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Technology

SHENZHEN JIZHUO TECHNOLOGY CO., LTD

EZ50B Wireless Serial Radio Modem

User's Manual

DVER 2.0

SHENZHEN JIZHUO TECHNOLOGY CO., LTD

TEL:+86-755-83304518-805 **Mobile:86+13692285161**

FAX: +86-755-83302824 **Website: http://www. jizhuo.com**

Email:sale@jizhuo.com

MSN:shenzhen_jizhuo@hotmail.com

Address: NO.813,212BLD,Tairan Tech Park, Futian District Shenzhen China

Post Code: 518040

EZ50B Wireless Serial Radio Modem

EZ50B data transmission module is highly integrated micro-power half-duplex wireless data transmission module, which use "TI" high-performance RF chips and high-speed microcontroller. Module provides eight channels, and is equipped with professional set-up software for the user to change parameters, the module is 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's

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: 915MHz

※Distance:1200m(1200Bps)

※Modulation:GFSK

※Transparent transmission

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

※UART/TTL、RS232、RS485 Interface

※Convenient and flexible

※Almost 512 bytes data buffer

※Suitable for built-in installation

EZ50B wireless module, the use of ISM frequency band, without application frequency; can be set to 8 communication channels, transmitting with high power , high receiver sensitivity-121dbm, size 110mm * 85mm * 25mm (without antenna base) , a large number of the billing system to use, very convenient for users to embedded wireless systems.

EZ50B 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 512 bytes, means that users can be in any state 512 bytes of data transfer , 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.

EZ50B set parameters, the market is no longer used wireless modules used in the traditional way to change the parameters of the jumper, causing long-term use because it brings bad, options less dynamic change is not easy, a lot of inconvenience. EZ50B using the serial port setting parameters easy and quick, easy set refers to the chip embedded in the user program and operating software in the background. Meanwhile module 1200/2400/4800/9600/19200/38400bps six kinds of rate and 8 frequencies; provide UART / TTL, RS232, RS485 three kinds of interfaces. Choice for users.

In the work on, EZ50B 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, it must be user-controlled mode wake-up pin block, the module can send and receive data.

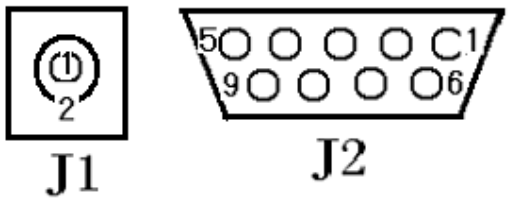
In the application of EZ50B module, the module uses a wide voltage range, but also divided into two kinds of voltage, the first for the 5V power supply module, also known as conventional module, the voltage of DC 4.5V -5.5V. users in the use of power to DC power supply, the current must be greater than 200mA, but to choose a good power supply ripple.

Module pin definition

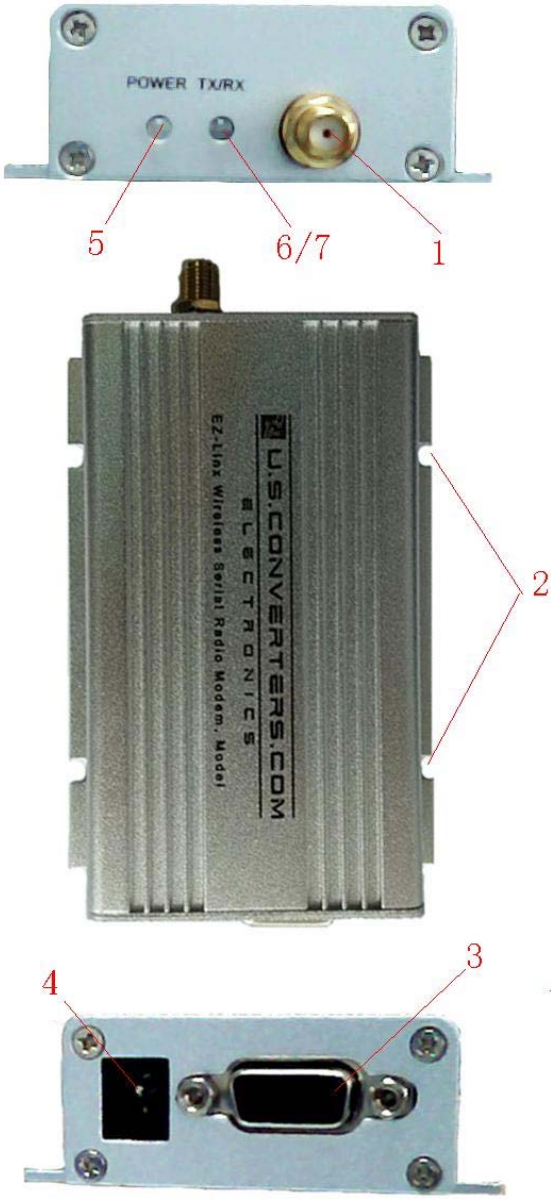
EZ50B module J1,J2 interfaces seat, detail as follows:

	Item No	Pin	Specification	User Terminal	Remark
J1	1	GND	User GND	User GND	
	2	+5V	User GND+	User GND+	
J2	1	Null			
	2	TXD	TTL/RS232：data transmit，	user equipment receiver	
	3	RXD	TTL/RS232：data receive，	user equipment transmit	
	4	Null			
	5	GND	User Interface	user equipment interface	
	6	Null			
	7	Null			
	8、9	Null			

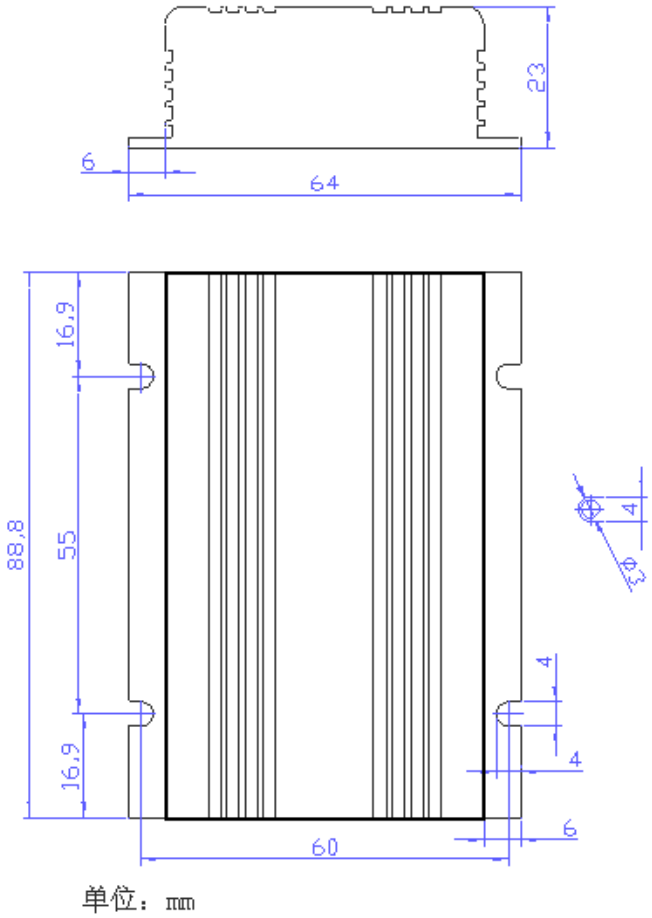
Dimensions:



Appearance :

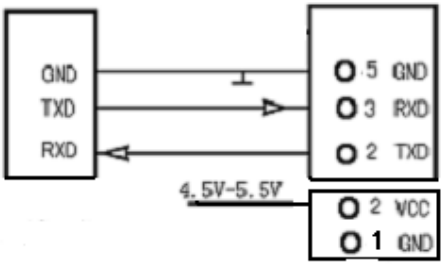

POWER TX/RX
5
6/7
1
U.S.CONVERTERS.COM
ELECTRONICS
EZ-Linx Wireless Serial Radio Modem, Model
2
4
3

Installation Dimensions



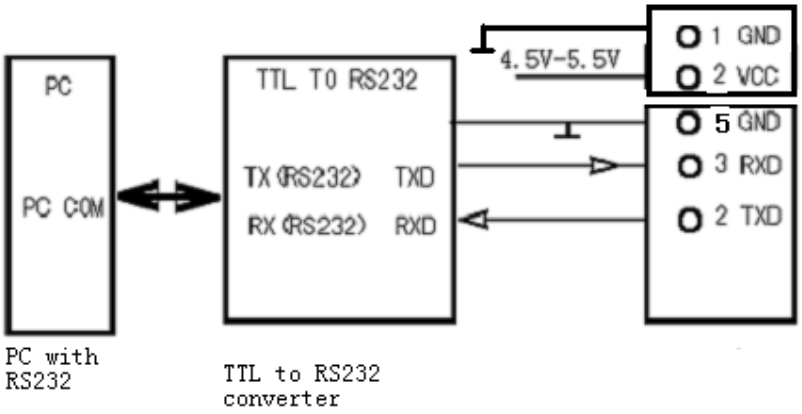
单位：mm

Module with user equipment connection



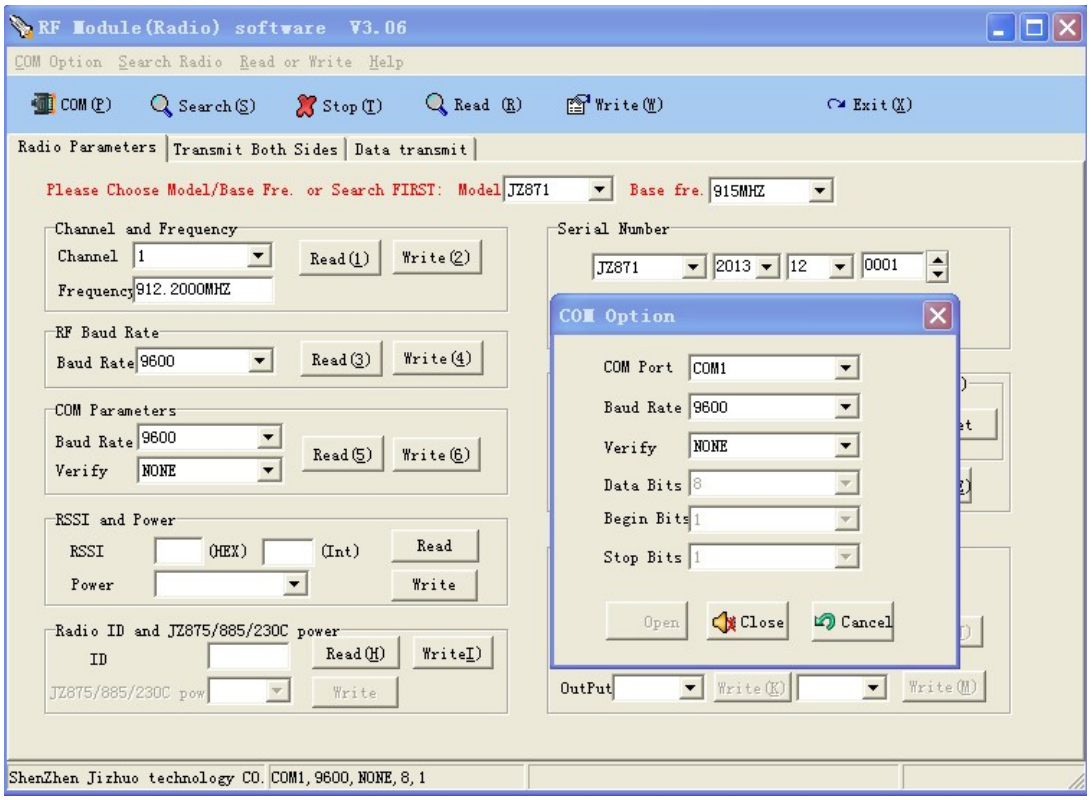
Note: EZ50B did not have sleep in the state, the module of the SLE feet must be vacant. In the sleep state when the module must be low, the module can send and receive data.

Module with PC connection



Note: As EZ50B 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.

software testing and parameters



A、EZ50B module connected to the PC 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 same.

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

Communication Module

EZ50B wireless module with all the JZ87 series of models to communicate with each other. Communication as long as you pay attention to the following:

A. select all the modules to the same channel.
B. you have the same communication module of the air rate.
C. the communication module, power supply, interface connection is connected.

Sleeping Mode

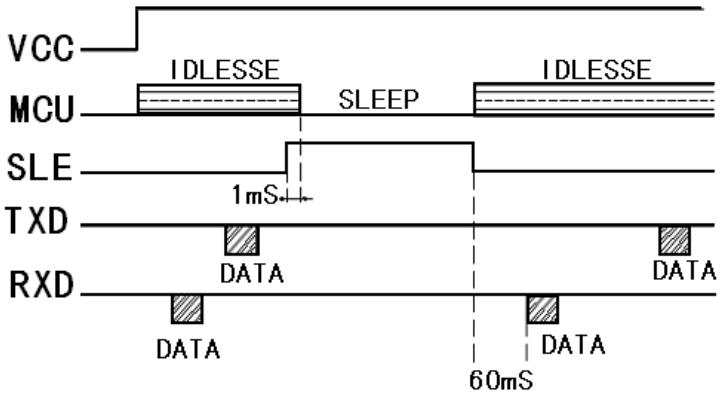
EZ50B divided into dormancy release version with no sleep. EZ50B sleep after the current is 10uA. EZ50B hibernation wake-up mode for the hardware. Wake is the fifth through the interface hardware input pin high to sleep, wake-up input low.

If the user has a sleep function EZ50B, but do not want to use the hibernate feature, available through J2 pin 9 to ground,then achieve.

Details as followings

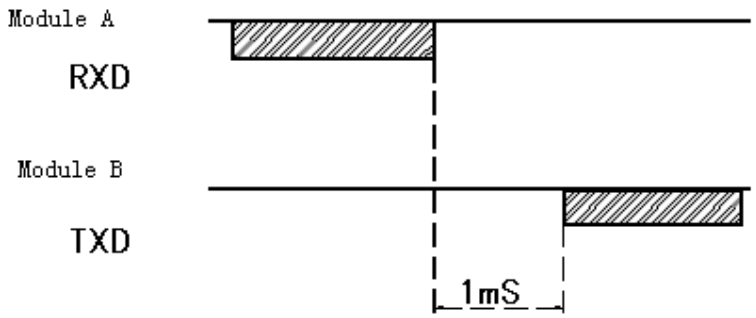
Module in the working state to sleep state, it is necessary to SLE pin from low to high, if the module is idle (no transmit / receive data) MCU to sleep within about 1ms; If you are in the collection and development data, the data will be processed the frame side to sleep.

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

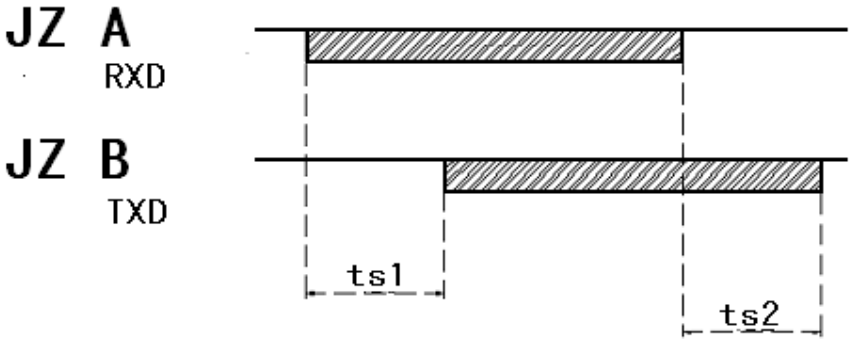
User devices receiving the data sent by the module, and then transferred to the data center must have sent more than 1ms delay.



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)
38400	6	4800	39
19200	11	2400	76
9600	20	1200	120



EZ50B default parameter

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

channel	frequency	channel	frequency
1	912.2000MHz	5	916.6940MHz
2	913.4288MHz	6	916.2332MHz
3	913.7360MHz	7	915.1580MHz
4	912.5072MHz	8	915.9260MHz

Technical specification of EZ50B

Technical specification	
Modulation:	GFSK
Frequency:	915MHz
Transmit Power:	TBD
Receiver sensitivity:	-121dBm
Transmit Current:	<75mA （TTL interface）
Receive Current:	<30mA
Sleep Current:	<10uA
Channel Rate:	1200/2400/4800/9600/19200/38400Bit/s customized
Serial Port Rate:	1200/2400/4800/9600/19200/38400Bit/s customized
Interface:	UART/TTL RS232 RS485
Interface-data-format:	8E1/8N1/8O1
Working Power:	DC 4.5-5.5V
Working Temperature:	-20℃～75℃ (could be customized-40℃～85℃)
Working humidity:	10%～90% Relative humidity, no condensing
Size:	110mm*85mm*25mm
Communicated Model:	EZ50B/JZ872/JZ873/JZ874/JZ875/JZ878

Shipped Antenna (3dBi):

small suction cup antenna

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

Note: All of the rights of final interpretation and modification by our company

RF Exposure Information and Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

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.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help