

# **USR-G800V2 User Manual**

File version: V1.0.1





USR-G800 V2 User Manual

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## 1 Quick Start

This chapter is a quick introduction. It is recommended that users read this chapter and follow the instructions to operate it again. Users will have a systematic understanding of this 4G router product. If user has any question, please submit it back to customer center: <u>http://h.usriot.com</u>

## 1.1 Hardware Test



Figure1 hardware connection

## **1.2 Network Connection**

- > Insert SIM card into the router card slot
- Install the WIFI antenna and 4G antenna
- Connect computer and the router LAN port (either LAN1 ~ LAN4) with network cable
- > Configure computer network card, select the automatically obtain IP



络 井田	5			40
In	ternet 协议版本 4 (TCP/IPv4),	属性		8
连接时1	<u>گان میں م</u>			-
🔮 Re	吊规 备用配置			
	如果网络支持此功能,则可以	获取自动指派的	)_IP 设计	昱。否则,
此连接们	您需要从网络系统管理员处获	得适当的 IP 说	s置。	
	◎ 自动获得 IP 地址(0)			
V	- ⑦ 使用下面的 IP 地址(S):			
	IP 地址(I):			
	子网搐码(U):			
	明白 いい かい			
•	熱原四大の		1	4
安漠	◎ 白动获得 DWS 服务哭他t	E (B)		
描述	● 信切获得 LLD 版外都起来	的 1 (正):		
TCP/I	首法 DMS 服を要で)		- 22	50 C
的相對				
	會用 JIMS 服务器(A):	4		¥
			-	
_	Contractions for Common Providence of the			and the second second second second

Figure2 network connection

- Use standard DC12V power supply
- After waiting for about 1 minute, the 4G standard light and signal light are on, indicating the success of the router's 4G networking

## 1.3 Webpage Login and Test

The default parameters of G800V2:

Parameter	Default
Account	root
Password	root
IP	192.168.1.1

Login 192.168.1.1, the account and password are both root.



USR-G800V2		中文   English
USR IOT Communication Expert of Industrial IOT		Be Honest, Do Best!
	Authorization Required   Pease enter your username and password.   Username:   root   Password:   Login   Reset	06/2 07/5 55
	Figure3 login webpage	

## 2 Product Overview

### **2.1 Product Introduction**

USR-G800V2 support wired WAN port, LAN port, WLAN network, and 4G network interface, support serial port to network data transmission function.

### 2.2 Feature

- Support 4 wired LAN ports and 1 wired WAN port
- Support 1 WLAN
- Support Mini-PCIE interface of 4G communication module
- Support LED status monitoring (display power supply, Work, WAN, LAN, WIFI, 4G network mode and signal strength status)
- Supports transparent data transfer from RS232 to the network
- Support SSH, Telnet, Web multi-platform management configuration
- Support one-click restore factory settings
- Wired network ports all support 10/100mbps
- Support for multiple VPN Client (the PPTP, L2TP/GRE/OPENVPN/SSTP), and support the VPN encryption.
- Support APN automatic network checking, 2/3/4g standard switching, SIM information display, support APN dedicated network card
- Support wired wireless multi-network simultaneous online, multi-network intelligent switching backup function
- Support mandatory portal (WIFIDOG), this feature needs to be customized according to customer requirements
- Support dynamic domain name (DDNS), static routing, PPPOE, DHCP, static IP function.



- Support firewall, NAT, DMZ host, access control black and white list, IP speed limit, MAC speed limit
- Support QOS, traffic service, can limit speed according to the interface
- NTP support, built-in RTC
- Support external hardware watchdog design to ensure system stability

### 2.3 Basic Parameters

Operation band					
Network type		-Е	-AU	-A	
4G	FDD-LTE	1/3/5/7/8/20	1/2/3/4/5/6/7/8/28	1/3	
	TDD-LTE	38/39/40/41	40	38/39/40/41	
3G	WCDMA/HSPA/UMTS	1/8	1/2/5/8	1/8	
2G	GPRS/GSM/EDGE	3/8	2/3/5/8	3/8	

Item		Info		
Product	USR-G800V2	·		
Ethernet	WAN	WAN*1		
	LAN	LAN*4		
	Rate	10/100Mbps, Auto MDI/MDIX		
WIFI	Wifi	Support 802.11b/g/n		
	Antenna	Wifi antenna		
	Distance	150m (open field)		
SIM card	SIM/USIM card	3V/1.8V SIM card		
Antenna	antenna Full frequency chuck antenna			
Button	Reload	Recovery to factory setting		
Status light	Status light	Power, WIFI, signal strength, WAN, LAN		
Serial port	RS232	*1		
	Function	Transparent transmission		
Temperature	Work temperature	-20° C~+70° C		
	Storage temperature	-40° C~+125° C		
Humidity	Work humidity	5%~95%		
	Storage humidity	1%~95%		
Power	Power	DC 9~36V		
	Current	Under DC12V power supply, average 170mA, maximum 289mA		

Power consumption parameters

Work style	Voltage	Average current	Max current
LAN(*4)+WAN transmission data (4G normal)	DC 12V	338mA	424mA
LAN(*1)+WAN transmission data (4G normal)		286mA	362mA
LAN(*4)+WAN transmission data (no 4G, WLAN		268mA	314mA
normal)			
WAN transmission data (WALN normal)		235mA	303mA



## 2.4 Appearance and Size





Figure4 hardware



## **3** Product Function



#### Figure5 G800V2 function

## **3.1 Configuration Process**

Steps:

- Make sure G800 V2 power off
- Put SIM card into G800 V2
- > Install WIFI antenna and 4G antenna
- > Power on G800 V2 with 12V power adapter
- > Wait for 1 minute, when 4G and signal light on, means the success of the router's 4G networking





### **3.2 Basic Function Introduce**

### 3.2.1 Hostnames

Host entries		
Hostname		IP address
usr-pc-linux	172.16.11.166	V 📋 Delete
🔓 Add		
	Save	ylay
	Figure7 host name pa	age

Users can ping this host name.



## ■ 命令振祥 — — — — — — — — — — — — — — — — — — Microsoft Windows [版本 10.0.17134.523] (c) 2018 Microsoft Corporation。保留所有权利。 C:\Users\Administrator>ping usr-pc-linux 正在 Ping usr-pc-linux.lan [172.16.11.166] 具有 32 字节的数据: 来目 172.16.11.166 的回复: 字节=22 时间=lms TTL=64 来目 172.16.11.166 的回复: 字节=32 时间=lms TTL=64 172.16.11.166 的问题: 条件 = 4, 丢失 = 0 (0% 丢失), 往返行程的估计时间(以叠秒为单位): 最短 = 0ms, 最长 = Ims, 平均 = 0ms C:\Users\Administrator>

#### Figure8 hostname PING function

Note:

- 1. this function will effect after reboot
- 2. no hostname by default



### 3.2.2 Diagnostics

Communication Expert of Industrial IOT		Be Honest, Do Best! 中文   English
<ul> <li>Status</li> <li>Services</li> <li>Network</li> <li>Interfaces</li> <li>APNSET</li> <li>IPSECSET</li> <li>Wifi</li> <li>DHCP and DNS</li> <li>Hostnames</li> <li>Static Routes</li> <li>Diagnostics</li> <li>QoS</li> <li>SerialtoEth</li> <li>Firewall</li> <li>System</li> </ul>	Diagnostics   Network Utilities   IPv4 v IPing   Traceroute	Image:
	Jinan USR IOT Technology Limited http://www.usrio	ot.com/

### Figure9 diagnostics

Router online diagnostic functions: including Ping tools, routing parsing tools, DNS viewing tools. The Ping tool can test a specific address directly on the router side. Route parsing tool, you can get access to an address, the path through. DNS View Tool, which can resolve domain names to IP addresses.



### 3.2.3 System

Communication Expert of Industrial IOT	Be Honest, Do Best AUTO REFRESH ON 中文   Englis	! :h
USR-G800V2	System	Í
> Status	Here you can configure the basic aspects of your device like its hostname or the timezone.	
<u>Services</u>	System Properties	
> Network		
> SerialtoEth	General Settings Remote log Local log Language and Style	
> Firewall	Local Time Wed Jan 23 17:22:20 2019 📵 Sync with browser	
✓ System	Hostname USR-G800V2	
System		
Administration	Timezone Asia/Beijing	
Scheduled Tasks		1
Backup/Upgrade	Time Synchronization	
Reboot		
> Logout	Enable NTP dient 🔽	
	Jinan USR IOT Technology Limited http://www.usriot.com/	

Figure10 hostname and timezone



### 3.2.4 User Name and Password

	Expert of Industrial IOT		Be Honest,	Do Best! <sup>中文   English</sup>
USR-G800V2	Router Password			
> Status > Services	Changes the administrator pa	assword for accessing the device		
> Network > SerialtoEth > Firewall	Password Confirmation	2 2		
✓ System System Administratio	m	Save Apply		
Scheduled Ta Backup/Upg Reboot	sks ade			
> Logout				
	Jinan USR IOT Technology	Limited http://www.usriot.co	om/	

#### Figure11 password

Note:

Password can be set, default password is root, user name can't be set. This password is mainly used for web server login password

### 3.2.5 Restore to Factory Settings

The G800V2 router can be restored to the factory parameters through the Reload button (restore factory Settings button).

- Long press 5s above and then release, the router will restore the factory parameter setting and restart by itself
- At the effective moment of restart, SIM card signal light and standard light, 4 lans and WAN ports will be on for 1 second and then off

Or restore to factory settings by webpage:



A MARKET THE REPORT OF A DECEMBER OF A DE	Backup / Restore
SR-G800V2	Click "Generate archive" to download a tar archive of the current configuration files. To reset the firmware to its initial state, click "Perform reset" .
Status	Download backup: 🔲 Generate archive
Services	Reset to defaults: i Perform
Network	
SerialtoEth	To restore configuration files, you can upload a previously generated backup archive here.
Firewall	Restore backup: 浏览 未选择文件。 III Upload archive
System	
System	Flash new firmware image
Administration	Upload a proper image here to replace the running firmware. Check "Keep settings" to retain the current
	configuration.
Scheduled Tasks	Keep settings:
Scheduled Tasks Backup/Upgrade	
Scheduled Tasks Backup/Upgrade	Check firmware: 🗹
Scheduled Tasks Backup/Upgrade Reboot	Check firmware: ☑ Image: 浏览 未选择文件。 III Flash image

#### Figure12 restore to factory setting

### 3.2.6 Status Light

Name	Intro	
Power	on	
Work	Blink every 1S	
WAN	WAN port network cable lights up when it is inserted and flashes	
	when it is used for data communication	
LAN1-4	LAN port network cable lights up when it is inserted and flashes	
	when it is used for data communication	
WLAN	When the WIFI network starts successfully, it will be on. If STA is	
	connected or data is sent or received, it will be bright	
2G	When work at 2G, it will on	
3G	When work at 3G, it will on	
Signal strength	The more lights the 4G signal intensity indicator lights on, the	
1-4	stronger the signal will be.	

Note:

- When the wires are inserted and the network devices at the opposite end are working, the corresponding WAN/LAN indicator will flash; it does not mean that only the wires are plugged in will light up.
- > The power lamp will always be on
- When LTE module works at 4G, 2G and 3G indicator lights are on.



### 3.2.7 FW Upgrade

	Backup / Restore	
ISR-G800V2	Click "Generate archive" to download a tar archive of the current configuration files. To reset the to its initial state, click "Perform reset" .	e firmware
Status	Download backup: 🔲 Generate archive	
Services	Reset to defaults: OPerform	
Network		
SerialtoEth	To restore configuration files, you can upload a previously generated backup archive here.	
Firewall	Restore backup; Mga #2017.X1+.	
✓ System		
System	Flash new firmware image	
Administration	Upload a proper image here to replace the running firmware. Check "Keep settings" to retain the	ne current
Scheduled Tasks		
Backup/Upgrade	Check firmware:	
Reboot		
> Logout	Image: 加克 木还年X年。 UM Flash Image	

Figure13 FW upgrade

Note: DO NOT POWER OFF WHEN UPGRADING



### 3.2.8 Reboot

Communication Expert of Industrial IOT	) }	i i i i i i i i i i i i i i i i i i i	Be	Honest,	Do	<b>Best!</b> 中文   English
USR-G800V2 Status Services Network SerialtoEth Firewall System Administration	<mark>System</mark> Reboot Perform reboot					
Scheduled Tasks Backup/Upgrade Reboot > Logout	Jinan USR IOT Technology Limited	http://www.usriot.com/				
	Figure14 ret	poot				



## **3.3Advanced Function**

### 3.3.1 DDNS

		MYDDNS		
11	JSK-G000V2	Enable		
	Status	Event interface	wan_wired ~	
~	Services		Network on which the ddns-up	dater scripts will be starte
	private ip ddns	Service	ddns.oray.com 🗸	
	Dynamic DNS	Hostname	mypersonaldomain.ddns.o	
	Captive Portals	Username	myusername	
	RemoteManager	Desword		64
	Network	Password		12*
	SerialtoEth	Source of IP address	interface 🗸	
	Firewall	Interface	eth0.2 v	
	System	Check for changed IP	10	
	Logout	every		
		Check-time unit	min ~	
		Force update every	72	
		Force-time unit	h ~	
		Figure15 DDNS		

Note:

- Disable this function by default;
- Reboot make sure the parameters effect;
- This function cannot be used if the router is on a network that is not assigned to a separate public network IP;
- > You can add more than one DDNS domain name for this router.



Save

### 3.3.2 WIFI-dog

29001/2	
SK-0000V2	wifidog-web
Statue	wifidog not start
<ul> <li>Services</li> </ul>	Configuration
private ip ddns	
Dynamic DNS	General Settings whitelist Advanced Settings
Captive Portals	Enable 🗌 🔿 Saakkaa Diaskaa iii iaa
RemoteManager	Enable 🖂 🎯 Enable or Disable witidog
Network	Blacklist and whitelist 🗌 🙆 Blacklist and whitelist daemon, mo daemon
SerialtoEth	AP ID eec57916f
irewall	Fill with wifidog server's correct AP ID
ystem	wifidog server address wifiauth.zhangkongbao.co
	Demain name of in

### Figure16 WIFI-dog

Function	Parameter	Note
Enable		Disable by default
Daemon		Disable by default
AP ID	eec57916f	
Wifidog server address	wifiauth.zhangkongbao.com	
	(e.g.)	
LAN interface	br-lan	
WAN interface	eth0.2	If u want use 4G, pls fill in eth1
Path of server	/apps/WIFIguanjia/	



### 3.3.3 LAN

### 3.3.3.1 DHCP Function

1	USR-G800V2	General Setup Physical Settings Firewall Settings			
,	0311-000012		University 10, 10, 17,		
>	Status	Status	Uptime: Un 18m 1/s           MAC-Address: D8:B0:4C:F9:BE:33           8/5         RX: 899.09 KB (5188 Pkts.)           France         TY: 1.20 MB (4452 Pkts.)		
>	Services		IPv4: 192.168.1.1/24		
~	Network		IPv6: FDAE:DEEC:9FEA:0:0:0:0:1/60		
	Interfaces APNSET	Protocol	Static address 🗸		
	IPSECSET	IPv4 address	192.168.1.1		
	Wifi	IPv4 netmask	255.255.255.0 🗸		
	DHCP and DNS	IPv4 gateway			
	Hostnames	IPv4 broadcast			
	Static Routes				
	Diagnostics	Use custom DNS servers	8.8.8.8		
	QoS				
>	SerialtoEth				
>	Firewall	DUCK C			
>	System	DHCP Server			
>	Logout	General Setup			
		Ignore interface	Disable <u>DHCP</u> for this interface.		

#### Figure17 DHCP

### Note:

- > DHCP range 192.168.1.100~192.168.1.250
- Leasetime 12h by default
- > The start and limit can be customize



### 3.3.4 WAN

USR-G800V2	WAN_WIRED WAN_4G1 LAN	
> Status	Interfaces - WAN_WIRED	
Services     Network	On this page you can configure the network interfaces. You can bridge seve can also use <u>VLAN</u> notation INTERFACE.VLANNR ( <u>e.g.</u> ; eth0.1).	eral interfaces by ticking the "bridge int
Interfaces APNSET	Common Configuration	
IPSECSET	General Setup Physical Settings Firewall Settings	
Wifi DHCP and DNS	Status Uptime: 0h 23m MAC-Address: I RX: 2.00 MB (12ť	26s )8:80:4C:F9:BE:33 561 Pkts.)
Hostnames Static Routes	eth0.2 <b>TX:</b> 1.11 MB (606 <b>IPv4:</b> 172.16.11.1	i3 Pkts.) 166/24
Diagnostics	Protocol DHCP client 💙	
QoS SerialtoEth	Hostname to send when 4GRouter	
> Firewall	requesting DHCP	
> System		Save Apply

#### Figure18 WAN

#### Note:

- > DHCP Client mode by default
- > Support DHCP Client, static IP, PPPOE mode

#### 3.3.5 WIFI

- > The G800V2 router is an AP, and other wireless terminals can access its WLAN network.
- Supports up to 24 wireless STA connections.
- WLAN and LAN port exchange
- > The maximum coverage of WIFI is 150m in the open area
- > The RFswitch is on by default.



USR-G800V2	General Setup Advance	ed Settings
Status > Services	Status	Mode:         Master   SSID:         USR-G800V2-BE33           0%         BSSID:         D8:80:4C:F9:BE:32   Encryption: -           Channel:         10 (2:457 GHz)   Tx-Power:         0 Bm           Signal:         0 Bm   Noise:         0 Bm           Bitrate:         300.0 Mbit/s   Country:         00
Network      Interfaces      APNSET      IPSECSET      Wifi      DHCP and DNS	Radio on/off Network Mode Channel	on v 802.11b/g/n v auto v
Hostnames Static Routes Diagnostics QoS	Interface Configuration General Setup Wireles	s Security
<ul> <li>&gt; SerialtoEth</li> <li>&gt; Firewall</li> <li>&gt; System</li> <li>&gt; Logout</li> </ul>	<u>ESSID</u> Mode Network	USR-G800V2-BE33 Access Point v Ian: :::::::::::::::::::::::::::::::::::
	Hide <u>ESSID</u>	<ul> <li>Choose the network(s) you want to attach to this wireless interface or fill out the <i>create</i> field to define a new network.</li> </ul>

### Figure19 WIFI

Name	Parameter
SSID name	USR-G800V2-XXXX (xxxx means the last 4
	bits of MAC address )
Wifi password	www.usr.cn
channel	Auto
Band width	40MHz
Encryption	WPA2-PSK



Be Honest, I	Do Best ! USR-G806 Us	ər Manual	Technical Support: h.usriot.com
V. Network			
	Network Mode	802.11b/g/n 🗸	
APNSET	Channel	auto 🗸	
IPSECSET	Band Width	40MHz V	
Wifi			
DHCP and DNS	Interface Configuration		
Hostnames	interface comparation		
Static Routes	General Setup Wireles	s Security	
Diagnostics	ESSID	USR-G800V2-BE33	
QoS	Mode	Access Point V	
> SerialtoEth	Network		
> Firewall			
> System		wan_4g1.	
> Logout		wan_wired, g	
		② Choose the network(s) you want to attach	to this wireless interface or fill out the <i>create</i> field to define a new
	Hide <u>ESSID</u>		
			Save Apply
nothon	Figure20 cha	nge SSID	
Interfaces		0% BSSID: D8:B0:40 Channel: 10 (2.4	C:F9:BE:32   <b>Encryption:</b> - 457 GHz)   <b>Tx-Power:</b> 0 dBm
ΔPNSET		Signal: 0 dBm   Bitrate: 300.0 M	Noise: 0 dBm /bit/c   Country: 00
IDSECSET			initial country too
Wife	Radio c	n/off on 🗸	
MIII			
DHCP and DINS	Network N	ode 802.11b/g/n 📉	
Hostnames	Cha	nnel auto 🗸	
Static Routes	Band V	/idth 40MHz v	
Diagnostics			
QoS			
> SerialtoEth	Interface Configu	ration	
> Firewall	General Setup	Vireless Security	
> System	Engry	tion WPA2-PSK	~
> Logout	Litty		
	G	oher Force CCMP (AES)	×
		Key •••••	R.
			Save Apply

### Figure21 wireless security

Modify whether to turn on the wireless function (turn off the radio frequency, as shown below, effective immediately).



		Device Configuration	
>	Status	General Setup	ed Settings
	Services		
~	Network	Status	Mode: Master   SSID: USR-G800V2-BE33
	Interfaces		Channel: 10 (2.457 GHz)   Tx-Power: 0 dBm
	APNSET		Bitrate: 300.0 Mbit/s   Country: 00
	IPSECSET		
	Wifi	Radio on/off	on 🛩
	DHCP and DNS	Network Mode	802.11b/g/n 🗸
	Hostnames	Channel	auto
	Static Routes		
	Diagnostics	Band Width	40MHz ~
	QoS		
>	SerialtoEth	Interface Configuration	r

Figure22 radio on/off

### 3.3.6 4G Interface

### 3.3.6.1 APN

Settings for APN address, u	use
Services SIM1 Configuration	
✓ Network	
Interfaces APN LTE Config	1
APNSET APNAddress	
IPSECSET Username	
DHCP and DNS Password	
Hostnames AuthType	
Static Routes Check Registered	
Diagnostics (Seconds)	
QoS Network Switch Set(s)	
SerialtoEth WAN Priority	
> Firewall Reference Mode	
System Reference Address(Can	
only enter the IP)	

#### Figure23 APN

### Ask operator for SIM card APN information and fill in.



	Status	Settings for APN address, us	ername and password, if you goning to use an APN car
	Services	SIM1 Configuration	
~	Network		
	Interfaces	APN LTE Config	SIM Info
	APNSET	APNAddress	AutoCheck
	IPSECSET		AutoCheck
	Wifi	Username	- custom -
	DHCP and DNS	Password	
	Hostnames	AuthType	PAP
	Static Routes	Check Registered	30
	Diagnostics	(Seconds)	
	QoS	Network Switch Set(s)	10
	SerialtoEth	WAN Priority	wanfirst 🗸
	Firewall	Deference Made	Custom
	System	Kererence Mode	
	Logout	Reference Address(Can only enter the IP)	8.8.8.8

#### Figure24 APN setup page

### LTE configuration is as follows:

When the default is set to automatic, the priority is 4G>3G>2G. You can also manually force the switch between standard and priority.

Services	SIM1 Configuration
Network	
Interfaces	APN LTE Config SIM Info
APNSET	Mode(Please Select AUTO ~
IPSECSET	2/3/4G,When selecting auto, default 4G>3G>2G)
Wifi	
DHCP and DNS	Priority(When selecting AUTO auto, default 4G>3G>2G)
Hostnames	
Static Routes	
Diagnostics	

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### 3.3.7 Serial Port to Ethernet

031-000042	Serial to ethernet	
	Settings for Serial to Etherne	et Converter, it has one serial port and able to transceive data
Status		
> Services	Configuration	
> Network		
✓ SerialtoEth	Network Serial Port	heart register
setup_ser2net	Work Mode	TCPServer V
> Firewall		
> System	Remote Address	192.168.1.201 🗸
> Logout	Remote Port	8899 ~
		[0] 1-65535     [1]
	Local Port	8899 ~
		1-65535
	ModbusTCP	NotUse

#### Figure25 serial port to Ethernet

### Note:

- > Transparent transmission work mode:
  - TCP Server
  - TCP Client
  - UDP Server
  - UDP Client
- Support MODBUS TCP
- > Support setup of baudrate, data bit, parity bit, stop bit
- Can't customize baudrate
- > RS232, hardware flow control is not supported
- > When working with TCP Server, the maximum number of client connections is 128



USR-G800V2	Serial to ethernet
> Status	Settings for Serial to Ethernet Converter, it has one serial port and able to transceive d
> Services	Configuration
Network	
<ul> <li>SerialtoEth</li> </ul>	Network Serial Port heart register
setup_ser2net	Baud 115200 V
Firewall	Data Bit 8 V
System	
Logout	Parity Bit None 🗠
	Stop Bit 1 🗸
	Package time(ms) 100
	(2) The Recommended Value: More than 20

#### Figure25 serial port parameters

- Package mechanism: packaged time calculated according to the baud rate, packing length of 1460 bytes, it cannot be changed.
- Support domain server and the function of the serial port to send a heartbeat and registration packet
- Heartbeat package: we choose works as TCP Client, the heartbeat time is set to be send every 5 seconds. The data content is hexadecimal data.

### Heartbeat packets and registration packet is disable by default

Jervices	Conliguration	
> Network		
✓ SerialtoEth	Network Serial Port heart register	
<u>setup_ser2net</u>	Enable	
> Firewall		
> System	neart time 5	
> Logout	heart data 12	
	heart type send to net	

### Figure26 heartbeat package

### 3.3.8 VPN Client(PPTP、L2TP、IPSEC、OPENVPN、GRE、SSTP)

#### 3.3.8.1 PPTP

PPTP is a point-to-point tunnel protocol. It uses a TCP (port 1723) connection to maintain the tunnel. It uses the general route encapsulation (GRE) technology to encapsulate the data into PPP data frames and transmit them through the tunnel. It encrypts or compresses the load data in the encapsulated PPP frames. MPPE encrypts PPP frames through encryption keys generated by MS-CHAP, MS-CHAP V2 or EAP-TLS



### authentication processes.

### Configuring PPTP Client:



Figure28 create PPTP



USR-G800V2	TEST WAN_4G	1 WAN_WIRED LAI	۷	
	Interfaces - TEST			
> Status	On this page you can config	jure the network interfaces. Yo	u can bridg	e several interfaces by tickir
> Services	network interfaces separate	d by spaces. You can also use \	/LAN notat	ion INTERFACE . VLANNR (e.c
✓ Network	6-			
Interfaces	Common Configuration	n		
APNSET	General Setup Advanc	ed Settings Firewall Setti	ngs	
IPSECSET	Status			RX: 0.00 B (0 Plets)
Wifi	Status	pptp-test		TX: 0.00 B (0 Pkts.)
DHCP and DNS				
Hostnames	Protocol	PPtP ~		
Static Routes	VPN Server	test.usr.cn		
Diagnostics	PAP/CHAP username	-		
QoS	•			
> SerialtoEth	PAP/CHAP password		R	
> Firewall	L'			1
> System				Save Apply
	Figure29 setting page			

#### Note:

1. Server is built to see if only MPPE encryption is supported. Only MSChapV2 encryption can be selected in the client advanced settings.

2. In the firewall area, we choose WAN because we dial at the WAN port and then click to save and apply.

3. When the "VPN" interface in the router page has run time (non-zero), it indicates that the current VPN has been successfully started and can access the VPN network.

### 3.3.8.2 L2TP

G800V2 supports tunnel password authentication, CHAP authentication and other authentication methods. Encryption supports MPPE encryption and L2TP OVER IPSEC pre-shared key encryption.



USR IOT

Interfaces           Interface Overview           LAN         Status           Uptime: 0h 33m 42s           MAC-Address: D8:80:4C:F9:8E:33           RX: 772.WB (44227 Pkts.)           Uptime: 0h 33m 42s           MAC-Address: D8:80:4C:F9:8E:33           RX: 772.WB (44227 Pkts.)           Uptime: 0h 33m 42s           MAC-Address: 06:84CC:F8:0450           WAN_4G1           Uptime: 0h 0m 0s           MAC-Address: 06:84CC:F8:04:5C           RX: 000 8 (0 Pkts.)           TX: 000 8 (0 Pkts.)           WAN_WIRED           Wan WIRED           Wath 22           WAN WIRED           Wath 23           Wath 24           Wath 22           Wath 23           Wath 24           Wath 24           Wath 24           Wath 24           Wath 25           Wath 25           Wath 26           Wath 27           Wath 28	R-G800V2		WAN 4G1 LAN
Interface Overview         Network       Status         Uptime: 0h 33m 42s         MAC-Address: Db:80:462:F9:8E:33         RX: 7.72 MB (44227 Pkts.)         TX: 91.39 MB (80:034 Pkts.)         IPv4: 192.168.1.1/24         IPv6: FDAE:DEEC:9FEA:0:0:0:0:1/60         WAN_4G1         WAR:-Address: 06:84:CC:FB:D4:5C         RX: 0:00 B (0 Pkts.)         TX: 0:00 B (0 Pkts.)         TX: 0:00 B (0 Pkts.)         WAN_WIRED         WAN_WIRED         WAC-Address: 08:80:4C:F9:8EE:33         RX: 91:32 MB (90:021 Pkts.)         TX: 81:4 MB (43813 Pkts.)         IPv4: 172.16:11.166/24	tatus	Interfaces	
Interface Overview           Network         Status           Uptime: 0h 33m 42s           MAC-Address: D8:80:4C:F9:8E:33           RX: 7.72 MB (44227 Pkts.)           Br-lan           IPv4: 192.168.1.1/24           IPv6: FDAE:DEEC:9FEA:00:00:1/60           WAN_4G1           Uptime: 0h 0m 0s           MAC-Address: 06:84:CC:FB:D4:5C           RX: 0.00 8 (0 Pkts.)           eth1           WAN_WIRED           Wath WIRED           Wath 43813 Pkts.)           IPv4: 172.16.11.166/24	rvices	interfaces	
Network         Status           LAN         Uptime: 0h 33m 42s           MAC-Address: D8:B0:4C:F9:BE:33         RX: 7.72 MB (44227 Pits.)           Br-lan         TF: 91.89 MB (5034 Pitts.)           IPv4: 192.168.1.1/24         IPv6: FDAE:DEE:G9FEA:00:00:01/60           WAN_4G1         Uptime: 0h 0m 0s           MAC-Address: 06:84:CC:FB:D4:5C         RX: 0.00 8 (0 Pitts.)           Eth1         RX: 0.00 8 (0 Pitts.)           WAN_WIRED         Uptime: 0h 33m 39s           MAC-Address: 08:80:4C:F9:BEE33         RX: 91:32 MB (90021 Pits.)           Br: 91:32 MB (90021 Pits.)         IPv4: 172.16.11.166/24	• Network	Interface Overview	
LAN       Uptime: 0h 33m 42s         MAC-Address: D0:804C:F99BE33       MAC-Address: D0:804C:F99BE33         B* (****)       B*         b*-lan       TX: 91.89 MB (4322 P kts.)         IPv4: 192.168.1.1/24       IPv6: FDAE:DEC:G9FEA:00:00:1/60         WAN_4G1       Uptime: 0h 3m 0s         MAC-Address: 06:84:CC:FB:D4:5C       RX: 0.00 B (0 P kts.)         eth1       TX: 0.00 B (0 P kts.)         WAN_WIRED       Uptime: 0h 33m 39s         WAAC-Address: 08:80:4C:F9:BEE33       RX: 91.32 MB (90021 P kts.)         TX: 8.14 MB (43813 P kts.)       IPv4: 172.16.11.166/24	Interfaces	Network	Status
Image: State of the state	PNSET	LAN	Uptime: 0h 33m 42s MAC-Address: D8:B0:4C:F9:BE:33
WAN_4G1         Uptime: 0h om 0s           WAN_4G1         Uptime: 0h om 0s           WAC-Address: 06:84:CC:FB:D4:5C         RX: 0.00 B (0 Pkts.)           eth1         TX: 0.00 B (0 Pkts.)           WAN_WIRED         Uptime: 0h 33m 39s           WAAC-Address: 06:80:4C:F9:BE:33         RX: 91:32 MB (90021 Pkts.)           TX: 8.14 MB (43813 Pkts.)         IPv4: 172.16.11.166/24           IPv4: 172.16.11.166/24         IPv4: 172.16.11.166/24	SET	◎ <sup>3</sup> (22 余) br-lan	RX: 7.72 MB (44227 Pkts.) TX: 91.89 MB (85034 Pkts.) IPv4: 192.168.1.1/24
WAXAddress:         06:84:4CC:FB:D4:5C           #1         TX:         000 B (0 Pkts.)           wAN_WIRED         Uptime: 0h 33m 39s           WAN_WIRED         Uptime: 0h 33m 39s           WAN_WIRED         RX: 91.32 MB (90021 Pkts.)           #2         TX: 8.14 MB (43813 Pkts.)           #4h0.2         IPv4: 172.16.11.166/24	I DNS	WAN 4C1	Uptime: 0h 0m 0s
WAN_WIRED         Uptime: (h 33m 39s           ###         RX: 91.32 MB (90021 Pkts.)           ## 0.2         TX: 8.14 MB (43813 Pkts.)           IPv4: 172.16.11.166/24		eth1	MAC-Address: 06:84:CC:FB:D4:5C RX: 0.00 B (0 Pkts.) TX: 0.00 B (0 Pkts.)
WAN_WIRED         MAC-Address:         D8:80:4C:F9:8E:33           ##         TX:         91.32 MB (90021 Pits.)           eth0.2         TX:         81.4 MB (43013 Pits.)           IPv4:         172.16.11.166/24			Uptime: 0h 33m 39s
Add new interface		eth0.2	MAC-Address: D8:80:4C:F9:8E:33 RX: 91.32 MB (90021 Pkts.) TX: 8.14 MB (43813 Pkts.)
La Add New Internate		Add now interface	IPV4: 1/2.10.11.100/24
		Add new interface	

#### Figure30 add interface







0V2 Common Configuratio	n	
Status General Setup Advance	ed Settings Firewall Settings	
Services Auth Type	No Authby	
letwork Set Static Ip	No Authby Only MSChapV2	
rialtoEth Tuppel Auth Password	MSChapV2 EAP PAP CHAP	
ewall Enable	LZIP OVER IPSEC	
em Enable IPv6 negotiation		
on the PPP link		
Use default gateway	Use default gateway 🗹 🍘 If unchecked, no default route is configured	
Use gateway metric		
Custom Subnet Mask Enabled	🗌 🍘 If unchecked, default Subnet	
Use DNS servers advertised by peer	If unchecked, the advertised	
LCP echo failure	3	
threshold	Presume peer to be dead after g	
LCP echo interval	120	
	Send LCP echo requests at the g	

#### Figure32 auth type

USR-G800V2	Common Configuration			
> Status	General Setup Advanc	ed Settings Firewall Settings		
> Services	Auth Type	No Authby		
✓ Network	Set Static Ip			
Interfaces APNSET	Tunnel Auth Password Enable			
IPSECSET Wife	Tunnel Auth Password	character: 1-16		
DHCP and DNS	Enable IPv6 negotiation on the PPP link			
Hostnames	Use default gateway	🛛 🎯 If unchecked, no default route is configured		
Diagnostics	Use gateway metric			
QoS	Custom Subnet Mask Enabled	🔲 🍘 If unchecked, default Subnet Mask is 255.255.255.255		
<ul> <li>SerialtoEth</li> <li>Firewall</li> </ul>	Use DNS servers advertised by peer	🛛 🔞 If unchecked, the advertised DNS server addresses are ignored		
	Figure33 setting page			

#### Note:

When selecting L2TP OVER IPSEC encryption, IPSEC configuration can refer to IPSEC configuration.

### 3.3.8.3 IPSEC

IPSEC protocol is not a single protocol. It provides a set of architecture for data security between application



and IP layer, including network authentication protocols AH, ESP, IKE and some algorithms for network authentication and encryption. AH protocol and ESP protocol are used to provide security services, IKE protocol is used for key exchange.

	General Setup Advance	ed Settings Connect Log
USR-G800V2	Ipsec Enable	
> Status	Connect Type	Net-to-Net Mode
> Services	Transport Type	Tunnel 🗸
<ul> <li>Network</li> <li>Interfaces</li> </ul>	Function Type	Client VPN 👻
APNSET	Connect Name	
IPSECSET	Local Interface	lan 🗸
Wifi	Local Subnet	
DHCP and DNS		Ø Subnet expressed as network/netmask, e.g. 10.10.10.0/24
Hostnames	Local ID	
Static Routes		<ul> <li>ID expressed as IPv4 address e.g. 10.10.10.10,</li> <li>or as fully-qualified domain name preceded by @ e.g. @domain</li> </ul>
Diagnostics	Pomoto Addross	
QoS	Kenote Address	IPv4 Address, A.B.C.D
> SerialtoEth	Remote Subnet	
> Firewall		Subnet expressed as network/netmask, e.g. 10.10.10.0/24

#### Figure34 setting page

- Application mode selection: Net-to-Net mode (site-to-site or gateway-to-gateway), Road Warrior mode (end-to-site or PC-to-gateway)
- Transport mode selection: It can be divided into tunnel mode and transmission mode. You can choose from the transport type.
- Functional types: can be divided into VPN client and VPN server.
- · Connection name: The name used to indicate the connection must be unique.
- · Local interface: The local address through which you can choose wan\_wired, wan\_4g
- · Remote address: IP/domain name on the other end.
- Local Terminals: IPSEC protects subnets and subnet masks. If you choose the client of Road Warrior mode, you do not need to fill in.
- Remote Terminals: IPSEC end-to-end protection subnet and subnet mask.
- Local identifier: Channel local identifier, which can be IP or domain name. Note that when you customize a domain name, add @
- Remote dentifier: Channel-to-end identifier, which can be IP or domain name. Note that when you customize a domain name, add @



Be Honest, Do Best	USR-G806 User Manual	Technical Support: h.usriot.com
USR-G800V2	General Setup Advance	ed Settings Connect Log
> Status	IKE Algorithm	3DES-SHA1 Y
> Services	IKE Life Time	28800
Interfaces	SA Type	ESP V
APNSET	ESP Algorithm	3DES-SHA1 V
Wifi	ESP Life Time	3600
DHCP and DNS	Mode	Main
Hostnames Static Routes	Session key forward encryption(PFS)	
Diagnostics	Auth By	Secret ~
QoS		
> SerialtoEth	PSK	100 million
> Firewall		

### Figure35 setting page

- Start DPD Detection: Whether to Enable this Function
- DPD time interval: Set the time interval of connection detection (DPD).
- DPD timeout: Set the connection detection (DPD) timeout.
- DPD operation: Set up the operation of connection detection.
- IKE encryption: The first stage includes IKE encryption mode, integrity scheme and DH switching algorithm.
- · IKE life cycle: Set IKE life cycle in seconds, default: 28800.
- · SA type: ESP and AH can be selected in the second stage.
- ESP Encryption: Select the corresponding encryption mode and integrity scheme.
- ESP Life Cycle: Set ESP Life Cycle, Unit: s, Default: 3600
- Mode: The negotiation mode defaults to the main mode, and the barbaric mode can be chosen.
- · Session Key Forward Encryption (PFS): Whether PFS is enabled

• Authentication method: At present, it supports the authentication method of pre-shared key.

Note:

After the configuration is successful, ISAKMP SA established flag in the connection log indicates that IPSEC VPN was created successfully.

### 3.3.8.4 **OPENVPN**

OPEN VPN is an application layer VPN implementation based on OpenssI library. It supports certificate-based two-way authentication, that is, the client needs to authenticate the server, and the server also needs to authenticate the client.



USR IOT

USR-G800V2	WAN_WIRED	WAN_4G1 LAN	
> Status	Interfaces		
> Services			
✓ Network	Interface Overview		
Interfaces	Network	Status	Actions
APNSET	LAN	Uptime: 0h 33m 42s MAC-Address: D8:B0:4C:F9:BE:33 DV: 7.73 MB (44337 DH+)	🔗 Connect 🛛 🙆 Stop
IPSECSET Wifi	த் <sup>த</sup> (ஊ இ ) br-lan	<b>TX:</b> 91.89 MB (85034 Pkts.) <b>IPv4:</b> 192.168.1.1/24 <b>IPv4:</b> 192.168.1.1/24	🗹 Edit 🗴 💼 Delete
DHCP and DNS Hostnames Static Routes	WAN_4G1	Uptime:         0h Om 0s           MAC-Address:         06:84:CC:FB:D4:5C           RX:         0.00 B (0 Pkts.)           TX:         0.00 B (0 Pkts.)	<ul> <li>Connect</li> <li>Stop</li> <li>Edit</li> <li>Delete</li> </ul>
Diagnostics QoS	WAN_WIRED 22 eth0.2	Uptime: 0h 33m 39s MAC-Address: D8:80:4C:F9:8E:33 RX: 91.32 MB (90021 Pkts.) TX: 8.14 MB (43813 Pkts.)	<ul><li>Connect</li><li>Stop</li><li>Edit</li><li>Delete</li></ul>
Senarrotth     Firewall     System	Add new interface	IPv4: 172.16.11.166/24	
> Logout			

### Figure36 add interface

USR-G800V2	Create Interface		
<ul> <li>Status</li> <li>Services</li> <li>Network</li> <li>SerialtoEth</li> <li>Firewall</li> <li>System</li> <li>Logout</li> </ul>	Create interface Protocol of the new interface Create a bridge over multiple interfaces Cover the following interface	The allowed charact Static address Static address DHCP dient Unmanaged DHCPv6 dient PPP PPP0E PPP0E PPP0ATM UMTS/GPRS/EV-DO LZTP GRE TUN TAP SSTP Relay bridge O Ethernet Ad O Kireless Ne O C Custom Int	ters are: A-Z, a-z, 0-9 and _ er: "apcli0" h: "eth0" "eth0.1" (lan) "eth0.2" (wan_wired) er: "eth1" (wan_4g1) er: "ra0" er: "teql0" er: "kds0" er: "wds1" dapter: "wds2" dapter: "wds3" etwork: Master "USR-G800V2-BE33" (lan) terface:

Figure37 setting page



-G800V2			
	TEST WAN_4G	1 WAN_WIRE	D LAN
tatus	Interfaces - TEST		
ervices			t v
letwork	On this page you can config network interfaces separated	ure the network inte d by spaces. You car	ertaces. You car n also use <u>VLAN</u>
nterfaces			
APNSET	Common Configuration	ı	
PSECSET	General Setup Advance	ed Settings Fir	ewall Settings
Vifi			100
HCP and DNS	Status	tu	n-test
istnames			
ratic Routes	Protocol	TUN	~
liagnostics	TCD/UDD Notwork		
agnosics	ICF/ODF NELWOIK		
05	Port	1194	
toEth	Local Interface	lan 🗸	
1			
	Remote Address		

### Figure38 setting page

- Protocol: TUN (Routing Mode) or TAP (Bridge Mode) .
- Channel protocol: UDP or TCP
- Port: The listening port of OPENVPN client.
- Home interface: wan\_wrid or wan\_4g.
- Remote address: IP/domain name of the server.
- Local Tunnel Address: You can set the local tunnel address, such as 192.168.10.1, if not fill in, default server automatic allocation.
- Remote Tunnel Address: You can set the opposite tunnel address, such as 192.168.10.1, if not fill in, default server automatic allocation.



USR-G800V2 General Setup Advan	ed Settings Firewall Settings
Encoursion Standard	Blowfish CBC 🗸
Services Hash Algorithm	SHA1 ~
✓ Network Use LZO Compression	
Interfaces Keepalive Set	
APNSET Tun MTU Set	
Wifi TCP MSS	
DHCP and DNS TLS Enable	
Hostnames Local Tunnel Address	
Static Routes Remote Tunnel Address	
Diagnostics QoS Public Server CA Certificate	
> SerialtoEth	
> Firewall	
> System	
> Logout	

#### Figure39 setting page

- Encryption Standards: Channel Encryption Standards include Blowfish CBC, AES-128 CBC, AES-192 CBC, AES-256 CBC and AES-512 CBC.
- · Use LZO compression: Enable or disable transmission data using LZO compression.
- Keep-alive settings: default is 10 120
- TUN MTU Settings: Set MTU Values for Channels
- TCP MSS: Maximum Segmentation Size of TCP Data
- TLS Authentication Key: Authentication Key for Secure Transport Layer
- Public Service CA Certificate: A Certificate Common to Server and Client
- Public Client Certificate: Client Certificate
- Client Private Key: Client Key

#### Note:

Before the connection between client and server, Ca certificate, client certificate, client key, TLS authentication key, which need to be provided by server.

### 3.3.8.5 GRE

GRE (Generic Routing Encapsulation) protocol is for some network layer protocol (such as IP and IPX) datagram Encapsulation, make the datagram is encapsulated to in another transmission in the network layer protocol (IP). The GRE uses Tunnel technology, which is the third-tier Tunnel protocol of the Virtual Private Network.



<u> </u>	2				
l	USR-G800V2		WAN_WIRED	WAN_4G1 LAN	
	Status		nterfaces		
	Services		interraces		
~	Network	L L	nterface Overview		
ſ	Interfaces	N	letwork	Status	Actions
L	APNSET		LAN	Uptime: 0h 33m 42s MAC-Address: D8:B0:4C:E9:BE:33	
	IPSECSET		s2 (5	RX: 7.72 MB (44227 Pkts.)	& Connect Stop
	Wifi	br-lan	TX: 91.89 MB (85034 Pkts.) IPv4: 192.168.1.1/24 IPv6: FDAE:DEEC:9FEA:0:0:0:0:1/60	C Edit 🝵 Delete	
	DHCP and DNS		WAN 4G1	Uptime: 0h 0m 0s	
	Hostnames		J.	MAC-Address: 06:84:CC:FB:D4:5C	Connect Stop
	Static Routes	eth1	eth1	TX: 0.00 B (0 Pkts.)	🗹 Edit 🛛 🍵 Delete
	Diagnostics		WAN WIRED	Uptime: 0h 33m 39s	
	QoS		WAN_WIKED	MAC-Address: D8:B0:4C:F9:BE:33 RX: 91.32 MB (90021 Pkts.)	🖉 Connect 🥘 Stop
	SerialtoEth		eth0.2	TX: 8.14 MB (43813 Pkts.) IPv4: 172.16.11.166/24	🗹 Edit 🧰 Delete
	Firewall	a	Add new interface		
	System				
	Logout				

#### Figure40 setting page

#### USR-G800V2 **Create Interface** Name of the new > Status interface The allowed characters are: A-Z, a-z, 0-9 and \_ > Services Static address ~ Protocol of the new > Network interface Static address DHCP dient > SerialtoEth Create a bridge over Unmanaged multiple interfaces > Firewall DHCPv6 dient PPP Cover the following er: "apcli0" > System PPtP interface h: "eth0" > Logout PPPoE "eth0.1" (lan) PPPoATM "eth0.2" (wan\_wired) UMTS/GPRS/EV-DO L2TP er: "eth1" (wan\_4g1) er: "ra0" TUN er: "tegl0" TAP er: "wds0" SSTP er: "wds1" Relay bridge O 🖉 Ethernet Adapter: "wds2" O 🖉 Ethernet Adapter: "wds3" O 🙍 Wireless Network: Master "USR-G800V2-BE33" (lan) O 🔬 Custom Interface:

Figure41 setting page



USR-G800V2	TEST WAN_4G	1 WAN_WIRED LAN	
	Interfaces - TEST		
> Status	On this page you can configu	ure the network interfaces. You ca	n bridge several interfaces by
> Services	network interfaces separated	l by spaces. You can also use VLA	N notation INTERFACE.VLANN
✓ Network	-		
Interfaces	Common Configuration		
APNSET	General Setup Advance	ed Settings Firewall Settings	
IPSECSET		E.	
Wifi	Status	gre-test	TX: 0.00 B (0 Pkts.)
DHCP and DNS			
Hostnames	Protocol	GRE 🗸	
Static Routes	Remote Address		
Diagnostics			
QoS	Local Address		
> SerialtoEth	Remote Tunnel Address		
> Firewall	Local Tunnel Address		
> System			
> Logout			
	Figure42 setting page		Save Apply
	r igure42 setting page		
USR-G800V2			
	TEST WAN_4G1	WAN_WIRED LAN	
> Status	Interfaces - TEST		
> Services	On this page you can configur	re the network interfaces. You can l	bridge several interfaces by tick
✓ Network	network interfaces separated b	by spaces. You can also use <u>VLAN</u> r	notation INTERFACE.VLANNR (
Interfaces			
APNSET	Common Configuration		
IPSECSET	General Setup Advanced	Settings Firewall Settings	
Wifi	TI Set		
DHCP and DNS	The Set		
Hostnames	Override MTU		
Static Routes			
Diagnostics			Save Apply
QoS			
> SerialtoEth			
	Figure43 setting page		

- TTL Settings: set the TTL of the GRE channel, default 255
- Set MTU: set the MTU of GRE channel, default 1400



#### 3.3.8.6 SSTP

SSTP, also known as secure sockets tunnel protocol, is an Internet protocol that creates a VPN tunnel for traffic over HTTPS.

SSTP is only available for remote access and does not support VPN tunnels between sites



Figure44 setting page

USR-G800V2	Create Interface		
<ul> <li>Status</li> <li>Services</li> <li>Network</li> <li>SerialtoEth</li> <li>Firewall</li> <li>System</li> <li>Logout</li> </ul>	Name of the new interface Protocol of the new interfaces Create a bridge over multiple interfaces Cover the following interface	<ul> <li>The allowed characteristic address</li> <li>Static address</li> <li>Static address</li> <li>DHCP dient</li> <li>Unmanaged</li> <li>DHCPv6 dient</li> <li>PPP</li> <li>PPtP</li> <li>PPPoE</li> <li>PPPoATM</li> <li>UMTS/GPRS/EV-DO</li> <li>L2TP</li> <li>GRE</li> <li>TUN</li> <li>TAP</li> <li>SSTP</li> <li>Relay bridge</li> <li>SSTP</li> <li>Ethernet A</li> <li>Ethernet A</li> </ul>	<pre>cters are: A-Z, a-z, 0-9 and er: "apcli0" h: "eth0"    "eth0.1" (lan)    "eth0.2" (wan_wired) er: "eth1" (wan_4g1) er: "ra0" er: "kds0" er: "wds1" kdapter: "wds2" kdapter: "wds3"</pre>
		U 🔮 Wireless N	letwork: Master "USR-G800V2-BE33" (lan)

Figure45 setting page



5	Status				
ĺ	Sonicas	On this page you can configu	re the netwo <mark>r</mark> k interfaces. Y	ou can bridg	e several interfaces by ticking
	Network	network interfaces separated	by spaces. You can also use	VLAN notat	ION INTERFACE.VLANNR (e.g.
Ě	Network	Common Configuration			
	Interfaces	Common Comiguration			
	APNSET	General Setup Advanced	l Settings Firewall Set	tings	
	IPSECSET	Chabun			
	Wifi	Status	sstp-test		TX: 0.00 B (0 Pkts.)
	DHCP and DNS				
	Hostnames	Protocol	SSTP 🗸		
	Static Routes	SSTP Server			
	Diagnostics	PAP/CHAP username			
	QoS				
>	SerialtoEth	PAP/CHAP password		en en	
>	Firewall				
>	System				Save Apply
122					

#### Figure46 setting page

- SSTP Server: IP or Domain Name of SSTP Server
- PAP/CHAP User Name: SSTP User Name
- PAP/CHAP password: SSTP password

Note:

Advanced settings can refer to advanced settings of PPTP.

### 3.3.9 Static Route

Static routing can achieve setup communication between two different intranet segments, such as the following configuration:

The Wan port of G800V2 is 192.168.13.167, and the LAN port is 192.168.20.1.

The Wan port of G806 is 192.168.13.165, and the LAN port is 192.168.1.1.

If users want to realize that the PC under G800V2 LAN port accesses the PC under G806 LAN port, users can add a static routing to G800V2.

Set up static routing on G800V2 first. (Refer to G800V2 setting principle for setting up G806)



USR-G800V2	Routes									
> Status		Routes specify over which interface and gateway a certain host or network can be reached.								
> Services		Static IPv4 Rou	tes							
✓ Network										
Interfaces		Interface	Target	IPv4-Netmask	IPv4-	-Gateway	Metr	ic	MTU	
APNSET			Host- <u>IP</u> or Network	if target is a network						
IPSECSET	w	van_wired 🗸	192.168.1.0	255.255.255.0	192.16	8.13.165				📋 Delete
Wifi										
DHCP and DNS	a	Add								
Hostnames	2	Static IPv6 Rou	tes							
Static Routes		Interface		Target			IPv6-Ga	teway	Metric	MTU
Diagnostics					CIDP					
QoS			I	-Address of Network	(CIDK)					
> SerialtoEth				Thi	s section cont	tains no values y	/et			
USR-G800V2			Figure47	setting page	)					
<ul> <li>Status</li> <li>Services</li> <li>Network</li> </ul>			Output accept v							
SerialtoEth		Zones								
✓ Firewall			Zone ⇒ Forwardings		Input	Output	Forward	Masguerading	MSS clamping	
General Settings										
Port Forwards										C Edit
Custom Rules		li	an: lan: ∰ ⊛ 🔿 🗰	an	accept 🗸	accept 🗸	accept 🗸			a Delete
Restricting access										
rate-limiting		wan: wan_	wired: 👷 wan_4g1: /	⇒ ACCEPT	accept 🗸	accept ~	accept ~			Edit
System										
Logout	<u>(</u>	Add								

#### Figure48 setting page

Note:

1. Static routing is not added by default. When using this function, please configure it according to specific requirements.

2. After adding, please enable the forwarding of Firewall - > basic settings.

### 3.3.10 Firewall

### 3.3.10.1 NAT Function

### · 3.3.10.1.1 MASQ

MASQ, also known as MASQUREADE, converts the source IP leaving the packet into the IP address of an interface of the router. If the IP dynamic camouflage is checked in the figure, the system will change the source IP address of the packet leaving the router to the IP address of the WAN port.

Note:

Enable by default.



Be Honest	est, Do Best ! USR-G806 User Manual Techn			chnical Support: h.usriot.com				
USR-G800V2  Status Services Network		Input     accept        Output     accept        Forward     reject						
SerialtoEth     Firewall     General Settings	Zones	Zone ⇒ Forwardings	Input	Output	Forward	Masquerading	MSS clamping	-
Port Forwards Traffic Rules Custom Rules		lan: lan: ﷺ ★ wan	accept 🗸	accept 🗸	accept 🗸			C Edit
Restricting access rate-limiting > System	wan:	wan_wired: ﷺ wan_4g1: ﷺ ⇒ ACCEPT	accept 🗸	accept 🗸	reject 🗸			C Edit
> Logout	Add		Save	Арріу				

#### Figure49 MASQ setting page

### · 3.3.10.1.2 SNAT

Source NAT is a special form of packet camouflage. By changing the source address of the packet leaving the router, the source IP address of the packet leaving the router is fixed to 192.168.9.1.

	Name S	ource zone Destination z	one		
> Status	New forward rule	∽ wan	V S Add and edit		
> Services					
> Network					
> SerialtoEth	Source NAT	r 1.1		10 1/	ff f la
✓ Firewall	addresses to internal sub	orm of masquerading which nets.	allows fine grained control over the	e source IP used for outgoing tr	attic, for example to map multiple WAIN
General Settings	Name	Match	Action	Enable	Sort
Port Forwards					
Traffic Rules			This section contains no value	s yet	
Custom Rules					
Restricting access	New source NAT:				
rate-limiting	Name	Source zone Destir	nation zone To source	IP To sour	ce port
> System	test	lan 🗸 🛛 v	van 🗸 192.168.9.1	Do not rewrit	Add and edit
> Logout					
			Save Apply		

Figure50 setting page



## 3.3.10.1.3 DNAT

### 3.3.10.1.1.1 Port Forward

> Status	Port forwarding allows remote computers on the internet to connect to a specific computer or service within the private Dark
> Services	Port Forwards
> Network	
SerialtoEth	Name Match Forward to Enable Sort
✓ Firewall	
General Settings	This section contains no values yet
Port Forwards	
Traffic Rules	New port forward:
Custom Rules	Name Protocol External External Internal Internal IP Internal 2010 port 2011 address port
Restricting access	
rate-limiting	
> System	
> Logout	Save Apply

Figure51 port forward

### 3.3.10.1.1.2 NAT/DMZ

> Status	Port forwarding allows remote computers on the Internet to connect to a specific computer or service within the private LAN.							
> Services	Port Forwa	rds						
> Network	Name	Match		Femural to		Enable	Cart	
> SerialtoEth	Name	Match		Porward to		Enable	3011	
<ul> <li>Firewall</li> <li>General Settings</li> </ul>	test	IPv4-TCP From any host in wan Via any router IP at port 8080	IP	192.168.1.214, port	80 in Ian	V	•	i Delete
Port Forwards								
Traffic Rules				New port forw	ard:			
Custom Rules		Name	Protocol	External Extern	al Internal	Internal IP	Internal	
Restricting access			11010001	zone port	zone	address	port	
rate-limiting			TCP+UDP ~	wan~	lan 🗸	~		🔂 Add
> System								
> Logout				Save	ply			

Figure52 setting page

### Note:

Port mapping and DMZ functions cannot be used simultaneously.



### 3.3.10.2 Restricting Access

)V2
es irk oEth
ral Settings Forwards
iles Rules
access

Figure53 black/white list

### 3.3.10.3 Rate-Limiting

USR-G800V2		Restrict access to t	he Internet speed o	fip	
> Status		start ip	end ip	downstream (KB/S)	upstream (KB/S)
> Services	<i>.</i>				
> Network				This section contains no	o values yet
> SerialtoEth					
✓ Firewall				New firewall re	ıle:
General Settings		start ip	end ip	downstream (KB/S) upstrea	m (KB/S)
Port Forwards					🗘 Add
Traffic Rules					
Custom Rules		Restrict access to t	he Internet sneed o	fmac	
Restricting access		Restrict decess to t	ne memer speed o	T Mac	
rate-limiting		MAC		downstream (KB/S)	upstream (KB/S)
> System					
> Logout				This section contains no	o values yet

### Figure54 rate-limiting

## 4 Setup Method

## 4.1 Webpage Setting



#### USR-G806 User Manual

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Parameters	Default
SSID	USR-G800V2-XXXX
IP of LAN port	192.168.1.1
Account	root
Password	root
Wifi-password	www.usr.cn

## 

Figure55 webpage

## 4.2Web Function

Status





USR-G800V2	WAN_WIRED	WAN_4G1 LAN	
> Status	Interfaces		
> Services			
✓ Network	Interface Overview		
Interfaces	Network	Status	Actions
APNSET	LAN	Uptime: 3h 21m 28s MAC-Address: D8:B0:4C:F9:BE:33	🖉 Connect 🛛 🙉 Ston
IPSECSET Wifi	في (ﷺ) br-lan	RX: 14.78 MB (97011 Pkts.) TX: 211.87 MB (197218 Pkts.) IPv4: 192.168.1.1/24	Connect Connect
DHCP and DNS	WAN 4G1	Uptime: 0h 0m 0s	🦪 Connect 🛛 🚳 Ston
Hostnames Static Routes	یا eth1	MAC-Address: 06:84:CC:FB:D4:5C RX: 0.00 B (0 Pkts.) TX: 0.00 B (0 Pkts.)	Connect Stop
Diagnostics	WAN_WIRED	Uptime: 3h 21m 26s MAC-Address: D8:B0:4C:F9:BE:33	🛿 Connect 🛛 🙆 Stop
QoS > SerialtoEth	eth0.2	RX: 211.39 MB (225748 Pkts.) TX: 15.36 MB (93837 Pkts.) IPv4: 172.16.11.166/24	🗭 Edit 📋 Delete
> Firewall	🕞 Add new interface	3 (1879/08 (1977) (753) (753) (753) (754) (753)	

#### Figure57 interfaces

Serial to Ethernet



ISR-G800V2	othernet		
Settings fo	or Serial to Etherne	et	t Converter, it has
es Configu	ration		
tork	Serial Port	heart	real
ser2net	Schurron	neure	icg
all	Work Mode	TCPServe	rv
Re	emote Ad <mark>d</mark> ress	192.168.1.	201
	Remote Port	8899	
	C	0 1-65535	
	Local Port	8899	
	ų,	1-65535	
	ModbusTCP	NotUse	
em G800V2	al to ethernet		
-G800V2	al to ethernet em Properties		
00V2 Gener	al to ethernet em Properties al Settings Re	mote log	
Syste	al to ethernet em Properties al Settings Re Local Time	motelog l e Mon Jan 28	
Syste	al to ethernet em Properties al Settings Re Local Time Hostname	motelog l e Mon Jan 28 e USR-G80	0
Syste	al to ethernet em Properties al Settings Re Local Time Hostname Timezone	motelog l e Mon Jan 28 e USR-G80 e America/N	( ( 0
Gener	al to ethernet em Properties al Settings Re Local Time Hostname Timezone	motelog l e Mon Jan 28 e USR-G80 e America/N	
Gener	al to ethernet em Properties al Settings Re Local Time Hostname Timezone	mote log l e Mon Jan 28 e USR-G80 e America/N	
Genera	al to ethernet em Properties al Settings Re Local Time Hostname Timezone	mote log l e Mon Jan 28 e USR-G80 e America/N	
Genera	al to ethernet em Properties al Settings Re Local Time Hostname Timezone	mote log e Mon Jan 28 e USR-G80 e America/f	
Genera	al to ethernet em Properties al Settings Re Local Time Hostname Timezone Synchronization Enable NTP clien	mote log e Mon Jan 28 e USR-G80 e America/f	
Genera	al to ethernet em Properties al Settings Re Local Time Hostname Timezone Synchronization Enable NTP clien Provide NTP serve	mote log e Mon Jan 28 e USR-G80 e America/f n n t ☑	
F NTP	al to ethernet em Properties al Settings Re Local Time Local Time Hostname Timezone Synchronization Enable NTP clien Provide NTP serve server candidate	mote log e Mon Jan 28 e USR-G80 e America/I n n t 🗹 er 🗆 s 0.openw	
Syste Gener Time F	al to ethernet m Properties al Settings Local Time Local Time Hostname Timezone Synchronization Enable NTP clien Provide NTP serve server candidates	mote log e Mon Jan 28 e USR-G80 e America/N n n t 🗹 s 0.openw 1.openw	
Syste Gener Time F NTP	al to ethernet em Properties al Settings Re Local Time Local Time Hostname Timezone Synchronization Enable NTP clien Provide NTP serve server candidates	mote log e Mon Jan 28 e USR-G80 e America/N n t 🗹 er 🗆 s 0.openw 1.openw 2.openw 3.openw	



## 5 AT Commands

Num	Command	Function				
Version						
1	AT+VER	Query firmware version				
2	AT+MAC	Query MAC				
3	AT+ICCID	Query ICCID				
4	AT+IMEI	Query IMEI				
	-	4G				
5	AT+SYSINFO	Query device network information				
6	AT+APN	Query/set APN				
7	AT+CSQ	Query signal strength				
8	AT+TRAFFIC	Query traffic information				
		System				
9	AT+UPTIME	Query running time				
10	AT+WWAN	Query IP of device				
11	AT+LANN	Query/set LAN IP(effect when G800V2 work as router)				
12	AT+WEBU	Query/set account and password of webpage				
13	AT+PLANG	Query/set the default language of webpage				
14	AT+RELD	Restore to factory setting				
15	AT+Z	Reboot. Note: return +ok				
16	AT+DHCPEN	Enable/disable DHCP server				
	Transparent					
17	AT+SOCKALK	Query connect status				
18	AT+SOCK	Query/set format of network protocol parameters				
19	AT+UART	Query/set serial port parameters				
20	AT+REGEN	Query/set transparent register package				
21	AT+HTBT	Query/set transparent heartbeat package				
	System Shell Command					
22	AT+LINUXCMP	Execute system shell command				



## 6 Contact us

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## 7 Disclaimer

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## 8 Updated History

2019-01-28 V1.0.1 established