RD06_WIFI User Manual

V2.2

1   Product Overview

The TZ-RD06_WIFI is an ultra-long-range wireless data acquisition gateway dedicated to receiving our temperature and humidity sensor Tag06/06B.built-in high-performance WIFI module can support WIFI and Ethernet data transmission. RD06_WIFI uses high-performance 32-bit industrial processor and industrial-grade wireless module, with high reliability, stability and data security.

2   Product Feature

- Built-in high-performance WIFI module can support WIFI and Ethernet data transmission;
- External special USB configure interface, user can configure operating mode;
- Prevent collision: advanced technology to prevent the collision;
- Security: encryption algorithm and certification to ensure data security, to prevent the data link eavesdropping and data to be cracked;
- Metal shell, resistance to high pressure, easy to install and easy to use

3   Technical Parameter

RF Frequency	433M
RF Modulation Mode	GFSK
RF Receiving Sensitivity	-124dBm
RF Identification Angle	3D
Interface	WIFI/LAN
LED	3 LED lights (RF, Net, Power)
Firmware update	Support
RF Protocol	Private protocol
Supply Power	DC12V
Flash Memory	32Mb/about 8600
Net Weight	0.27kg
Operating Temperature	-20°C~+60°C
Operating Humidity	5% ~ 95% (non-condensing)
Dimension	112mm*105mm*27mm

4   Definition of Interface

4.1   Appearance

4.2   Function of Interface

Interface	Function
A. LED light	RF, Net, Power
B. USB	Configure device and save log
C. LAN	Send data by connecting to the RJ45 network cable
D. Switch of power	Turn on/off
E. Charge interface	Connect power plug
F. WIFI antenna interface	Connect WIFI antenna
G. RF antenna interface	Connect RF antenna

5   LED Light Indicating Status

Blue light - RF	
RF light status	**Explanation**
Keep on always	OTA/Read or write configure/into WIFI module configuration mode
Sparkling 0.1 second	Receive data

Green light - Net	
Net light status	**Explanation**
Keep on always	OTA /Read or write configure/into WIFI module configuration mode
On 0.1 second, off 0.1 second	Sending data
Keep on 2 seconds	Data sent successfully
Off 2 seconds	Data sent failure
On 0.1 second, off 5 seconds	The module is free
On 2 seconds, off 2 seconds	Module initialization

Red light - Power	
Power light status	**Explanation**
Keep on always	OTA/ Read or write configure/Connect power/into WIFI module configuration mode
Sparkling each 2seconds	Not connect power

6   Data Protocol

Please refer to the document RD06_WIFI data protocol

7   Command List

The following commands are ASCII, can be set by serial port or server.

Note: $$$$$$ is RD06 `s password, and the initial password is 000000

Note: (1) The WIFI module must be connected to 12V external power supply to work properly

(2) Server ACK is enabled on the machine by default,every time the machine sends data to the server, the server must respond @ACK,Packet index (Hex converted into decimal)# to the machine. Then the machine will continue to send next data to the server,Otherwise, the data will be sent repeatedly.

(3) Set RD06_WIFI RTC time :

The machine cannot get the right time on its own,so when the server receives the machine data,the following information can be sent to the machine to modify the machine's RTC time

Format: @UTC,yyyy-MM-dd HH:mm:ss#

For example: @UTC,2021-11-24 02:56:43#

1. Set LAN transfer mode:

(1) Set the transfer mode: (the default is LAN mode,you don't have to set it))

Format: *$$$$$$,005,X#

For Example: *000000,005,1#

If you send the command of USB to device, the serial port tool will show:

CMD bytes: 0E
*000000,005,1#
ComdType:005(SETTRANSTYPE)
Type:LAN

Connect the RJ45 Network wire to the router:

2. Set WIFI Transfer Mode：

(1) Set the data transfer mode:

Format: *$$$$$$,005,X#

For Example: *000000,005,0#

If you send the command of USB to device, the serial port tool will show:

CMD bytes: 0E

*000000,005,0#

ComdType:005(SETTRANSTYPE)

Type:WIFI

(2) Set WIFI:

Format: *$$$$$$,050,WIFI Name ,WIFI Password #

For Example: *000000,005,TZONE1,tzone2014#

If you send the command of USB to device, the serial port tool will show:

CMD bytes: 1D

*000000,050,TZONE1,tzone2014#

ComdType:050(SETWIFINET)

Name:TZONE1

Password:tzone2014

NO.	Instruction	Format	Note
001	Modify user password	*$$$$$$,001,@@@@@@#	$$$$$$ is old password @@@@@@ is new password (default: 000000)
005	Set the data transfer mode	*$$$$$$,005,X#	X=0　WIFI X=1　LAN (default);
008	Extend setting	*$$$$$$,008,ABCDEFG#	A=0,disable TAG ACK download function; A=1,enable TAG ACK download function(default); Note:when the TAG ACK is disable, the machine will no longer reply the ACK information to the TAG. B=0, C=0, D=0, E=0,

			F=0, G=0, disable Server ACK function, G=1, enable Server ACK function, default; Note: if enable ACK function, every time the machine sends data to the server, the server must respond @ACK,Packet index(Hex converted into decimal)# to the machine. Then the machine will continue to send next data to the server, Otherwise, the data will be sent repeatedly.
015	Set IP Address & Port Number	*$$$$$$,015,X,IP,PORT#	X=0 use IP connect the server X=1 use DN connect the server IP: xxx.xxx.xxx.xxx DN: (domain name) www.xxx.com PORT: [1,65535]
018	Set the time interval for data transfer	*$$$$$$,018,X#	X=[10,6000], time interval (unit: s) (default: 300)
019	Set up transfer data protocol	*$$$$$$,019,X#	X=0, use the UDP mode X=1, use the TCP mode (default)
050	Set WIFI	*$$$$$$,050,X,Y#	X: WIFI Name, no more than 20 characters; Y: WIFI Password, no more than 20 characters; Note:The name and password cannot contain #.
136	Enable RF function	*$$$$$$,136,X#	X=0, disable RF function X=1, enable RF function (default)
144	Add a Tag	*$$$$$$,144,X,Y,ID#	X: Tag type X=0, TAG06/06B Y: Channel, [1,100]; ID: Tag ID, 8 characters; Note:The number of all tag should not be more than 100. By default, all tag in all ranges can be received. This function

			needs to be configured only when binding tag and using RS485 Modbus mod
145	Delete a Tag	*$$$$$$,145,X,Y#	X: TAG type X=0, TAG06/06B Y: Channel,[1,100];
146	Delete all Tags	*$$$$$$,146,1#	
147	Read all added Tags	*$$$$$$,147,1#	
148	Select restart time when RF does not receive data	*$$$$$$,148,X#	X: [1,1440], default:5, unit:min RF module will reboot if device can not receive any tags within this time period
500	Clear data flash	*$$$$$$,500#	Clear stored in the flash memory inside the machine

600	Auto reboot	*$$$$$$,600,X,Y#	X=0, disable this function
			X=1, enable this function. (default)
			Y: Reboot time interval,
			  [10,9999], unit: min,
			  (default: 1440)

800	Query command	*$$$$$$,800,X #	X:The instruction that needs to be queried
801	Read the IMEI number	*$$$$$$,801#	Can get the IMEI number, firmware version, WIFI module version number
990	Initialization of device	*$$$$$$,990,099#	It will set all parameters to factory default value (excluding the password).
991	Reboot now	*$$$$$$,991#	Reboot the RD06
	Query single instruction	#D5XXX	XXX: instruction
	Query all instructions	#DE	
	Restore default configuration	#DO	
	Update the firmware	#DU	

8   Data Query

TZONE cloud platform.

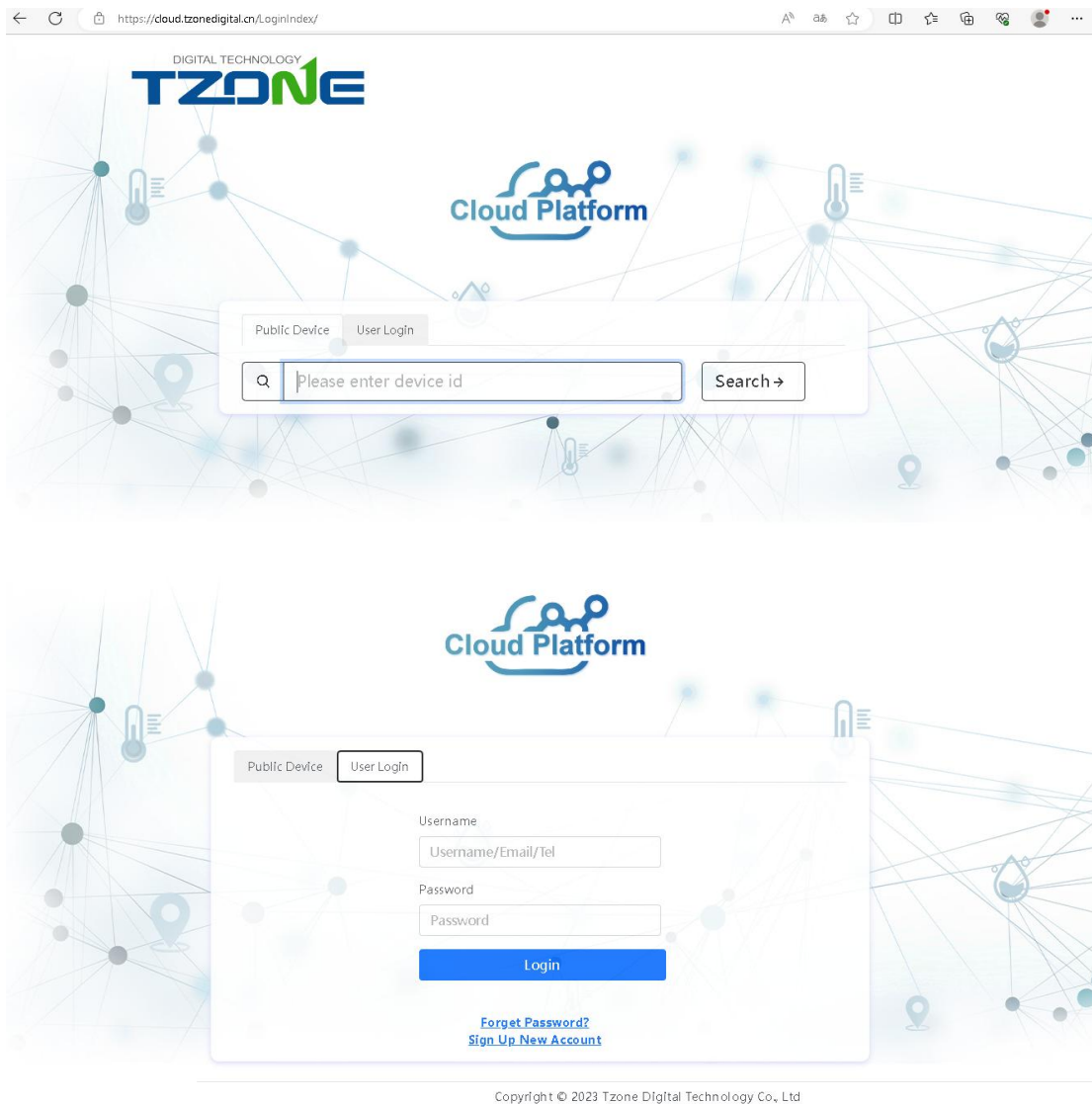Please register an account and add a device. After adding a device, you can query the data by device ID.

For more details, please log in and view the help documentation.

Tzone cloud platform website: http://cloud.tzonedigital.com/

Tzone Server Domain: t-gateway.tzonedigital.cn(default)

Tzone Server Port: 54929 (default)

URL：http://g.cloud.tzonedigital.cn:18811/Receive（HTTP）