USR-W630 User Manual

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1. Get Start

This chapter is a quick introduction to the USR-W630 product. New users are advised to read this chapter carefully and follow instructions to get a systematic understanding of the product. Users can skip this chapter if they are familiar with such products. Refer to the subsequent chapters for specific details and instructions.

1.1. Hardware Connection

We connect the serial port and network port of the USR-W630 to PC, if your PC have no serial port, you can use USB to 232 line. Hardware connection:



Figure 1 hardware connection

You just need connect 232 line and power to W630 as picture shows.

1.2. Net Connection

Search WIFI on PC, connect the WIFI named USR-W630-xxxx(xxxx means the last 4 bit of MAC address)

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Figure 2 search SSID

Set the PC DHCP mode, USR-W630 support DHCP server mode, the function default open.

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Figure 3 connect to the wifi of W630

Link indicator light will light up when PC join the wifi of W630.

1.3. Data Transmission Test

The default encryption mode of W610:open, none
The default serial port parameters:57600,8,1,None
The default network parameters: TCP,Server,8899,10.10.100.254
Steps of testing
1\open"USR-TCP232-Test.exe", COM11 represents the serial number of W610,set the baud rate 57600,then open the serial port;
2\choose TCP Client mode, IP:10.10.100.254,the server port is 8899,then click connect.
The data from serial port to net is: serial port of PC->serial port of W630->W630->network port(or wifi) of W630->PC;
The data from net to serial port is: PC-> network port(or wifi) of W630->W630->serial port of W630->serial port of PC

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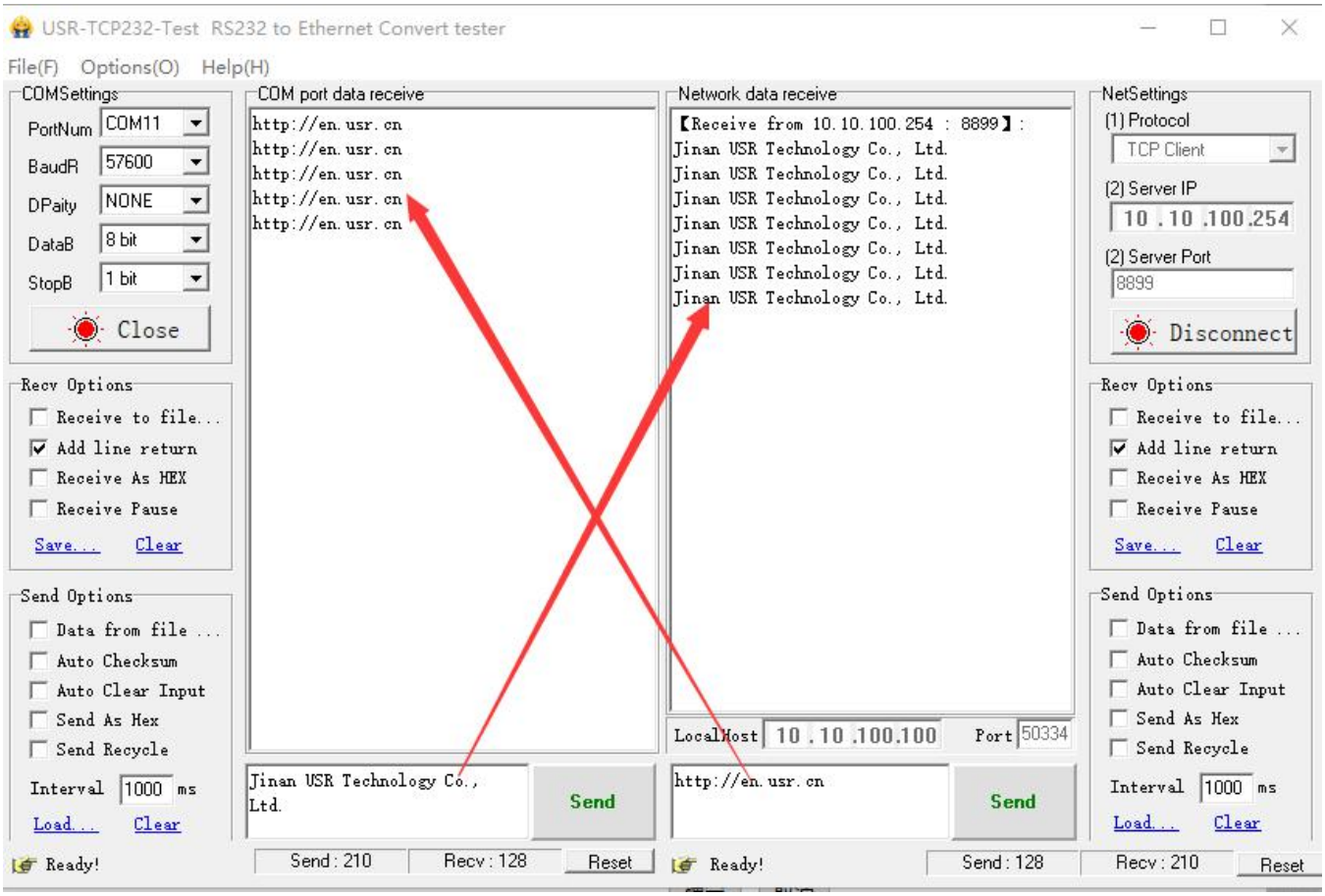


Figure 4 data transmission test

Note: users need to turn off the redundant network cards, and only keep one WiFi connection.

2. Product Overview

2.1. Product Introduction

USR-W630 provide the function of serial port to WIFI, serial port to Ethernet, Ethernet to WIFI. It can send data from RS232/485 serial port to TCP/IP network port, from RS232/485 serial port to WIFI/ Ethernet, vice versa. It can expand the communication distance of serial devices.

2.2. Product Feature

- It has positioning holes on the shell and is convenient for installation
- Support remote upgrade, MODBUS polling
- Standard configuration: power cord, serial cable and net cable. Easy to use
- DC5-36V power in, 5.5*2.1 standard power interface and terminal
- Status indicator lamp: Power, Work, Ready, Link, UART1, WAN/LAN, LAN
- UART to WIFI core module
- Support TCP Server/TCP Client/UDP Server/UDP Client work mode

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- When work at TCP Server mode, it support up to 24 Client to connect
- Support set baud rate, range: 300bps to 460800bps
- Support set parameters on webpage
- Support reload
- The distance for transmission can be 210m
- Ensure production quality

2.3. Electrical Parameters

Table 1 default parameters

	Item	Index
Wireless parameters	Standard authentication	FCC/CE
	Wireless standard	802.11 b/g/n
	Frequency range	2.400GHz-2.4835GHz
	Transmitting power	802.11b: +20dBm(Max.)
		802.11g: +18dBm(Max.)
		802.11n: +15dBm(Max.)
		User define
	Receiving sensitivity	802.11b: -89dBm
		802.11g: -81dBm
		802.11n: -71dBm
Hardware parameters	Data interface	UART：300bps-460800bps
		RS485(Surge prevention, lightning protection, over-current protection)
		Enternet:10Mbps/100Mbps
	Working voltage	DC5-36V
	Working temperature	-20℃-70℃
	Storage temperature	-40℃-125℃
	Size	103*105*25mm（L*W*H）
Software parameters	Wireless network type	STA/AP mode
	Security mechanism	WPA-PSK/WPA2-PSK
	Encryption type	TKIP/AES
	Working mode	Transparent transmission mode/ Serial port command mode/ Httpd Client mode/ Modbus mode
	Setting command	AT+command
	Network protocol	TCP/UDP/ARP/ICMP/DHCP/DNS/HTTP
	Max number of TCP connect	24
	User setting	Web server+ AT commands

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	Customized	Support

2.4. Product Appearance



Figure 5 USR-W630

2.5. Work Indicator Lamp

The module has 7 indicator lamp:

Table 2 work indicator lamp

Indicator lamp	Function	Instruction
Power	Power indication	Light on when use right power supply
Work	Work status indicator	Light flicker when system start
Ready	Start up indicator	Light on when system start up
Link	Net connection	Light on when wifi connect
UART1	COM 1 status indication	Blue light flicker when data transmission from serial port to net port; Red light flicker when data transmission from net port to serial port
UART2	COM 2 status indication	Reserve
WAN/LAN	NET 1 connect/data transmission	Light on when connect with WAN/LAN; Flicker when send data
LAN	NET 2 connect/data transmission	Light on when connect with LAN; Flicker when send data

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2.6. Interface Specification

Antenna interface:

3dbi antenna

Power interface:

5.5*2.1 standard DC power interface, product power input with TVS protection

RS232 interface:

The serial port of device is male connector, RS232, the pin sequence is consistent with the COM port of the computer. When connecting with the computer, we need to use crossing lines (2-3 crossing, 7-8 crossing, 5-5 direct connection, 7-8 can't be connected, but must not be directly connected to the computer, otherwise it may lead to abnormal work), a total of six wires are defined, the rest are suspended.

Table 3 the pin of RS232

2	RXD	Data received
3	TXD	Data send
5	GND	Grounding
7	RTS	Request to send
8	CTS	Clear send
9	VCC	Default not used

RS485 interface:

RS485 interface is A(data+),B(data-)and GND, when connect with RS485 device, A(+) to A(+),B(-)to B(-),GND to GND.

RJ45 net interface:

The interface of the WIFI dual-port serial port server is 10M/100M self-adapting and supports AUTO MDI/MDIX, that is to say, it can be tested by direct connection with the computer. The serial port server opens the network port by default.

Reload key:

This button can restore the factory settings. Press 3s or more when the device is in normal working state (after the Ready light is on), wait for 8s for the W630 to start automatically (except the Power indicator, the other indicator lights go out and then the Ready lights turn on), and restore the settings to the factory settings.

2.7. Appearance Size

Unit mm

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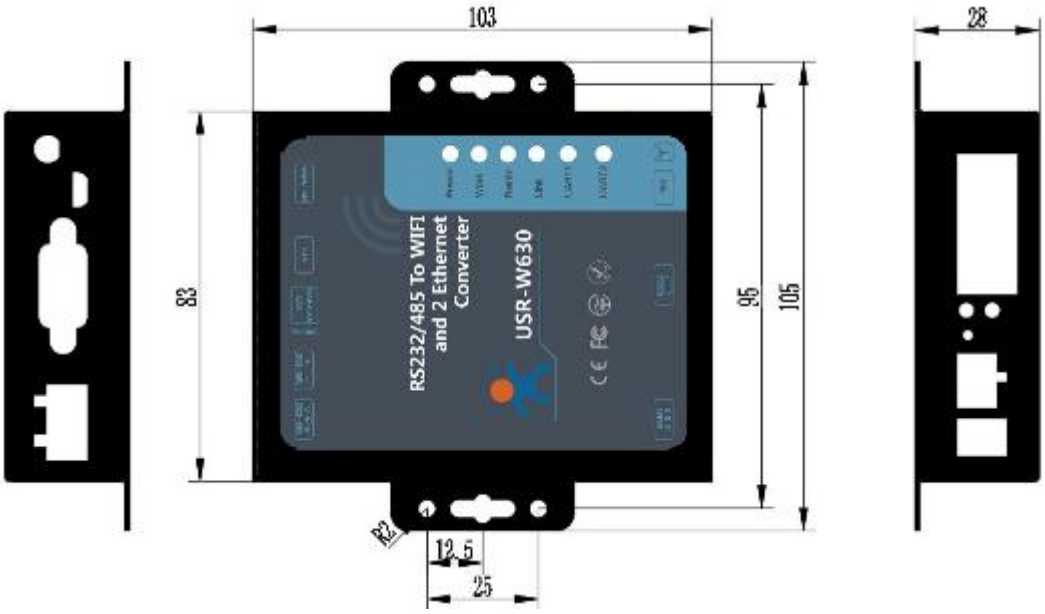


Figure 6 schematic diagram of interface

2.8. Application Area

- Serial port (RS232/RS485) to WIFI/ Ethernet.
- WIFI remote control / monitoring, TCP/IP and WIFI coprocessor;
- WIFI remote control of aircraft, cars and other toys;
- WIFI network radio, camera, digital photo frame;
- Medical instruments, data acquisition and handheld devices.
- WIFI fat scale, smart card terminal, home intelligence;
- Instrument and equipment parameter monitoring, wireless POS;
- Modern development of agriculture, military and other wireless related two development applications

3. Product Networking Application

The USR-W630 serial server can be configured either as a wireless STA or as an AP. So USR-W630 logically supports two wireless interfaces, one as STA, the other as an AP, and the other STA can connect to the wireless network through AP interface of the serial server.

At the same time, serial server provides a 100M Ethernet interface, through this Ethernet port , users can realize the WIFI port, serial port, Ethernet port, three interfaces interoperability. In terms of networking, USR-W630 module supports bridging mode and routing mode to correspond to different specific applications.

Therefore, USR-W630 can provide very flexible networking and network topology.

Description

AP: wireless access point, which is the core node of a wireless network. The wireless router is an AP, and other wireless terminals can be connected to each other via AP.

STA: wireless station, which is a terminal of wireless network. Such as PC , PAD, etc.

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3.1. Work as AP

Set W630 work at AP mode. Other W630s and computers can be connected to the W630 as STA, and it can also be connected to user equipment through RS232/RS485 interface.

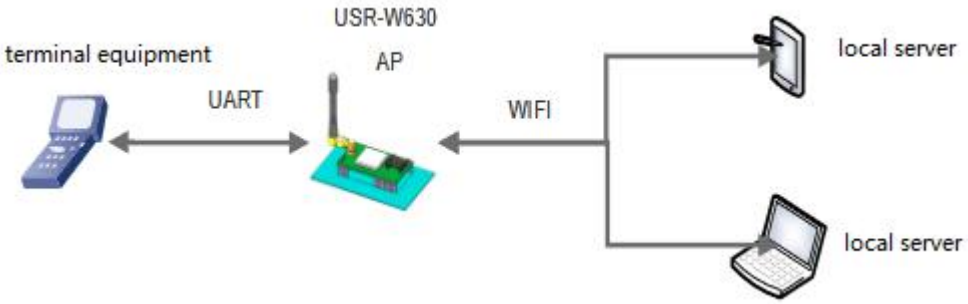


Figure 7 work as an AP

3.2. Work as STA

Set W630 work at STA mode and connect to other AP. The communication between STA is accomplished by AP forwarding.



Figure 8 work as STA

3.3. Work as AP+STA

USR-W630 can support one AP interface and one STA interface simultaneously. After opening the AP+STA function, the STA and AP interfaces are available at the same time. The STA interface of the serial server is connected to the router and is connected to the server in the network through TCPB, and the AP interface can be connected by mobile phone / PAD (through TCPA). The TCP Server, mobile phone / PAD and so on in the network can control the serial port devices connected by USR-W630 or set the parameters of serial port server itself.

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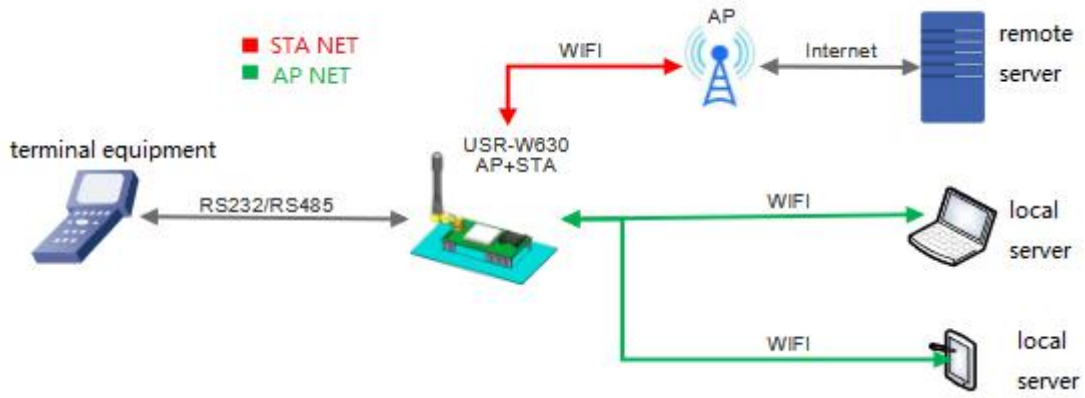


Figure 9 work as AP+STA

- Through the AP + STA function, it is easy to use handheld devices such as mobile phone / PAD to monitor user equipment without changing its original network settings.
- Through the AP + STA function, the serial port server can be set conveniently, which solves the problem that the serial port server can only be set through the serial port in STA.

3.4. Wireless Serial Port Application

USR-W630's wireless can be configured either as a wireless STA or as an AP. Logically, two wireless interfaces are supported, one as STA and the other as an AP. The other STAs can be connected to the wireless network through the AP interface of the W630.

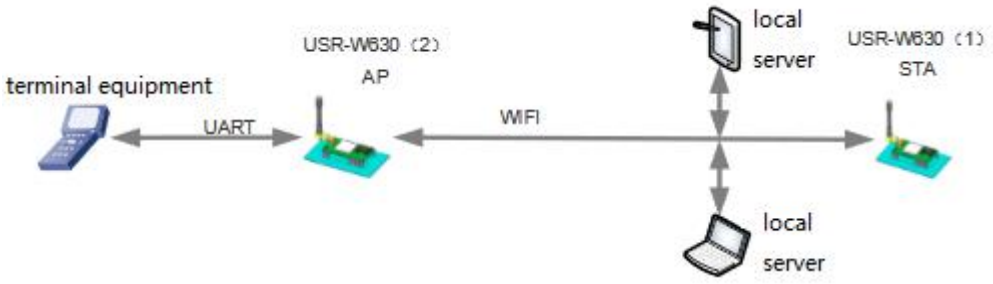


Figure 10 wirless serial port application

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3.5. Network Cable Bridge Application (AP)

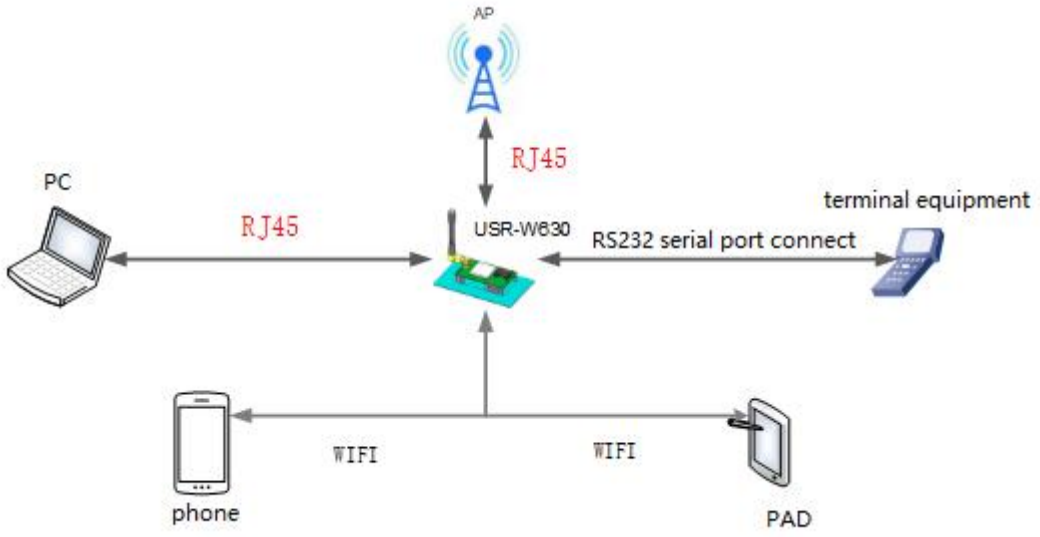


Figure 11 application of network cable bridge

Set USR-W630 work at AP mode, turn off the DHCP server of the module, and the IP is modified to a same network segment with the router (the "Wireless Access Point Settings" page in the web page has the corresponding options), and the ports 1 and 2 are set to LAN ports. After setting up, the network port 2 connects to the router, and the network port 1 connects to the computer. In this way, computers, serial servers and routers are in the same network segment. The serial server is equivalent to a switch bridge connected to routers and computers.

Table 4 AT commands

No.	Command	Intro
1	AT+WAP	Set the SSID of router
2	AT+WAKEY	Set the password of router
3	AT+LANN	Set the IP of W630 in the same network segment with the router
4	AT+DHCPDEN=off	Enable the DHCP function of W630

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3.6. Wireless Bridging Application(AP+STA)

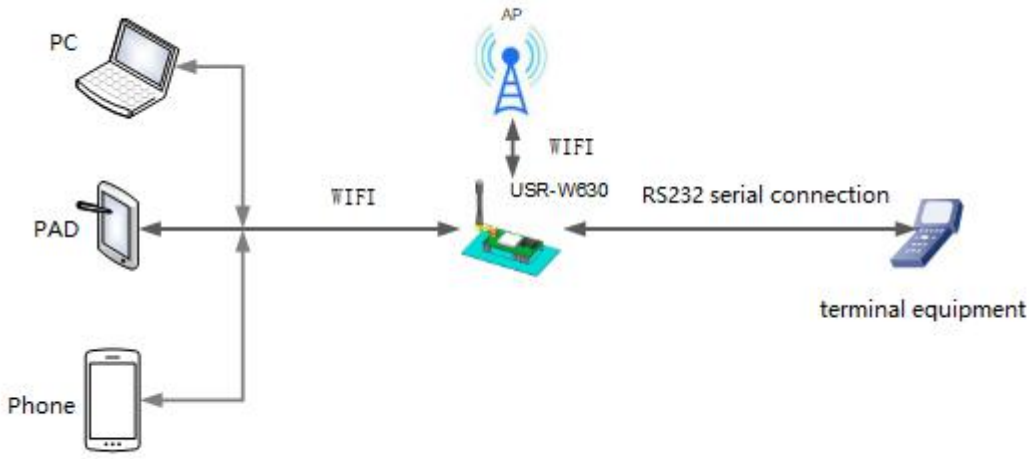


Figure 12 wireless bridging application

USR-W630 work as AP+STA, the SSID and encryption, encryption algorithm (the "wireless access point settings" section of the Web page) of AP set to the same parameters as STA (the "wireless terminal settings" in the Web page), and STA to connect to the router (the IP of AP in the same network segment with router). In this way, the wireless dual-port serial port server is equivalent to a wireless switch bridging to the router, which expands the wireless coverage of the router.

Table 5 AT commands

No.	Command	Intro
1	AT+FAPSTA=on	Enable AT+STA mode, the command is restored to the factory settings valid.
2	AT+FVER=z	Enable Z mode, the command is restored to the factory settings valid.
3	AT+WMODE=STA	Set W630 work at STA mode
4	AT+WSSSID	Set the SSID of router which W630 join
5	AT+WSKEY	Set the password of router which W630 join
6	AT+WAP	Set the SSID of router
7	AT+WAKEY	Set the password of router
8	AT+LANN	Set the IP of W630 in the same network segment with router
9	AT+DHCPDEN=off	Unable the DHCP function of W630

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3.7. Application of wireless plus cable

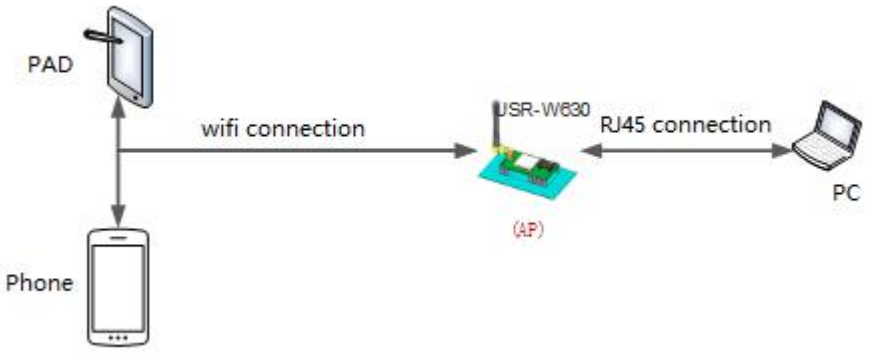


Figure 13 application 1 of wireless plus cable

When W630 work at AP mode, the STA can connect by RJ45 or WI-FI to W630

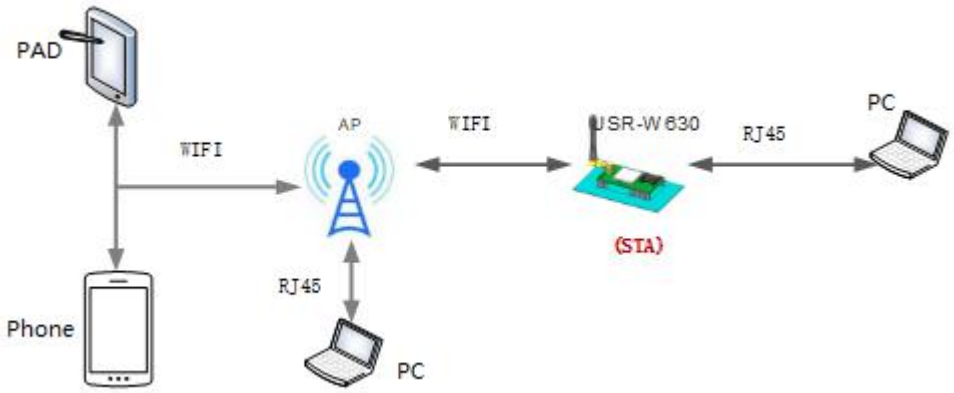


Figure 14 application 2 of wireless plus cable

When W630 work at STA mode, it can connect PC with RJ45, or join the WI-FI of AP.

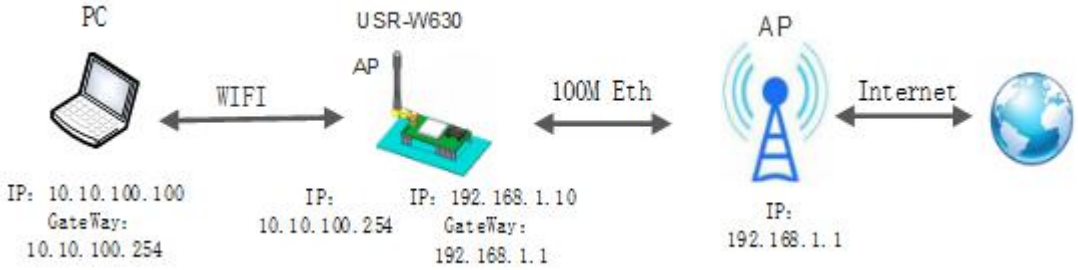


Figure 15 application 3 of wireless plus cable

When W630 work as AP , it can connect external network with RJ45, other PC or device connect to W630 through WI-FI.

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4. Product Function

4.1. Work Mode

W630 work mode: transparent transmission mode, serial port command mode, HTTPD Client mode, MODBUS mode, AT command mode.

4.1.1. Transparent Transmission Mode

W630 supports the serial port transparent transmission mode, in which the data needed to be sent and received are transparently transmitted between the serial port and WIFI / Ethernet, without any parsing, to achieve data transfer between general serial port devices and network devices.
In transparent transmission mode, users can fully compatible with the original software platform. Users can basically support wireless data transmission without software modification.

4.1.2. Serial Port Command Mode

In this mode, when the USR-W630 serial server acts as UDP Client or TCP Client, the user is allowed to send serial data to different servers.
Customer MCU send packets in the following format. After the server parses the WIFI string, only n bytes of data are sent to the destination address. When data is returned, the data is output from the serial port without parsing.

4.1.3. HTTPD Client Mode

In this mode, the user can send data to the specified HTTP server, and the W630 automatically adds HTTP protocol header to the data sent, the content of the specific protocol header can be set by AT instructions or web pages.
This mode is used by W630 transmit data to HTTP server or to retrieve data from HTTP server. Users are using the AT commands or webpage to set up the specific contents of the HTTP header.W630 automatically encapsulates the sent data into HTTP protocol data and sends it to the designated HTTP server. The data received from the server will be directly transmitted to the serial port without any processing. The tedious HTTP protocol is done by the WIFI serial port server, which is convenient for the user to program the serial port without considering too much HTTP.

4.1.4. MODBUS TCP⇔MODBUS RTU

Support Modbus TCP to Modbus RTU(not support Modbus ASCII), the net parameter of module should be Corresponding with the software, TCP server to the TCP client, port to the configuration to the same, work mode is Modbus TCP<=>Modbus RTU.

4.1.5. AT Commands Mode

In AT commands mode, users can query the current state of USR-W630 or set the parameters of USR-W630 by sending AT commands.

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4.2. Wireless Characteristics

4.2.1. Auto Frequency Selection Function

When W630 work in STA mode, the WIFI serial port server will adjust itself to the same channel as AP according to the wireless channel of AP and access it.
When W630 work in AP mode, it can be set to automatic frequency selection mode, so when the W630 starts, it will choose a better wireless channel according to the surrounding environment.

4.2.2. Security Mechanism

USR-W630 supports a variety of wireless network encryption methods, which can fully guarantee the safe transmission of data, including:

- WPA-PSK/TKIP
- WPA-PSK/AES
- WPA2-PSK/TKIP
- WPA2-PSK/AES

Note: the WPA-PSK and WPA2-PSK passwords are at least 8 bits.

4.2.3. STA Join The Router

The search button is added to the W630 wireless terminal settings page. When you click the button, a window will pop up to display the surrounding AP information. After selecting the router, you will return to the original page. At this time, the encryption mode and encryption algorithm have been filled in. You just need to write the password according to the prompt.

4.3. Socket Communication

The USR-W630 has two Socket: Socket A and Socket B. Data written to the USR-W630 serial port, USR-W630 will automatically send to Socket A and B at the same time; data received by USR-W630 through Socket A or Socket B, are sent through the serial port.
Socket A works include: TCP Server, TCP Client, UDP Server, UDP Client. At present, Socket B supports TCP client and UDP client (users can connect Socket B to remote server to realize remote control of equipment). Through the different settings of dual Socket, multiple network interconnection modes can be realized.
When Socket A work at TCP Server, up to 24 TCP Client can be supported.

4.4. UART Framing Mechanism

4.4.1. UART Free Framing Mode

When receiving data from UART, the W630 constantly checks the interval between two adjacent bytes. If the interval is longer than a certain value, a frame is considered end, otherwise the data is received until it is greater than 4K bytes.

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W630 determines that after the end of a serial port, it will be forwarded to the WIFI interface.
The default 2-byte interval of the W630 is 50 ms, when the interval is greater than 50 ms, one frame ends.

4.4.2. UART Auto Framing Mode

For fixed-length data frames on the serial port, UART auto-framing can be turned on to achieve the highest forwarding efficiency. USR-W630 serial port server supports UART port auto framing function. After setting the trigger time and the trigger frame length, the serial server will automatically frame the data received from the serial port and forward it to the network.

4.5. Password Authentication When TCP Establishing Connection

This function is only applicable to W630 work as TCP Server. When TCP Client connects to W630, W630 authenticates each connected TCP.
The first data sent after TCP Client is connected should be the web page password of the W630 plus carriage return. By default, the password of the W630 is admin, so the first data sent by the TCP Client should be "0x610x640x6D 0x690x6E 0x0D 0x0A" (hexadecimal). If the password is correct, the W630 returns "OK" instead of "NO" and disconnects.
This function can be opened or disabled in the "TCP connection password verification" on the web page.

4.6. Register MAC/CLOUD/USR Function

This function is only applicable when W630 work at TCP Client.
The registration USR-CLOUD function is that when W630 connects to the server, it sends the registration package composed of device ID and communication password. The registration package information is correct, the server returns the registration success information, and the W630 accesses the USR-CLOUD platform.
The registration USR (user-defined registration package) feature allows users to customize the content of the registration package, and the length is limited to less than 40 characters (UDP Client supported, adding user-defined registration packages before sent the data).
There are two ways to register the MAC / USR function: one is to send the registration information when connecting to the server for the first time, and the other is to add the registration information to the data sent each time.
There is only one way to register a CLOUD, that is, to send a registry package to join USR-Cloud when connecting to a server.



Figure 16 send registration package when connect

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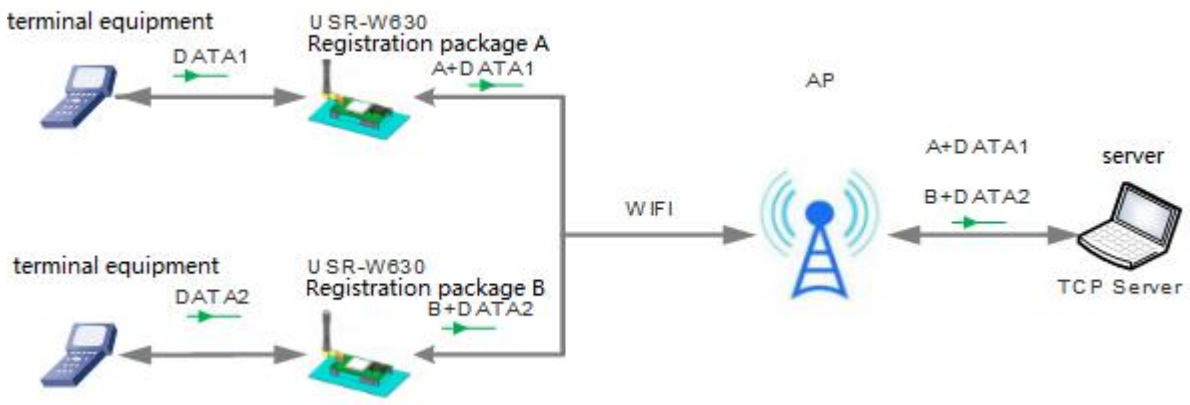


Figure 17 send registration package with data

The relevant parameters of the function are set on the "serial port and other settings" part of the web page, and the default is closed.

The relevant commands are set as follows:

Table 6 AT commands

No.	Command	Intro
1	REGEN	Setting the type of registration package
2	REGTCP	Registration package settings
3	REGCLOUD	Query/setting USR-Cloud account and password
4	REGUSR	Query/setting USR-Cloud custom registration package content

4.7. Class RFC2217 Automatic Baud Rate Function

RFC2217 is a standard protocol for instantly modifying device serial port parameters through Ethernet. This device supports a protocol similar to RFC2217, not standard RFC2217, which implements the same function, but the protocol is simpler.

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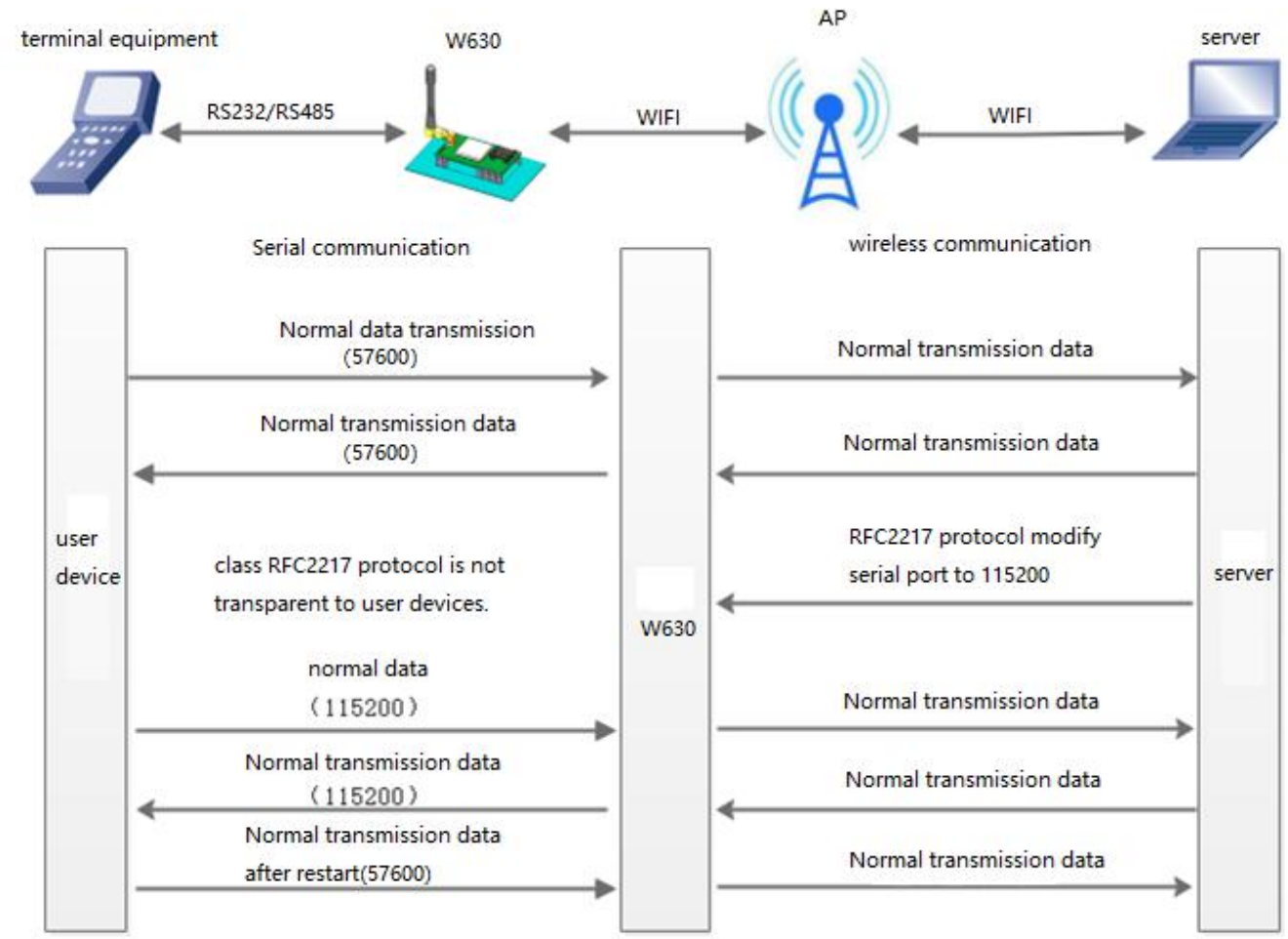


Figure 18 class RFC2217

The changes made by this command take effect immediately without restarting. After restarting, the W630 restores the original parameters.

4.8. Keep-alive Function

Keep-alive mechanism is added to TCP connection. When W630 network is abnormal, it can judge the network abnormal and disconnect in time. When the network is restored, it can connect to the server in time.

4.9. USR-Link

When USR-W630 works in AP mode, it opens a UDP port with a port number of 4900 for receiving commands from the Fast Networking Protocol. The mobile phone can be directly connected to the WIFI network of USR-W630, query the list of SSID information and set the router SSID and password through the command of UDP protocol. After setting up, USR-W630 will automatically restart and connect to the router, then work in STA mode.

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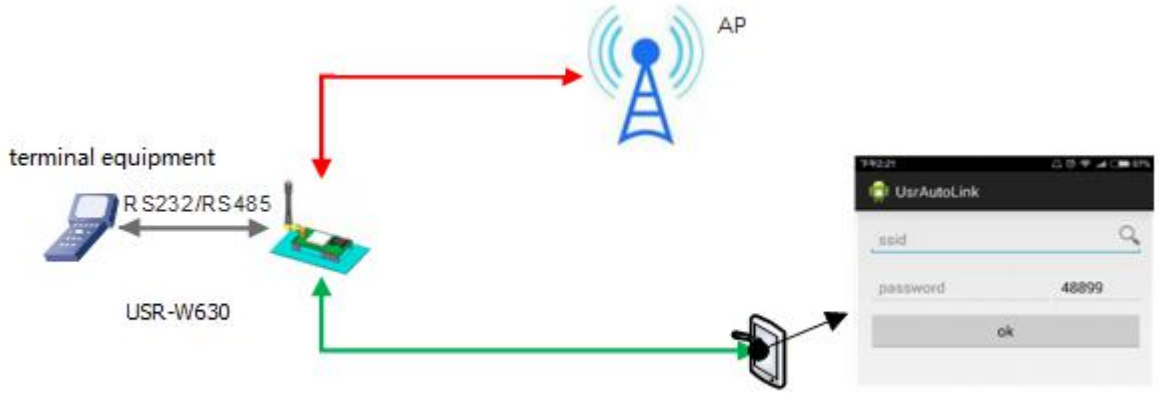


Figure 19 usr-link

4.10. Search in LAN

W630 supports search in-LAN. When W630 is connected to a wireless router, users can obtain the IP address of the serial server in W630's current LAN by sending UDP broadcasts to a fixed port to realize device search and communication. It can also directly connect W630's AP to send search instructions.

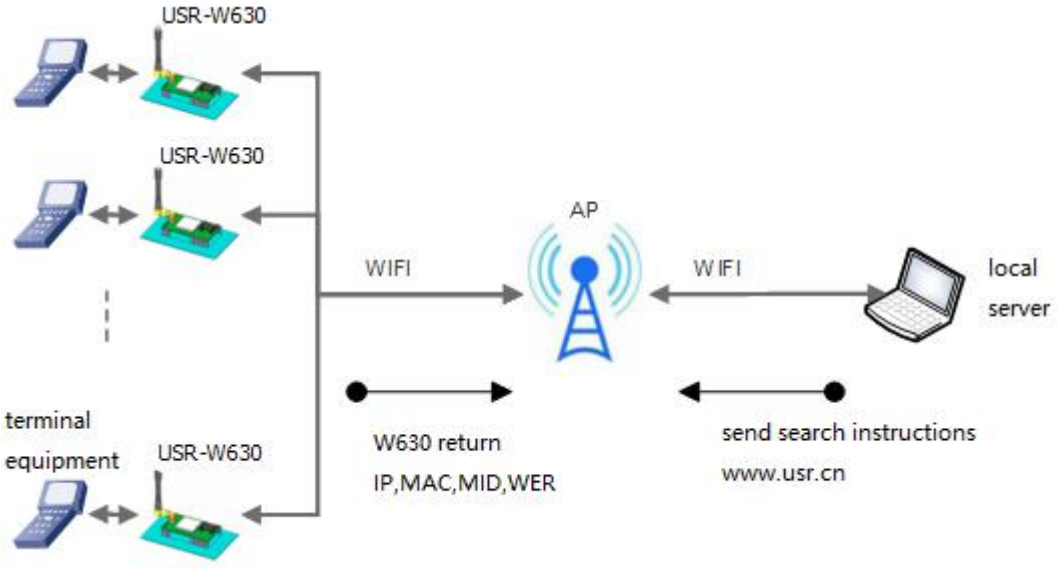


Figure 20 serch in LAN

Search process:

1. On another device in the LAN, the search command "www.usr.cn" is sent via UDP broadcast (broadcast address: xx.xx.xx.255, port: 48899).

2. When W630 receives the password, if it is correct, W630 enters configuration mode, send IP, MAC, MID to the address, and send +ok (no return) through UDP to enter network AT instruction mode.

If the W630 doesn’t receive the setup command within 30 seconds after entering the configuration mode, it will exit the configuration mode. The user needs to resend the search command word and enter the configuration mode.

3. Users can set and read the parameters/states by sending network AT commands (upper case) to the port. The net AT commands are in the same format with serial AT commands.

Note: Search tools and W630 must be in the same LAN. If multiple STAs are connected to a router, the computer

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running the search tool is also connected to that router. This search tool can search all the STA.

4.11. Custom Heartbeat Package

In the transparent mode, users can enable the function of the custom heartbeat package. Heartbeat packets can be sent in the following directions: NET - Network Server, COM - Serial Device. Custom heartbeat packet is up to 40 characters and needs to be converted to HEX format when set, sending time interval 1-65535s.

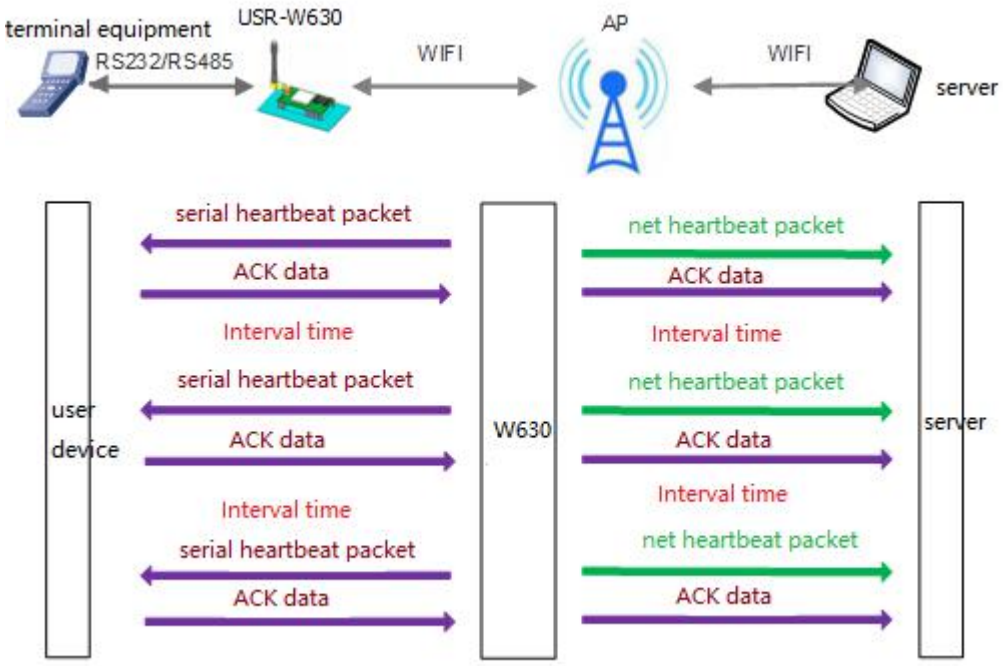


Figure 21 custom heartbeat package

4.12. Socket Function

In transparent transmission mode, enabled socket function allows the serial port device to send data to a specified Socket connection, while the data sent from the network terminal W630 will be packaged according to the protocol format and sent to the serial port device.

The user's MCU only needs to send packets in socket distribution protocol format, and the WIFI server parses the received packets. If the data conforms to the protocol, the WIFI server sends the parsed data to the specified socket connection; if the data doesn't conform to the protocol, the corresponding error code will be returned, and the data will not be sent. It sends to the specified socket connection.

For example, the serial port device sends ABC to socket A, and the network terminal socket A sends the data to the serial port device 123.

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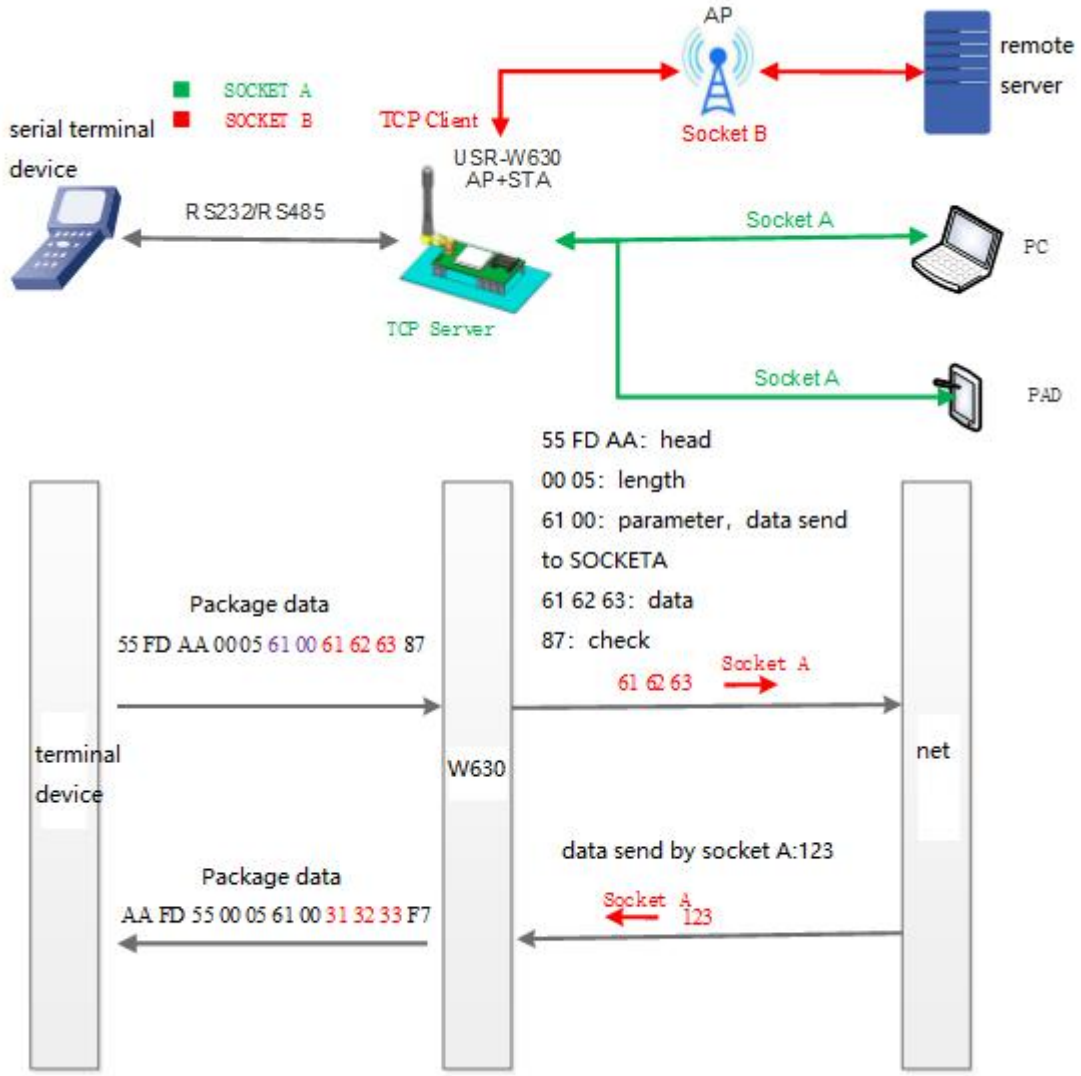


Figure 22 socket function

This function is deactivated by default.

4.13. Timeout Restart Function

If the W630 is disconnected or W630 is connected but not communicating, it will restarted within the set time when the timeout function is turned on. The timeout time can be set to 60-65535s and the default time is 3600s. The restart conditions are as follows:

(1) When WIFI is disconnected, the timing unit will start and the connection will be cleared. If the timing unit exceeds the time of overtime restart, the W630 will be restarted.

(2) WIFI connection is established and no communication also starts timing, if there is communication, the clear timing unit, if the timing time exceeds the timeout restart time, then restart the W630.

This function defaults by default.

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4.14. Timer Restart Function

In the non-serial instruction mode, when the timing restart function is turned on, the relevant timing unit starts timing when the W630 is powered on, and the W630 restart clears the timing unit. If the timing unit exceeds the timing restart time, the W630 is restarted.
This function defaults by default.

4.15. Modbus Polling

W630 supports Modbus polling, mainly for multi-host queries. When W630 works on TCP Server, TCP Client has data requests, it saves the TCP Client of the request first, then forwards it to the serial port, waiting for the serial port reply. If the serial port reply is forwarded only to the previously saved Client, if there is no reply, it waits until the timeout time. And then proceed to the next round of polling.

4.16. Remote Upgrade

W630 supports remote upgrade.

4.17. Firmware Upgrade

First make PC join the WIFI of W630, enter 10.10.100.254,the account and password are both admin.

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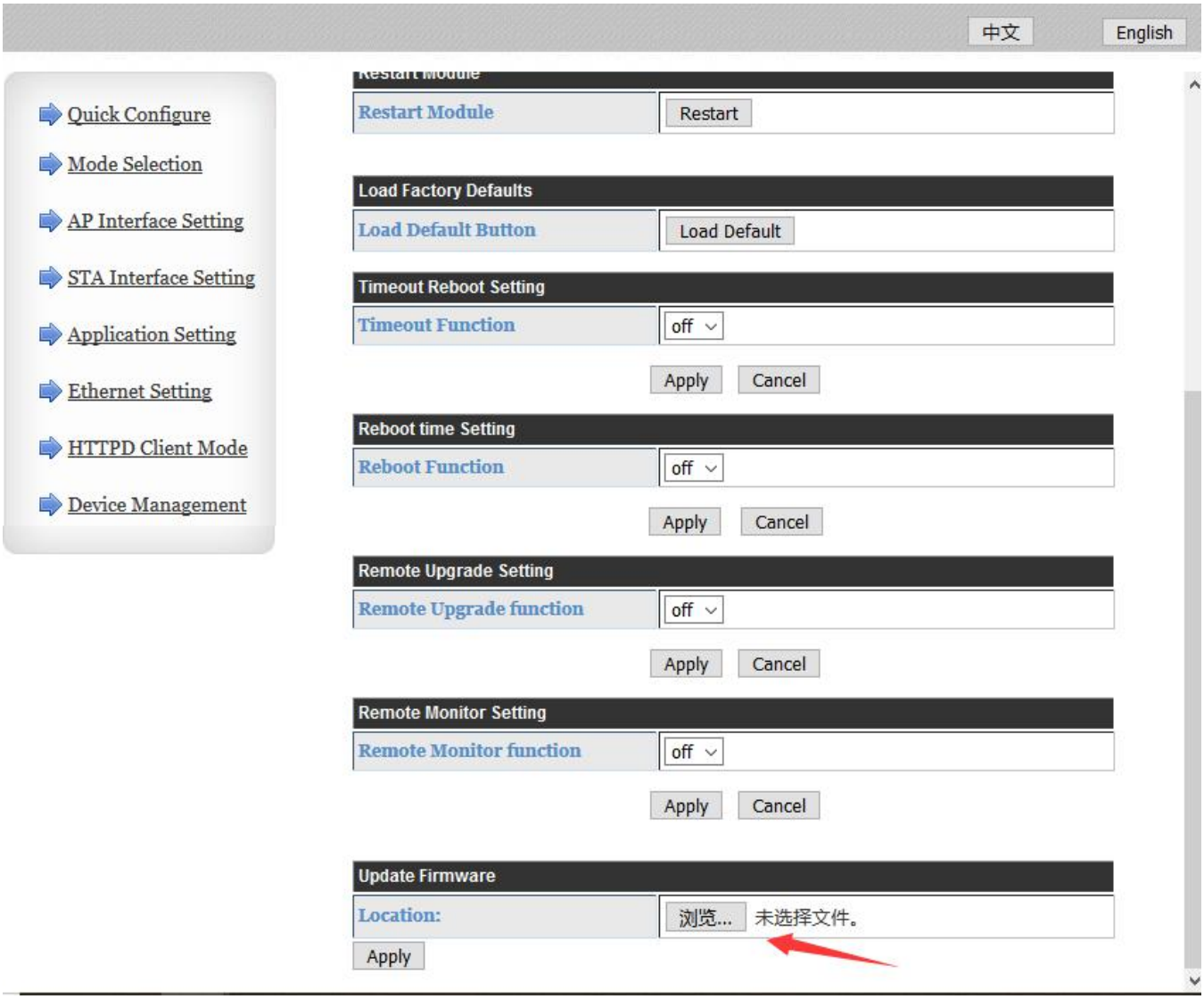


Figure 23 firmware upgrade

Then click apply

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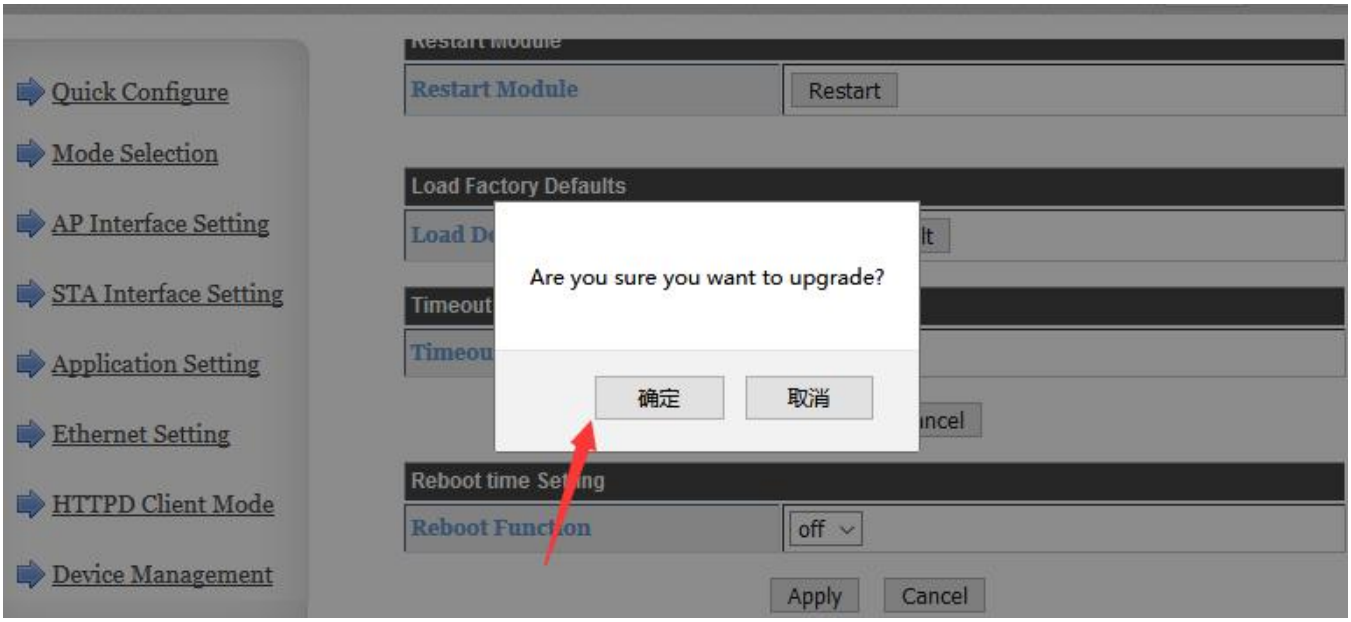


Figure 24 firmware upgrade

And waiting upgrade about 40s,don't cut off the power.

5. Setting Method

W630 supports AT commands and webpage setting.

W630 and PC should join the same WIFI, or set the PC join the WIFI of W630.

5.1. Webpage Setting

W630 default AP mode.

Table 7 webpage default parameters

Parameter	Default
SSID	USR-W630_XXXX
IP	10.10.100.254
Subnet mask	255.255.255.0
Account	admin
Password	admin

5.1.1. Open The Webpage

Make PC join the WIFI of W630, enter 10.10.100.254, the account and password are both admin. There are eight pages on the management page, which are "Quick Configuration", "Mode Selection", "Wireless Access Point Settings", "Wireless Terminal Settings", "Serial Port and Network Settings", "Ethernet Function Settings", "HTTPD Client Mode", "Advanced Settings" and "Module Management".

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5.1.2. Quick Configuration

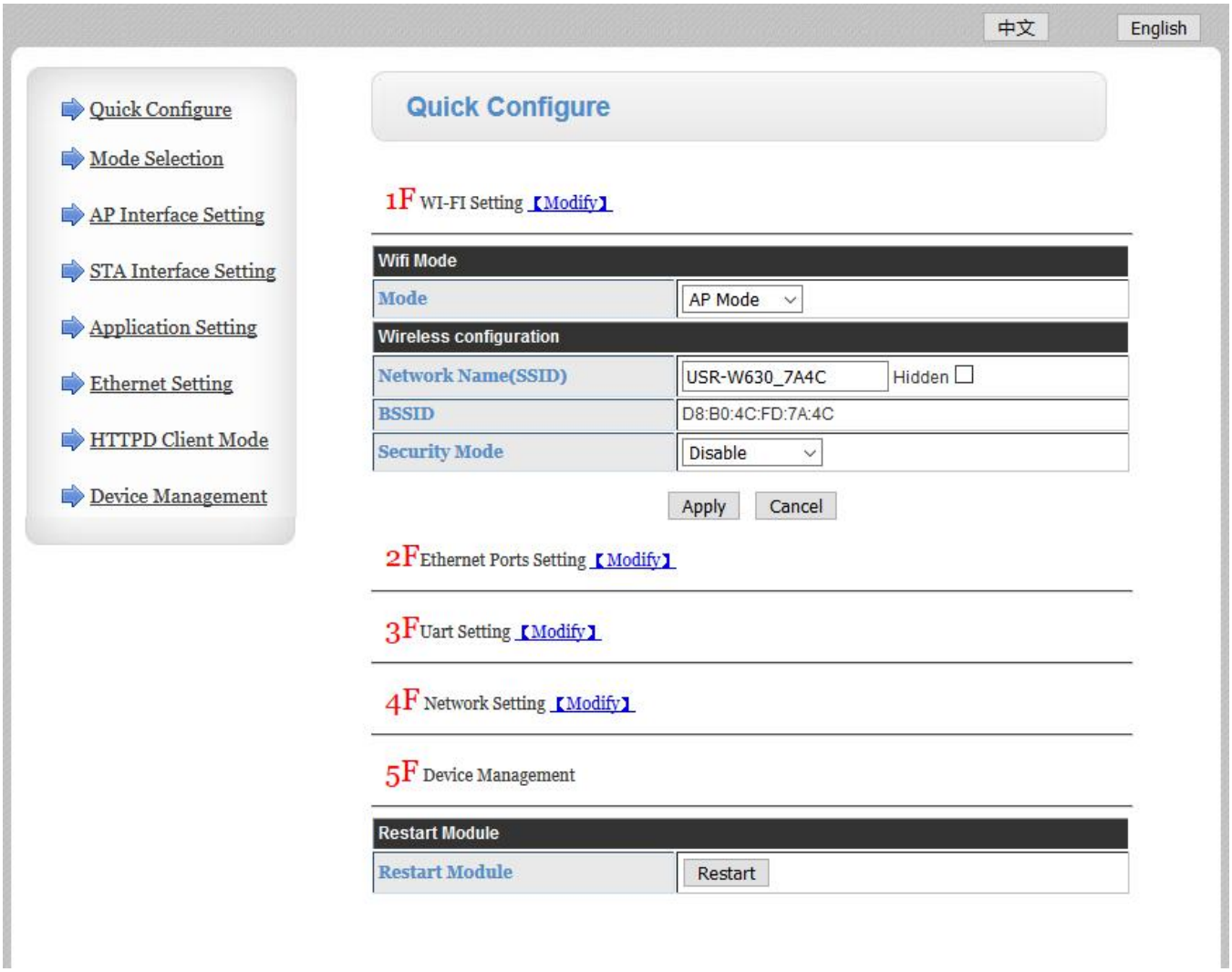


Figure 25 quick configure

The quick configuration page provides users with a quick way to configure the W630. By configuring the parameters and restarting W630 in accordance with the page steps, W630can work properly, reducing the configuration steps and time. Of course, there are fewer options on this page. If some details are configured, it should be configured to the corresponding page.

This page has four options that need to be configured and a restart item.

- Wireless configuration: configuring the working mode of WIFI serial port server WIFI, AP or STA mode.
- Ethernet function configuration: open / close Ethernet port and set the corresponding working mode.
- Serial port configuration: Configuration of serial port parameters of WIFI serial port server, including serial port baud rate, check bit, 485 functions and so on.
- Network configuration: configure the network parameters of the W630, with only the relevant parameters of Socket A.
- Module management: when the above parameters are configured, click restart and restart the module.

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5.1.3. Other Page

Mode selection: mainly sets up the WIFI working mode and data transmission mode of W630. WIFI mode includes "AP mode" and "STA mode"; "Data transfer mode" includes "transparent transfer mode", "serial instruction mode" and "HTTPD Client mode".
Wireless access point settings: this webpage mainly sets up the parameters of W630 AP mode. Including: SSID settings, wireless network mode settings and wireless security settings, as well as the AP composition of the LAN settings.
Wireless Terminal Settings: This web page sets the WIFI parameters of STA mode, including router SSID, wireless security and STA network IP access (DHCP or static IP), USR-W630 supports three sets of STA parameters for user settings.
Serial port and network settings: this webpage is mainly set up serial port parameters and Socket parameters of W630. Including serial port parameters, serial port framing mode, registration package mechanism, Socket A parameters and Socket B parameters.
Ethernet function settings: This web page is mainly set up W630 network interface switch and working mode, this network interface can be used as LAN port, also can be used as WAN port (this function does not need to be set).
HTTPD Client mode: This page sets HTTPD Client mode, HTTP protocol header content, including: server address, server port, request type, protocol header path, protocol header Connection, protocol header User-Agent. HTTPD Client mode supports POST, PUT and GET three HTTP requests.
Module management page: Module management includes user name / password settings, restart, restore factory settings and software upgrades.

5.2. AT Command Setting

5.2.1. Serial Port AT Commands

Users can set up the WIFI serial port server by using AT command through UART port.

5.2.2. Net AT Commands

After searching for W630 through LAN search, use AT command to query and set W630 parameters.

5.3. AT Commands

Table 8 AT commands

Command	Function
(None)	Empty command
E	Open/close instruction recall
ENTM	Exit command mode
NETP	Query/setup the parameter of net protocol
UART	Query/setup the parameter of serial port
UARTF	Open/close auto framing function
UARTFT	Set / query auto framing trigger time

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UARTFL	Set / query auto framing trigger length
TMODE	Set / query data transfer mode (transparent transport mode or protocol mode)
WKMOD	Query / setup work mode
WSKEY	Set / query encryption parameters in WIFI STA mode
WSSSID	Set / query AP SSID in WIFI STA mode
WSLK	Query link status in wireless STA mode
WEBU	Set / query landing parameters for WEB pages
WAP	Setting / querying parameters in WIFI AP mode
WAKEY	Set / query encryption parameters in WIFI AP mode
MSLP	Set the module into low power mode, close WIFI
WSCAN	Search AP in STA mode
TCPLK	Query whether the TCPA connection has been established.
TCPDIS	Link / disconnect TCP (valid only at TCP Client)
WANN	Setting / querying WAN settings is valid only in STA mode.
LANN	Setting / querying LAN settings is valid only in AP mode.
TCPTO	Set / query TCP timeout time
MAXSK	Set / query maximum TCP connection number
TCPB	Enabling / disabling TCPB functions
TCPPTB	Set / query the port number of TCPB
TCPADDB	Set / query the server address of TCPB
TCPTOB	Set / query TCPB timeout time
TCPLKB	Query whether the TCPB connection has been established.
EPHY	Turn on / off ETH interface
RELD	Restore factory settings
IDFIR	Turn on / off for the first time to establish the ID function of the connection belt.
IDEVE	Turn on / off each data with ID function
AABR	Turn on / off adaptive baud rate function
DHCPDEN	Turn on / off the DHCP Server function of LAN port.
HIDESSID	Set up / query to hide the SSID of module AP
DOMAIN	Set / query the domain name of the landing module page.
Z	Reboot module
AT+FAPSTA	Enabling or prohibiting AP+STA functions
MID	Query module MID
VER	Query software version
H	Help orders
WSQY	Set / query the threshold value of signal switching for three sets of STA parameters.
HTPMODE	New and old version of HTTP header setup mode switch (HTTPD Client)
HTTPURL	The old version sets / inquires the IP and port of the HTTP server

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HTTPTP	Old version set / query HTTP request type
HTTPPH	Old version set / query HTTP protocol header path
HTTPCN	Old version set / query HTTP protocol header Connection
HTTPUA	Old version set / query HTTP protocol header User-Agent
HTPSV	New version / query server address and IP (HTTPD Client)
HTPTP	New version / query request mode (HTTPD Client)
HTPURL	New version / query request path (HTTPD Client)
HTPHEAD	New version / query HTTP header (HTTPD Client)
HTTPSCEN	Set / query HTTPD Client connection mode (long/short)
HTTPSCT	Set / query HTTPD Client short connection timeout time (3-65535s)
REGEN	Setting / querying registration package types
REGTCP	Setting up and querying registration packages
WTPWR	Set module transmit power
REGCLOUD	Set up / query through cloud device serial number and password.
FVER	Set up / query module software version (N-Ver, Z-Ver)
REGUSR	Setting / querying user-defined registration package contents
TCPDPEN	Open / close socket distribution function
HEARTEN	Open / close custom heartbeat package function
HEARTTP	Set / query custom heartbeat packet sending direction
HEARTDT	Set / query custom heartbeat data
HEARTTM	Set / query custom heartbeat packet sending interval
REBOOTEN	Turn on / off timer restart function
REBOOTT	Set / query timed restart time
TIMEOUTEN	Turn on / off timeout restart function
TIMEOUTT	Setup / query timeout restart time
MODBPOLLEN	Enabling or prohibiting Modbus polling function
MODBPOLLT	Query / set polling interval (50~65535) (MS)
UPDATE	Query and set enabled status of remote upgrade, remote server address, remote server port, reporting interval
MONITOR	Query and set the enabling state and reporting interval of remote monitoring

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8.Update History

Edition	Describe
V1.0.3	2018-06-28 establish

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