

# RS232/485/422 wireless data transmission transceiver manual

Please read the product manual carefully before using the product

## 1.Introduction

This product is a multi-functional LORA wireless data transmission transceiver. It adopts LORA spread spectrum modulation method to transmit, high performance, high reliability, high stability and low power consumption wireless data transmission method, which provides high Performance and low-cost solutions. LORA is a long-distance wireless communication solution. The most prominent feature is long-distance and low power consumption. It breaks through the coverage scenarios that need to be relayed before. This product uses the wireless 433MHz frequency band for wireless data transmission by default. Supported wireless frequency bands The range is 410MHz-441MHz, and the transmission distance is up to 3 kilometers. Compared with the GPRS and 4G solutions, LORA does not require a monthly subscription fee (free application frequency band), and it is farther away than WIFI and ZIGBEE. Therefore, LORA is more and more widely used in small data and long-distance industrial serial communication. LoRa is excellent in coverage and power consumption, and its application scenarios in the Internet of Things are becoming more and more extensive. This product can also-to-many or many-to-many at the same time. Data transmission is performed in one-to-many or many-to-many modes, without distinguishing between the transmitter and the receiver.

This product provides RS232/RS485/RS422 standard interfaces, which can be directly used in the following application scenarios through the LORA wireless function:

- ① Wireless meter reading, such as: smart electricity meters, smart water meters, smart gas meters, heat meters, etc;
- ② Slowly changing physical quantity (temperature, water pressure, PM2.5, geomagnetic sensor) ultra-low power sensor;
- ③ Wireless alarm (smoke detector, pyro-infrared);
- ④ Remote I/O controller (lighting control, air conditioning control);
- ⑤ Wireless RS232/485/422/Modbus converter;
- ⑥ Industrial applications, industrial control machine tools, industrial automation instruments, long-distance irrigation equipment, access control, security control systems, highway platform scale data transmission and other equipment connections.

## 2.Product Feature

- (1) It has fixed-point transmission, transparent transmission, air wake-up function, and internal automatic sub-packet transmission.

- (2) Communication distance: The distance is increased by 3-5 times. This is the most intuitive experience. The original 433MHz small wireless products can hardly cover the blind spots, and LORA can fully cover it. This is the ultimate solution for users to encounter unreliable 433MHz communication.
- (3) LORA demodulation technology can demodulate data correctly under noise, and the sensitivity can reach -148dBm.
- (4) Description of Communication distance:

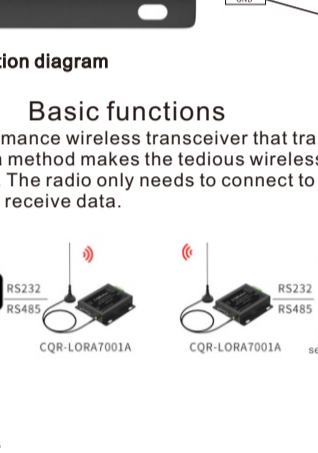
testenvironment	testdistance	Product functiondescription
Emptycommunication	About3Km	Straight line emptychannel communication
Cityroadspreadin a straightline	About3Km	Dependson the actualuse environment
Building sheltered environment	About1Km	Dependson the actualuse environment
Insidethebuilding	About5 floor	Dependson the actualuse environment

## 3.Product parameters

Performance parameter	Operating Voltage	DC9~30V
	Working current	100mA@12V
	Temperature	-20℃~85℃
	environment humidity	<80%RH
	Performance design	Superanti-electromagnetleference design.
	responding speed	In the default 9600bps wireless configuration, it takes 70 milliseconds to send and receive 1 byte of data.
	Electrical protection	Circuit integrated ESD protection: ±15KV IEC1000-4-2 Air gap discharge;±8KV IEC1000-4-2 Contact discharge.

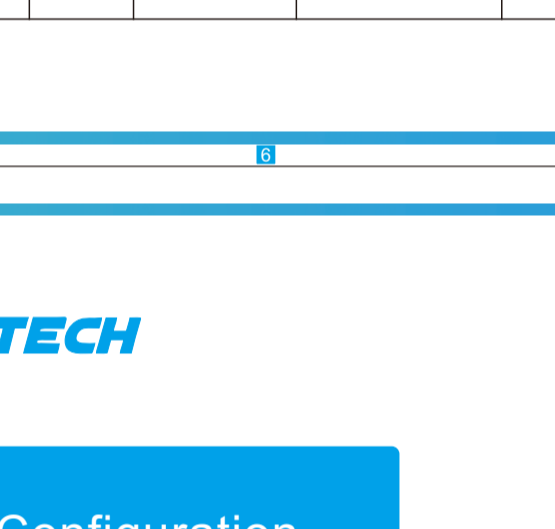
Wireless communication	Transmission distance	3 kilometers outside without shelter, and about 5 floors across indoors.
	Frequency Range	410MHz~441MHz
	Wireless channel	115 PCS
	Receivin sensitiivl	-140dbm
	Transmit power	20dbm
Wired communication	Modulation	Professional software modulation technology
	Antenna connection	External SMA male antenna, suction cup antenna 1 meter; working frequency: 433MHz
shape	Serial port parameters	Baud rate: 1200~115200bps The default baud rate :9600bps; Support data bits:7,8,9,stop bits:1,1.5,2, parity bits:Even,None,Odd Support data receiving and sending buffer function: 256byte sending, 256byte receiving.
	interface	RS485/RS422 adopt terminal mode; RS232 interface adopt DB9 wiring mode;
	power	Positive inside and outside negative, standard power socket, wide voltage design (9V-38V) power supply, Support plug and satin two power supply methods.
	dimension	L x W x H =87.13mm*70mm*22.12mm
software support	Indicator	Data sending: yellow light; data receiving: green light;
	System Support	Supported operating system:Windows XP(Windows7) Windows8(Windows10)Linux4; Mac OS and etc.
	Configuration Tool	Use DtechWifi/Config configuration tool, easy to configure in a few steps.

## 4.Description of interface :



Number	Name	Introduction
①	RS232	RS232interface
②	RXD-LED	Transmission Indicator
③	TXD-LED	ReceiverIndicator
④	ANT	Antennainterface
⑤	Configuration	Configuration
⑥	PWR-LED	Powerindicator
⑦	DC 9-30V	Powerinterface
⑧	DC+	Powerpositive
⑨	GND	Grounded
⑩	RS485A	RS485ACommunication Interface
⑪	RA485B	RS485BCommunication Interface
⑫	RS422A	RS422ACommunication Interface
⑬	RS422B	RS422BCommunication Interface

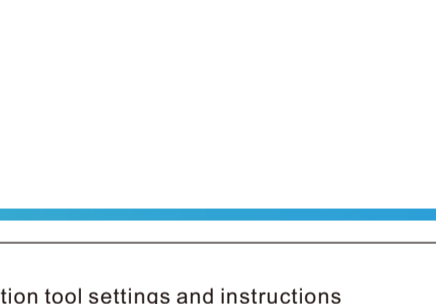
## 5.Product in definition wiring diagram



## 6.Product Connection diagram

### Basic functions

A high-performance wireless transceiver that transmits digital signals wirelessly without a method makes the tedious wireless transmission and application simple. The radio only needs to connect to RS232/485/422 signals to send and receive data.



## 5.Product List

- I .Product \*1pcs
- II .12V1A Adapter \*1 pcs
- III.15MM DIN Aluminum rail buckle \*1pcs
- IV.SMA Male pin sucker antenna \*1pcs
- V .Product use scan code card \*1pcs
- VI.3.81\*6P Terminal \*1pcs

# Product Warranty Card

## Customer Information

Model:	
Date of purchase:	
User telephone:	
User address:	
Distributor:	
Agency address:	
User telephone:	Dealer stamp valid

## Intenence Records

Repair times	Date	Fault	Treatment measures	Repair work NO.

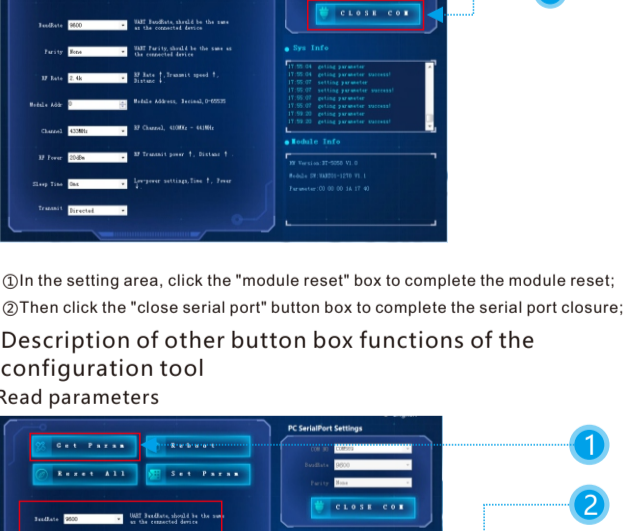
# Configuration tool manual

## Configuration tool settings and instructions

Step 1: Open "Dtechwificonfig" software

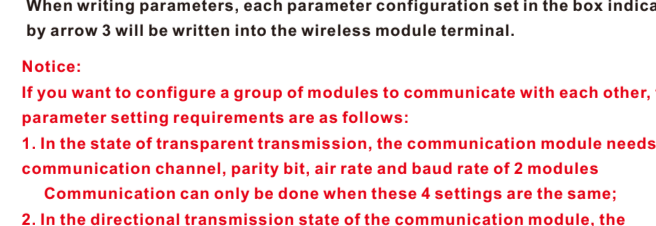


Step 2: Open the interface as follows



- ① (Interface language) You can select the language of the configuration tool, and select by clicking "A";
- ② (Computer serial port settings) You can click the "blank box" to choose a number; 'baud rate', 'check digit', 'System Information' box
- ③ (System Information) After opening the serial port, you can see the configuration status;
- ④ (Module information) After opening the serial port, you can see the basic information of the module;
- ⑤ (Other buttons) Click to trigger different functions;
- ⑥ (Parameter Information) You can select parameters by clicking on the blank box, module address You can enter parameters.

Step 3: Select the corresponding port number, baud rate, and check digit (The factory default baud rate is 9600, and the baud digit defaults to None), press and hold the product configuration button for 5 seconds, and then click the "open serial port" box, Enter configuration mode.



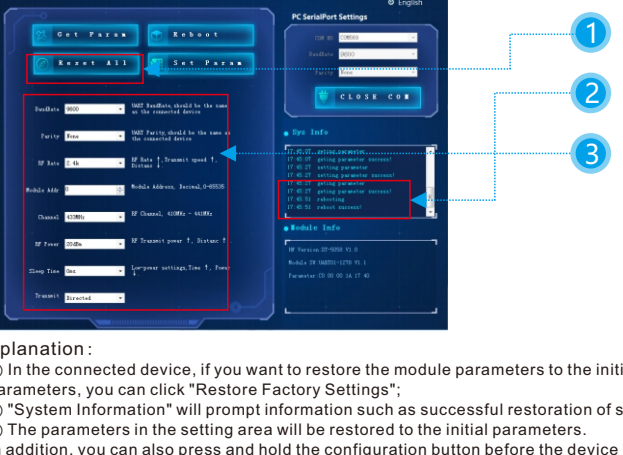
- At this time, you can open it normally, enter the configuration, and:
- ① The button box of "open serial port" will change to "close serial port"
  - ② The information shown in the figure will appear in the "System Information" box
  - ③ The initial basic information of the module will appear in the "Module Information" box
  - ④ The setting area will access the selectable state and display the parameters of the current device



- (If you click "open serial port", a similar or similar serial port information error appears)
- ① In the setting area, click the "module reset" box to complete the module reset;
  - ② Then click the "close serial port" button box to complete the serial port closure;

## Description of other button box functions of the configuration tool

### Read parameters



- illustrate:
- ① If you want to see the current parameter information of the module, you can click "Read Parameters" with the left mouse button;
  - ② In the "System Information" box, the information shown in the figure will be displayed, indicating that the reading is successful;
  - ③ The current specific parameter information of the module will appear in the setting area.

### Write parameters



When writing parameters, each parameter configuration set in the box indicated by arrow 3 will be written into the wireless module terminal.

**Note:**  
If you want to configure a group of modules to communicate with each other, the parameter setting requirements are as follows:

1. In the state of transparent transmission, the communication module needs the communication channel, parity bit, air rate and baud rate of 2 modules  
Communication can only be done when these 4 settings are the same;
2. In the directional transmission state of the communication module, the communication channel, air rate and baud rate of 2 modules are required  
Module address can only communicate when these 4 settings are the same;

If you want to configure the two sets of modules to communicate without interference, you only need to configure the two sets of module parameters to different communication channels.

### Module reset



Explanation:  
① In the connected device, if you want to restart the module, you can click "Module Reset";  
② "System Information" will prompt the module successfully reset and other information.

### Reset



Explanation:  
① In the connected device, if you want to restore the module parameters to the initial parameters, you can click "Restore Factory Settings";  
② "System Information" will prompt information such as successful restoration of settings; ③ The parameters in the setting area will be restored to the initial parameters. In addition, you can also press and hold the configuration button before the device is powered on, then continue to press for 5 seconds after power on, and click the "open serial port" box to restore the device to factory settings.