

USR-C216 User Manual

File Version: V1.0.0



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Feature

- Support WiFi@2.4 GHz 802.11b/g/n wireless standards
- Support WEP/WPA/WPA2 security mode
- Support AP, STA, AP+STA working mode
- Completely integrated serial-to-wireless TCP/UDP transmission function, multiple serial rate selection
- Local area network search and wireless parameter setting function
- Support TCP/UDP client registration packet mechanism
- Supporting simple Config/ usrlink fast networking configuration
- Support similar RFC2217 automatic baud rate adaptation function
- Supporting simple AT commands
- Support Httpd client function
- 3.3V single power supply
- Selection of built-in antenna and external antenna (antenna pad)
- Ultra-small size: 22.0mm x 13.5mm x 2.7mm, SMT package

1. Get Start

This chapter is a quick introduction to the USR-C216 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-C216 to PC, if PC has no serial port, you can use USB to 232cable. Hardware connection:

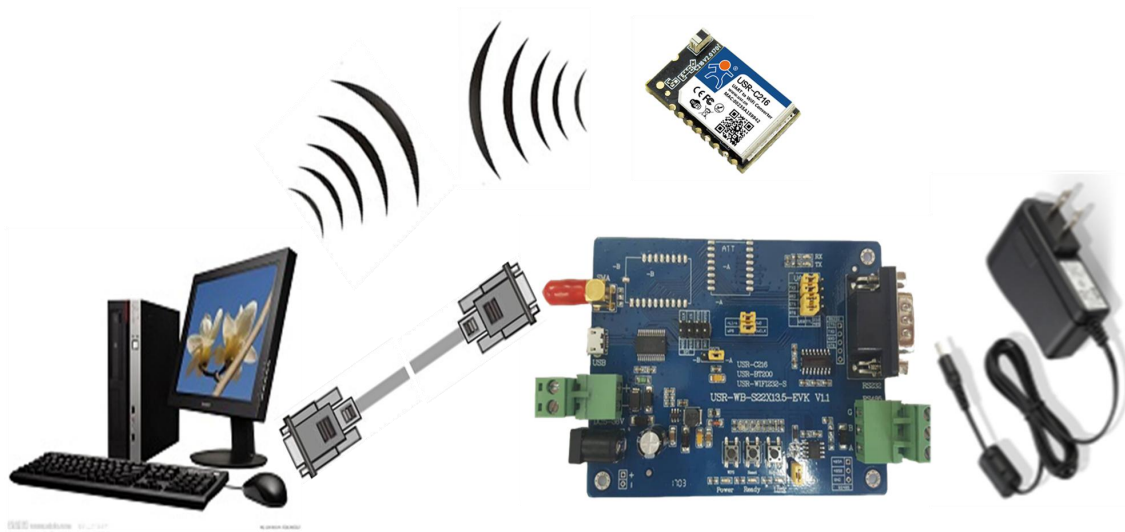


Figure 1 hardware connection

You just need connect RS232 cable and power to C216 as picture shows.

1.2. Net Connection

Search WIFI on PC, connect the WIFI named USR-C216



Figure 2 search SSID

Set the PC DHCP mode, USR-C216 support DHCP server mode, this function is open by default.

1.3. Data Transmission Test

The default parameters:

Name	Parameters
SSID	USR-C216
Encryption mode	Open, none
Serial port	115200, 8, 1, none, nfc
Network	TCPS, 8899, 10.10.100.254
IP	10.10.100.254

Steps :

1\open"USR-TCP232-Test.exe", COM11 represents the serial number of C216,set the baud rate 115200,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 C216->C216->network port(or wifi) of C216->PC;

The data from net to serial port is: PC-> Ethernet (or wifi) of C216->C216->serial port of C216->serial port of PC

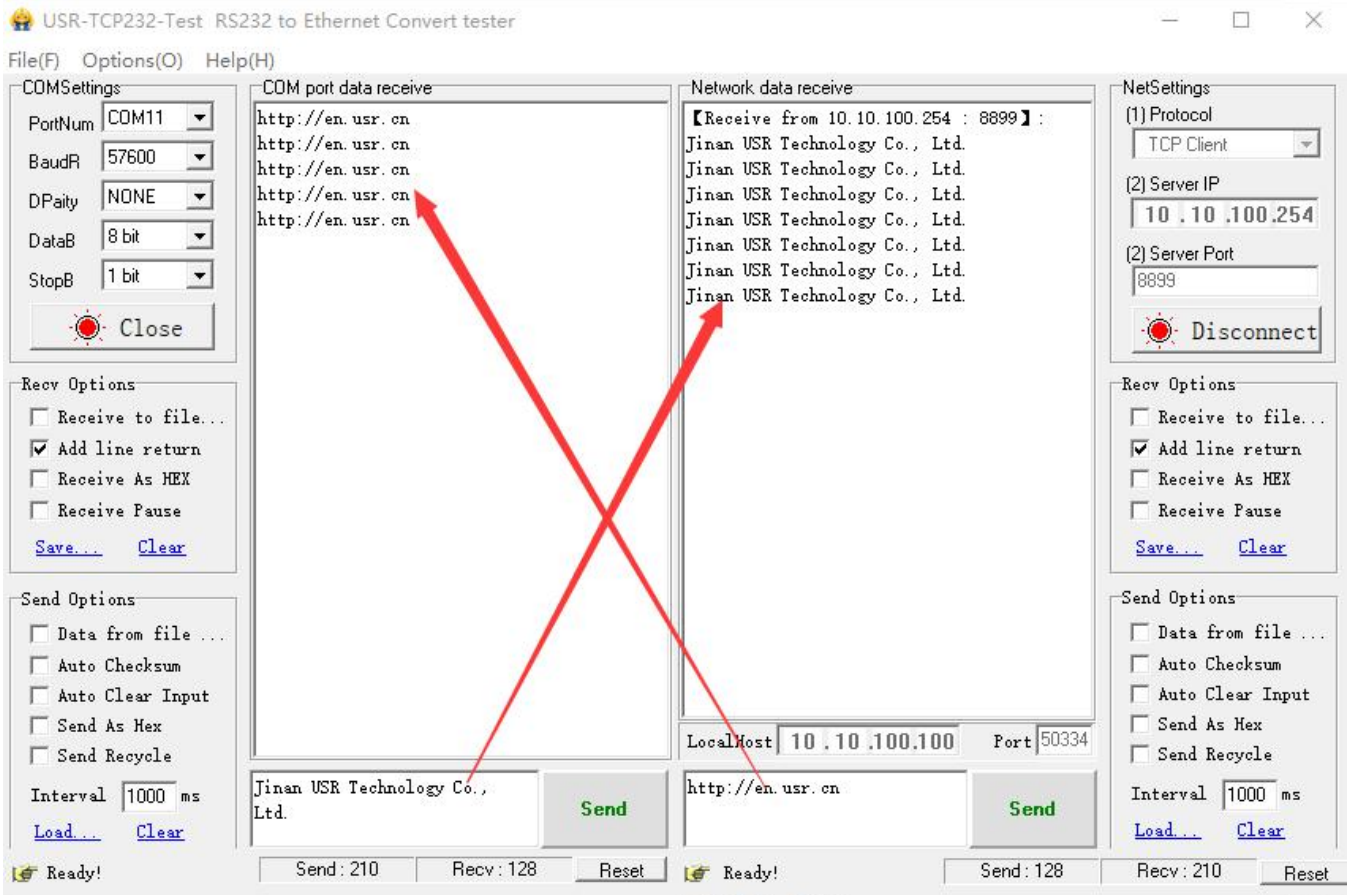


Figure 3 data transmission test

2. Product Overview

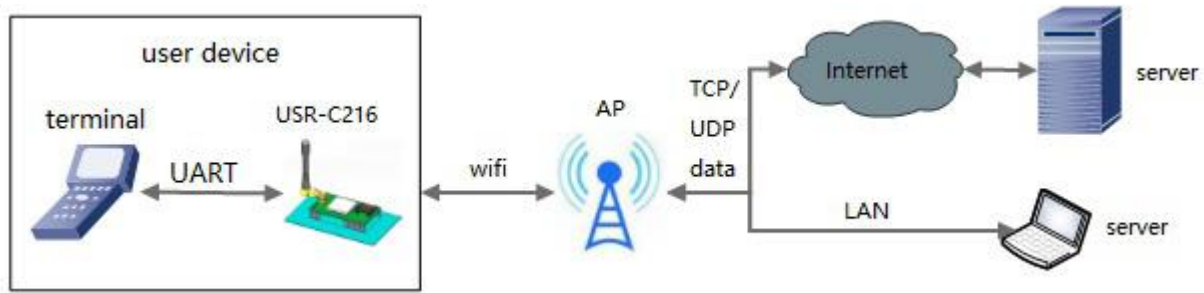
2.1. Product Introduction

The hardware of USR-C216 is integrated into MAC, basic frequency chip and RF transceiver unit. Built-in low power operation mechanism can effectively realize the low power operation of the module; Support Wi-Fi protocol and TCP/IP protocol, users only need a simple configuration, to achieve the networking function of UART devices. Module size is small, easy to solder in the customer's hardware circuit. And the module can choose the application of internal or external antenna, convenient for customers to choose multiple.

The specific size of the module: 22.0mm x 13.5mm x 2.7mm, SMT package

The basic functions of the module are described as follows:

Module to achieve serial data to network data transmission function: including Socket transparent transmission, Httpd Client transparent transmission.


Figure 4 basic function

2.2. Electrical Parameters

	Item	Index
Wireless parameters	Wireless standard	802.11 b/g/n
	Transmitting power	802.11b: +19dBm(Max.@11Mbps, CCK)
		802.11g: +18dBm(Max.@54Mbps, OFDM)
		802.11n: +16dBm(Max.@HT20, MCS7)
	Receiving sensitivity	802.11b: -85 dBm(@11Mbps, CCK)
		802.11g: -70 dBm(@54Mbps, OFDM)
802.11n: -68 dBm(@HT20, MCS7)		
Antenna	C216-a: antenna pad	
	C216-b:board-mounted ceramic antenna	
Hardware parameters	Data interface	UART
	Working voltage	3.0~3.6V
	Working current	AP: average:74mA max:285mA STA: average:32mA max:196mA (work with 3.3V power supply)
	Working temperature	-20°C-85°C
	Storage temperature	-40°C-125°C
	Working humidity	5~95%RH(no condensation)
	Storage humidity	5~95%RH(no condensation)
	Size	103*105*25mm (L*W*H)
	Encapsulation	SMT
Software parameters	Wireless network type	STA/AP/STA+AP mode
	Security mechanism	WEP/WPA-PSK/WPA2-PSK
	Encryption type	TKIP/AES
	Network protocol	IPV4, TCP/UDP
Software function	DHCP/static IP	support
	DNS	support
	Web server	support
	Socket	TCP Server, TCP Client, UDP Server, UDP Client

	Httpd client	support
	Similar RFC2217	support
	Register packet	support
	Setup method	AT+ command, webpage

2.3. Power Supply and Power Consumption

	min	suggest	max	unit
Voltage	3.0	3.3	3.6	V
Voltage ripple	-	-	200	mV
Current	350	500	-	mA

	min	average	max	unit
STA mode without AP connection	-	50	114	mA
STA mode connect to AP but no data transmission	-	30	102	mA
STA mode connect to AP with data transmission(10 K/s)	-	67	160	mA
AP mode connect to STA but no data transmission	-	69	243	mA
AP mode connect to STA with data transmission(10K/s)	-	74	230	mA

2.4. Appearance Size

Unit mm

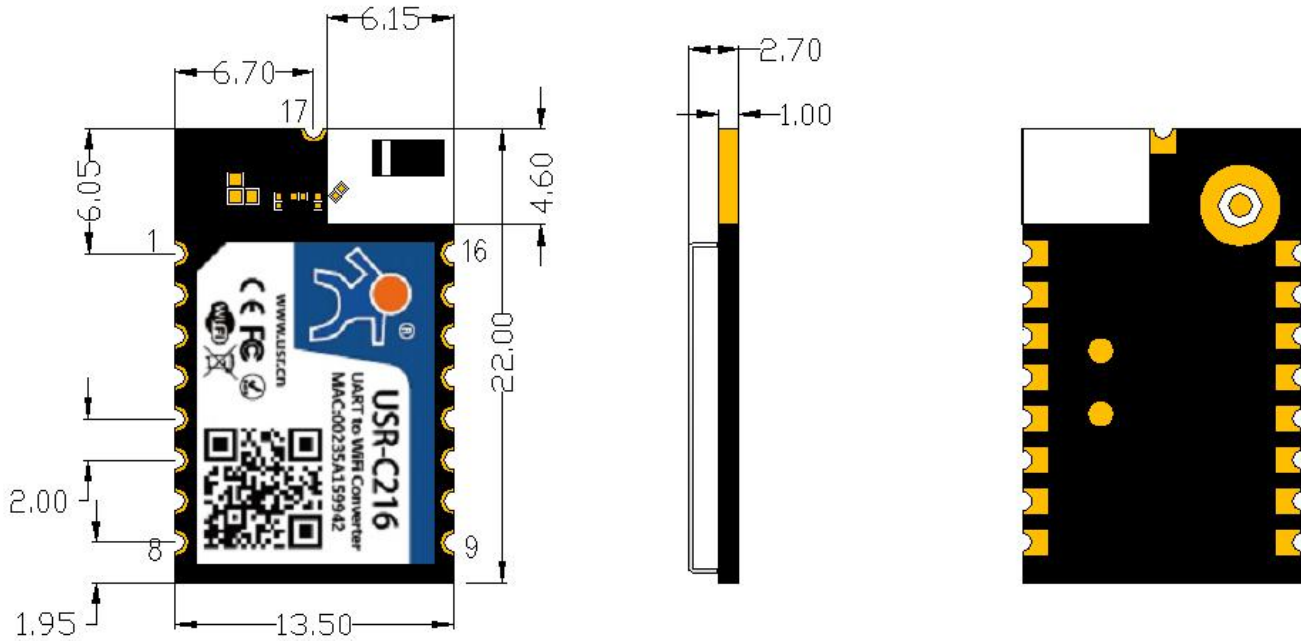


Figure 5 schematic diagram of interface

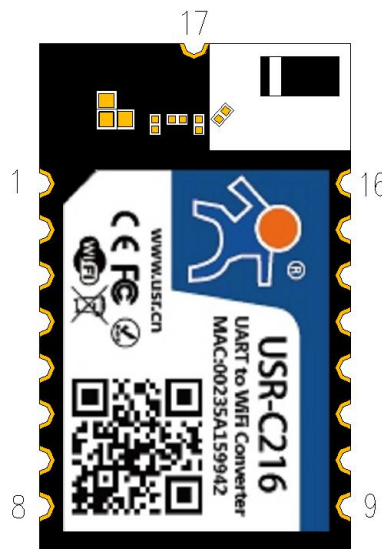


Figure 6 pin of C216

Pin	Name	Signal type	Intro
1	GPIO1	NC	NC
2	GPIO2	NC	NC
3	GPIO3	I/O	GPIO, do not support
4	GPIO4	I/O	GPIO, do not support
5	UART0_TX	O	TX of UART
6	UART0_RX	I	RX of UART
7	UART0_CTS	I	CTS of UART

8	UART0_ RTS	O	RTS of UART
9	SPI_IRQ	O	485 Control pin, after disabled 485 function presents high resistance state, enable 485 function, the default is low level; when serial port has data transmission, temporary switch to high level
10	nReset	I	Module reset, low level effective, pull down at least 100 ms
11	nReady	O	Module works normally with indication pin, low efficiency, external LED
12	nReload	I	Pull down 0.5-3 seconds to start Simple Config distribution network. Pull down more than 3 seconds to restore factory settings.
13	nLink	O	Module Wi-Fi Connection Indicator Pin, Low Effective, External LED
14	WPS	I/O	WPS function pin, do not support
15	VCC	P	3.3V
16	GND	P	ground
17	RFIO	O	Radio Frequency Signal Output

Note: P means power, I means in, o means out, N means not support

3. Product Function

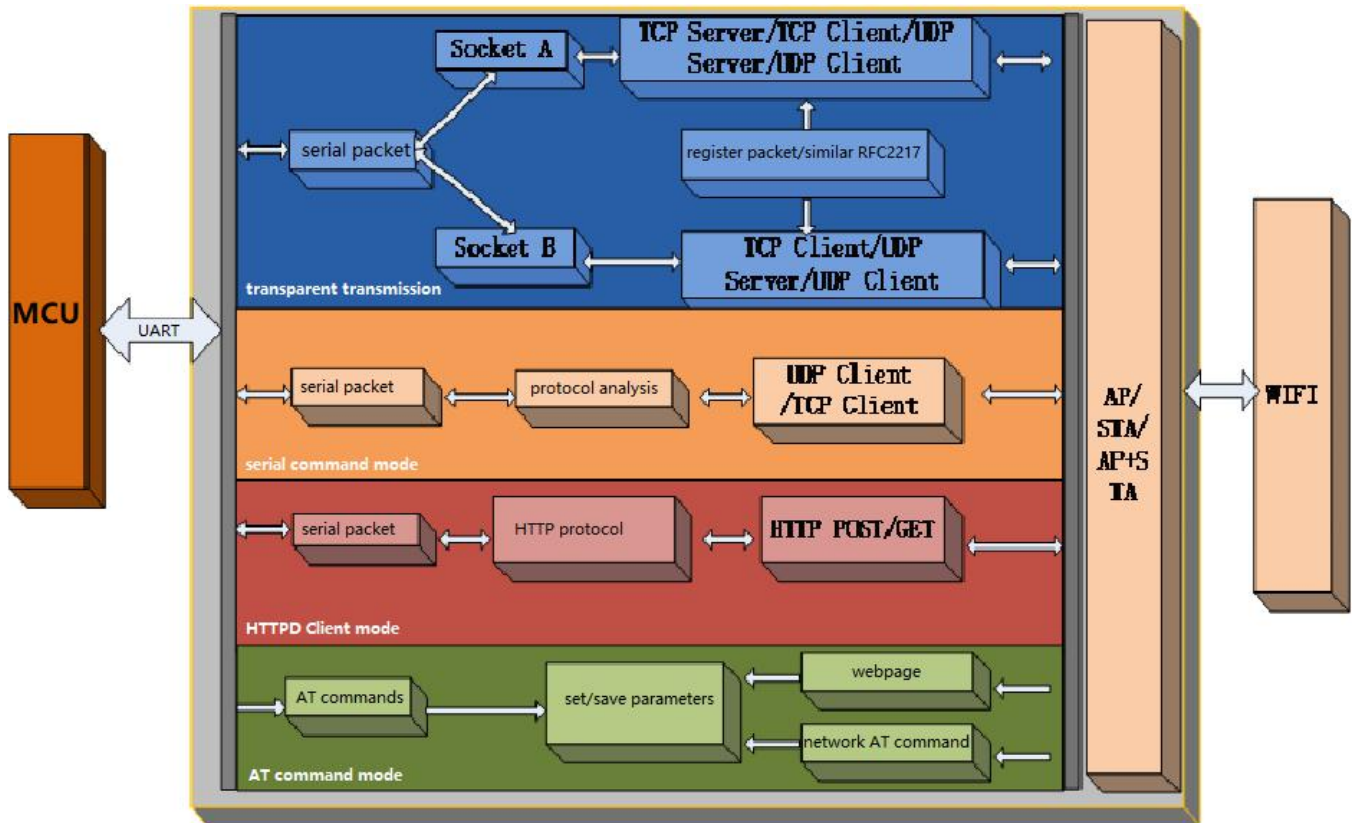


Figure 7 function of C216

3.1. Wireless Distribution Network

The USR-C216 serial server can be configured either as a wireless STA or as an AP. So USR-C216 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.

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.

3.1.1. Work as AP

Set C216 work at AP mode. Other C216s and computers can be connected to the C216 as STA, and it can also be connected to user equipment through RS232/RS485 interface.

Setup by AT commands:

AT+WMODE=AP

AT+WAP=11BGN,USR-C216,CH6

AT+WKEY=WPA2PSK,AES,password

AT+RELD

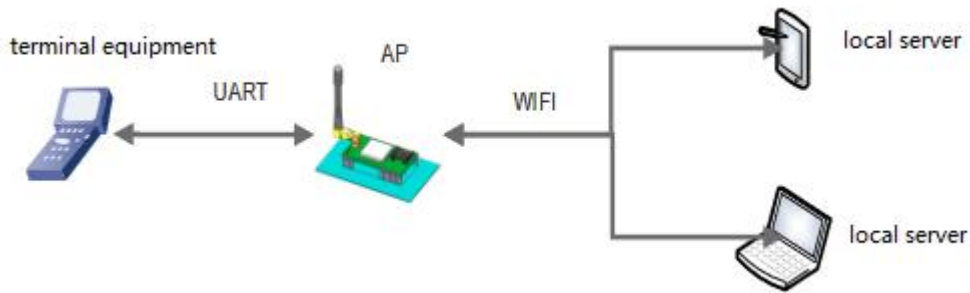


Figure 8 work as an AP

3.1.2. Work as STA

Set C216 work at STA mode and connect to other AP. The communication between STA is accomplished by AP forwarding.

Setup by AT commands:

AT+WMODE=STA

AT+WSSID=router-ssid

AT+WSKEY=WPA2PSK,AES,password

AT+RELD



Figure 9 work as STA

3.1.3. Work as AP+STA

USR-C216 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-C216 or set the parameters of serial port server itself.

Setup by AT commands:

AT+WMODE=APSTA

AT+WAP=11BGN,USR-C216,CH6

AT+WKEY=WPA2PSK,AES,password

AT+WSSID=router-ssid

AT+WSKEY=WPA2PSK,AES,password

AT+rRELD

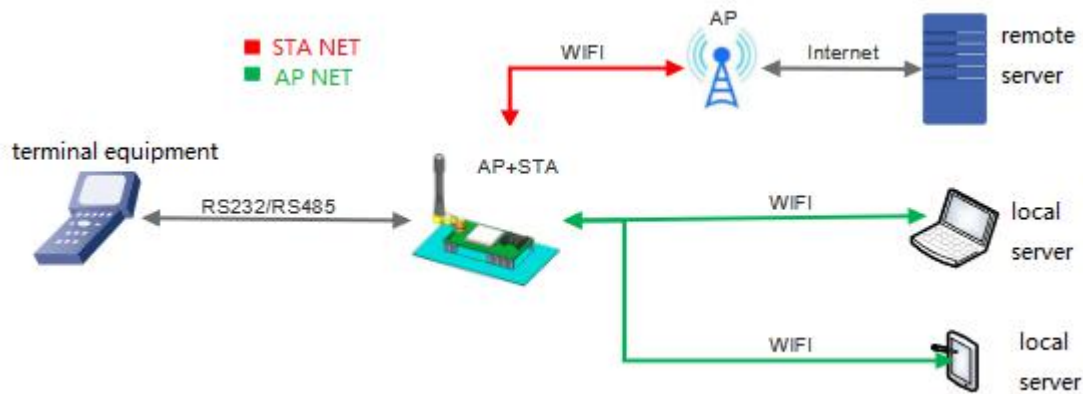


Figure 10 work as AP+STA

- 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.

3.1.4. Encryption Mode

Support:

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

3.2. Work Mode

C216 work mode: transparent transmission mode, HTTPD Client mode, AT command mode.

3.2.1. Transparent Transmission Mode

C216 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, 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.

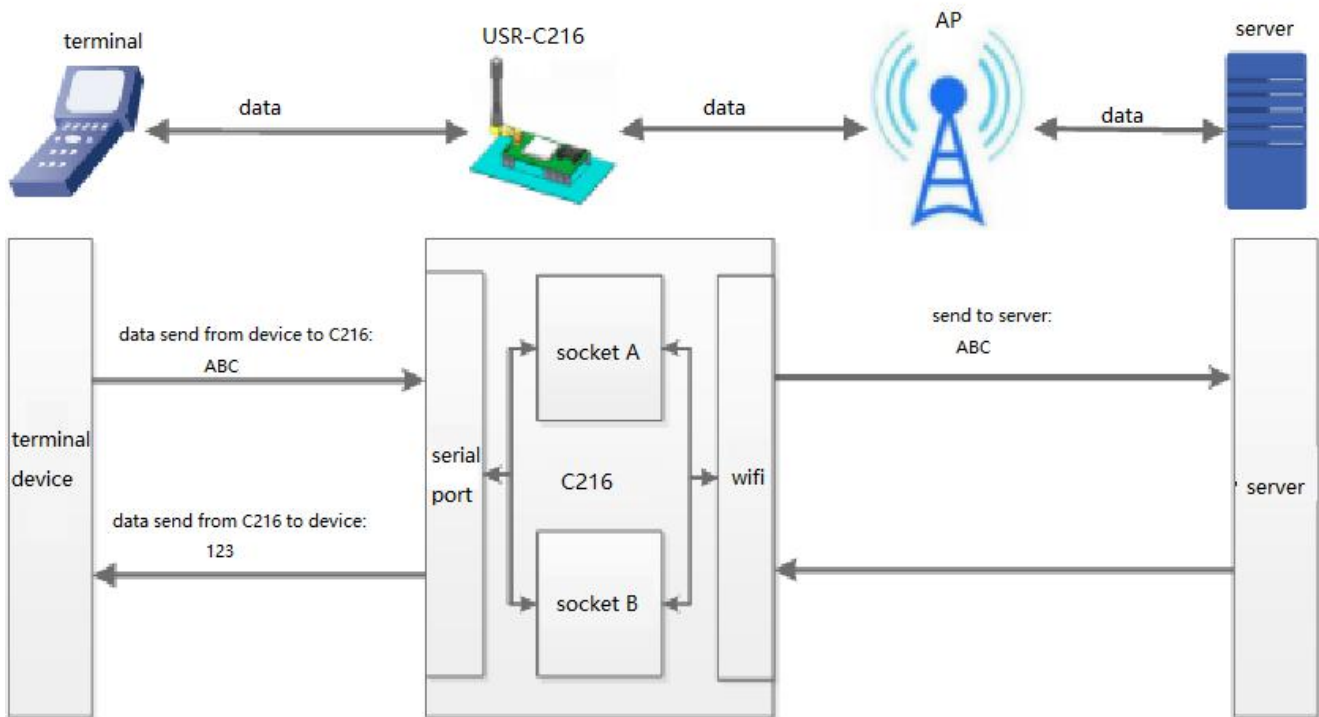
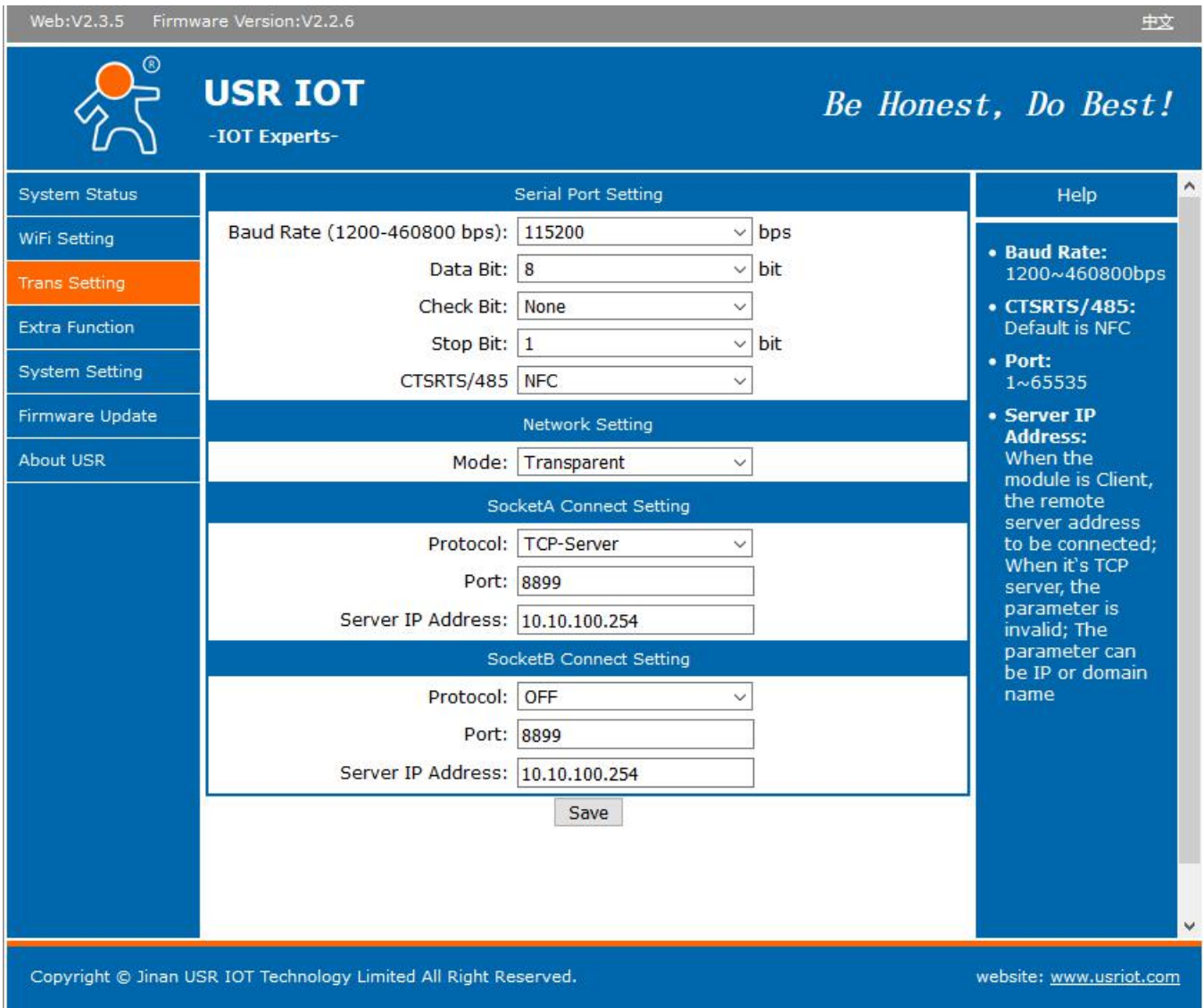


Figure 11 transparent transmission

Setup by AT commands

	Command	Intro
1	NETP	Set/query network protocol parameters
2	TCPTO	Set/query timeout of socket A
3	TCPLK	Query TCP connection status
4	TCPDIS	Set/query socket A auto-connection or not, or disconnect
5	SOCKB	Set/query socket B parameters
6	TCPTOB	Set/query timeout of socket B
7	TCPLKB	Query socket B status
8	TCPDISB	Set/query socket B auto-connection or not, or disconnect
9	UART	Set/query UART parameters
10	UARTTE	Set/query interval

Webpage:



Web:V2.3.5 Firmware Version:V2.2.6 中文

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System Status	Serial Port Setting	Help <ul style="list-style-type: none"> Baud Rate: 1200~460800bps CTSRTS/485: Default is NFC Port: 1~65535 Server IP Address: When the module is Client, the remote server address to be connected; When it's TCP server, the parameter is invalid; The parameter can be IP or domain name
WiFi Setting	Baud Rate (1200-460800 bps): <input type="text" value="115200"/> bps	
Trans Setting	Data Bit: <input type="text" value="8"/> bit	
Extra Function	Check Bit: <input type="text" value="None"/>	
System Setting	Stop Bit: <input type="text" value="1"/> bit	
Firmware Update	CTSRTS/485: <input type="text" value="NFC"/>	
About USR	Network Setting	
Mode: <input type="text" value="Transparent"/>		
SocketA Connect Setting		
Protocol: <input type="text" value="TCP-Server"/>		
Port: <input type="text" value="8899"/>		
Server IP Address: <input type="text" value="10.10.100.254"/>		
SocketB Connect Setting		
Protocol: <input type="text" value="OFF"/>		
Port: <input type="text" value="8899"/>		
Server IP Address: <input type="text" value="10.10.100.254"/>		
<input type="button" value="Save"/>		

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Figure 12 transparent transmission

3.2.2.AT Commands Mode

In AT commands mode, users can query the current state of USR-C216 or set the parameters of USR-C216 by sending AT commands.

3.2.3.HTTPD Client Mode

Note: only firmware version 2.0.3 and later can support this function.

In this mode, the user can send data to the specified HTTP server, and the C216 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 C216 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.

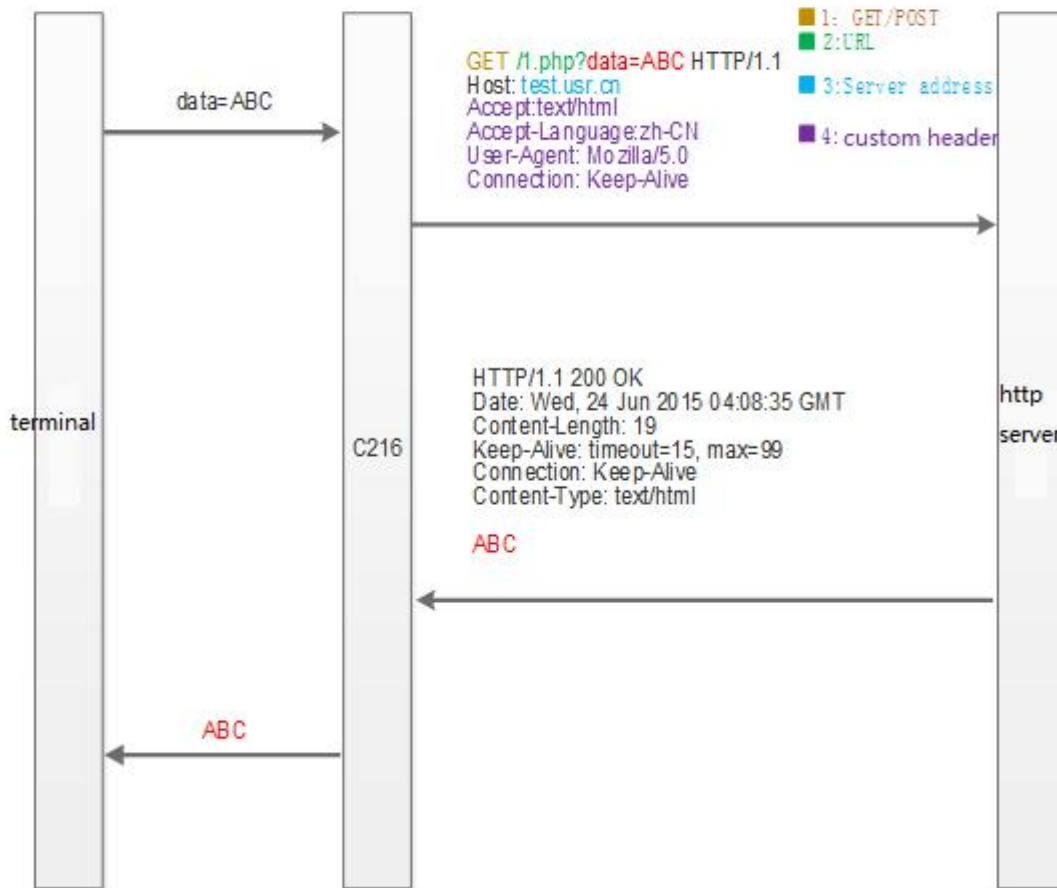
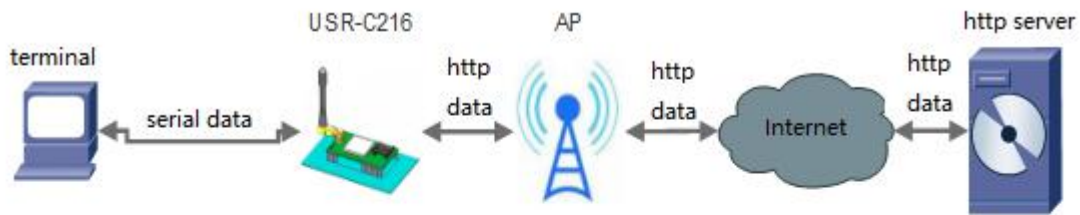


Figure 13 http client mode

GET mode:



Figure 14 GET

POST mode:

```

POST /1.php? HTTP/1.1
Host: test.usr.cn
Connection: Keep-Alive
Content-length:3

ABC
  
```

■ 1: POST
■ 2: URL
■ 3: Server address
■ 4: Custom header
■ 5: Serial data

Figure 15 POST

AT commands:

No.	Command	Intro
1	TMODE	Query/set work mode
2	HTPSV	Query/set httpd server and port
3	HTPTP	Query/set httpd request type
4	HTPHD	Query/set httpd header
5	HTPURL	Query/set httpd URL
6	HTPFT	Query/set filter header or not
7	HTPTO	Query/set time of timeout

3.3. UART Parameters

3.3.1. UART Parameters Intro

Name	Parameters
Baud rate	1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 115200, 128000, 230400, 460800
Data bit	7,8
Stop bit	1,2
Check bit	NONE EVEN ODD MARK SPACE
Flow/485	NFC FC 485

Setup by AT commands:

AT+UART=115200,8,1,NONE,NFC

3.3.2. Similar RFC2217

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.

Enable by AT commands:

AT+RFCENA=ON

The command takes effect immediately, does not need to restart, valid at this time, will not be saved, power loss.

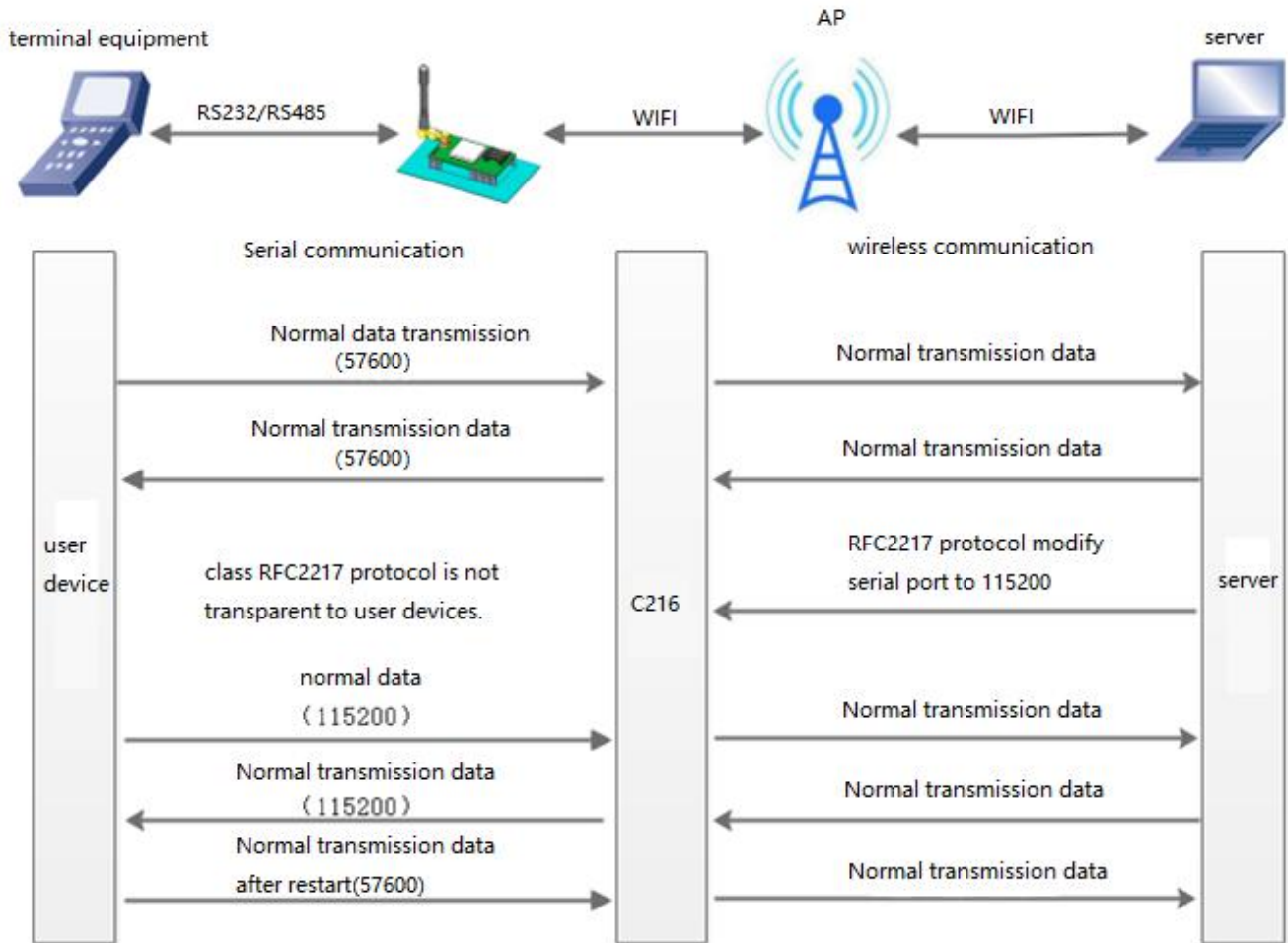


Figure 16 similar RFC2217

3.4. Extra Function

3.4.1. Search in LAN

C216 supports search in-LAN. When C216 is connected to a wireless router, users can obtain the IP address of the serial server in C216's current LAN by sending UDP broadcasts to a fixed port to realize device search and communication. It can also directly connect C216's AP to send search instructions.

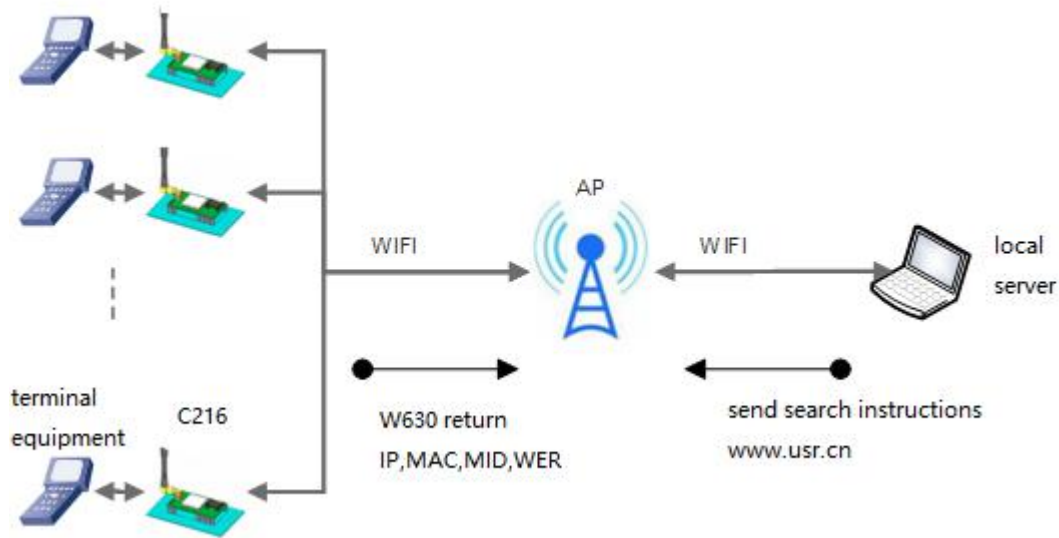


Figure 17 search in LAN

Users can set the search port and search key by AT commands:

1. Search key: **AT+ASWD=www.usr.cn**
2. Search port: **AT+SEARCH=48899**

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 C216 receives the password, if it is correct, C216 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 C216 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 C216 must be in the same LAN. If multiple STAs are connected to a router, the computer running the search tool is also connected to that router. This search tool can search all the STA.

3.4.2. TCP/UDP Client Register Function

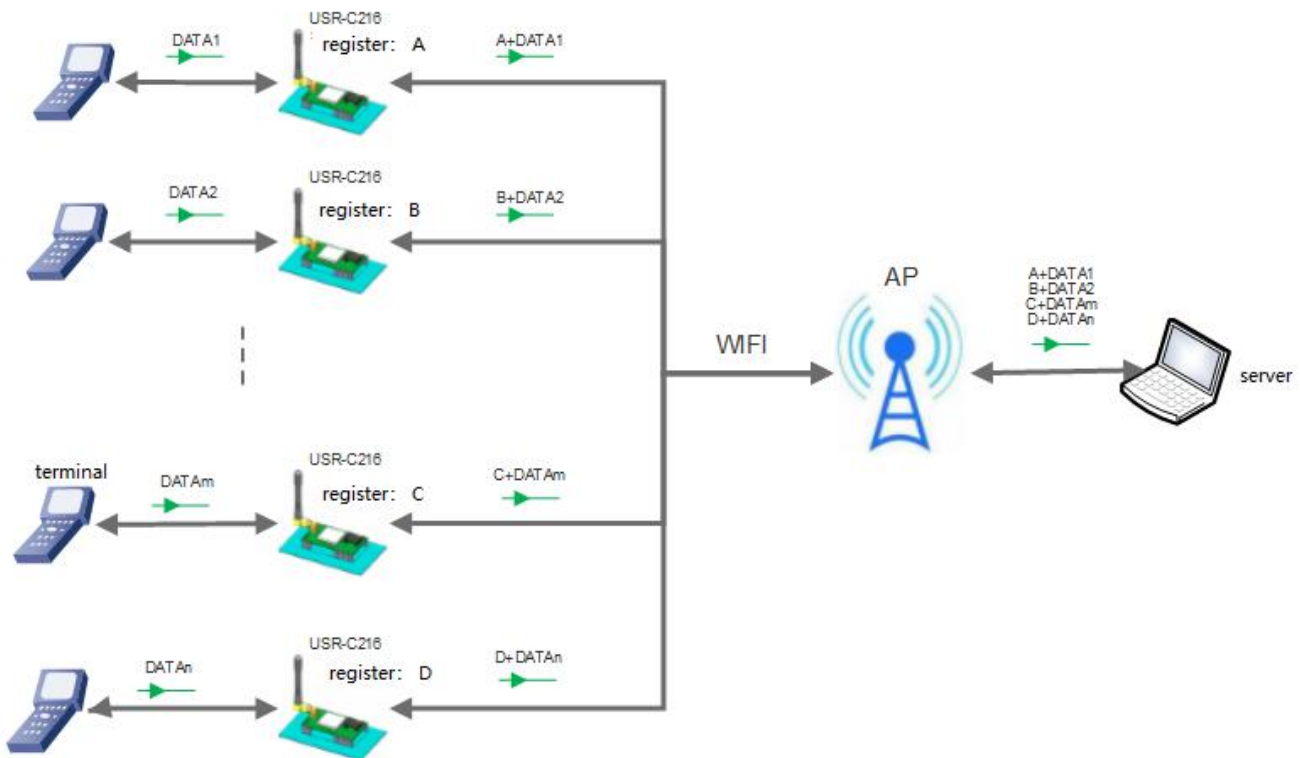


Figure 18 register package

This function is only applicable when C216 work at TCP/UDP Client.

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.

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

The relevant commands are set as follows:

No.	Command	Intro
1	REGENA	Setting the type of registration package
2	DTDID	Set the register package ID
3	REGUSR	Registration package settings
4	CLOUDID	Query/setting USR-Cloud account
5	CLOUDPW	Query/setting USR-Cloud password

3.4.3. USR-Link

When USR-C216 works in AP mode, it opens a UDP port with a port number of 48899 for receiving commands from the Fast Networking Protocol. The mobile phone can be directly connected to the WIFI network of USR-C216, query the list of SSID information and set the router SSID and password through the command of UDP protocol. After setting up, USR-C216 will automatically restart and connect to the router, then work in STA

mode.

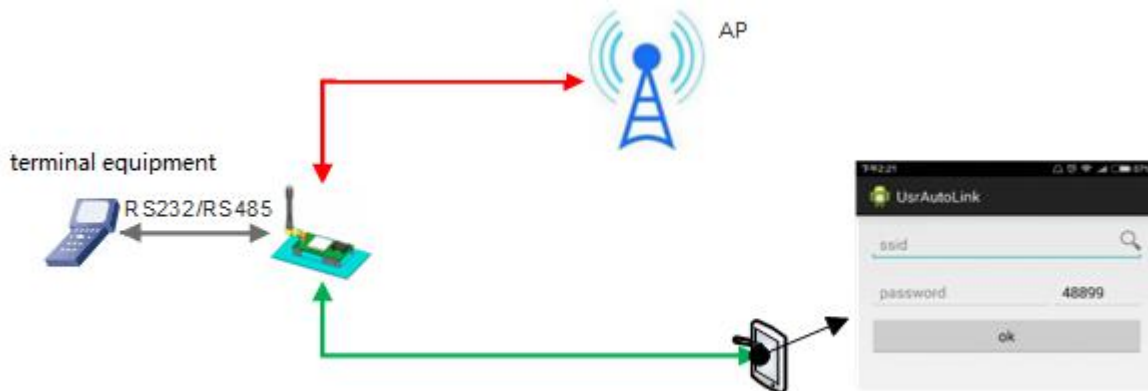


Figure 19 usr-link

3.4.4. Heartbeat Package

Note: only firmware version 2.1.8 and later can support this function.

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.

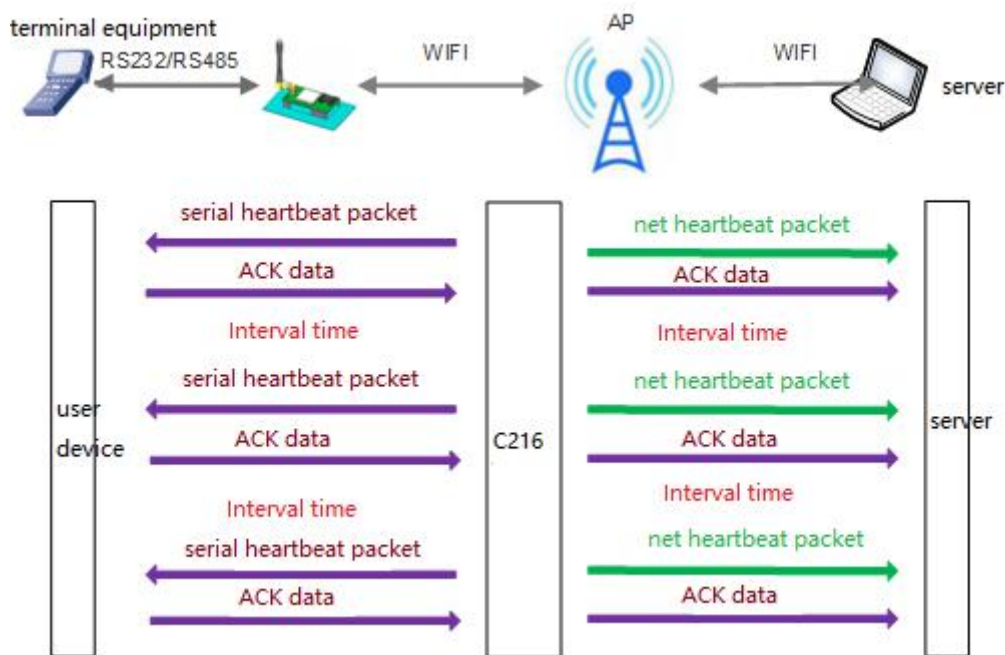


Figure 20 heartbeat package

Setup by AT commands:

No.	Command	Intro
1	HEARTEN	Query/set enable/disable heartbeat package
2	HEARTTP	Query/set the type of heartbeat package
3	HEARTDT	Query/set heartbeat data
4	HEARTTM	Query/set interval of heartbeat package

3.4.5. Customize Webpage

Note: only firmware version 2.0.7 and later can support this function.

Please contact sales.

3.4.6. Wi-Fi Connection Exception Handling

Note: only firmware version 2.2.2 and later can support this function.

There are three types of Wi-Fi exception states:

1. C216 can't ping the gateway when it work as STA three consecutive times;
2. When C216 work as AP, no STA can connect to;
3. when C216 work as AP+STA , it can't ping gateway and no STA can connect to.

This function can be set by AT+MDCH

	STA	AP	AP+STA	heartbeat interval
OFF	-	-	-	-
ON	Switch to AP+STA mode	-	1. AP+STA mode set manually by users, module does not do any operation. 2. The AP+STA mode is automatically switched by STA mode. The module tries to connect the router and restores the STA mode if the connection succeeds.	1 min
2~240	Initialize WiFi	Initialize WiFi	Initialize WiFi	2~240 min

4. Setting Method

C216 supports AT commands and webpage setting.

C216 and PC should join the same WIFI, or set the PC join the WIFI of C216. Then users can login the webpage of C216.

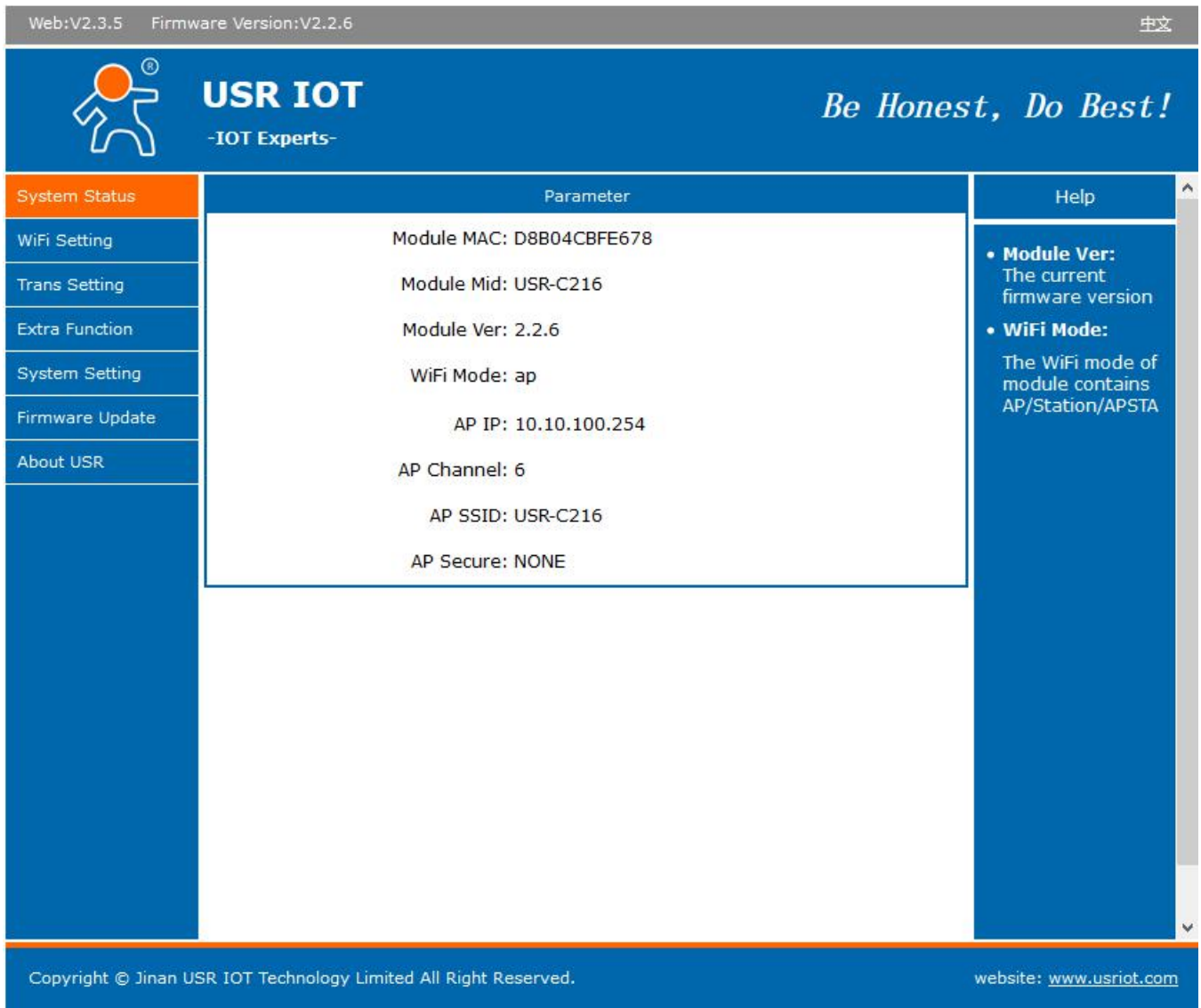
4.1. Webpage Setting

C216 default AP mode.

Parameter	Default
SSID	USR-C216
IP	10.10.100.254
Subnet mask	255.255.255.0
Account	admin
Password	admin

4.1.1. Open The Webpage

Make PC join the WIFI of C216, enter 10.10.100.254, the account and password are both admin.



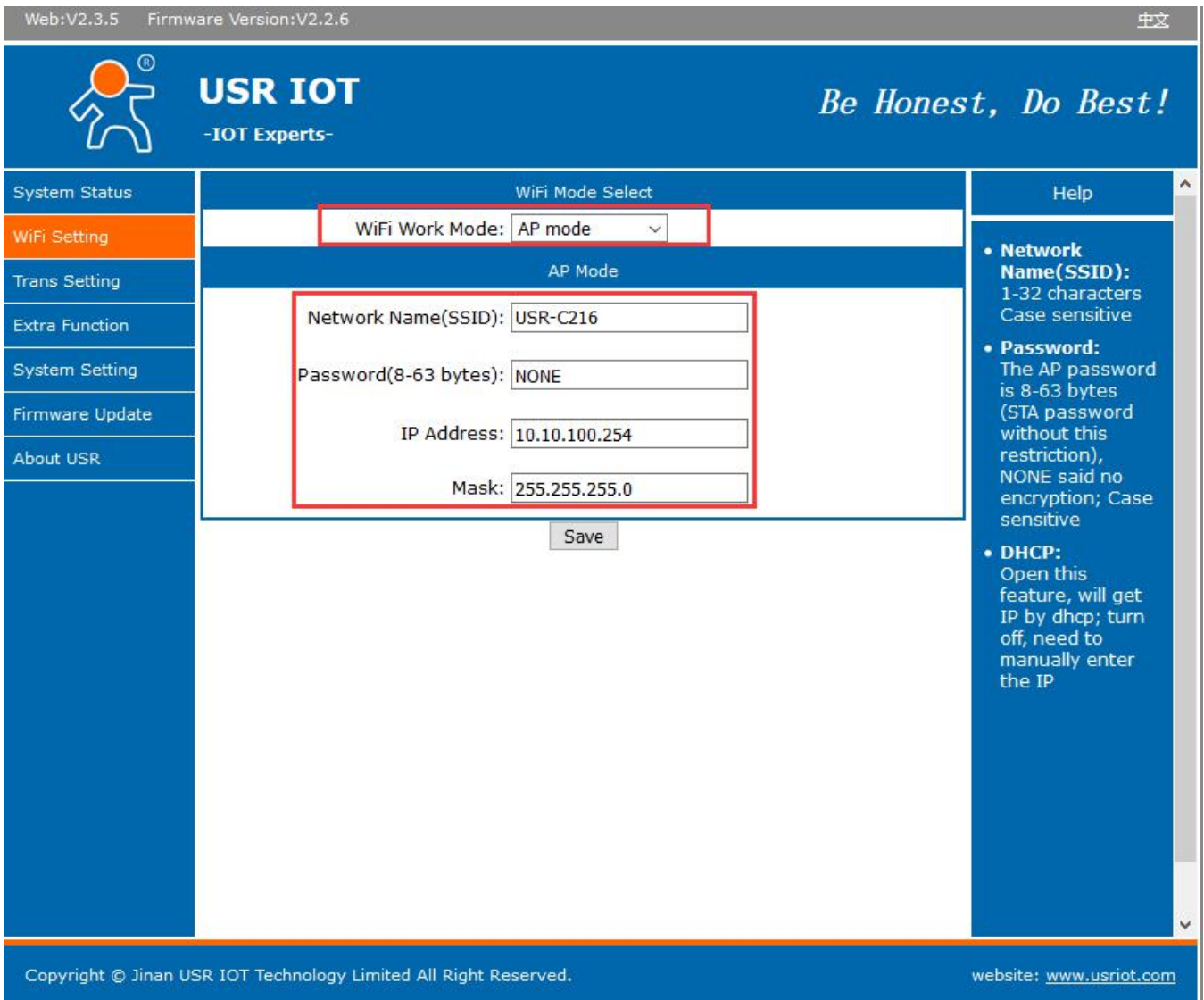
The screenshot shows the USR IOT web interface. At the top, it displays 'Web:V2.3.5' and 'Firmware Version:V2.2.6' on the left, and '中文' on the right. The main header features the USR IOT logo and the slogan 'Be Honest, Do Best!'. Below the header is a navigation menu with options: System Status (highlighted), WiFi Setting, Trans Setting, Extra Function, System Setting, Firmware Update, and About USR. The main content area is divided into three columns: 'System Status', 'Parameter', and 'Help'. The 'Parameter' column lists the following settings:

System Status	Parameter	Help
WiFi Setting	Module MAC: D8B04CBFE678	<ul style="list-style-type: none"> • Module Ver: The current firmware version • WiFi Mode: The WiFi mode of module contains AP/Station/APSTA
Trans Setting	Module Mid: USR-C216	
Extra Function	Module Ver: 2.2.6	
System Setting	WiFi Mode: ap	
Firmware Update	AP IP: 10.10.100.254	
About USR	AP Channel: 6	
	AP SSID: USR-C216	
	AP Secure: NONE	


At the bottom of the page, the footer contains 'Copyright © Jinan USR IOT Technology Limited All Right Reserved.' on the left and 'website: www.usriot.com' on the right.

Figure 21 webpage configure

4.1.2. Wi-Fi Setting



Web:V2.3.5 Firmware Version:V2.2.6 中文

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System Status

WiFi Setting

Trans Setting

Extra Function

System Setting

Firmware Update

About USR

WiFi Mode Select

WiFi Work Mode: AP mode

AP Mode

Network Name(SSID): USR-C216

Password(8-63 bytes): NONE

IP Address: 10.10.100.254

Mask: 255.255.255.0

Save

Help

- **Network Name(SSID):**
1-32 characters
Case sensitive
- **Password:**
The AP password is 8-63 bytes
(STA password without this restriction),
NONE said no encryption; Case sensitive
- **DHCP:**
Open this feature, will get IP by dhcp; turn off, need to manually enter the IP

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Figure 21 wifi setting

Users can configure work mode , network SSID , password...etc

4.1.3. Transmission Setting

Web:V2.3.5 Firmware Version:V2.2.6 中文

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System Status	Serial Port Setting	Help
WiFi Setting	Baud Rate (1200-460800 bps): <input type="text" value="115200"/> bps	<ul style="list-style-type: none"> • Baud Rate: 1200~460800bps • CTSRTS/485: Default is NFC • Port: 1~65535 • Server IP Address: When the module is Client, the remote server address to be connected; When it's TCP server, the parameter is invalid; The parameter can be IP or domain name
Trans Setting	Data Bit: <input type="text" value="8"/> bit	
Extra Function	Check Bit: <input type="text" value="None"/>	
System Setting	Stop Bit: <input type="text" value="1"/> bit	
Firmware Update	CTSRTS/485: <input type="text" value="NFC"/>	
About USR	Network Setting	
	Mode: <input type="text" value="Transparent"/>	
	SocketA Connect Setting	
	Protocol: <input type="text" value="TCP-Server"/>	
	Port: <input type="text" value="8899"/>	
	Server IP Address: <input type="text" value="10.10.100.254"/>	
	SocketB Connect Setting	
	Protocol: <input type="text" value="OFF"/>	
	Port: <input type="text" value="8899"/>	
	Server IP Address: <input type="text" value="10.10.100.254"/>	
	<input type="button" value="Save"/>	


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Figure 22 transmission setting

Users can setup baud rate, data bit...etc serial port parameters; choose work mode, and set the socket function.

4.1.4.Extra Function

Web:V2.3.5 Firmware Version:V2.2.6
中文



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System Status WiFi Setting Trans Setting Extra Function System Setting Firmware Update About USR	<div style="text-align: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;">RFC2117 function</div> RFC2117: <input type="text" value="Disable"/> <div style="text-align: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;">Search in Network</div> Search Port: <input type="text" value="48899"/> Search Name: <input type="text" value="www.usr.cn"/> <div style="text-align: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;">Regist Mechanism</div> Regist Content: <input type="text" value="OFF"/> Regist Frequency(Just for TCPC): <input type="text" value="FIRST"/> USER Register(Within 32Byte): <input type="text" value="USR-C216"/> CLOUD ID(20 Figure): <input type="text" value="00000000000000000000"/> CLOUD Password(within 8Byte): <input type="text" value="password"/> <div style="text-align: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;">Module MID</div> MID: <input type="text" value="USR-C216"/> <div style="text-align: center; margin-top: 10px;"> <input type="button" value="Save"/> </div>	<div style="text-align: center; border-bottom: 1px solid #ccc; padding-bottom: 5px;">Help</div> <ul style="list-style-type: none"> • RFC2117: Automatic Baud Rate Function; Please cooperate with "USR-VCOM.exe" to use • Search Name: Up to 20 bytes • Regist Mechanism Registration Packet Mechanism;Used to send the ID/MAC to the server;Work only in TCP client • USR CLOUD: ID: 20 bytes Password: within 8 bytes
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Figure 23 extra setting

The heartbeat and register package can be set on this page.

4.1.5. Firmware Upgrade

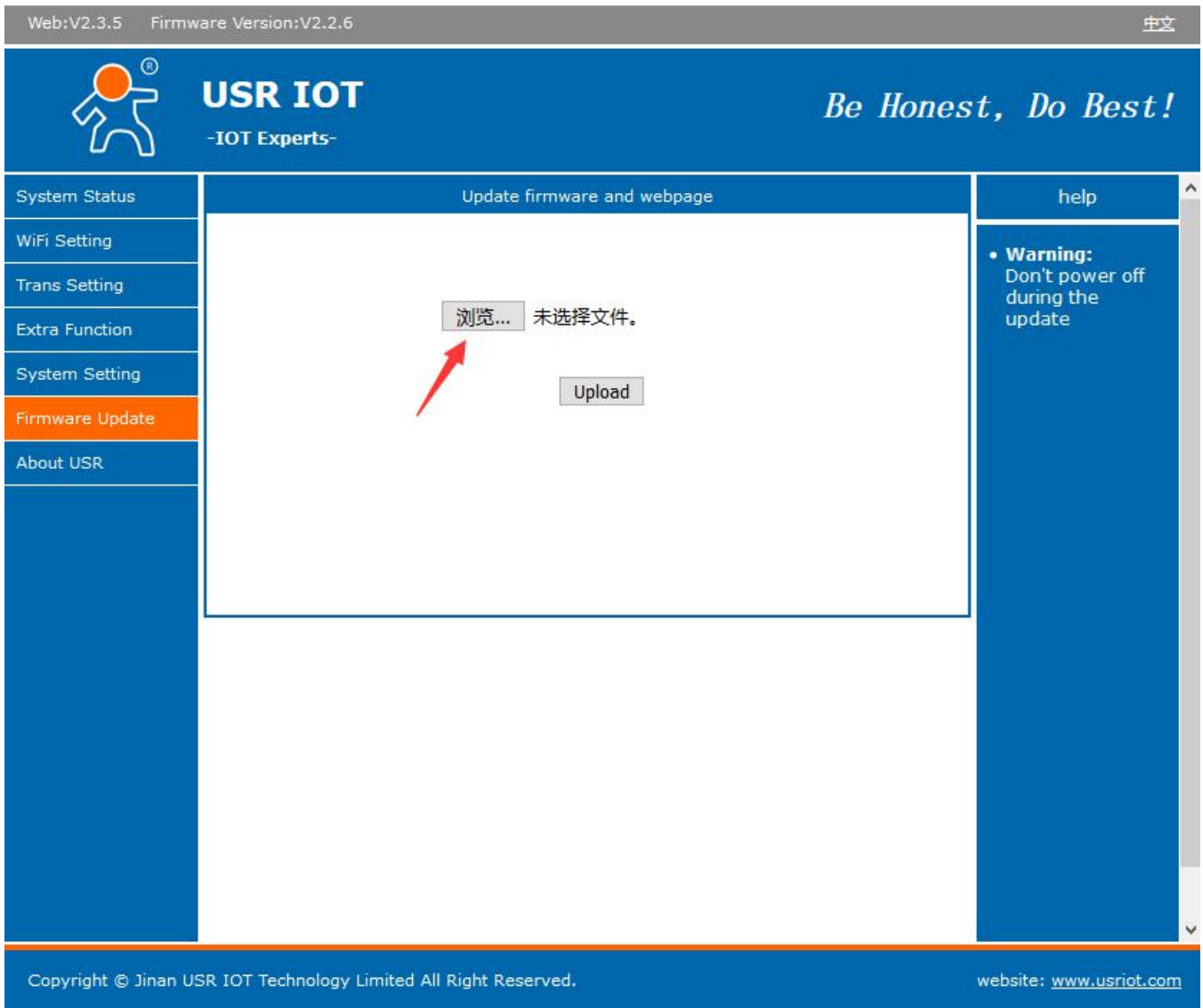


Figure 24 upgrade firmware

4.1.6. Standby Upgrade Page

Enter 10.10.100.254/iweb.html

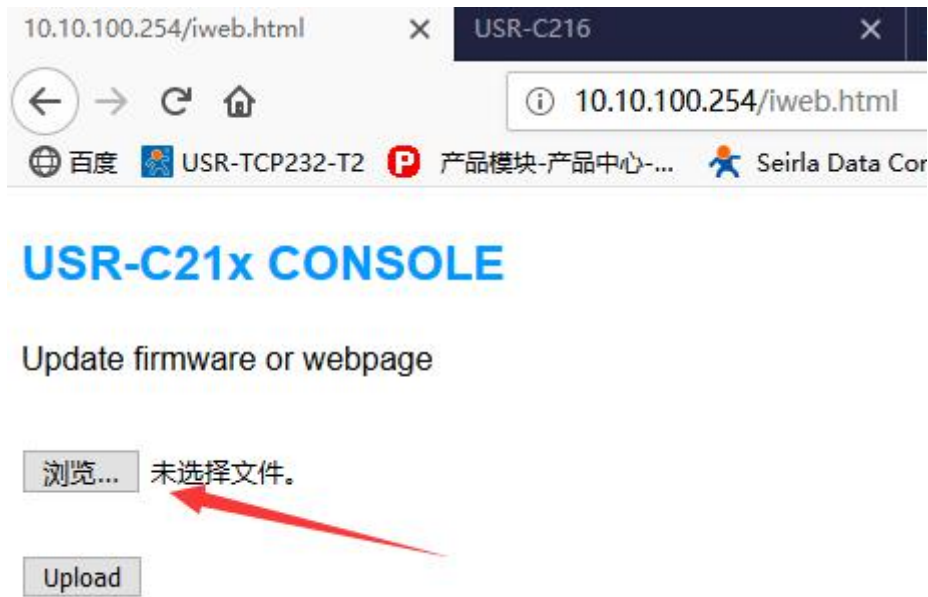


Figure 25 upgrade firmware

4.2. AT Command Setting

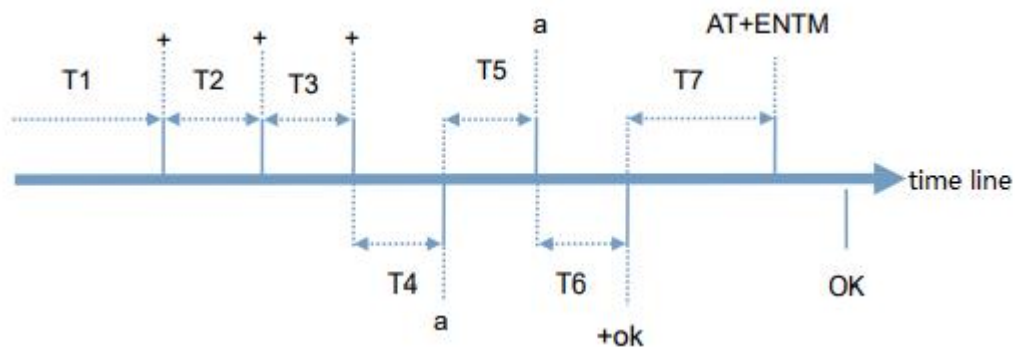
Steps to switch from other modes to command mode:

1. send +++ from serial port to module, when module receive +++, it will return "a";
2. after serial port receive a ,send another "a" to module,module will return"+OK"when receive,then enter AT command mode.

Users can send"+++a ",when module return"+OK",it work at AT command mode.

Illustration:

Send +++ and "a" need finish in time:



Requirement:

T1> packing interval

T2,T3<=300ms

T5<=3s

You can switch from command mode to transparent mode when you enter AT+ENTM and "enter key" in command mode.

4.2.1. Error Table

Error code	Intro
-1	Invalid command format
-2	Invalid command
-3	Invalid operate code
-4	Invalid parameters
-5	Operation not permitted

4.3. AT Commands

Command	Function
E	Open/close instruction recall
WKMOD	Query / setup work mode
ENTM	Exit command mode
MID	Query module ID
RELD	Restore factory settings
Z	Reboot module
VER	Query software version
CFGTF	Copy user configuration parameters to factory configuration settings
UART	Query/setup the parameter of serial port
UARTTE	Set/query the interval of every two bytes
NETP	Query/setup the parameter of net protocol
TCPTO	Set/query timeout of socket A
TCPLK	Query TCP connection status
TCPDIS	Set/query socket A auto-connection or not, or disconnect
SOCKB	Set/query socket B parameters
TCPTOB	Set/query timeout of socket B
TCPLKB	Query socket B status
TCPDISB	Set/query socket B auto-connection or not, or disconnect
WSKEY	Set / query encryption parameters in WIFI STA mode
WSSID	Set / query AP SSID in WIFI STA mode
WANN	Setting / querying WAN settings is valid only in STA mode.
WSMAC	Query MAC of STA
WSLK	Query wireless connection status of STA
WSLQ	Query wireless signal intensity of STA
WSCAN	Search AP
WSDNS	Query/set DNS server address in static configure when C216 work as STA
LANN	Setting / querying LAN settings is valid only in AP mode.
WAP	Setting / querying parameters in WIFI AP mode

WAKEY	Set / query encryption parameters in WIFI AP mode
WALK	Query the MAC of STA which connect to C216
TMODE	Set / query data transfer mode (transparent transport mode or protocol mode)
HTPSV	Set / query server address and IP (HTTPD Client)
HTPTP	Set / query HTTP request type
HTPHD	Set / query HTTP header (HTTPD Client)
HTPURL	Set / query URL (HTTPD Client)
HTPFT	Filter the header or not
HTPTO	Query/set http request timeout time
PLANG	Set/query the language of webpage
WEBU	Set / query landing parameters for WEB pages
DTDDIS	Enable/disable D2D function
DTDID	Set/query D2D ID
CLOUDEN	Enable/disable USR-Cloud
CLOUDID	Query/set cloud ID
CLOUDPW	Query/set cloud password
REGDIS	Enable/disable customize register packet
REGUSR	Query/set the content of register package
REGENA	Query/set register packet
DTTY	Query/set register packet mechanism
PING	Network ping command
WRMID	Set the ID of C216
SEARCH	Set/query C216 search port
ASWD	Set/query C216 search key
USERVER	Query custom version number
RPTMAC	Query report MAC function open or not
WRRPTMAC	Set the report MAC function
NTPEN	Enable/disable NTP network clock
NTPTM	Query the time of network clock
NTPSER	Query/set NTP server and time zone
NTPRF	Query/set interval of NTP calibration time
WAPM	Set display the MAC suffix or not
HEARTEN	Query/set enable/disable heartbeat packet function
HEARTTP	Query/set the send type of heartbeat packet
HEARTDT	Query/set heartbeat packet data
HEARTTM	Query/set the interval of sending heartbeat packet
MDCH	Query/set Wi-Fi exception handling status

6.Contact Us

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8.Update History

Edition	Describe
V1.0.0	2019-3-13 establish