

# RS485 to LORA wireless serial port data transmission transceiver manual

Please read the product manual carefully before using the product

## 1. Product description:

LORA wireless data transmission transceiver adopts LORA spread spectrum modulation method for transmission, high performance, high reliability, high stability and low power consumption wireless data transmission method, providing high performance and low-cost solution. 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 1 km. Compared with the GPRS and 4G solutions, LORA does not require a monthly subscription fee for network access (no 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. The application scenarios in the Internet of Things are becoming more and more extensive. This product can also achieve one-to-one. Data transmission is carried out in one-to-many or many-to-many modes, without distinguishing the transmitter and receiver.

This product provides a standard signal interface, which can be directly used in the following application scenarios through the LORA wireless function.

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

## 2. Product features:

- (1) With fixed-point transmission, transparent transmission, air wake-up function, and internal automatic sub-packet transmission.
- (2) Communication distance: The distance increases 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 completely 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.

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### (4) Description of communication distance:

Test environment	Test distance	Product function description
Unobstructed communication	About 1Km	Local Communications
City roads travel in a straight line	About 800m	Depending on the actual use environment
The city has buildings to block the environment	About 500m	Depending on the actual use environment
In the building	About 5 floors of floor slabs are worn	Depending on the actual use environment

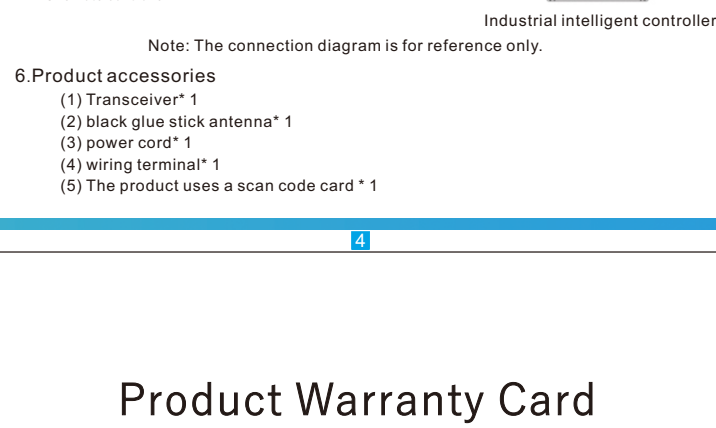
## 3. Product technical parameters

Performance parameters	Working voltage	DC5V
	Working current	50mA@5V
	Environmental temperature	-20°C~85°C
	Environmental humidity	<80%RH
Wireless communication	Performance design	Super anti-electromagnetic interference design
	Transmission distance	1 km outside without shelter, indoors through about 5 floors.
	Frequency range	410MHz~441MHz
	Wireless channels	115
	Receiving sensitivity	-140dbm
	Transmit power	20dbm
Modulation method	Professional software modulation technology	
Antenna connection	External SMA male antenna; working frequency: 433MHz	

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Wired communication	Serial port parameters	Baud rate: 1200~115200bps; The default baud rate is 9600bps; Support data bits: 7, 8, 9, stop bits: 1, 1.5, 2, parity bits: Even, None, Odd
Form factor	Interface	RS485 standard DB9 interface
	Power supply	Use USB and wire to power DC5V
Software support	Indicator light	data sending: yellow light; data receiving: green light;
	System support	System support Supported operating system WindowsXP/Windows7/Windows8/Windows10/Linux/Operating systems such as Mac OS.
Configuration tool	System support	DtechWifiConfig configuration tool is adopted, which can be easily configured in a few steps and can be used. (The configuration button length is pressed for 5 seconds to enter the configuration mode, and the factory setting can be restored by pressing the button for 5 seconds before powerup)
	Configuration tool	

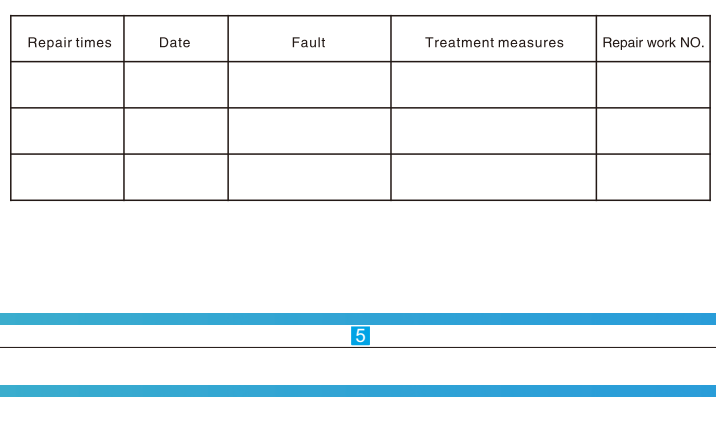
## 4. interface description



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DB9 male pin definition		Terminal pin definition	
Pin	definition	position	definition
① ②	RS485A	DC 5V	powerinput
③	RS485B	GND	Grounded
④	GND	RS485B	RS485Bcommunication interface
⑤	DC 5V (power input)	RS485A	RS485Acommunication interface
Interface number	Description	Interfacenumber	Description
① ②	DB9interface	①	Antennainterface
⑩	Power connector	②	Configurationbutton

## 5. product connection diagram



Note: The connection diagram is for reference only.

## 6 Product accessories

- (1) Transceiver\* 1
- (2) black glue stick antenna\* 1
- (3) power cord\* 1
- (4) wiring terminal\* 1
- (5) The product uses a scan code card \* 1

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# Product Warranty Card

## Customer Information

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

## Intenance Records

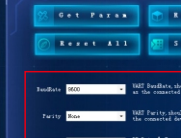
Repair times	Date	Fault	Treatment measures	Repair work NO.

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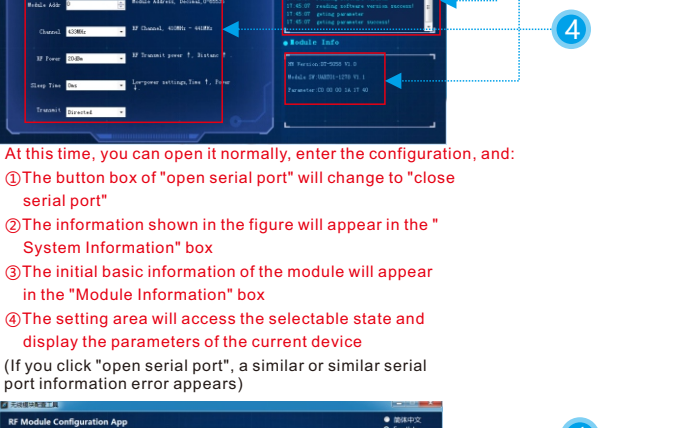
# Configuration tool manual

## Configuration tool settings and instructions

### Step 1: Open "Dtechwificonfig" software



### Step 2: Open the interface as follows

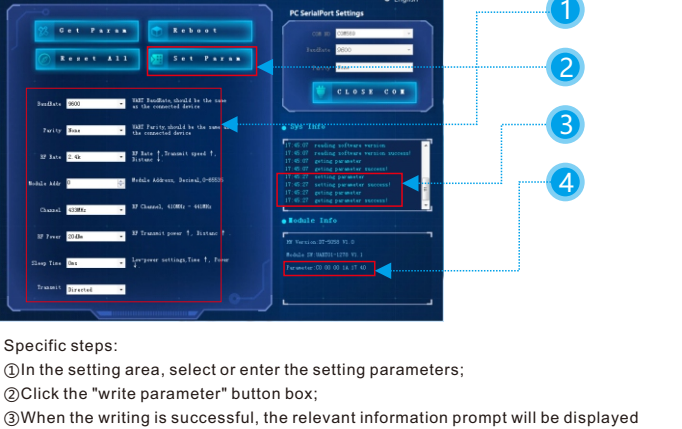


- ① (Interface language) You can select the language of the configuration tool, and select by clicking "★";
- ② (Computer serial port settings) 'serial number', 'baud rate', 'check digit'. You can click the "blank box" to choose to change the parameters;
- ③ (System Information) After opening the serial 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 selection) 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 check digit defaults to None), press and hold the port configuration button for 5 seconds, and then click the "open serial port" box. Enter configuration mode.

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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)

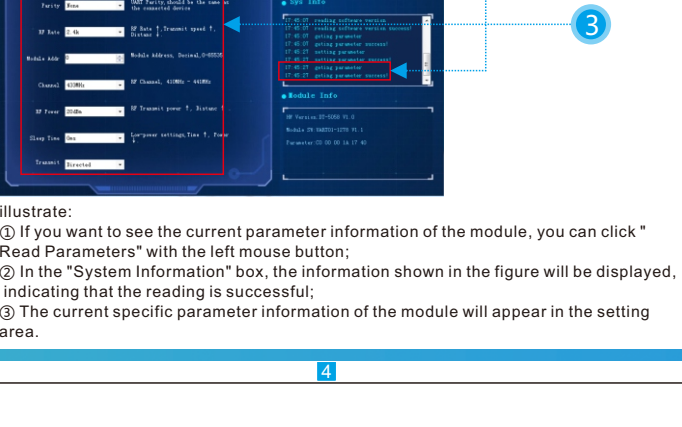
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The reasons for the failure to open the serial port are as follows:

- ① The serial port number is wrongly selected;
- ② Baud rate selection is wrong;
- ③ The check bit selection is wrong;
- ④ The device is not adjusted to the configuration mode.

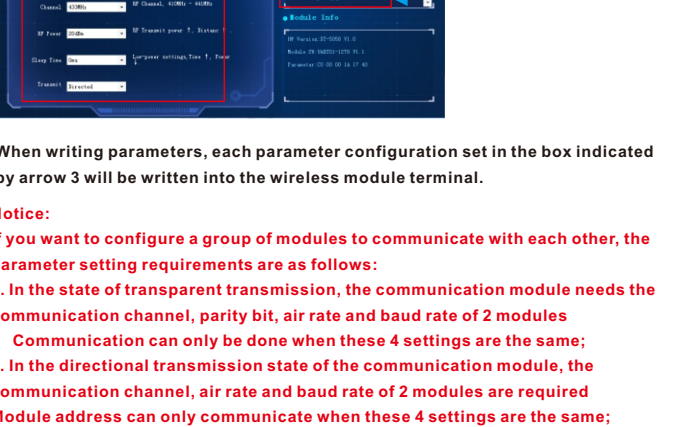
Step 4: Click the "write parameter" button box to complete the parameter setting



- ① In the setting area, select or enter the setting parameters;
- ② Click the "write parameter" button box;
- ③ When the writing is successful, the relevant information prompt will be displayed in the "System Information" box;
- ④ And the "Module Parameters" in the "Module Information" box will change, indicating that the parameters are successfully written.

Step 5: Click the "Module Reset" button box first, and then click the "Close Serial Port" button box

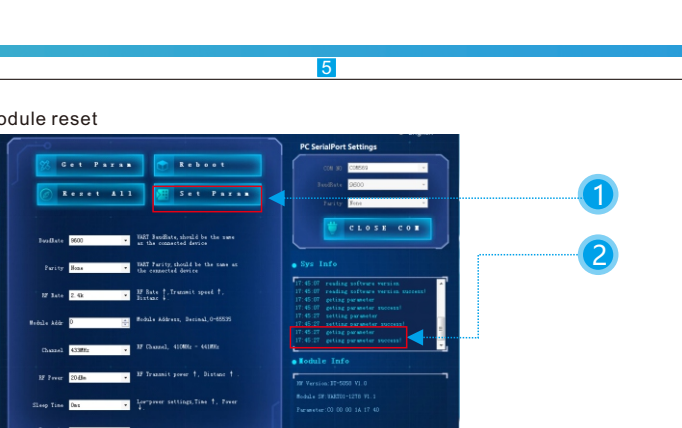
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- ① In the setting area, click the "module reset" box to complete the module reset;
- ② Then click the "close serial port" button box to complete the serial port closure;

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

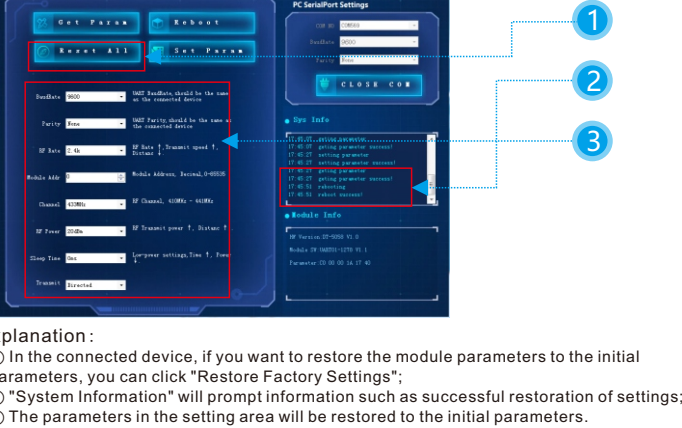
### Read parameters



- 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.

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### Write parameters



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

**Notice:**

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.

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## 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.

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