USR-G800-42 User Manual

File Version: V1.0.5

CONTENTS

1. Quick Start

USR-G800-42 is a 4G wireless router which provides a solution for user's device to access 4G network. It is based on industrial high-performance embedded structure. And plays an important role in data transmission fields such as smart home, industrial control etc.

This chapter aims at getting start USR-G800-42 quickly. It's recommended that user read this chapter systemically and operate it according to instructions.

Any questions can be submitted to our customer support center: **Http://h.usriot.com**

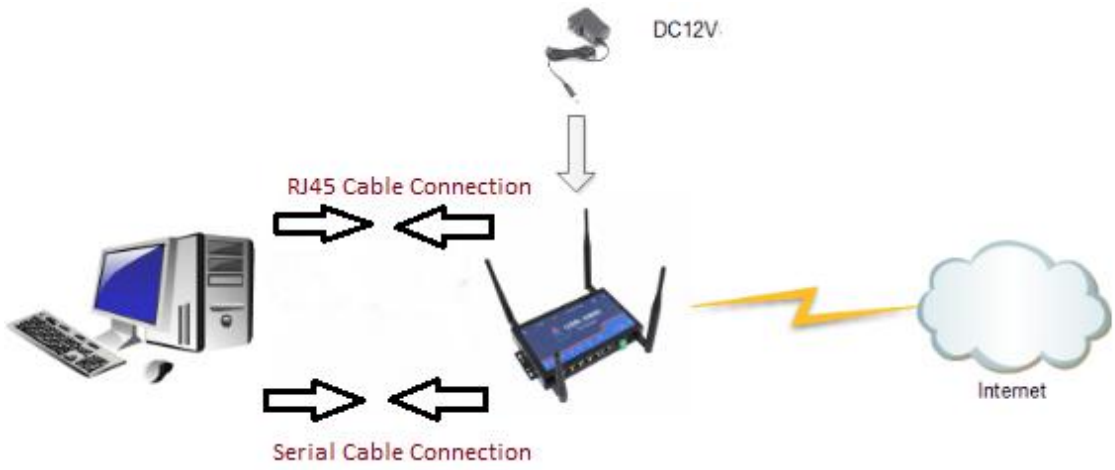
1.1. Hardware Tset Environment

Connect USR-G800-42 with PC by RS232 serial cable and RJ45 cable.

<Note>:

1. RS232 serial cable have to be female to female cross line
2. Four LAN ports, one of them (LAN1-LAN4) can be connected with PC

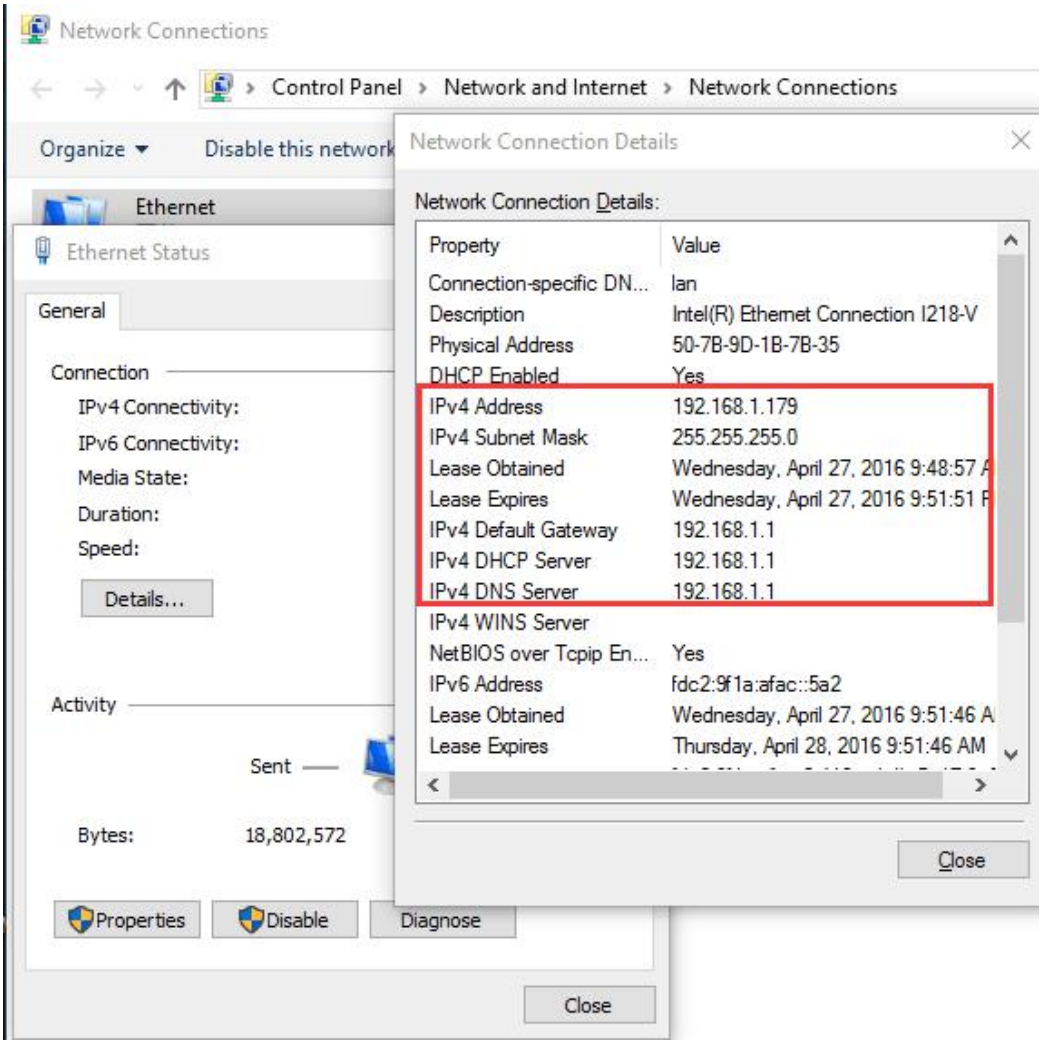
Hardware connection as below:



1.2. Network Connection

Please refer to the following steps:

1. Put SIM card into router
2. Install WIFI antenna and 4G antenna
3. Connect PC and router by RJ45 cable, anyone of LAN port (LAN1-LAN4) can be connected.
4. Configure PC's network connection. Choose to obtain IP automatically, such as the below:



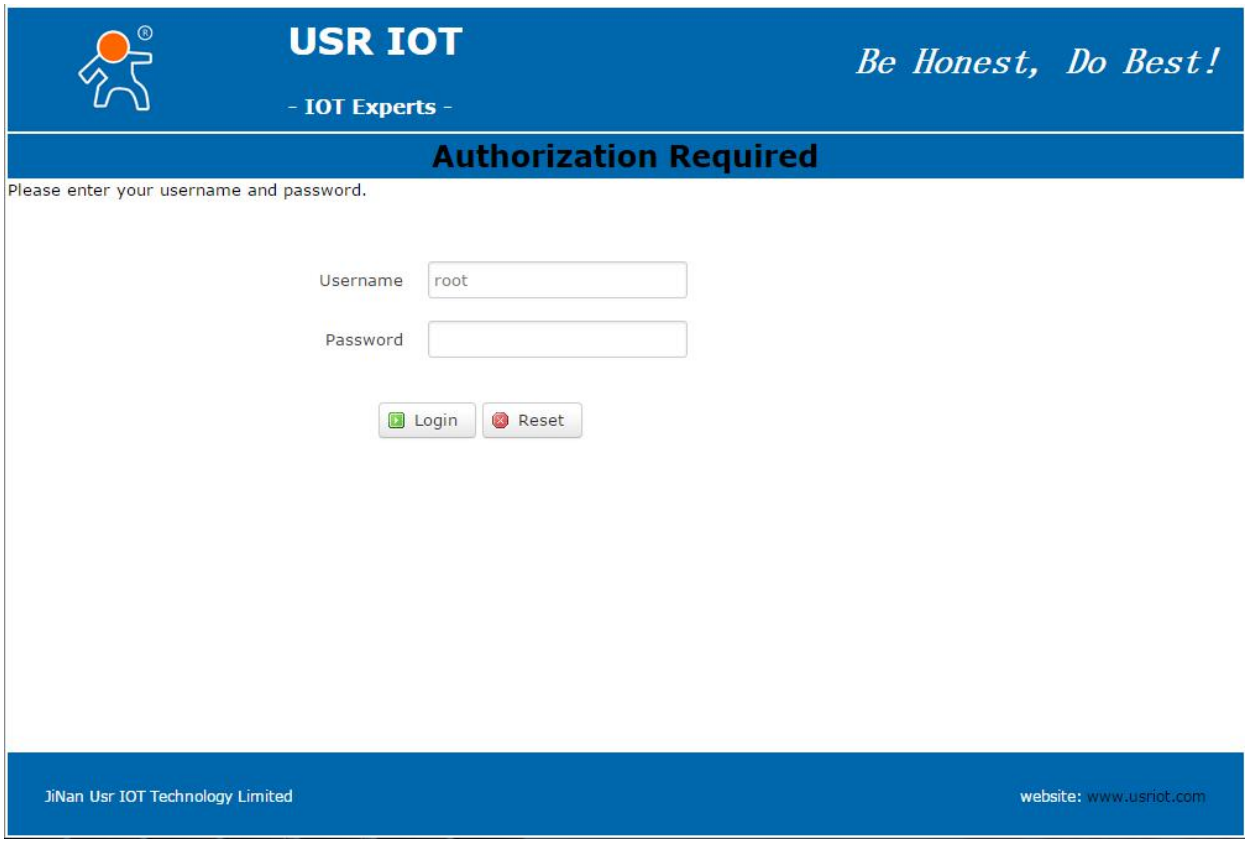
5. Power on router by DC 12V
6. Indicate that the connection is successful when indicating light of USR-G800-42 starts to blink

1.3. Data Transmission Test

Parameter of USR-G800-42:

Parameter	Primary Value
User's Name	root
Password	root
Self IP Address	192.168.1.1

Enter **http://192.168.1.1** to open web page of router:



2. Product Introduction

USR-G800-42 is a 4G wireless router which provides a solution for user's device to access 4G network. It is based on industrial high-performance embedded structure. And plays an important role in data transmission fields such as smart home, industrial control etc.

USR-G800-42 supports one WAN port, four LAN ports, WLAN network and 4G. It also supports data transparent transmission between RS232 serial port and 4G network.

2.1. Product Feature

- It has one WAN port and four LAN ports
- Support WLAN wireless network
- Support 4G module with Mini-PCIE interface.

  TD-LTE: Band 38/39/40/41

  FDD-LTE: Band 1/3

  WCDMA: Band 1 / 8

  TD-SCDMA: Band 34/39

  GSM/GPRS/EDGE: Band 3/8
- Multiple indicating lights
- Data transparent transmission between RS232 and 4G network
- Web page configuration
- A key to restore factory setting
- Both LAN and WAN port with a rate of 10/100Mbps
- Support VNP (PPTP/L2TP), PPPOE,DHCP
- Support APN card, SIM card slot is in drawer type
- Firewall function and static router configured
- Support DDNS and port-forwarding
- Traffic service, and the traffic rate can be limited according to interface or IP
- Support dual SSID of WIFI
- Support WIFIDOG

2.2. USR-G800-42 Parameter

■ Product Parameter

Product Specification		
Item		Description
Product Name	USR-G800-42	4G Wireless Router
Wired Ethernet	WAN Port	1 WAN Port
	LAN Port	4 LAN Port
	Both LAN & WAN ports support 10/100Mbps, Auto MDI/MDIX	
WIFI	Wireless Standard	802.11b/g/n
	Antenna	WIFI Antenna * 2
4G Module	TD-LTE	3GPP R9 Download rate at 150Mbps Upstream rate at 50Mbps
		Band 38/39/40/41
	FDD-LTE	3GPP R9 Download rate at 150Mbps Upstream rate at 50Mbps
		Band 1/3
	WCDMA	HSPA+ Download rate at 21Mbps Upstream rate at 5.76Mbps
		Band 1/8
	TD-SCDMA	3GPP R9 Download rate at 2.8Mbps Upstream rate at 2.2Mbps
		Band34/39
	GSM/GPRS/EDGE	Download rate at 384Kbps Upstream rate at 128Kbps
		Band 3/8
SIM & Antenna	SIM/USIM card	Standard 6-Pin SIM card interface,3V/1.8V SIM card
	Antenna	3/4G full frequency antenna * 2
Button	Reload	A key to restore factory setting
Indicating light	Status	Power, WIFI, 4G, WAN*1，LAN*4
Serial port	RS232	DB9 Male Plug, RS232 power level
	Function	Data transparent transmission between RS232 and Ethernet

Temperature	Work temperature	-20C~70C
	Store temperature	-40C~75C
Moisture	Work moisture	10%~90%
	Store moisture	5%~90%

■ Consumption Parameter

The following data is obtained from the test in the situation of full-speed working, testing is based on the connection of WIFI and one LAN port ,10Kbyte/s data transmission speed.

Test Items（4G Router）	Power supply	Average current	Maximum current
WIFI on full-speed communication	DC12V	175mA	289mA
LAN Port on full-speed communication	DC12V	169mA	245mA

Consumption value is obtained under 12V power supply and full-speed working:

Average consumption: 2.1W; Max consumption: 3.5W.

Average current:175mA; Maximum current: 289mA.

2.3. Hardware Description

Hardware description is as below:

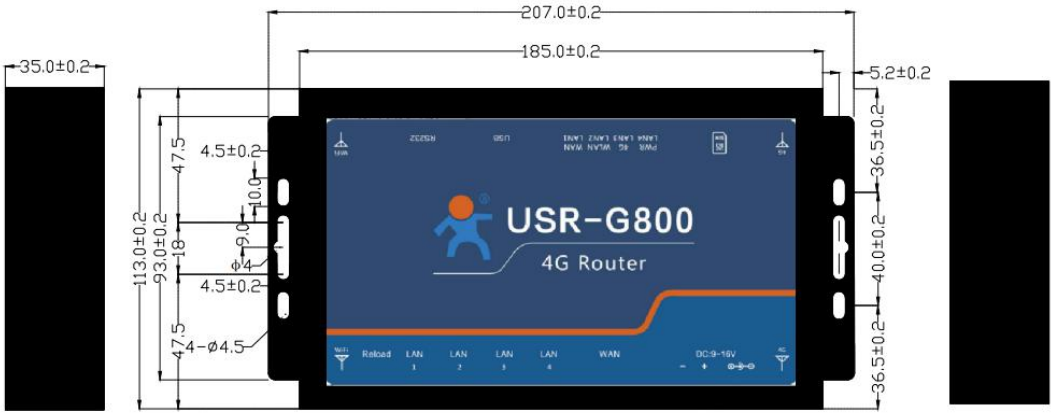
No.	Name	Remarks
1	DC power supply	DC 9~16V Standard 5.5*2.1 power adapter
2	Power terminal	DC 9~16V, green, 5.08-2
3	WAN Port	10/100Mbps,support Auto MDI/MDIX
4	LAN Port（1~4）	10/100Mbps,support Auto MDI/MDIX
5	DB9 Male Port	RS232 port, data transmitted between serial and ethernet
6	USB Port	Reserved
7	Indicating light	8 indicating lights,details please refer to 3.7 chapter

8	SIM card seat	SIM card slot is in drawer type. Need use a sharp object to push yellow button when you put SIM card.
9	Reload	Press for more than 3s and then release to restore factory setting
10	WIFI antenna	WIFI antennas *2, near to reload key and DB9 port
11	3/4G full frequency antenna	Antenna for 4G module, near to SIM card and power supply

<Note>

Please note that the difference between WIFI and 4G antenna.

2.4. Size Description

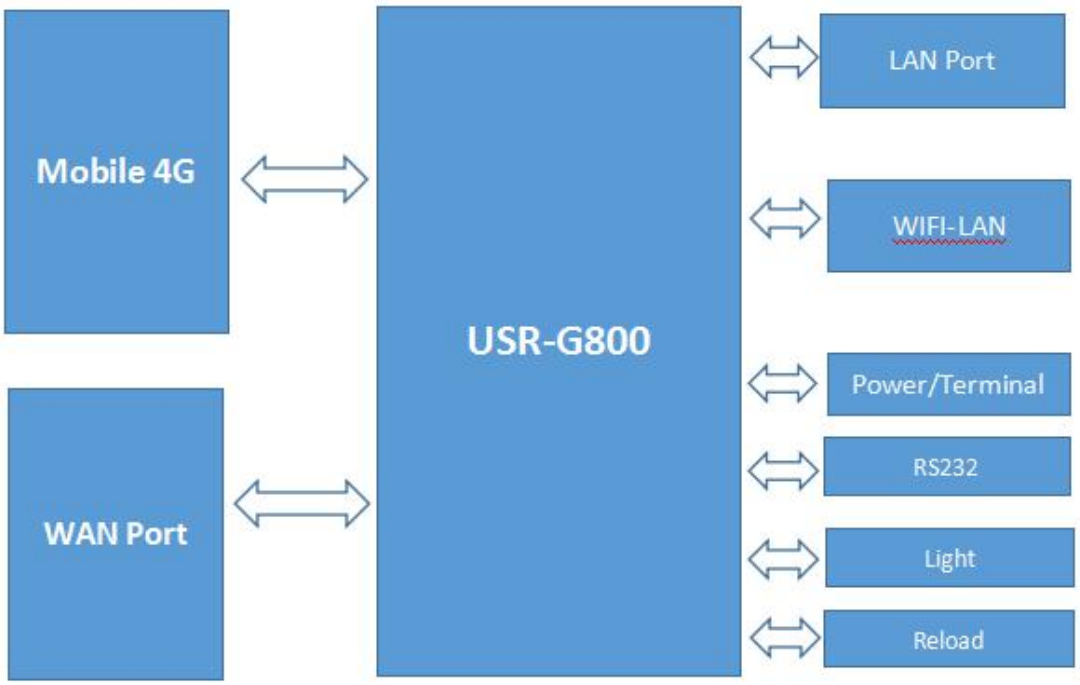


Note:

- Sheet metal casing, PCB is fastened onto the bottom with screws
- Settled holes for C45 Din rail in the two sides
- Size at 207 * 113 * 35mm (Not including power termial, antenna)

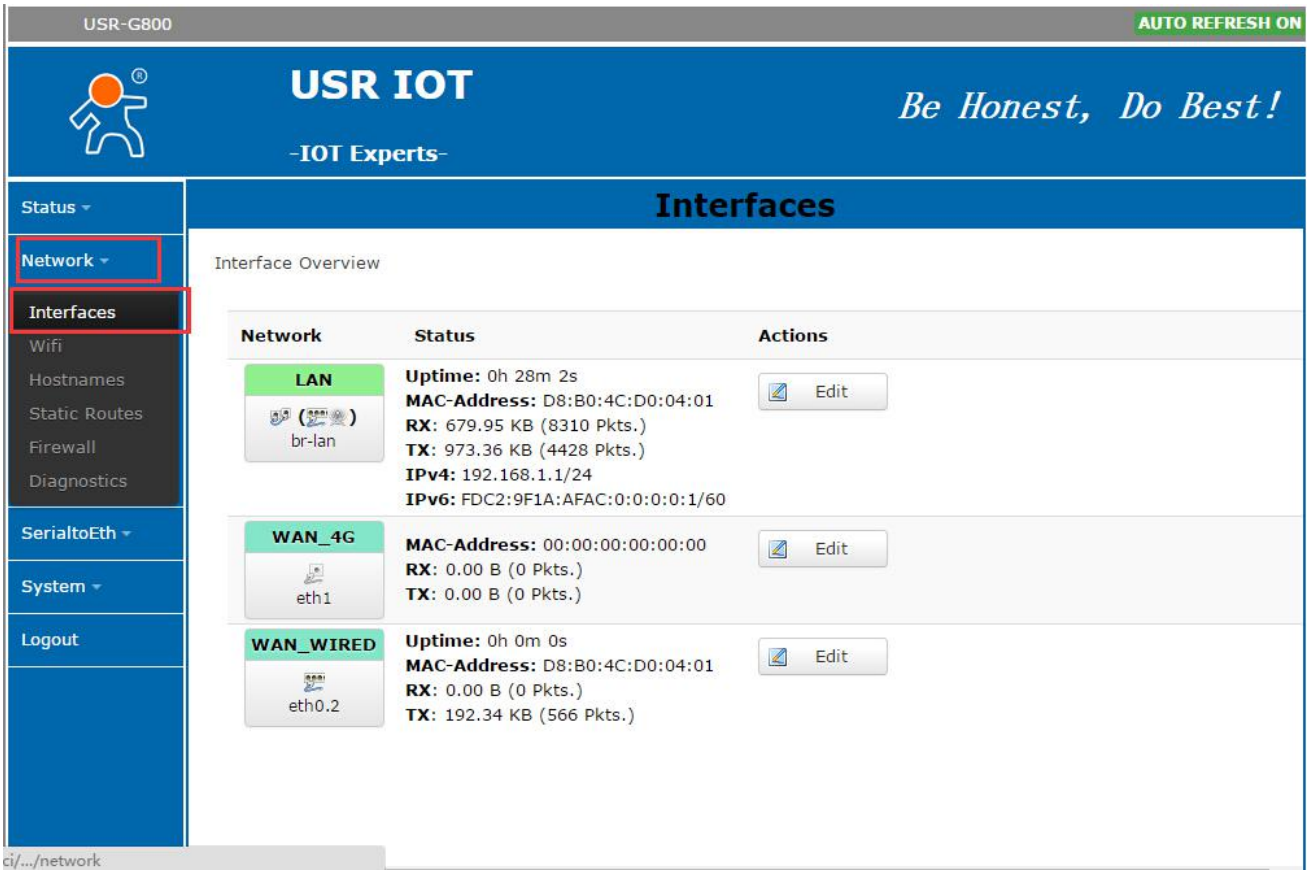
3. Product Function

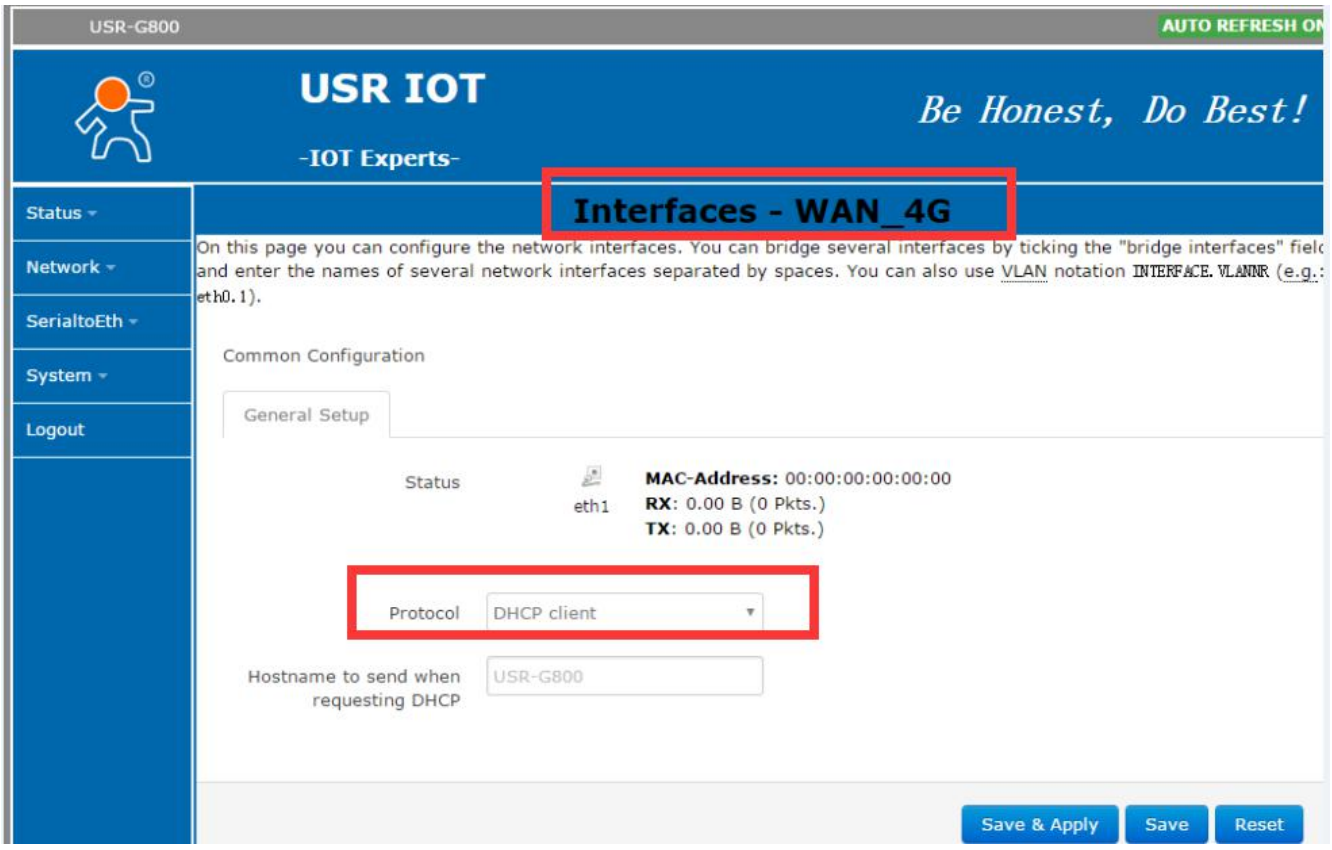
This chapter introduces all function of USR-G800-42, basic frame:



3.1. 4G Interface

USR-G800-42 support 4G communication module interface which can be used to visit outer networks.


USR-G800
AUTO REFRESH ON
USR IOT
-IOT Experts-
Be Honest, Do Best!
Status
Network
Interfaces
Wifi
Hostnames
Static Routes
Firewall
Diagnostics
SerialtoEth
System
Logout
Interfaces
Interface Overview
Network
Status
Actions
LAN
br-lan
Uptime: 0h 28m 2s
MAC-Address: D8:B0:4C:D0:04:01
RX: 679.95 KB (8310 Pkts.)
TX: 973.36 KB (4428 Pkts.)
IPv4: 192.168.1.1/24
IPv6: FDC2:9F1A:AFAC:0:0:0:0:1/60
Edit
WAN_4G
eth1
MAC-Address: 00:00:00:00:00:00
RX: 0.00 B (0 Pkts.)
TX: 0.00 B (0 Pkts.)
Edit
WAN_WIRED
eth0.2
Uptime: 0h 0m 0s
MAC-Address: D8:B0:4C:D0:04:01
RX: 0.00 B (0 Pkts.)
TX: 192.34 KB (566 Pkts.)
Edit
ci/.../network


USR-G800
AUTO REFRESH ON
USR IOT
-IOT Experts-
Be Honest, Do Best!
Status
Network
SerialtoEth
System
Logout
Interfaces - WAN_4G
On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field
and enter the names of several network interfaces separated by spaces. You can also use VLAN notation INTERFACE.VLANNR (e.g.:
eth0.1).
Common Configuration
General Setup
Status
eth1
MAC-Address: 00:00:00:00:00:00
RX: 0.00 B (0 Pkts.)
TX: 0.00 B (0 Pkts.)
Protocol
DHCP client
Hostname to send when requesting DHCP
USR-G800
Save & Apply
Save
Reset

<Note>

- Mini-PCIE hardware interface
- Support the below band:

  TD-LTE: Band 38/39/40/41

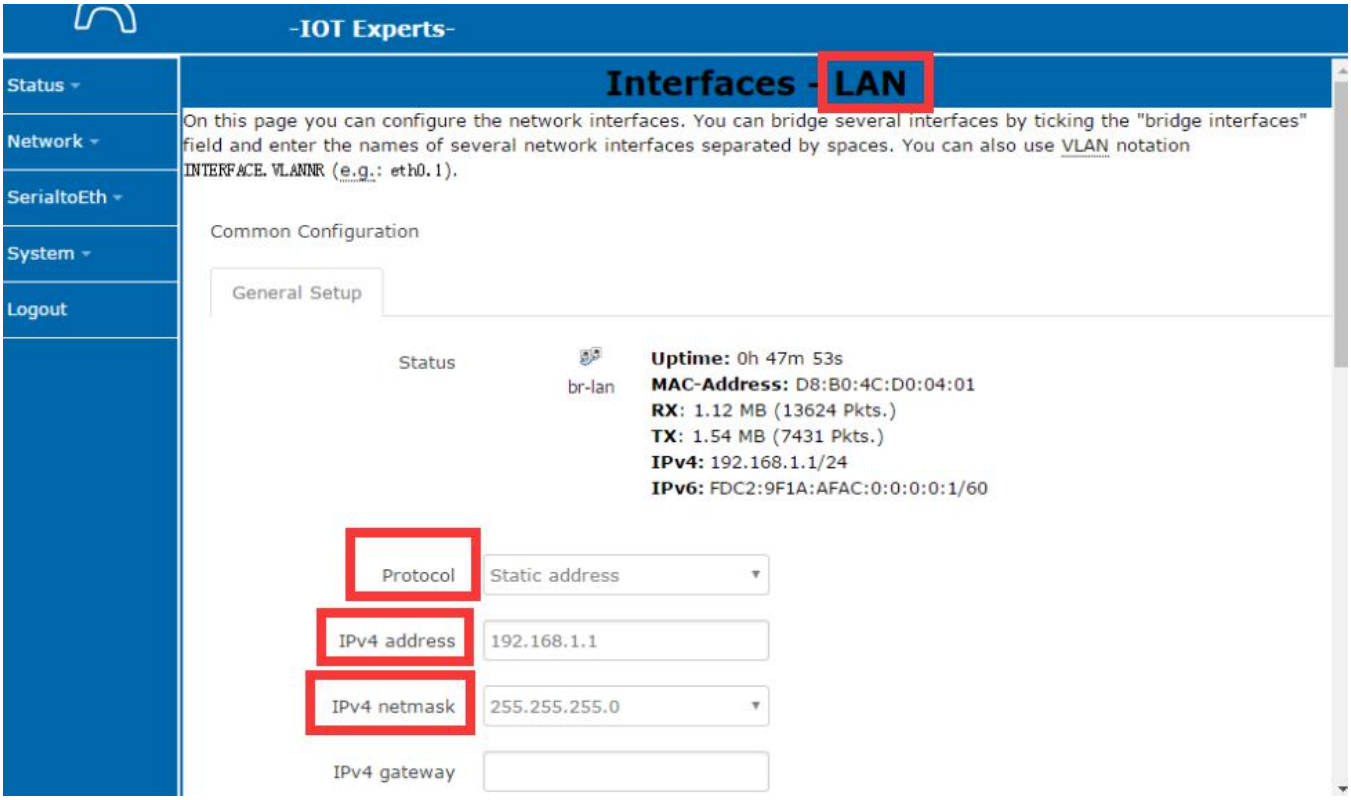
  FDD-LTE: Band 1/3

  WCDMA: Band 1 / 8

  TD-SCDMA: Band 34/39

  GSM/GPRS/EDGE: Band 3/8
- Protocol should be chosen for DHCP (default selection)
- Router will prefer using 4G network, and then WAN port

3.2. LAN Interface

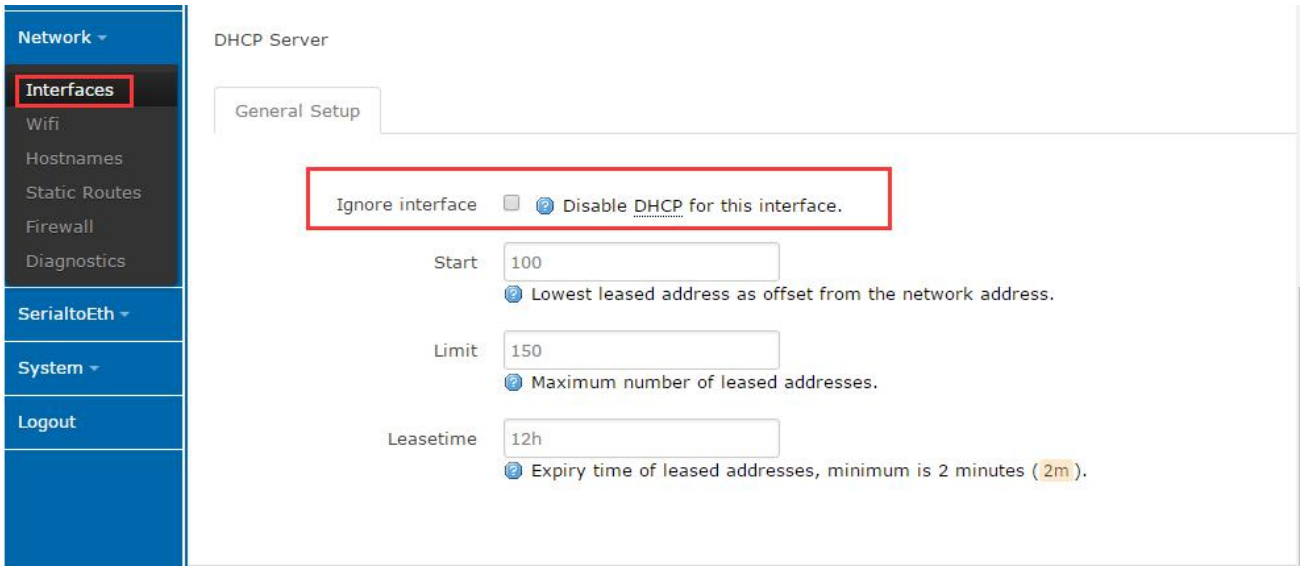


LAN port is under local area network.

- 4 LAN Ports
- Default static IP 192.168.1.1, subnet mask 255.255.255.0. User can revise this parameters, such as, modify static IP as 192.168.2.1
- LAN port and WAN port is interchangeable

3.2.1. DHCP Function

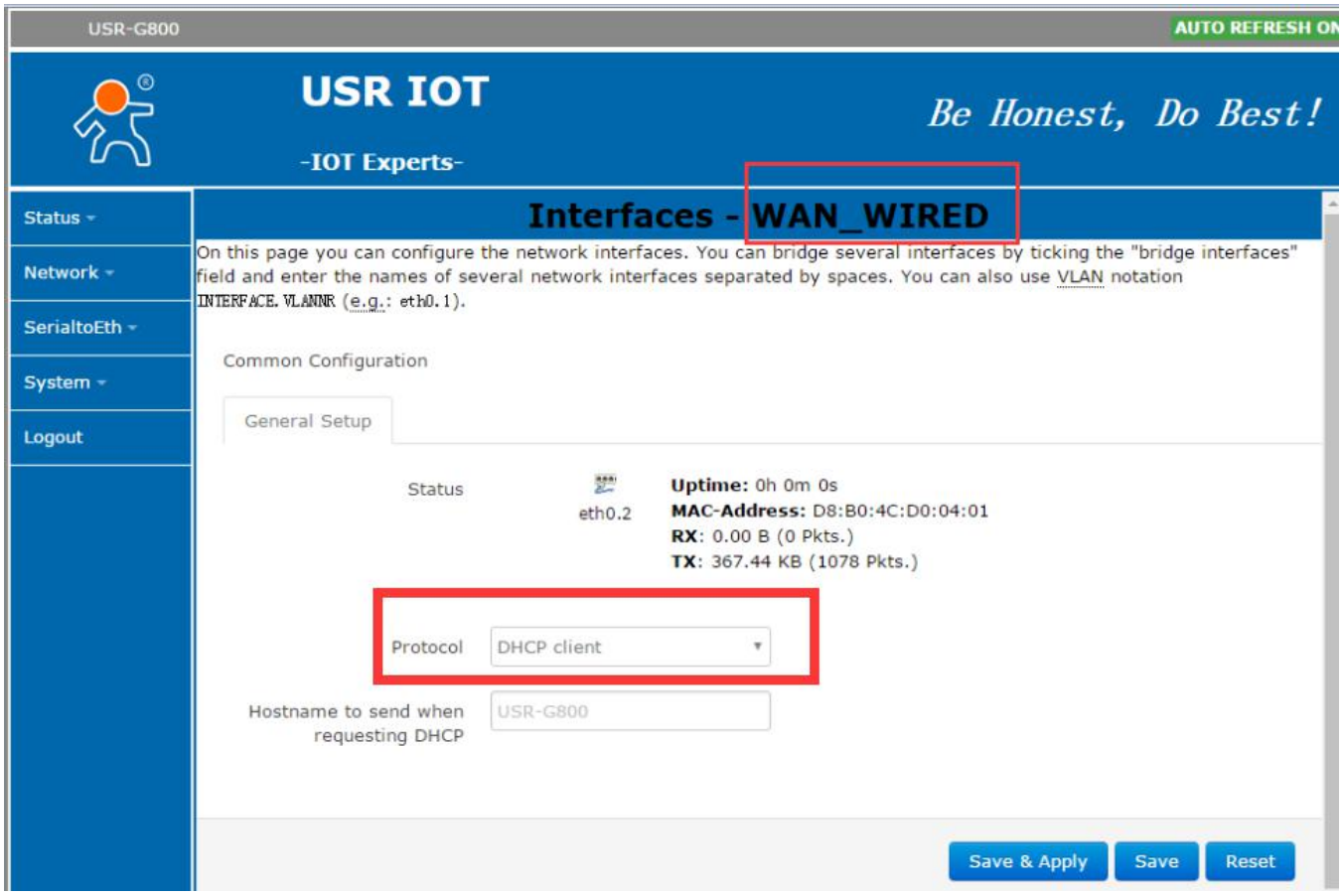
DHCP server function of LAN port defaults to be open, all the network device what connected to LAN port can obtain IP address automatically



<Noted>

- Start & end address and address lease time of DHCP pool can be adjusted.
- Scope of default DHCP 192.168.1.100 - 192.168.1.250.
- Default lease time is 12 hours

3.3. WAN Interface



<Note>

- One WAN port
- Support DHCP client and static IP
- The way to obtain default IP is DHCP client

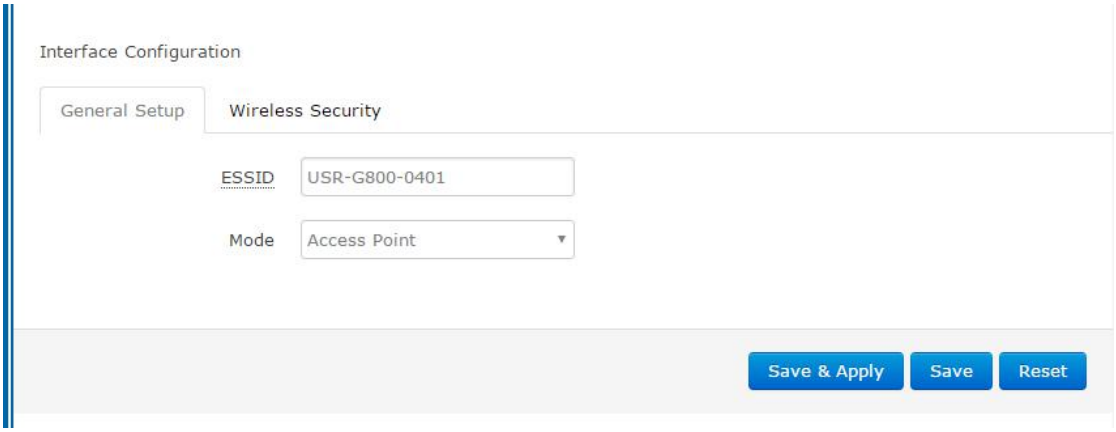
3.4. WLAN Network

It mean Local wireless local area network. Web page as below:

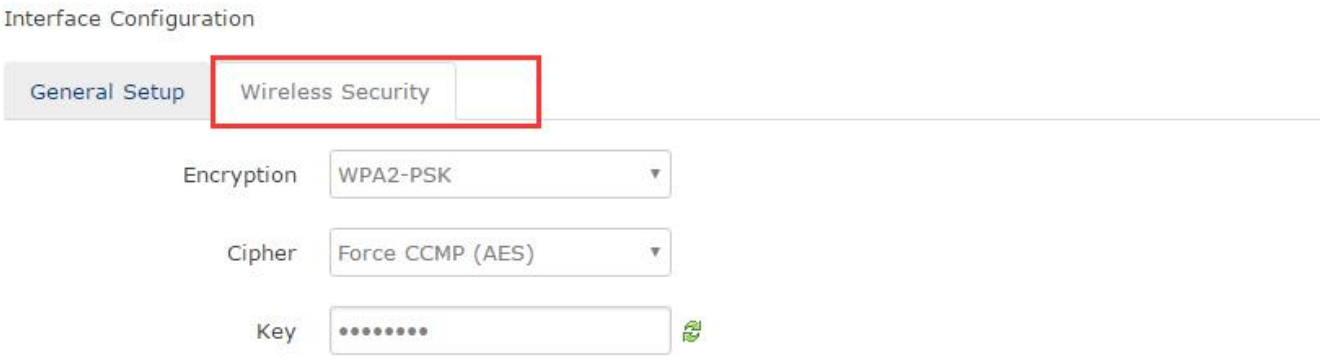
Default parameter:

Default Parameter	Value
SSID	USR-G800-XXXX XXXX is MAC address
Password	12345678
Channel	Auto
Band Width	40MHz
Encryption	WPA2-PSK

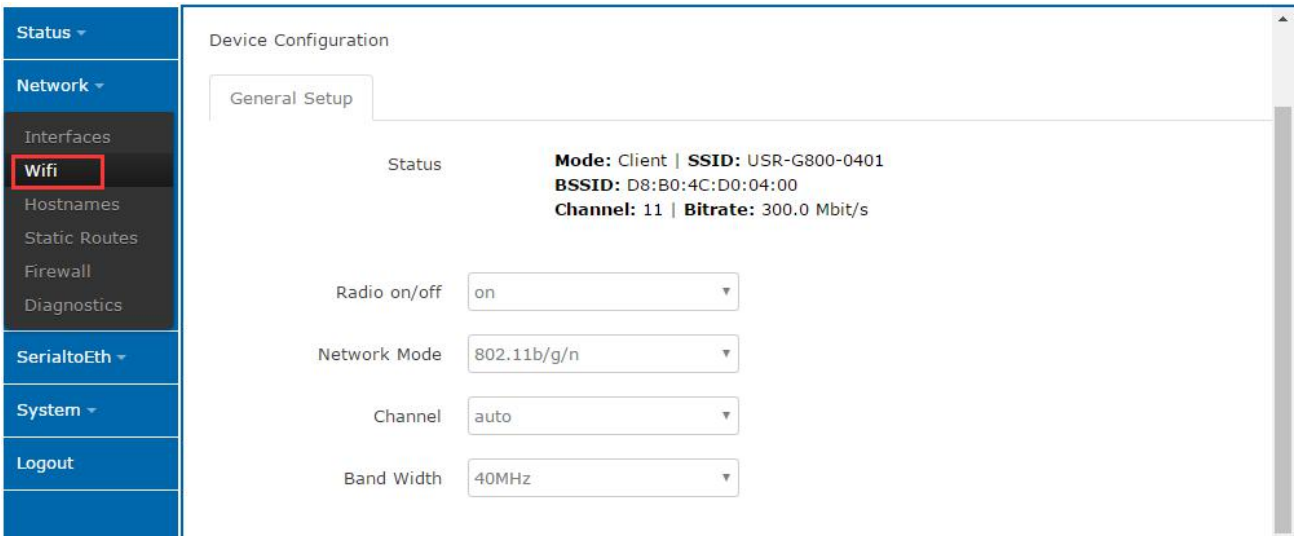
Revise SSID in the below position:



Revise password in the below position,



To revise the WIFI, wireless speed, channel and band width in here:

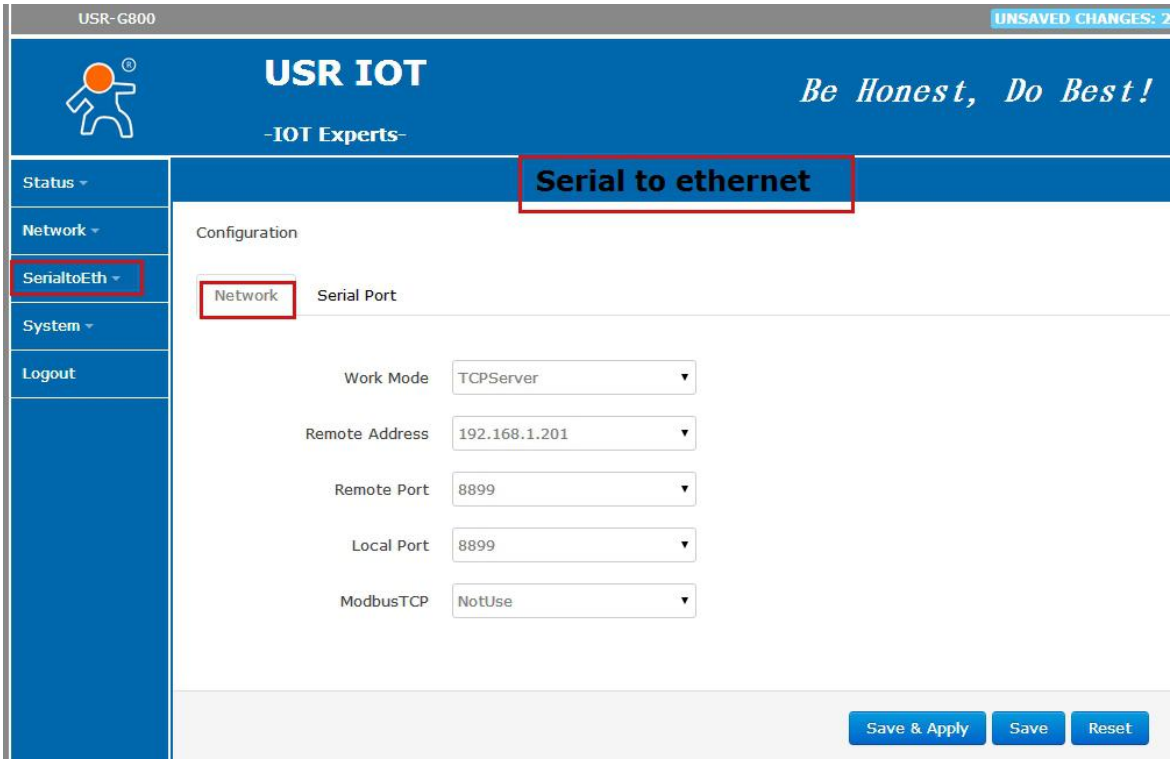


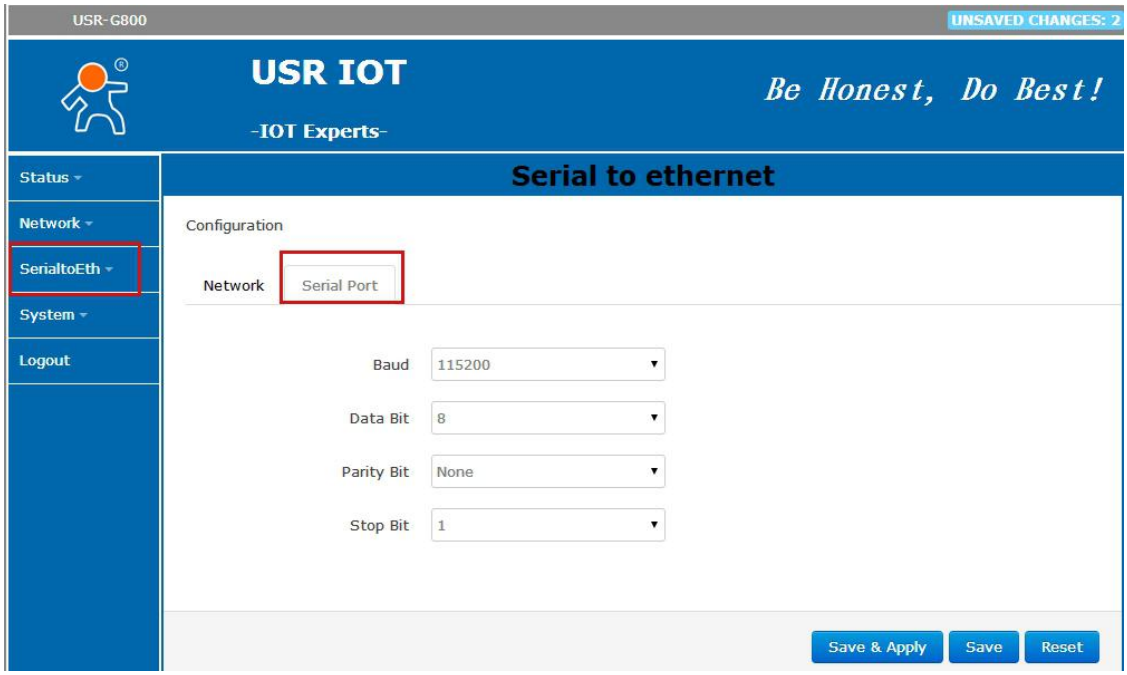
<Note>

- USR-G800-42 as AP, other wireless device can access to its WLAN network
- Work as AP, support max 24 STA connection
- This WLAN port and LAN port is interchangeable
- Coverage area of WIFI is 180M

3.5. Serial to Ethernet Function

USR-G800-42 supports transparent transmission mode, data can be transmitted between serial port and ethernet.





<Note>

- Four work mode in transparent transmission:
  TCP Server
  TCP Client
  UDP Server
  UDP Client
- Support Modbus TCP
- Configure band rate, data bit, parity bit and stop bit

- Band rate: 300~115200bps; Do not support user-defined
- Serial port means RS232 port (TXD, RXD,GND), not support hardware flow control
- Work as TCP server, can connect with max 128 TCP client
- Default packing time: 50ms; Packing length: 1460 bytes; User can not revise them.

3.6. Reset Button

This button is only used for restore factory setting.

- Press more than 5s and then release it, router will restore factory setting and restart automatically
- Restart moment, all indicating lights will shine for 1s and then light is off. (Except for indicating light of power and 4G)

3.7. Indicating Light

There are 8 indicating lights in all, meanings as below

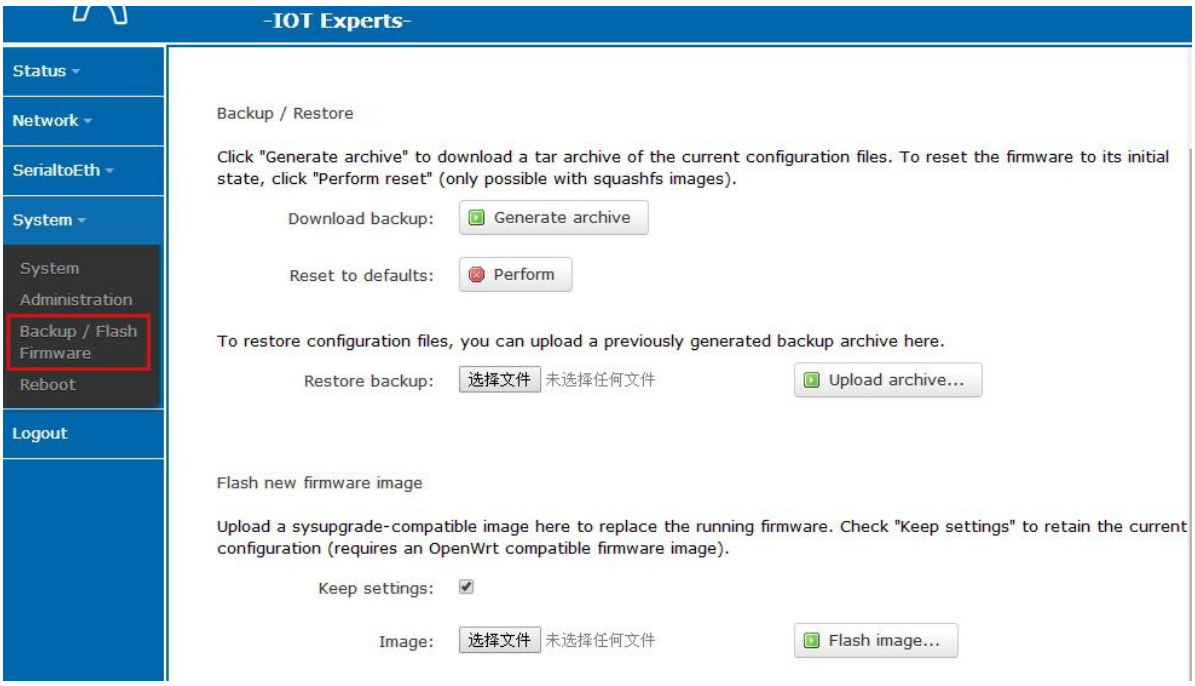
Name	Meaning	Instruction
Power	Power Indicating Light	Blink all the time when power on
4G	4G Communication	Not blink without registering to network, blink for successful when dial up access.
WLAN	WIFI Indicating Light	Blink all the time with successful starting of WIFI Twinkle when STA connection or data transmitting
WAN	WAN port Indicating Light	Blink all the time when WAN cable connected; Twinkle when data transmitting
LAN1	LAN1 port Indicating Light	Blink all the time when cable connect LAN1 port; Twinkle when data transmitting
LAN2	LAN2 port Indicating Light	Blink all the time when cable connect LAN2 port; Twinkle when data transmitting
LAN3	LAN3 port Indicating Light	Blink all the time when cable connect LAN3 port; Twinkle when data transmitting
LAN4	LAN4 port Indicating Light	Blink all the time when cable connect LAN4 port; Twinkle when data transmitting

<Note>

- No indicating light on the seat of LAN port and WAN port, physical connection of LAN port is indicated by WAN and LAN1-4 indicating lights
- Corresponding WAN/LAN indicating light will twinkle when cable is inserted and the network device on the other side is also working; It will not blink if only inserting the cable
- Power light will blink all the time

3.8. Firmware Update

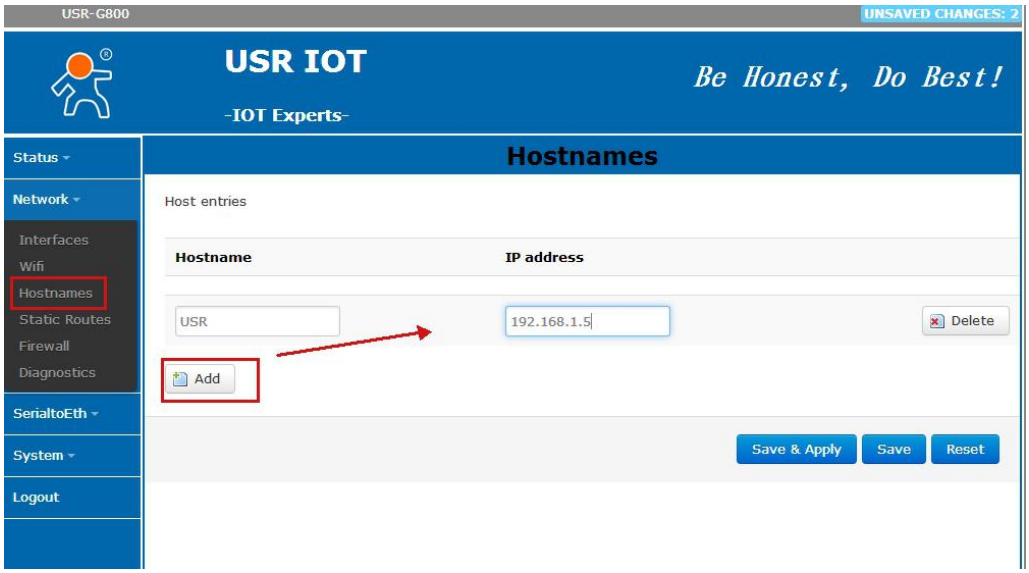
USR-G800-42 support upgrade firmware via Web page, as below:



<Note>

- Upgrade firmware will last 30s-50s, please re-enter web page after 30s
- Retain configuration or not can be selected
- Do not cut off power supply or pull out RJ45 cable when upgrade firmware

3.9. Host Name Function

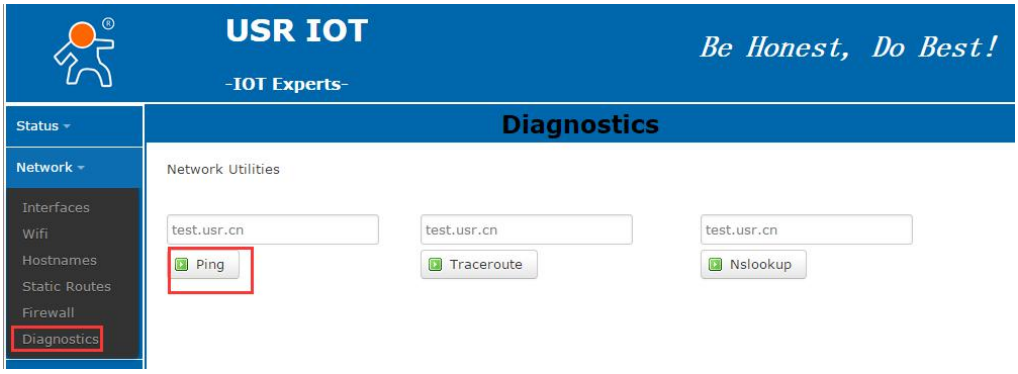


USR-G800-42 can analyze the user-defined domain name. Such as:

Set host name as “USR”, IP address 192.168.0.9. Then mapping relation between host name and IP address can be realized.

Note: This function can only be effective after restarting the router.

3.10. Network Diagnosing Function

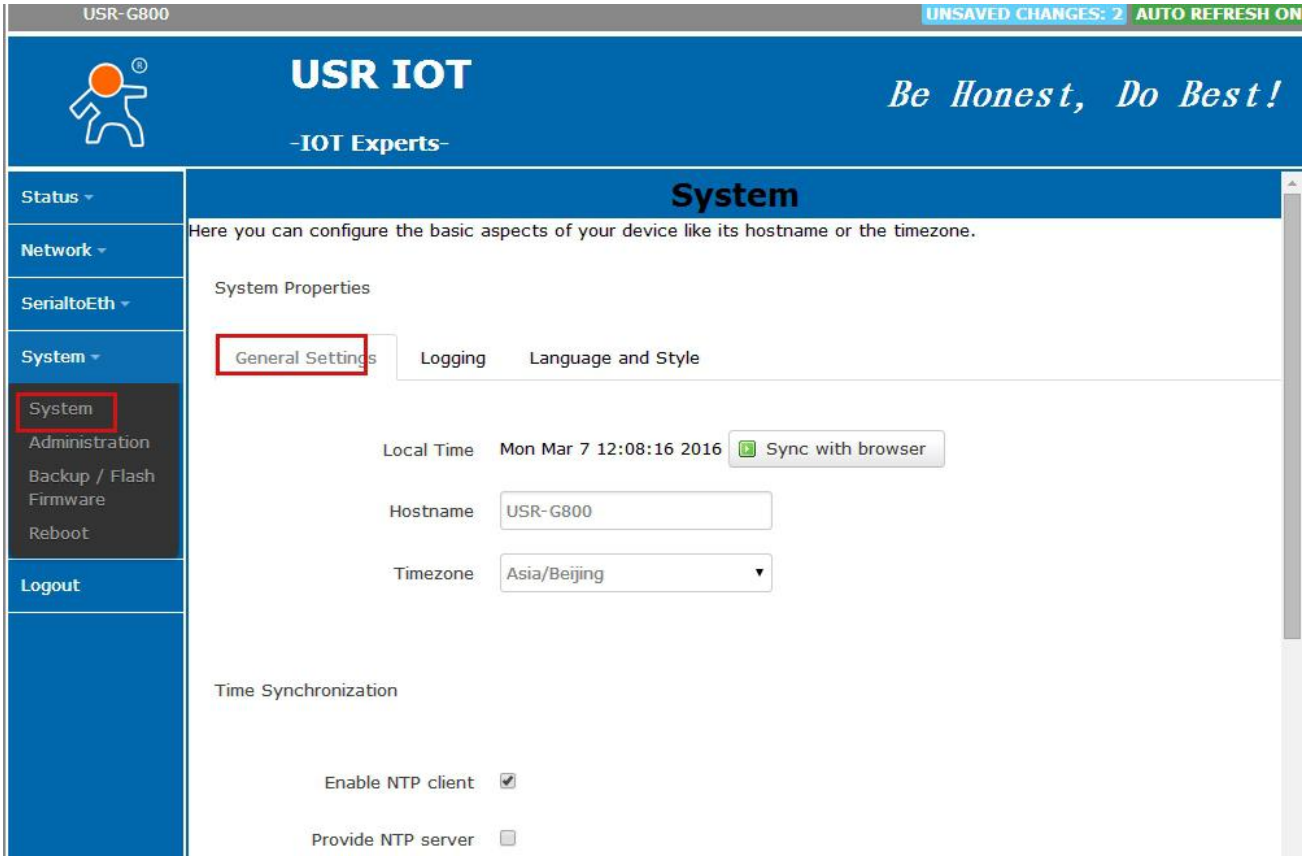


Diagnosing function, including Ping tool, analysis tool and DHS check tool.

- Ping tool, user can ping the specific address directly in the router end.
- Router analysis tool, can obtain the routing path when visit an address
- DNS check tool, can analyze the domain name to IP address

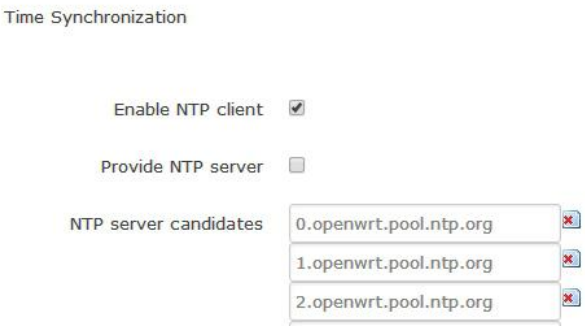
3.11. Host name and Time Zone Setting

USR-G800-42's default host name is USR-G800; Time zone is Asia/Beijing. User can modify it according to the actual situation.



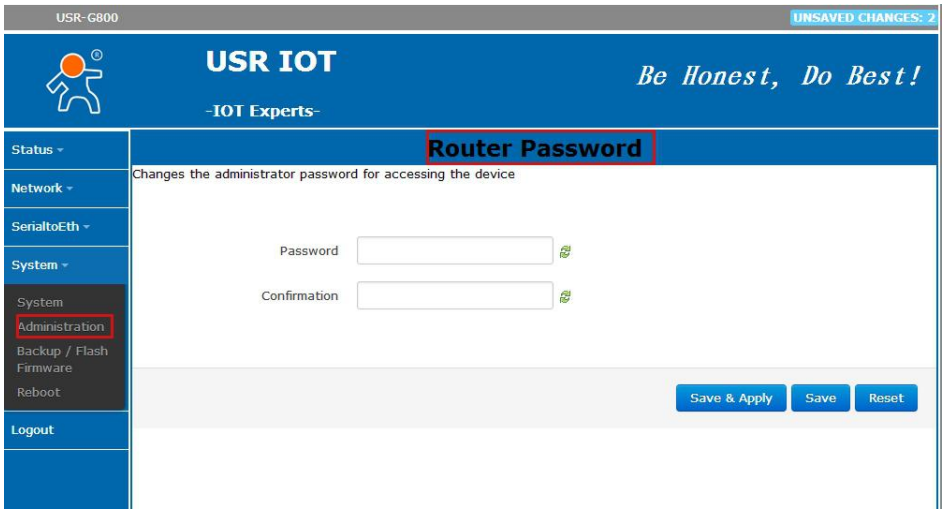
3.12. NTP Parameter Setting

USR-G800-42 can make network timing. Default status is enable NTP client. And can set candidate NTP server.

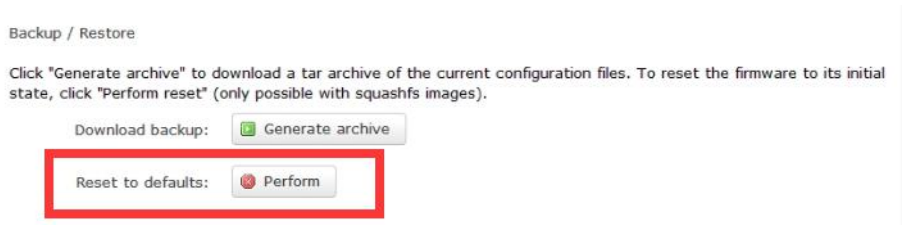


3.13. User name and Password

Default password is root which only used for enter web page, and can be revised by user.
But user name can't be revised and configured.



3.14. Reset by webpage

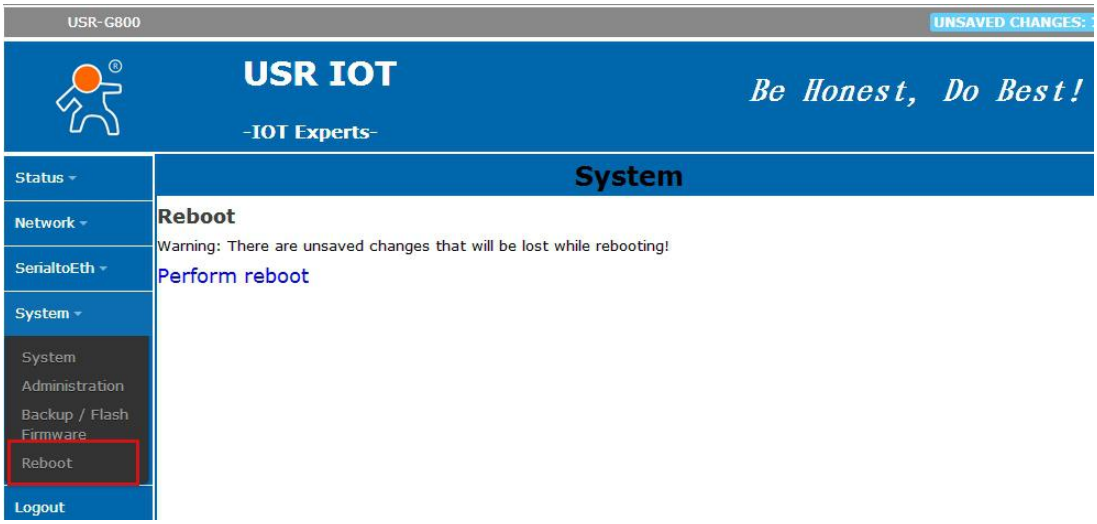


Click the button for restore factory setting.

- Download backups, means downloading the concurrent router's parameter configuration files which can be used for backing up parameter setting.
- Upload backups, means backed-up parameter files can be uploaded into router and take effect.

3.15. Restart

Click the button to restart the router. Restarting time is same as power up time of router. Router will start completely and successfully after about 30-40 seconds.



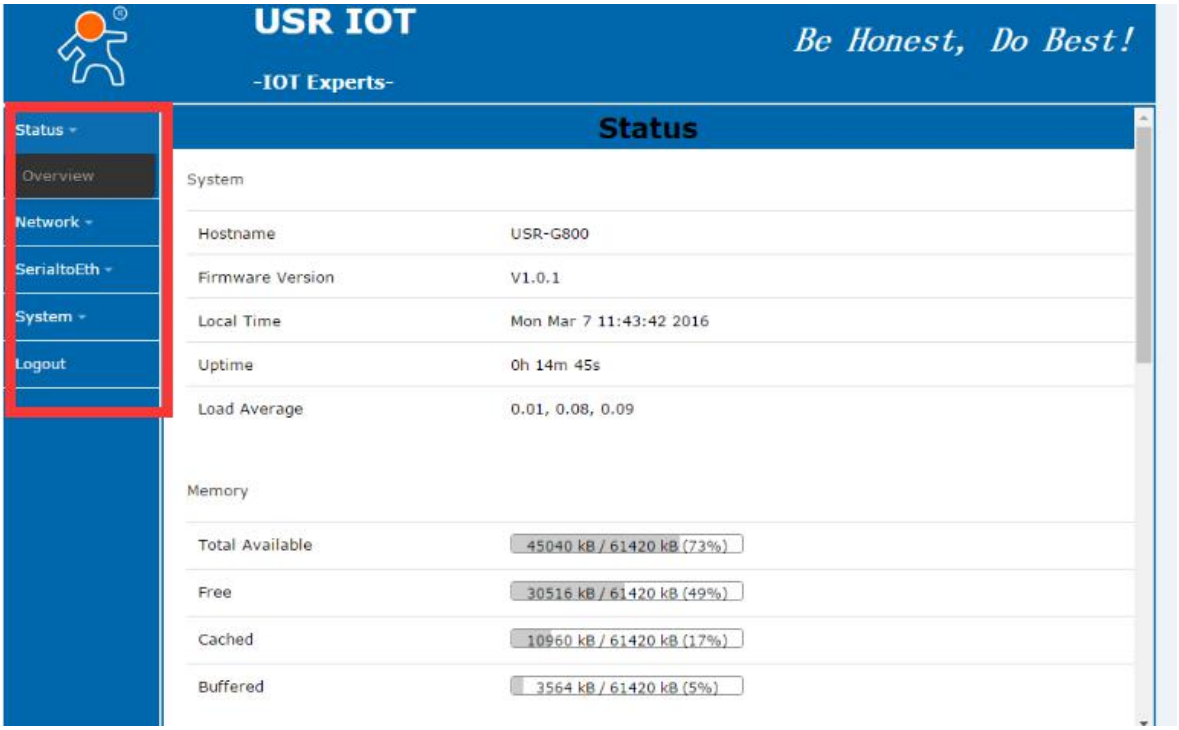
4. Setting Method

4.1. Web page Configuration

Connect USR-G800-42 with PC by LAN port or WLAN (WIFI), and then enter web page to configure. Please refer to following default parameter:

Parameter	Default Configuration
SSID	USR-G800-XXXX
LAN Interface IP Address	192.168.1.1
User's Name	root
Password	root
Wireless Password	12345678

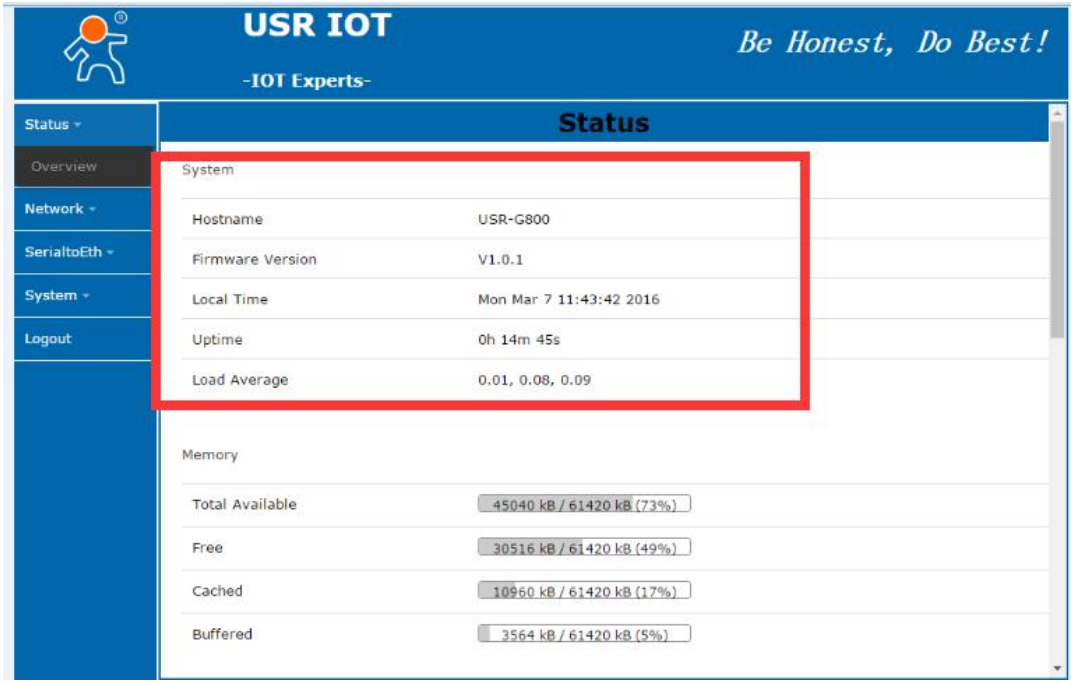
Step1, PC access to router's network. Search wireless network on PC and join USR-G800-XXXX
Step2, Enter **http://192.168.1.1** after wireless connection.
Step3, Will show web page of USR-G800-42 on PC. Change Chinese to English



4.2. Web page Introduction

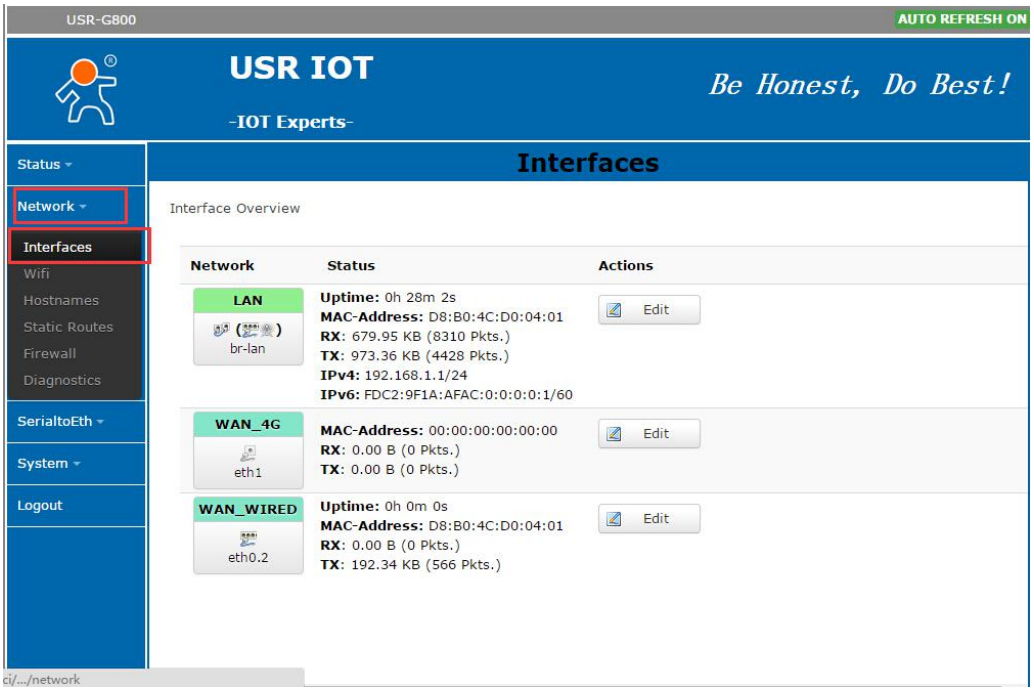
■ Status Page

It mainly shows device name, firmware version, firewall, router table and current running state.



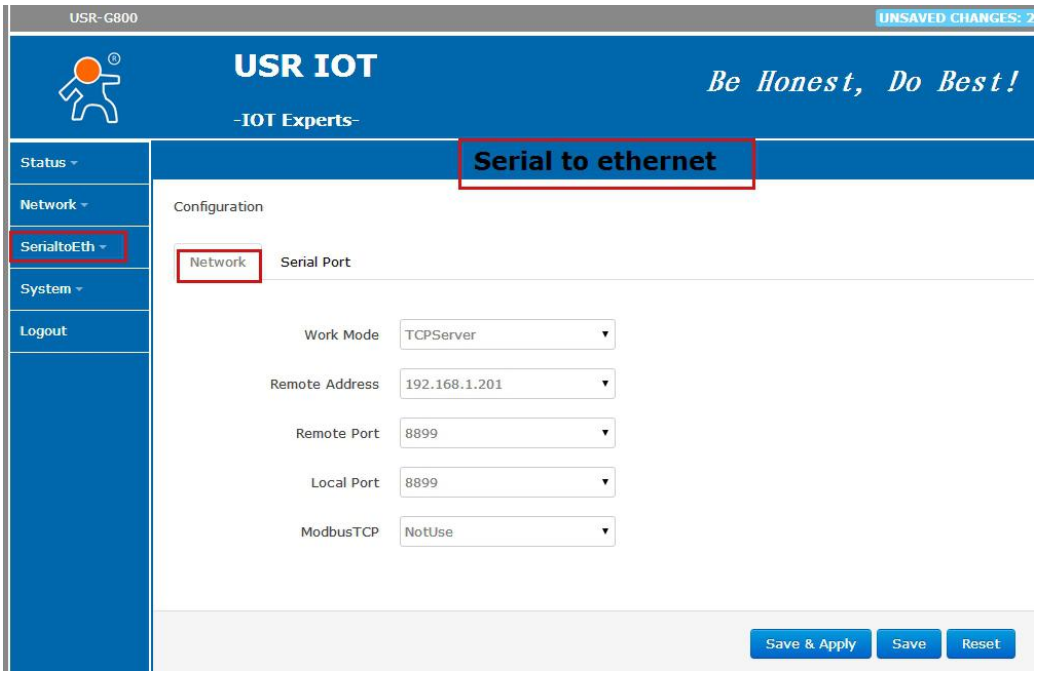
■ Network interface page:

User can configure LAN port, WAN port, WIFI parameter and DHCP/DNS on this page.



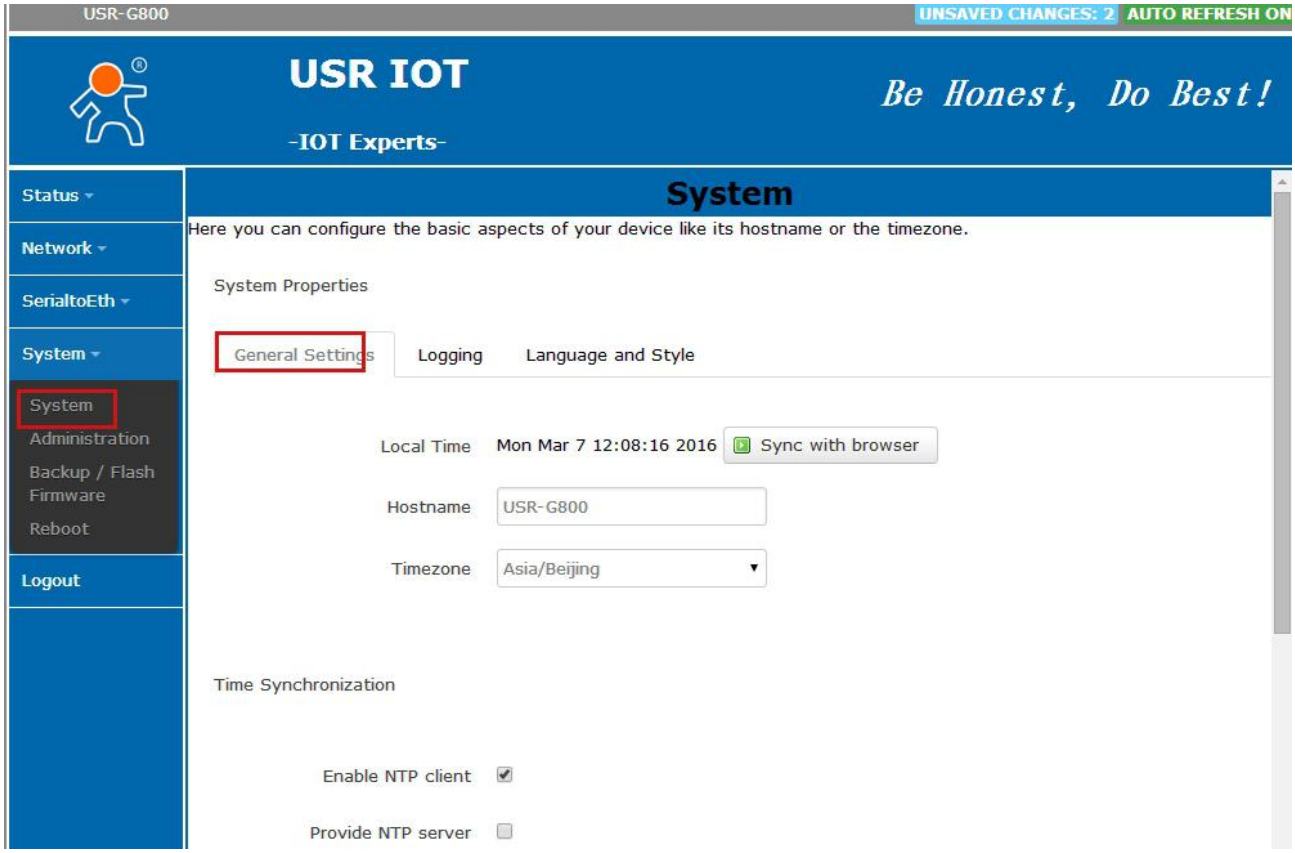
■ Serial to Web page

It used for setting parameter of Serial -Ethernet, including work mode, local port, remote port and IP



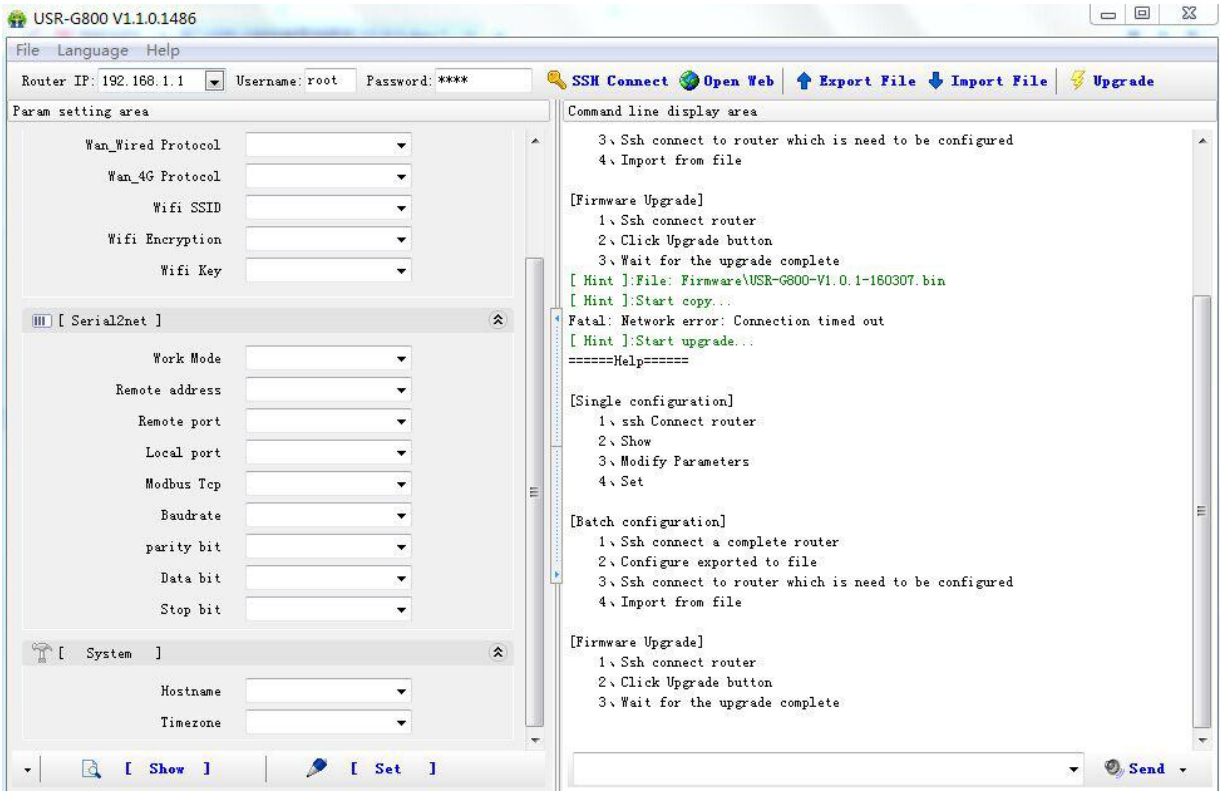
■ System Page

User can configure password, NTP time, firmware updated and restart.



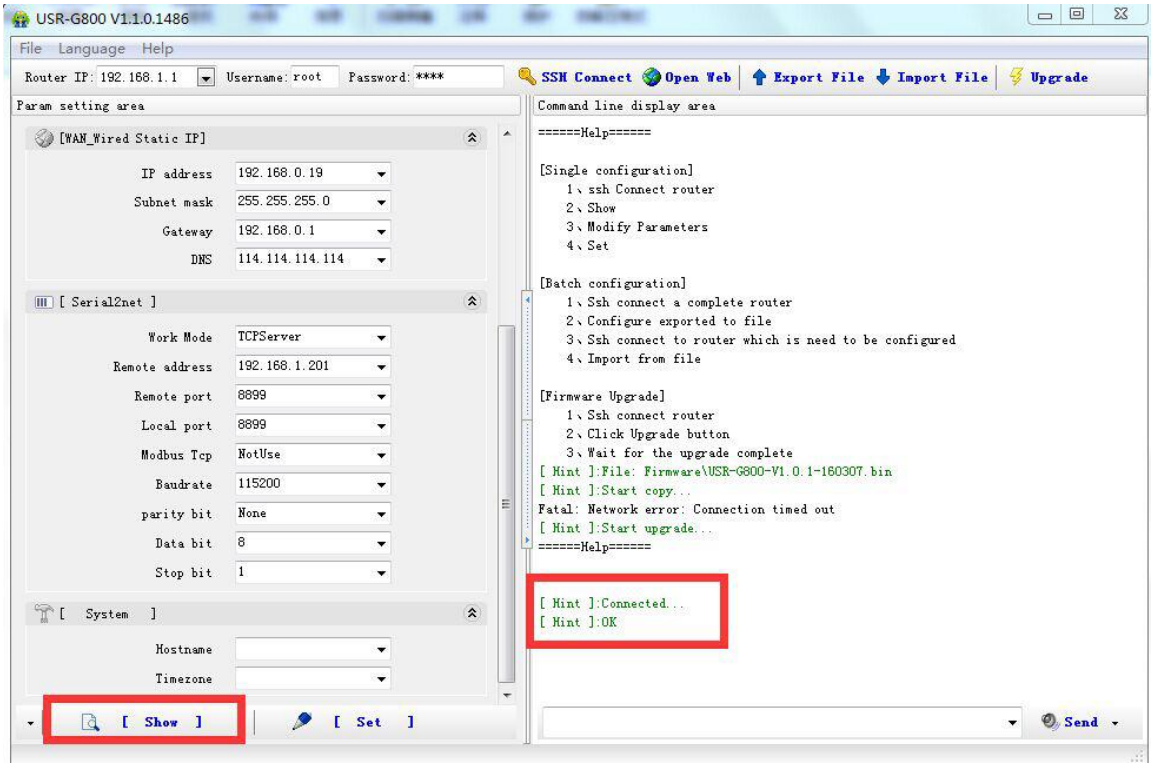
4.3. Setup Software

Download setup software from the below link:
http://www.usriot.com/usr-g800-setup-software/

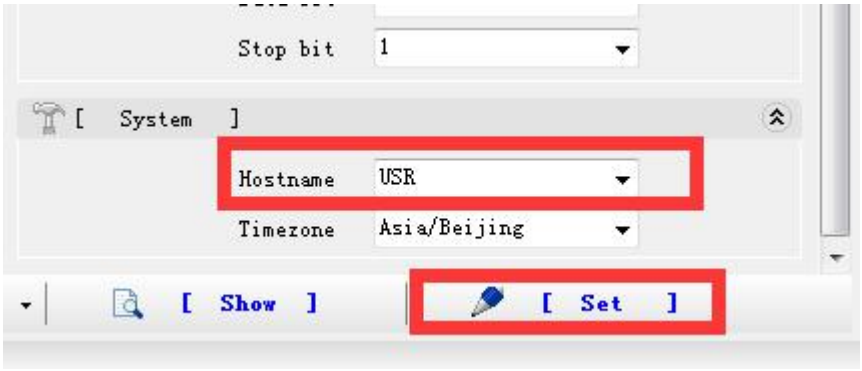


Setting step is as below:

- Double click to open software. Note: PC must be placed under LAN port.
- Click SSH connection, “Connecting…” will be hinted, “Connected” will be hinted for successful connection.
- Click “Show” button, if reading successfully, corresponding data will be updated in the left side and “OK” will be hinted in the right side

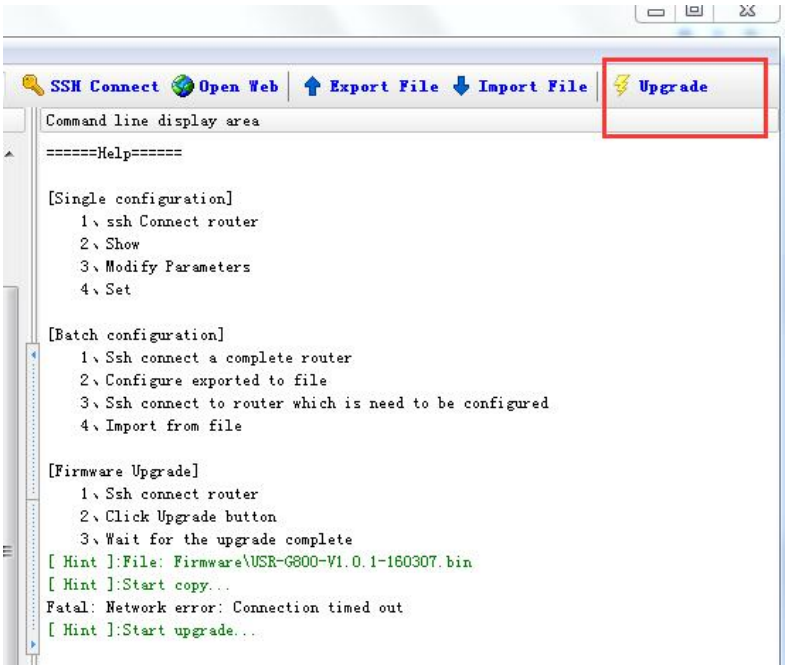


- Please configure parameter according to your own need, for example, default host name can be revised to “USR” such as:



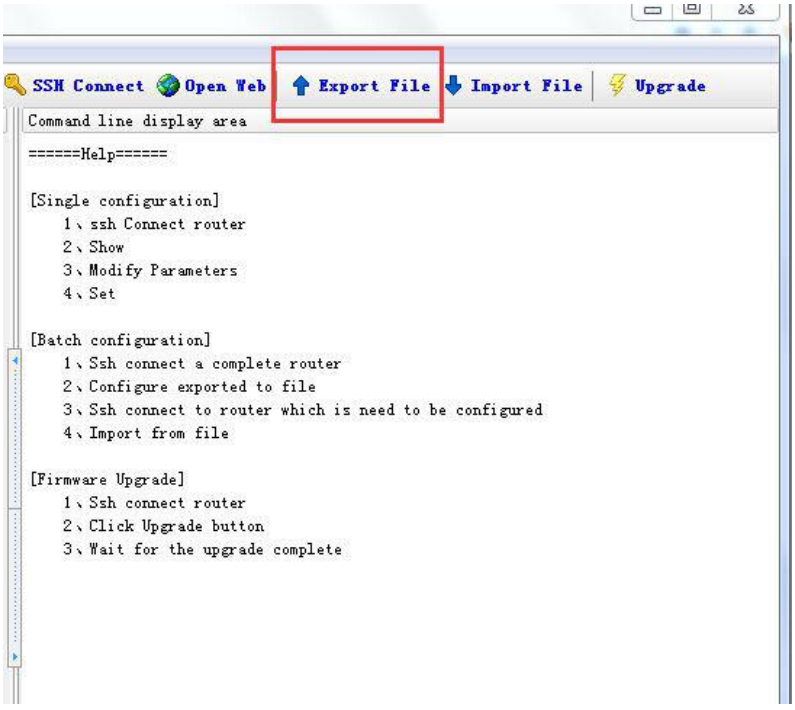
- Parameter setting takes effect. Please restart router to ensure configuration completely be in operation. (User can also input “reboot” in send box to realize long-distance restart).
- Upgrade firmware. Please click the button “update” in the top right corner to update new firmware.
- Firmware is stored under “Root Directory/Firmware”

Details as below:



■ Export and Import for parameter configuration files.

Export and Import configuration files are under “Root Directory/etc/config”



5. Contact

Company: Jinan USR IOT Technology Limited
Address: Floor 11, Building1, No.1166 Xinluo Street, Gaoxin Distric, Jinan, Shandong, China
Tel: 86-531-55507297, 86-531-88826739
Web: http://www.usriot.com
Support : http://h.usriot.com
Email: sales@usr.cn, tec@usr.cn

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7. Update

2015-10-27 V1.01 Version released
2016-01-12 V1.0.2 version add the description of detailed function
2016-03-22 V1.0.3 version add size picture
2016-06-21 V1.0.5 version modify DHCP description