the delay module, in order to ensure the reliability of wireless transmission, the company added the module FEC (forward error), and other encoding rules. Then from A to B module module, in the middle of the transmission of data with different baud rates for the delay, in the following table:

Air rate (bps)	Time ts1 (ms)	Air Rate (bps)	Time ts1 (ms)
9600	24	2400	76
4800	43	1200	152



JZ861 default parameter

Channel: First channel;
Serial port speed: 9600BPS
Serial port verification: Null
Airborne speed: 9600BPS

Channel	Frequency
1	434.5308MHZ
2	429.0012MHZ
3	433.3020MHZ
4	433.9164MHZ

Technical specification of JZ861

Technical specification	
Modulation：	FSK
Frequency：	433MHz
Transmit Power：	10mW(10 dB)
Receiver sensitivity：	-110dBm
Transmit Current：	<35mA
Receive Current：	<11mA
Sleep Current：	<15uA
Channel Rate：	1200/2400/4800/9600Bit/s customized
Serial Port Rate：	1200/2400/4800/9600Bit/s customized
Interface：	TTL
Interface-data-format：	8E1/8N1/8O1
Working Power：	DC 3.3-5.5V or 2.7~3.3V
Working Temperature：	- ～
Working humidity：	10%～90% Relative humidity, no condensing
Size：	38mm*25mm*6mm
Communicated Model：	JZ861/JZ862/JZ863/JZ864(Only for 2\3\4 channel)

Trouble and solve ways:

Trouble and solve ways:	
Troubles	Cause and Remedy
Between devices not communicated	Communication at both ends of the air rate, parity inconsistency
	Frequency inconsistency
	Without power
	Module has destroyed
	The pin of sleep mode not set
Short Distance	Environment very bad or the antenna is blocked
	The existence of the same frequency or magnetic or electrical interference, or replacement of the channel away from sources of interference
	Power match or not. Voltage and current is large enough
Module cant communicate with PC	Without power
	TTL to RS232 converter is damaged, or without power supply
	Converters .module.pc with connection error
	Change work channels
	Serial port baud rate settings are not correct or air, to re-set
	Power supply ripple big, replace the power supply

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