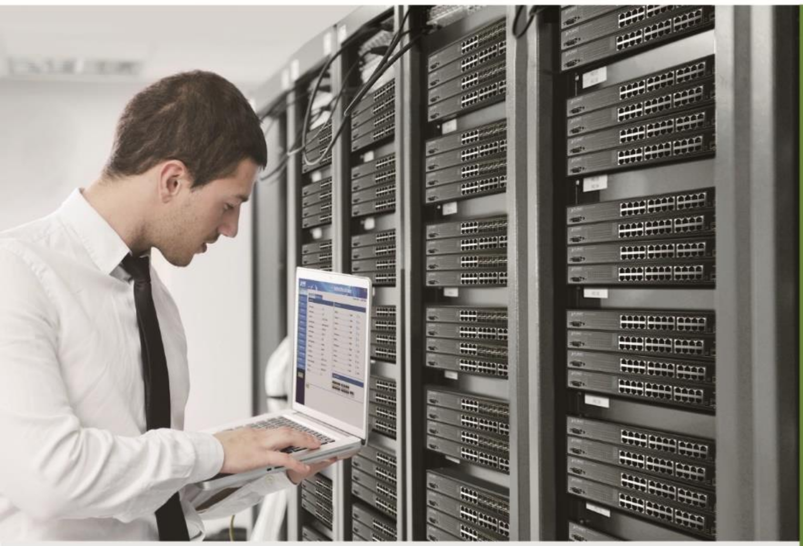
Networking & Communication

User's Manual

Vehicle 4G LTE Cellular Wireless Gateway with 5-Port 10/100TX

► VCG-1500WG-LTE



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FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the Instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Energy Saving Note of the Device

This power required device does not support Standby mode operation. For energy saving, please remove the power cable to disconnect the device from the power circuit. In view of saving the energy and reducing the unnecessary power consumption, it is strongly suggested to remove the power connection for the device if this device is not intended to be active.

WEEE Warning

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

PLANET VCG-1500WG-LTE User's Manual

Model: VCG-1500WG-LTE

Revision: 1.0 (July, 2018)

Part No: EM-VCG-1500WG-LTE _v1.0

TABLE OF CONTENTS

1. INTRODUCTION

Thank you for purchasing PLANET Vehicle 4G LTE Cellular Gateway. Please refer to the table list below for the models used in Europe and the U.S.:

Model Name	4G LTE		Wi-Fi
	FDD	TDD	
VCG-1500WG-LTE-EU	B1/B3/B5/B7/B8/B20	B38/B40/B41	ETSI
VCG-1500WG-LTE-US	B1-5/7/8/13/17-20	-	FCC

"**Vehicle Gateway**" is used as an alternative name in this user's manual.

1.1 Packet Contents

Open the box of the **Vehicle Gateway** and carefully unpack it. The box should contain the following items:

- VCG-1500WG-LTE x 1
- Quick Installation Guide x 1
- 4G LTE Antenna x 1
- 2.4G Wi-Fi Antenna x 2
- GPS Antenna x 1
- Ethernet Cable x 1
- Console Cable x 1
- Mounting Kit x 1
- Power Kit x 1
- Antenna Dust Cap x 4
- Copper Dust Cap x 6

If any item is found missing or damaged, please contact your local reseller for replacement.

1.2 Product Description

Internet of Vehicles via 4G LTE Vehicle Gateway

PLANET VCG-1500WG-LTE is a reliable, secure and high-bandwidth communications Vehicle Gateway for demanding mobile applications and **IoV** deployments. It features **4G LTE** (Long Term Evolution), **wireless AP**, **five Ethernet** ports (4 LAN and 1 WAN), **GPS**, **VPN** technology and **bandwidth management** bundled in a mountable metal case to establish a public network connection and allow passengers to access Internet.

High-performance 4G LTE

The VCG-1500WG-LTE is able to reach a download (DL) speed of up to **100Mbps** and an upload (UL) speed of **50Mbps**. The Vehicle Gateway also supports multi-band connectivity including LTE FDD, TDD, HSDPA, WCDMA and GSM for a wide range of applications.

Wireless Access Point

With an integrated 802.11n Wireless Access Point, the gateway supports data rate up to 300Mbps and is also compatible with **2.4GHz 802.11b/g/n** equipment. The Wireless Protected Access (WPA-PSK/WPA2-PSK) and Wireless Encryption Protocol (WEP) features enhance the level of transmission security and access control over Wireless LAN.

GPS Included

The VCG-1500WG-LTE is equipped with one convenient feature and that is GPS (global positioning system). It is a positioning system based on a network of satellites that continuously transmit necessary data. More signals transmitted from more satellites can triangulate its location on the ground, meaning any location can be easily tracked anytime.

Cost-effective VPN Solution

The VCG-1500WG-LTE provides a complete data security and privacy feature for access and exchange of sensitive data. The full VPN capability of the VCG-1500WG-LTE including built-in **PPTP, LT2P,** and **IPSec VPN** client functions with DES/3DES/AES encryption and MD5/SHA-1 authentication makes the shared connection more secure and flexible. The IPSec VPN also makes the private tunnel over Internet more secure for enterprises doing business transactions.

Dual TF Cards for Wi-Fi Advertising Contents

The VCG-1500WG-LTE provides dual TF cards and the capacity of each card is up to 128GB. The TF cards can store thousands of advertising data and movie files. The administrator is able to upload these files to TF cards via FTP locally. Besides, through the CMS (central management system), administrator is able to upload and maintain these files remotely. The device will display advertising contents when users access to the Wi-Fi after authentication.

Superior Management Functions

For networking management features, the VCG-1500WG-LTE provides such functions as DMZ, QoS, Wifidog and SNMP, as well as full secure functions including Network Address Translation (NAT) and IP/URL/MAC filtering. The VCG-1500WG-LTE has 4G and WAN connection failover characteristics, which can automatically switch over to the redundant, stable WAN connection to keep users always online without missing any fascinating moments.

User-friendly and Secure Management

For efficient management, the VCG-1500WG-LTE is equipped with console, web and Wifidog management interfaces. With the built-in web-based management interface, the VCG-1500WG-LTE offers an easy-to-use, platform independent management and configuration facility. The VCG-1500WG-LTE supports Wifidog and it can be managed via the CMS for remote management and Wi-Fi advertising.

1.3 How to Use This Manual

This User Manual is structured as follows:

Section 2, **INSTALLATION**

The section explains the functions of the Vehicle Gateway and how to physically install the Vehicle Gateway.

Section 3, **QUICK CONFIGURATION**

The section contains the procedure of installing hardware and accessing the Web UI.

Section 4, **BASIC CONFIGURATION**

The section explains how to manage the Vehicle Gateway by Web interface.

Section 5, **ADVANCED CONFIGURATION**

The chapter explains how to set up the advanced function of the Vehicle Gateway.

Section 6, **SYSTEM MANAGEMENT**

The chapter explains how to troubleshoot the Vehicle Gateway.

Section 7, **INTERNET ACCESS MANAGEMENT**

The chapter explains how to set up remote management and advertising.

Section 8, **OTHER CONFIGURATIONS**

The chapter explains related functions of the Vehicle Gateway.

Appendix A

The section contains FAQ information of the Vehicle Gateway.

1.4 Product Features

- **Physical Port**
  - **4 10/100BASE-TX** RJ45 LAN ports, auto-negotiation, auto MDI/MDI-X
  - **1 10/100BASE-TX** RJ45 WAN port, auto-negotiation, auto MDI/MDI-X
  - **1** 4G LTE 2.3 dBi antenna
  - **2** 2.4G Wi-Fi 2dBi antennas
  - **1** GPS antenna
  - **1** SIM card slot
  - **1** console port
  - **2** TF card slots to save files for Wi-Fi advertising

- **Cellular Interfaces**
  - Supports multi-band connectivity with FDD LTE/ TDD LTE/ WCDMA/ GSM/ LTE Cat4
  - Built-in SIM and broadband backup for network redundancy
  - One detachable antenna for 4G LTE connectiion
  - LED indicators for connection status (3G/4G)

- **Wi-Fi Interfaces**
  - Complies with IEEE802.11b/g/n 2.4GHz
  - Two detachable antennas for wireless connection
  - 64/128-bit WEP, WPA/WPA2 and WPA-PSK/WPA2-PSK (TKIP/AES encryption)
  - LED indicators for status

- **Case and Installation**
  - IP30 aluminum case
  - Mounting brackets for vehicles
  - Power requirement: 6~32V DC
  - Supports 15KV DC Ethernet ESD protection
  - -25 to 65 degrees C operating temperature

- **Advanced Features**
  - Supports demilitarized zone (DMZ)
  - Supports VPN client, including GRE, PPTP, IPSec, L2TP
  - Supports NAT port mapping function, such as SNAT and DNAT
  - Supports Static Routing to display current routing information of the gateway
  - Supports QoS for bandwidth management
  - Supports Dynamic DNS and PLANETDDNS
  - Supports WAN connection types: DHCP client, static IP and PPPoE client
  - Secures network connection
    - –IP filter
    - –URL filter
    - –MAC filter

- **Management**
  - ■ Gateway management interfaces
    - Console/Telnet Command Line interface
    - Web management
  - ■ Gateway Maintenance
    - Firmware upload via HTTP, and TFTP
    - Restore or Reset button for reset to factory default
    - Dual images
  - ■ SNTP (Simple Network Time Protocol)
  - ■ System log
  - ■ System tool, such as ping and trace
  - ■ Configuration backup and restore
  - ■ Supports CMS and Wifidog for remote management, and Wi-Fi advertising

1.5 Product Specifications

Product	**VCG-1500WG-LTE**
Hardware Specifications	
Copper Ports	4 LAN 10/100BASE-TX RJ45 auto-MDI/MDI-X ports 1 WAN 10/100BASE-TX RJ45 auto-MDI/MDI-X port
Console	1 x RS232-to-RJ45 serial port (115200, 8, N, 1)
SIM Interface	1 SIM card slot with mini SIM card tray
Cellular Antenna	1 2dBi external antenna with SMA connector for LTE
Wi-Fi Antenna	2 2dBi external antennas with SMA connectors for 2.4GHz
GPS Antenna	1 28dB gain external antennas with SMA connectors for GPS -3m
USB Interface	1 USB 2.0 for external storage
TF Card Interface	2 TF card for storing thousands of advertising data (max. capacity up to 128G for each)
Connector	Standard 4-pin vehicle power jack for power input
Reset Button	> 5 sec: Factory default
ESD Protection	15KV DC
Enclosure	IP30 metal case
Installation	Mounting brackets for vehicles
LED	System: PWR (Red) Ethernet Interfaces (Port1-4 and WAN Port): LNK (Green) ACT (Orange) LTE SIM and Signal : 3G/4G (Blue) Wi-Fi (Blue) Internet (Blue)
Dimensions (W x D x H)	168 x 104 x 25 mm (not including antenna and connector)
Weight	537g (not including antenna)
Power Requirements – DC	6~32V DC, 1.5A
Power Consumption	3 watts/10.23 BTU
Multi Band Supports	
EU Model	■ FDD LTE B1/B3/B5/B7/B8/B20 (2100/1800/850/2600/900/800) ■ TDD LTE B38/B40/B41 (2600/2300/2500) ■ WCDMA B1/B5/B8 (2100/850/900) ■ GSM/EDGE B3/B8 (1800/900)
US Model	■ FDD LTE B2/B4/B12 (1900/AWS1700/700) ■ WCDMA B2/B4/B5 (1900/AWS1700/850)
LTE Data Rate	20MHz bandwidth: 100Mbps (DL), 50Mbps (UL)
Wireless Specifications	
Standard	IEEE 802.11 b/g/n 2.4GHz
Wireless Mode	Access Point
Operating Channels	FCC: 1~11, ETSI: 1~13
Encryption Security	64-/128-bit WEP, WPA, WPA-PSK, WPA2, WPA2-PSK

Data Rate	Up to 300Mbps
Transmission Distance	Up to 150 meters *The estimated transmission distance is based on the theory. The actual distance will vary in different environments
Advanced Functions	
VPN	GRE, PPTP, IPSec, L2TP
QoS	Bandwidth management
WAN Connection Type	PPPoE, Static, DHCP client
Wifidog	Wifi authentication and advertising
Secure Network	IP filter URL filter MAC filter
Other	Supports demilitarized zone (DMZ) Supports NAT port mapping function, UPnP Supports Dynamic DNS
Management	
Basic Management Interfaces	Console, Telnet, Web browser
Standards Conformance	
Regulatory Compliance	CE, FCC
Standards and Protocols Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3x flow control and back pressure RFC 768 UDP RFC 791 IP RFC 792 ICMP RFC 5321 SMTP RFC 2068 HTTP RFC 1939 POP3 RFC 854 TELNET RFC 959 FTP
Environment	
Operating	Temperature: -25 ~ 65 degrees C Relative Humidity: 95% (non-condensing)
Storage	Temperature: -40 ~ 85 degrees C Relative Humidity: 95% (non-condensing)

2. INSTALLATION

This section describes the hardware features and installation of the Vehicle Gateway. For easier management and control of the Vehicle Gateway, familiarize yourself with its display indicators and ports. Front panel illustrations in this chapter display the unit LED indicators. Before connecting any network device to the Vehicle Gateway, please read this chapter completely.

2.1 Hardware Description

2.1.1 Vehicle Gateway Front and Rear Panels

The front panel provides the monitoring of the Vehicle Gateway's simple interfaces. Figure 2-1 shows the front panel of the Vehicle Gateway.

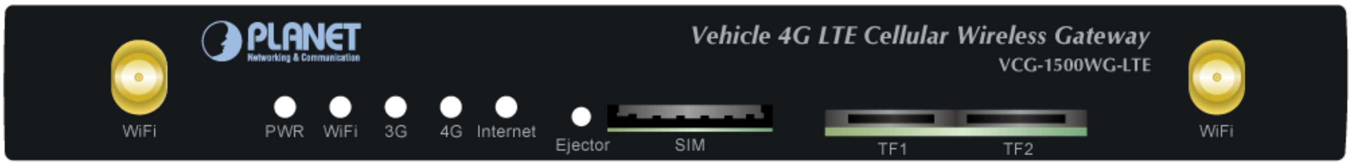

PLANET Networking & Communication
Vehicle 4G LTE Cellular Wireless Gateway
VCG-1500WG-LTE
WiFi
PWR
WiFi
3G
4G
Internet
Ejector
SIM
TF1
TF2
WiFi

Figure 2-1 Front Panel

The rear panel provides the most of the connectors in the gateway. Figure 2-2 shows the rear panel of the Vehicle Gateway.

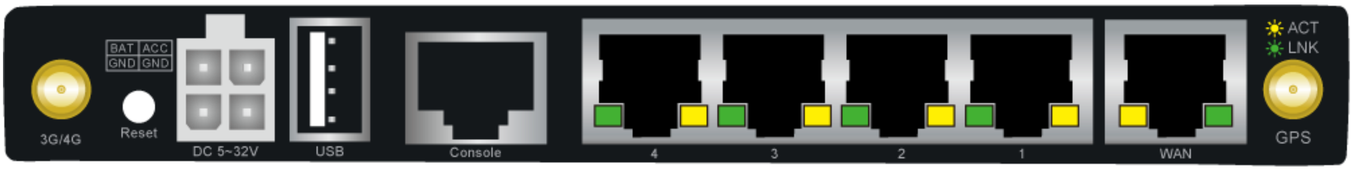


Figure 2-2 Rear Panel

- **Reset Button**

On the rear of the VCG-1500WG-LTE, the reset button is designed to reset the Vehicle Gateway to factory default.

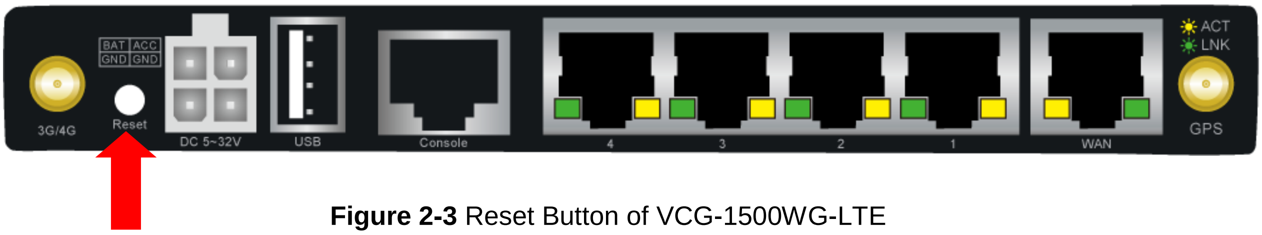


Figure 2-3 Reset Button of VCG-1500WG-LTE

Reset Button	Function
> 5 sec: Factory Default	Reset the Vehicle Gateway to Factory Default configuration. Vehicle Gateway will then reboot and load the default settings shown below: ● Default username: **admin** ● Default password: **admin** ● Default IP address: **192.168.1.1** ● Subnet mask: **255.255.255.0**

2.1.2 LED Indications

The front and real panels' LEDs indicate instant status related to system power, Wi-Fi, 4G and Internet. It helps monitor and troubleshoot when needed.

- **System**

LED	Color	Function	
PWR	**Red**	**Lights**	Indicates the system is working properly.
Wi-Fi	**Blue**	**Lights**	Indicates the Wi-Fi is working. The Wi-Fi is enabled by default.
3G	**Blue**	**Lights**	Indicates the SIM card is detected via 3G
4G	**Blue**	**Lights**	Indicates the SIM card is detected via 4G.
Internet	**Blue**	**Lights**	Indicates the system is connecting to the Internet.

- **10/100BASE-TX Port Interfaces (LAN Port-1 to Port-4, WAN)**

LED	Color	Function	
Ethernet	**Green**	**Blinking**	LNK, indicates that the link is successfully established
	Orange	**Blinking**	ACT, indicates that the port is operating at 100Mbps

2.1.3 Power Inputs

The 4-pin power connector on the rear panel of Vehicle Gateway is used for one DC power input. The power input range is from 6 to 32V DC. In the power kit, VCG-1500WG-LTE provides one power adapter and one power cable with 4-pin female power jack. Please follow the steps below to insert the power wire.

1. Plug the 4-pin female power jack of the power cable into the power connector.

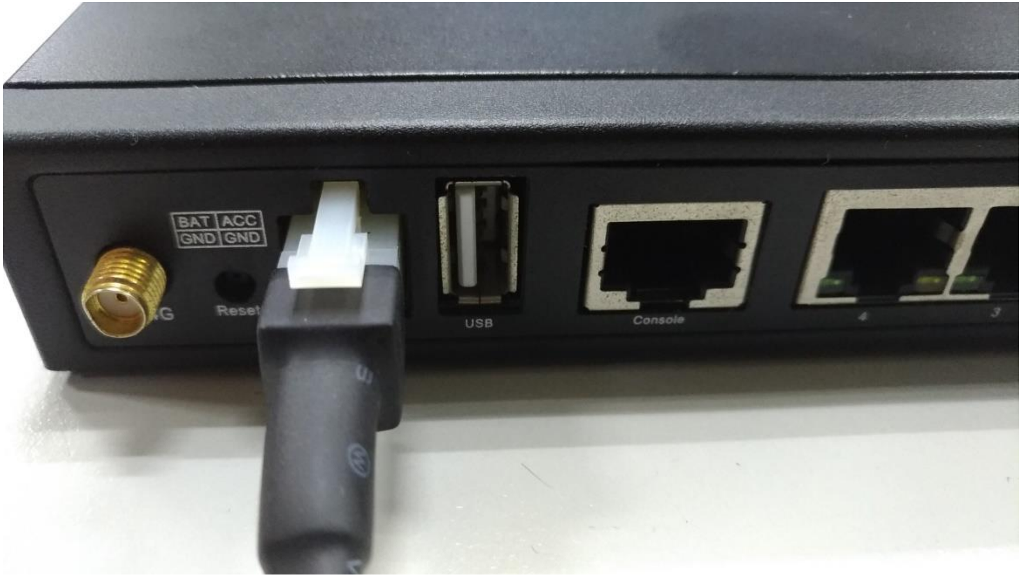


Figure 2-4: Plugging in the Power Input

2. Connecting power adapter with power cable.

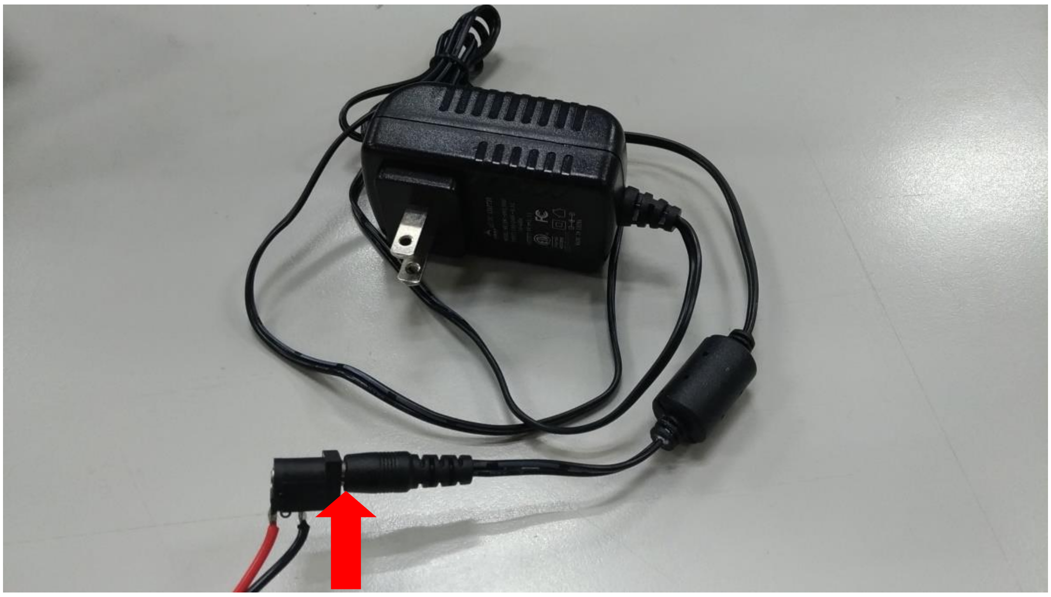


Figure 2-5: Connecting Power Cable with Power Adapter

Note	Except for the power adapter, the power cable also reserves two bare wires with positive and negative poles so that the user can connect to the battery of the car.

2.1.4 SIM Card Installation

1. SIM Card Drawer and Eject Button

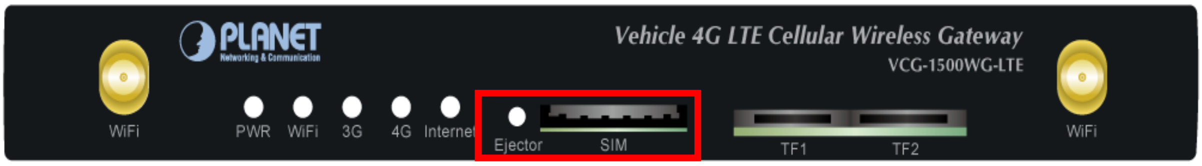


Figure 2-6: SIM Card Slot and Ejector

2. Inserting and Removing SIM Card

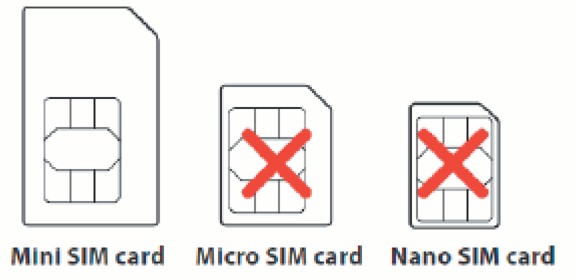
(1) Before inserting or removing the SIM card, ensure that the power has been turned off and the power connector has been removed from Vehicle Gateway.

(2) Press the ejector button with a paper clip or suitable tool to eject the SIM card from the drawer.

(3) Insert the SIM card with the contacts facing down and align it properly into the drawer. Make sure your direction of SIM card and put it into the tray.

(4) Slide the drawer back and lock it in place.

A mini card with LTE and WCDMA subscription.



Note	Please make sure the direction first. When pulling into the SIM tray without putting the correct direction, the tray will be stuck inside. Please turn off Vehicle Gateway before removing the SIM card.

2.1.5 Antenna Installation

After SIM card installation, please connect 4G antenna, GPS antenna and Wi-Fi antennas to connectors and ensure these antennas are fixed properly. Without installing antennas, it will affect the performance or can not receive the signal.

2.1.6 RJ45-DB9F Instruction

This Gateway supports RS232 asynchronous communication serial interface and adopts RJ45. Serial interface is mainly used to configure control or configured to be DTU function.

Com/line: RS232 asynchronous communication serial interface

Shown below are the signal definitions of the RJ45-DB9F serial communication interfaces:

RJ45	DB9F
1	8
2	6
3	2
4	1
5	5
6	3
7	4
8	7

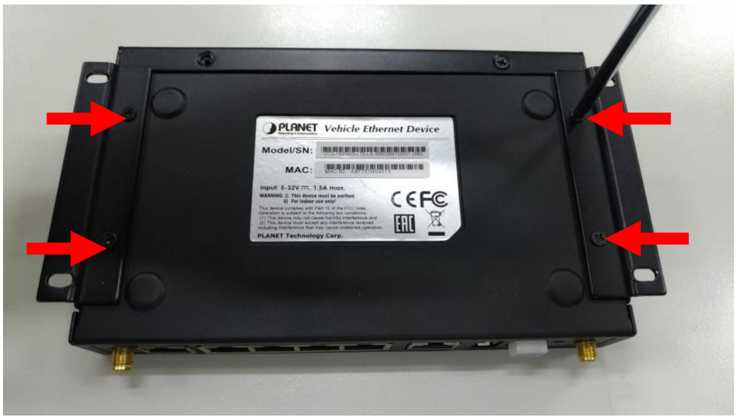
The signal definitions of the DB9F serial communication interface shown below::

PIN	RS232 Signal Name	Description	Direction related to DTU
1	DCD	carrier wave signal check	Output
2	RXD	receive data	Output
3	TXD	send data	Input
4	DTR	data terminal ready	Input
5	GND	power reference ground	
6	DSR	data device ready	Output
7	RTS	request to send	Input
8	CTS	data device gets ready to receive data	Output

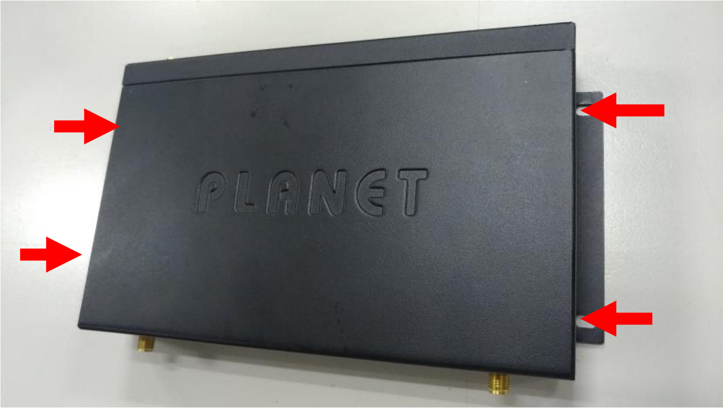
2.2 Mounting Installation

This section describes how to install your Vehicle Gateway and make connections to the Vehicle Gateway. To install your Vehicle Gateway on a desktop or shelf, simply complete the following steps.

Step 1: Screw the brackets on the Vehicle Gateway.



Step 2: Place the Vehicle Gateway in the car where you need to install it, and then lock the screws.



3. QUICK CONFIGURATION

This chapter explains the procedure that you can install and configure the Gateway in a short time. Besides, it also contains information about port connection options.

3.1 Inserting SIM Card into Gateway's SIM Card Slot

3.2 Connecting Antennas

3.3 Connecting LAN 2 Port of Gateway with PC

Please connect the gateway and PC to the same switch. The default IP address of LAN 2 port is 192.168.1.1 and the port number is 9999. In the PC, please make sure the manager PC must be set to the same IP subnet address.

For example, the default IP address of the gateway is 192.168.1.1, then the manager PC should be set to 192.168.1.x (where x is a number between 2 and 254), and the default subnet mask is 255.255.255.0

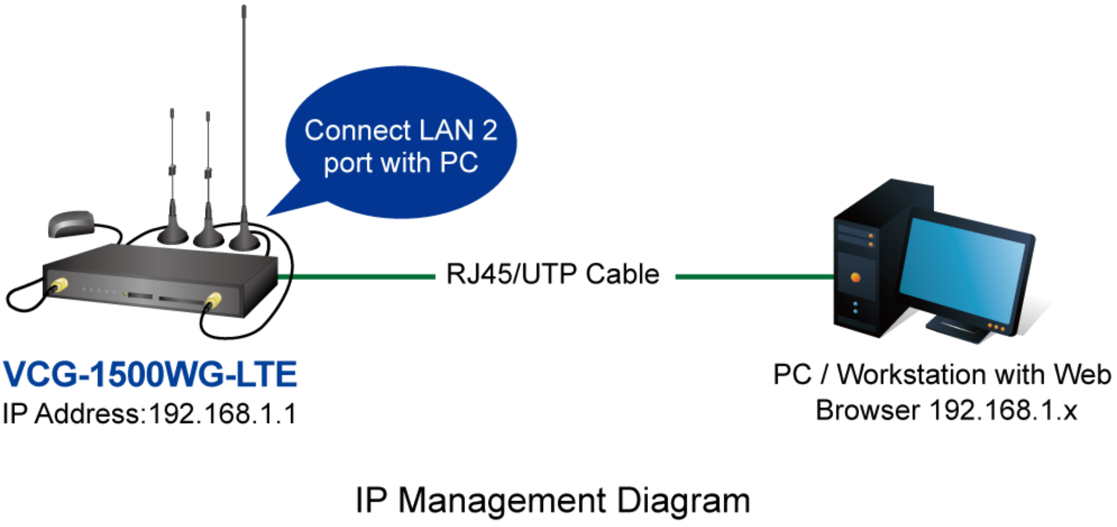

Connect LAN 2 port with PC
RJ45/UTP Cable
VCG-1500WG-LTE
IP Address:192.168.1.1
PC / Workstation with Web Browser 192.168.1.x
IP Management Diagram

Figure 3-3-1 Web Management

3.4 Logging in to the Vehicle Gateway

Use Internet Explorer 8.0 or above Web browser and enter default IP address http://192.168.1.1:9999 to access the Web interface.

After entering the http://192.168.1.1:9999 the following dialog box will appear. Please enter the default user name and password "**admin**".

3.5 LED and System Status

When the gateway is working properly, the LED status should display as shown below:

LED	Color	Status
PWR	Red	Solid Light
WiFi	Blue	Solid Light
3G/4G	Blue	Solid Light
Internet	Blue	Solid Light

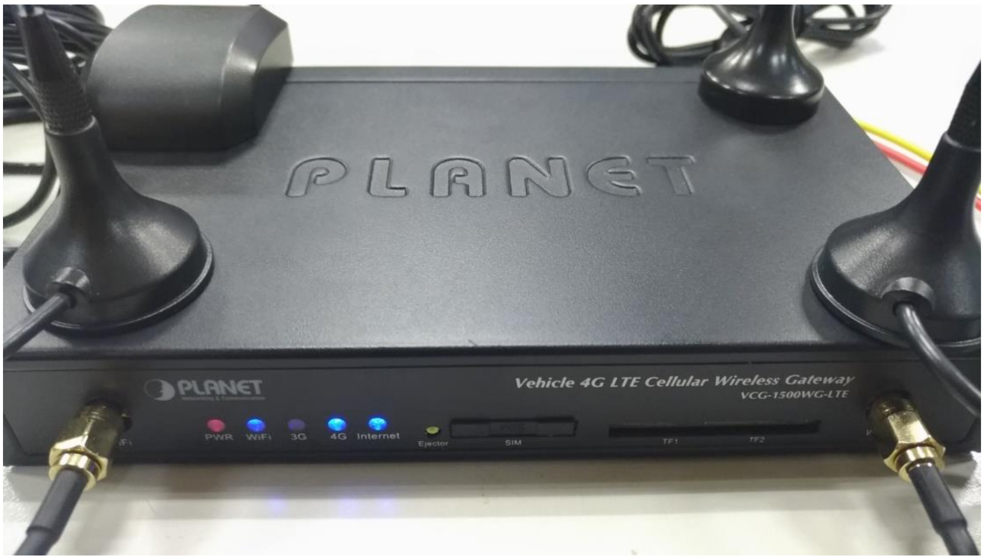
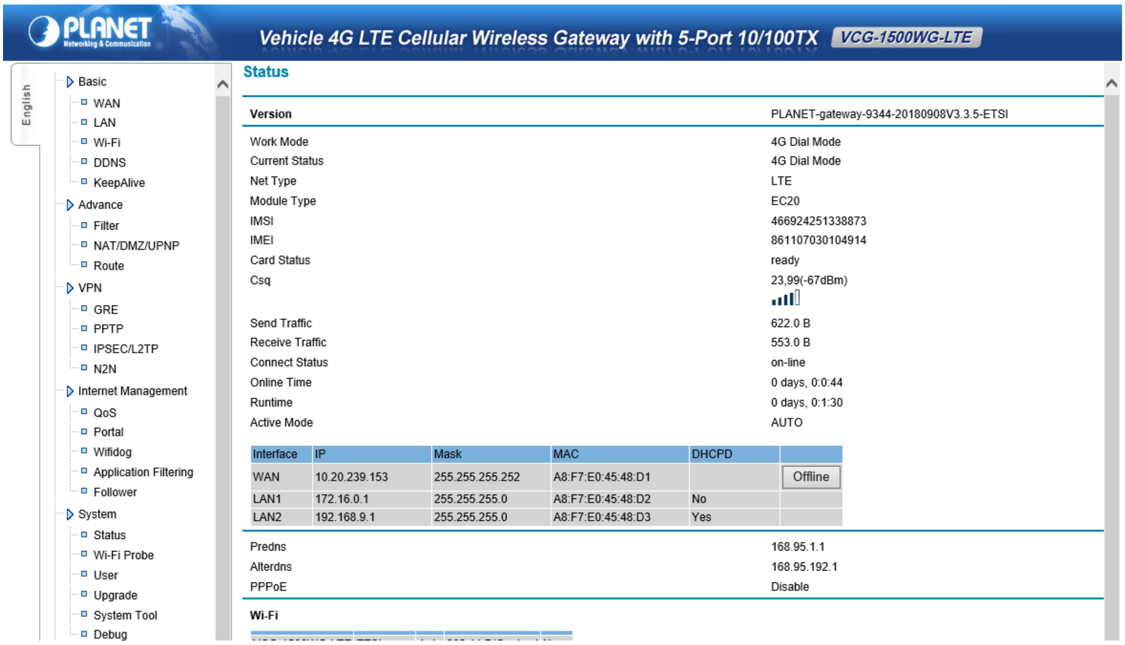


Figure 3-5-1 LED Status



Status

Version	PLANET-gateway-9344-20180908V3.3.5-ETSI
Work Mode	4G Dial Mode
Current Status	4G Dial Mode
Net Type	LTE
Module Type	EC20
IMSI	466924251338873
IMEI	861107030104914
Card Status	ready
Csq	23,99(-67dBm)
Send Traffic	622.0 B
Receive Traffic	553.0 B
Connect Status	on-line
Online Time	0 days, 0:0:44
Runtime	0 days, 0:1:30
Active Mode	AUTO

Interface	IP	Mask	MAC	DHCPD	
WAN	10.20.239.153	255.255.255.252	A8:F7:E0:45:48:D1		Offline
LAN1	172.16.0.1	255.255.255.0	A8:F7:E0:45:48:D2	No	
LAN2	192.168.9.1	255.255.255.0	A8:F7:E0:45:48:D3	Yes	

Predns	168.95.1.1
Alterdns	168.95.192.1
PPPoE	Disable

Wi-Fi

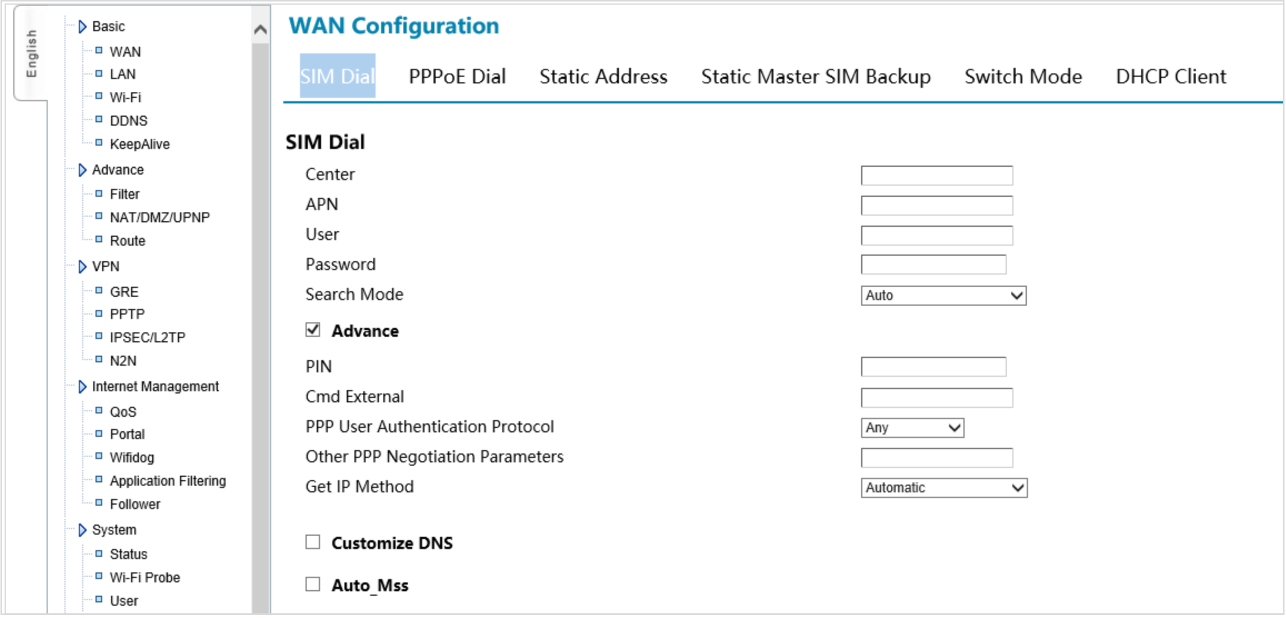
Figure 3-5-2 System Status

4. BASIC CONFIGURATION

This section introduces the configuration and functions of the Web-based management.

4.1 WAN Configuration

Gateway dial-up configuration is the basic parameter of connecting wireless network.



WAN Configuration

SIM Dial

Center

APN

User

Password

Search Mode: Auto

☑ Advance

PIN

Cmd External

PPP User Authentication Protocol: Any

Other PPP Negotiation Parameters

Get IP Method: Automatic

☐ Customize DNS

☐ Auto_Mss

Figure 4-1-1 Main Page

Object	Description
Calling Center Number, Access Point Name, Username and Password	Usually the information is default setting (refer to Appendix 5). Usually it doesn’t need to revise it. If APN/VPND is used, it needs to type these information supplied by ISP to the exact place.
PIN Code	If mobile UIM/SIM card is used to set a PIN code, please input it here.
Extra Initialization Commands	It is usually blank here. If customer has any especial command, customer can input here.
The Way to Obtain IP	To obtain IP automatically, specify the local IP and specify the remote client’s IP. Default situation is to obtain IP automatically; it is the IP address assigned by ISP when wireless dial-up is made. If “Specify IP address” is selected, please input it according to ISP supplied information. Otherwise, it can’t be online by dial-up. If ISP requires specifying one kind, and the other one is obtaining automatically, please input 0.0.0.0.

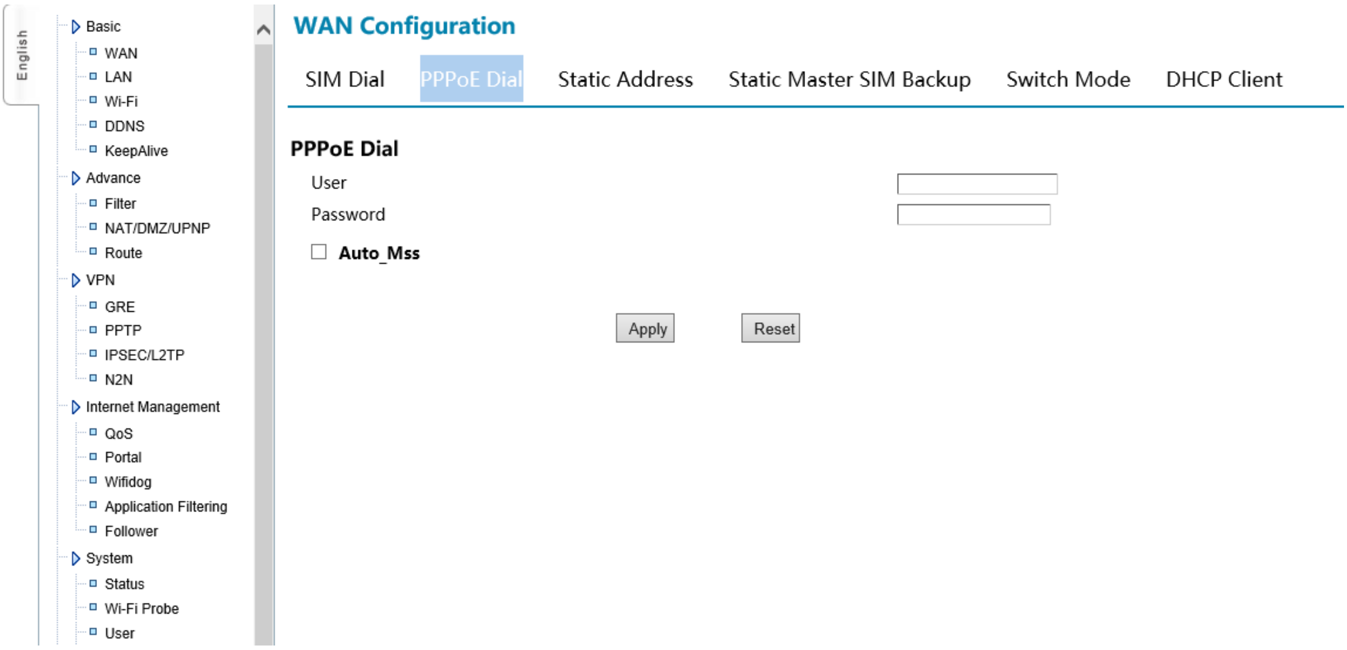
Note

1. PIN code can’t be input casually to avoid locking the card.
2. Please don’t input extra initialization command casually to avoid dial-up which is unavailable.
3. Please don’t specify IP casually unless it is required to do so by ISP, otherwise, online is

	unavailable.

4.2 PPPoE Configuration

PPPOE is the short name of point-to-point protocol over Ethernet, and it can make Ethernet host connect with remote access concentrator by a simple bridge equipment



PPPoE Dial

User

Password

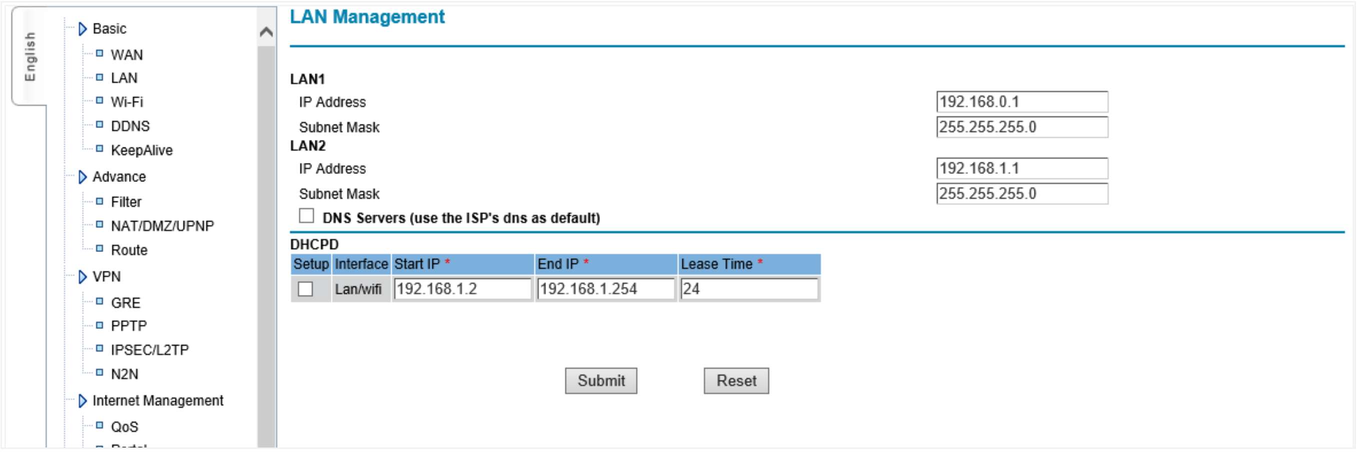
☐ **Auto_Mss**

Figure 4-2-1 PPPoE

Object	**Description**
User Name	User name access to public network, supplied by ISP
PIN Code	Password access to public network, supplied by ISP

4.3 LAN Configuration

Gateway Ethernet port configuration (local IP address and DHCP server)



LAN1

IP Address 192.168.0.1

Subnet Mask 255.255.255.0

LAN2

IP Address 192.168.1.1

Subnet Mask 255.255.255.0

☐ **DNS Servers (use the ISP's dns as default)**

DHCPD

Setup	Interface	Start IP *	End IP *	Lease Time *
☐	Lan/wifi	192.168.1.2	192.168.1.254	24

Figure 4-3-1 LAN

Object	Description
Local Interface 1 (LAN1)	Multiplex with WAN -- It can be used to connect with LAN if without using PPPOE
IP Address	The default setting of the IP address of the gateway LAN1 interface is 192.168.0.1
Subnet Mask	Set Subnet Mask corresponding local IP address
Local Interface 2 (LAN2)	Used to connect with Wi-Fi and 4-port LAN
IP Address	The default setting of the IP address of the gateway Wi-Fi and LAN1-4 interface is 192.168.1.1
Subnet Mask	Set Subnet Mask corresponding local IP address. Default setting of Subnet Mask is 255.255.255.0
Primary DNS/Second DNS	It is the domain name decoding server address, and default situation (blank) is obtained from ISP when gateway dial-up is made. If customer has stable DNS server, it can input customer stable DNS server address, but we suggest that it is better to obtain from ISP when gateway dial-up is made.

Note:

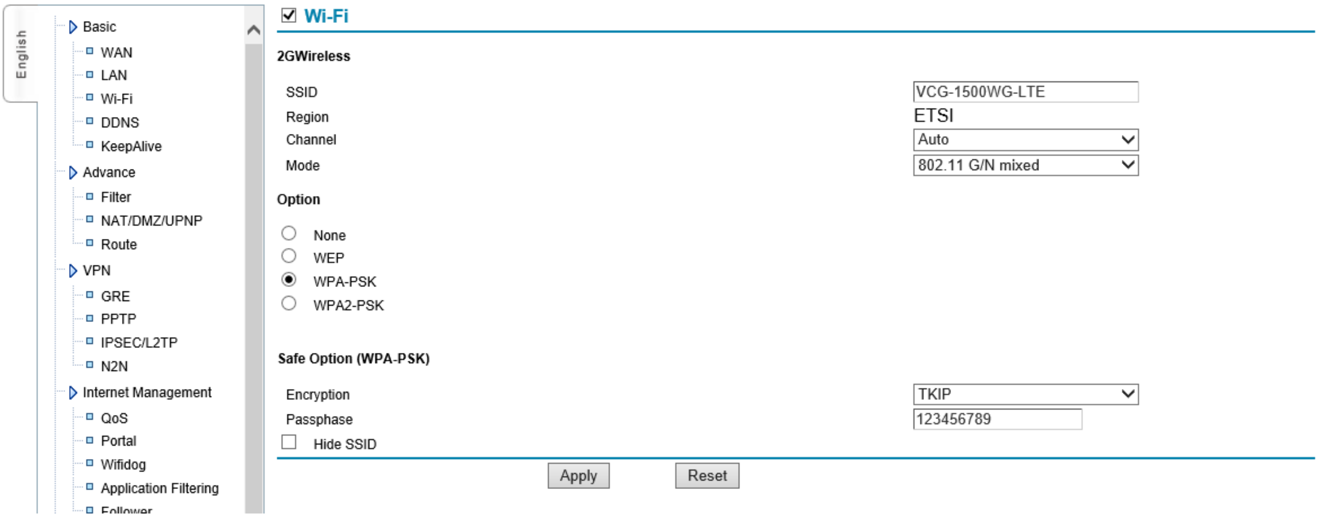
1. Make sure all IPs connected to equipment are in the same Subnet Mask with gateway.

2. When multi units work in the same LAN, MAC address will restore to default setting after "load default setting". It is easy to make MAC address conflict with other equipment. So please revise MAC address.

3. If users input DNS server address, after dialing, please check whether DNS used by gateway can decode domain name.

4. Local interface 1 and Local interface 2 can't be in the same subnet mask

4.4 Wi-Fi Configuration



☑ Wi-Fi

2GWireless

SSID: VCG-1500WG-LTE
Region: ETSI
Channel: Auto
Mode: 802.11 G/N mixed

Option

○ None
○ WEP
● WPA-PSK
○ WPA2-PSK

Safe Option (WPA-PSK)

Encryption: TKIP
Passphase: 123456789
□ Hide SSID

Figure 4-4-1 Wi-Fi

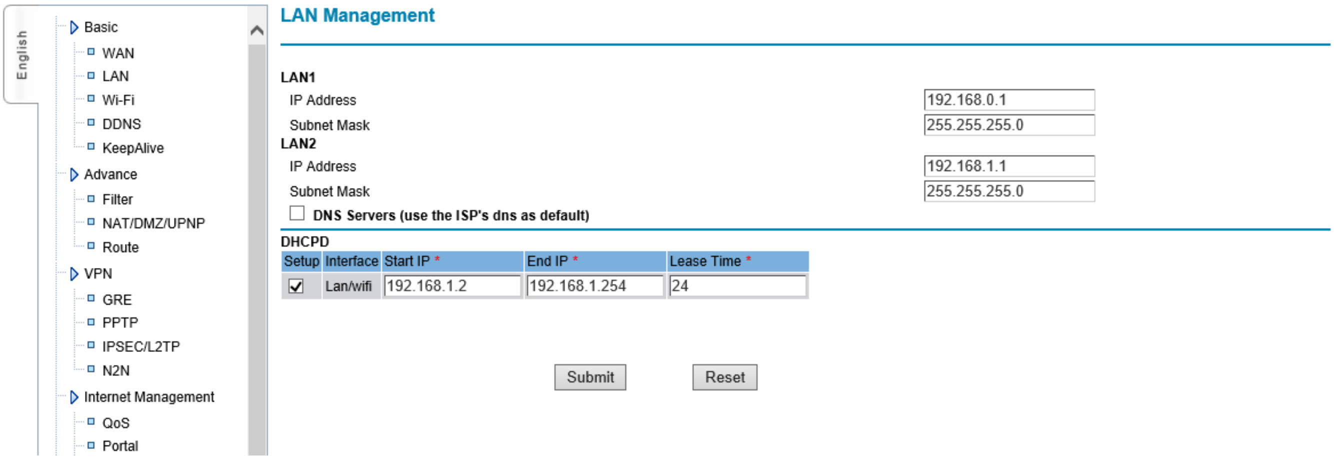
The page includes the following fields:

Object	Description
SSID	Sign the wireless network name. It supports a maximum of 32 characters which is default for theVCG-1500WG-LTE. We suggest revise it to avoid conflict with our company's other products.
Region	Display the standard which this deivce works
Channel	Select this device working channel. It doesn't need to revise wireless channel except there are interferences with other access points nearby. Priority Channel are 1,6, and 11. The default setting is Auto.
Mode	Select mode this device will work. 802.11B only: Only supports 802.11B. 802.11 G only: Only supports 802.11 G. 802.11G/N mixed: Suppors G or N.
Option	It provides None, WEP, WPA-PSK and WPA2-PSK options for Wi-Fi security. WEP: It adopts WEP 64- or 128-bit data encryption. WPA-PSK: It adopts WPA-PSK standard encryption; use pre-shared key protection access. WPA2-PSK: It adopts WPA2-PSK standard encryption; use pre-shared key protection access. Encryption type is AES.
WEP Encryption	Authentication: Default is Auto; if default can't work normally, customer can choose Shared (Open system). Encryption: 64 bits or 128 bits Passphase: WEP key -- customer can input by hand or adopt program that creates encryption key automatically. Customer on wireless network has to input encryption key value correctly to make connection successfully.

WPA-PSK Encryption	Encryption Mode: It supports TKIP, AES, and TKIP/AES. Passphase: The length of the encryption key is 8 to 63 characters.
WPA2-PSK Encryption	Encryption Mode: It supports TKIP, AES, and TKIP/AES. Passphase: The length of the encryption key is 8 to 63 characters.

4.5 DHCPD Configuration

DHCP is Dynamic Host Control Protocol. It can assign IP address to computers in the LAN automatically. For customers, it is not easy to set TCP/IP protocol parameters to all LAN computers. There are IP address, subnet mask, gateway, DNS server and so on. Problems can be solved easily by using DHCP. The system default is open. If customer doesn't use DHCPD service, please close this selection.



LAN Management

LAN1

IP Address 192.168.0.1

Subnet Mask 255.255.255.0

LAN2

IP Address 192.168.1.1

Subnet Mask 255.255.255.0

□ DNS Servers (use the ISP's dns as default)

DHCPD

Setup	Interface	Start IP *	End IP *	Lease Time *
☑	Lan/wifi	192.168.1.2	192.168.1.254	24

Figure 4-5-1 DHCP Server

Object	Description
Start IP, End IP	They are start and end addresses when DHCP server assigns IP automatically. After setting IP address, internal computer received from this gateway is between these two addresses

Note:

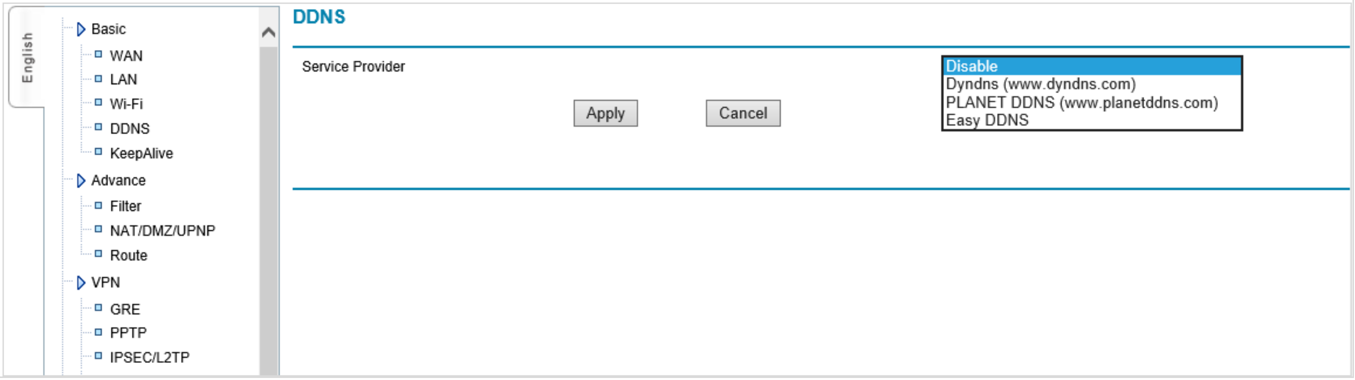
1. DHCP start IP and end IP are a must, and they are in the same subnet with gateway, but can't include gateway local IP ; otherwise, DHCP server can't work normally.

2. Lapped DHCP servers can't be existed in the same LAN. If there are multi devices using DHCP server function in the same LAN, it can cause IP address to unable to assign normally in the system. It needs to stop one DHCP server.

3. If PPPOE is used, don't use "local interface 1" DHCPD.

4.6 Dynamic Domain Name Server (DDNS) Configuration

DDNS stands for dynamic DNS, or more specifically dynamic Domain Name System. It's a service that maps internet domain names to IP addresses. It's a DDNS service that lets you access your home computer from anywhere in the world. The gateway provides DYNDNS, PLANET DDNS and Easy DDNS options.



Service Provider

Disable
Dyndns (www.dyndns.com)
PLANET DDNS (www.planetddns.com)
Easy DDNS

Figure 4-6-1 DDNS

4.6.1 PLANET DDNS

In order to properly configure the DDNS service function, please register a free DDNS domain name and account from PLANET DDNS first. Go to http://www.plnaetddns.com from the browser to do so.

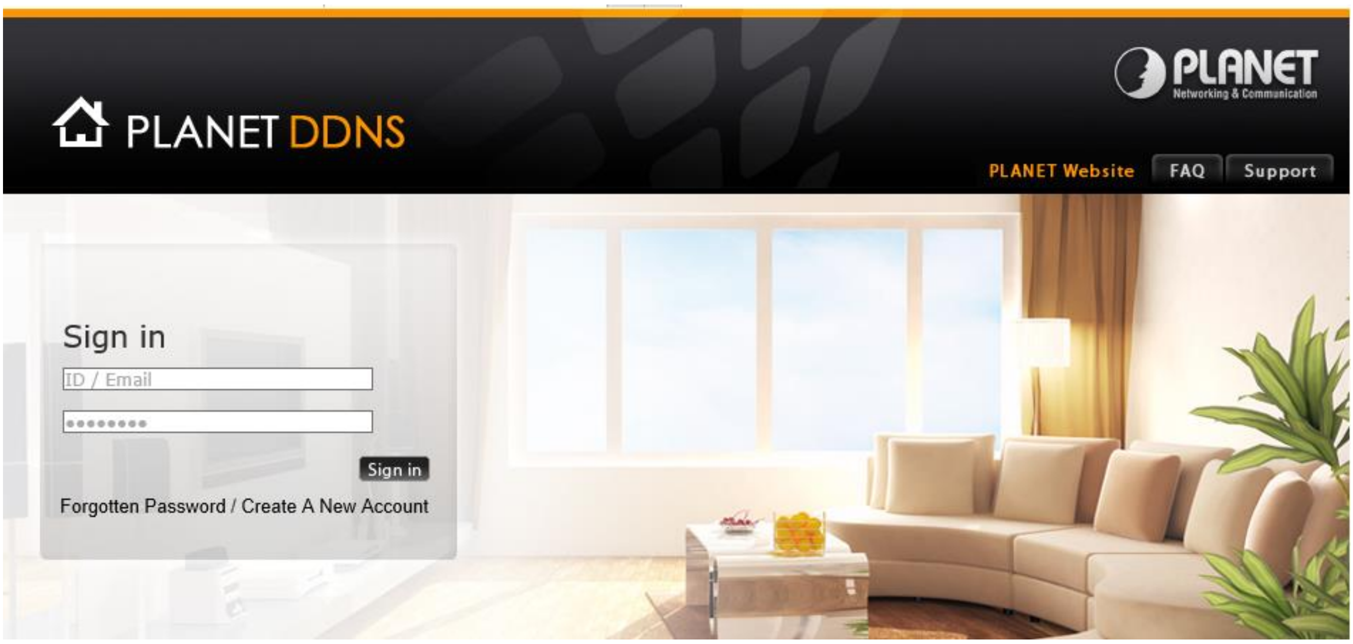
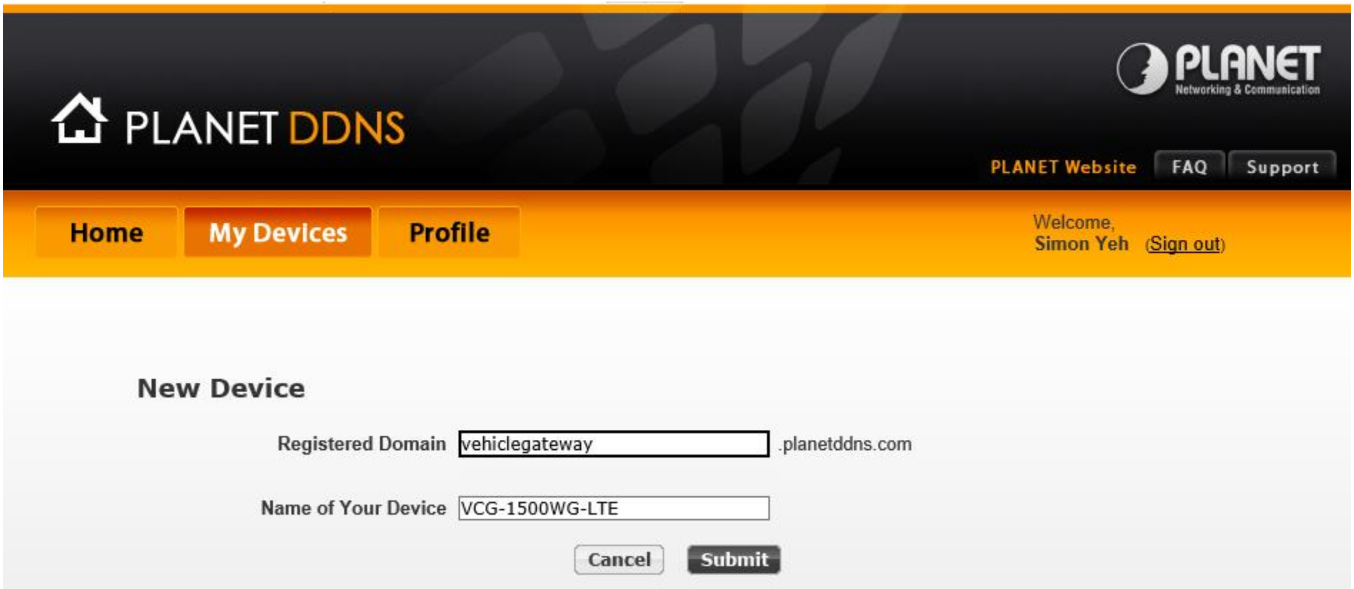

PLANET DDNS
PLANET Networking & Communication
PLANET Website
FAQ
Support
Sign in
ID / Email
••••••••
Sign in
Forgotten Password / Create A New Account

Figure 4-6-1-1 PLANETDDNS Website

Fill in the necessary fields as illustrated below. The page will check whether or not another user has used the host name you entered as soon as you click the "Submit" button. If you see the message below, it means the domain name is created successfully.

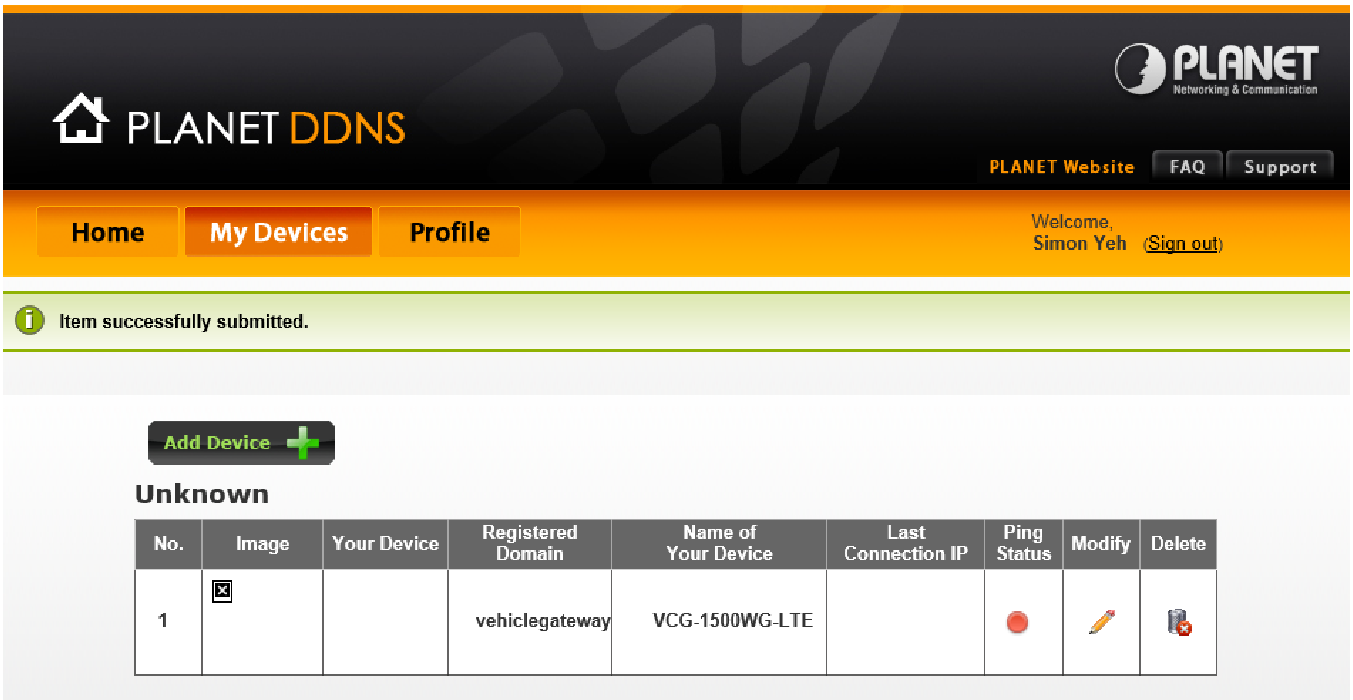


New Device

Registered Domain: vehiclegateway .planetddns.com

Name of Your Device: VCG-1500WG-LTE

Figure 4-6-1-2 Domain Registration



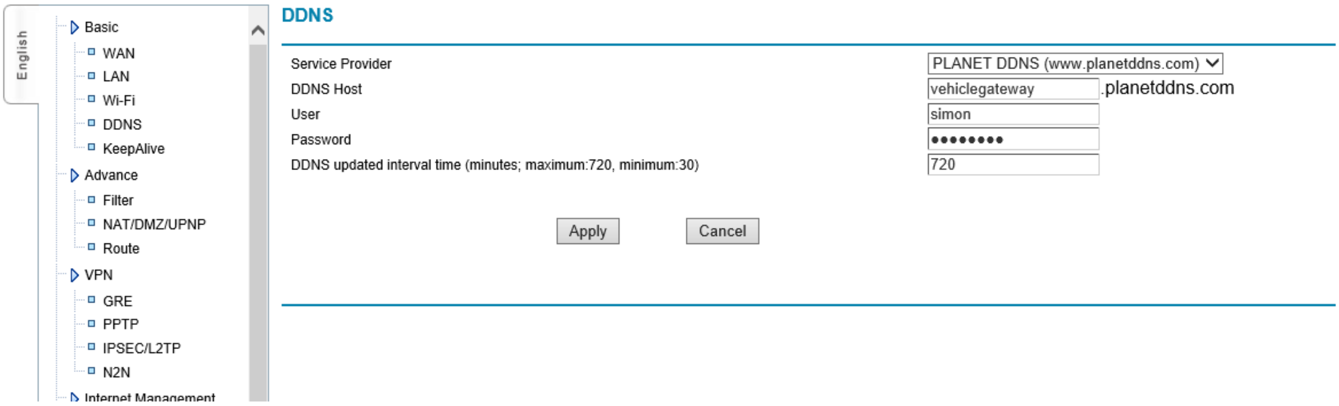
Item successfully submitted.

Unknown

No.	Image	Your Device	Registered Domain	Name of Your Device	Last Connection IP	Ping Status	Modify	Delete
1	☒		vehiclegateway	VCG-1500WG-LTE		●	✎	🗑

Figure 4-6-1-3 PLANETDDNS Domain added

Go back to the gateway's DDNS service configuration page under "Basic". Fill in the domain name you picked during the registration in the "Host Nme" field and the username/password you created in the "User ID" and "Password" filed and click "Apply" to finish



DDNS

Service Provider	PLANET DDNS (www.planetddns.com)
DDNS Host	vehiclegateway .planetddns.com
User	simon
Password	••••••••
DDNS updated interval time (minutes; maximum:720, minimum:30)	720

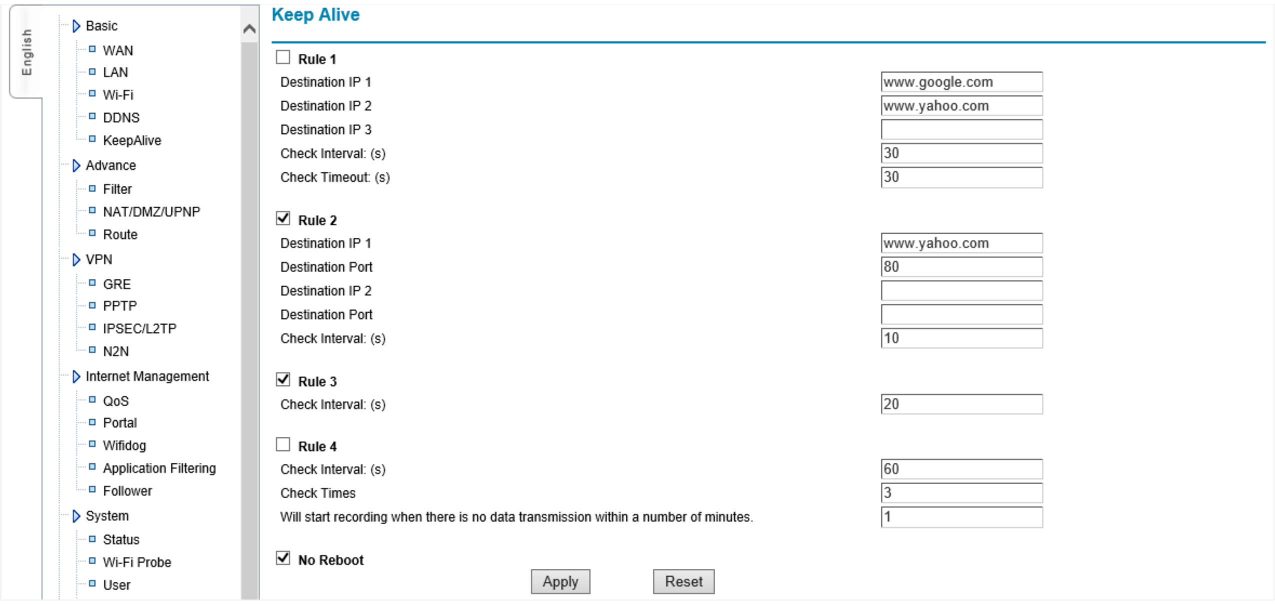
Figure 4-6-1-4 PLANETDDNS Configuration

4.7 Keep Alive

Keeping Online function is used to check wireless gateway online status, this function checks periodically and automatically data channel between gateway and wireless network whether normal or not. If it is found to be off-line, software will re-dial automatically and intelligently, so that the device can always be online to make sure data channel smooth.

Wireless gateway supplies 4 kinds of online checking modes; customer can select one or more kinds. By default, Rule2 and Rule3 are used.

Customer inputs stable “destination IP address” and “destination address port ”and regards them as the reference of online maintenance. Please kindly noted the input “destination IP address” and “destination address port” must be stable, because wireless gate is referred to this server; if this server is not stable, it will cause wireless network off-line frequently. When multi rules are used, only when all selected rules find communication line is obstructed, wireless gateway can judge whether device is off-line or not and restart connection automatically



Keep Alive

□ Rule 1

Destination IP 1: www.google.com
Destination IP 2: www.yahoo.com
Destination IP 3:
Check Interval: (s): 30
Check Timeout: (s): 30

☑ Rule 2

Destination IP 1: www.yahoo.com
Destination Port: 80
Destination IP 2:
Destination Port:
Check Interval: (s): 10

☑ Rule 3

Check Interval: (s): 20

□ Rule 4

Check Interval: (s): 60
Check Times: 3
Will start recording when there is no data transmission within a number of minutes.: 1

☑ No Reboot

Apply Reset

Figure 4-7-1 Rule and No Reboot

The page includes the following fields:

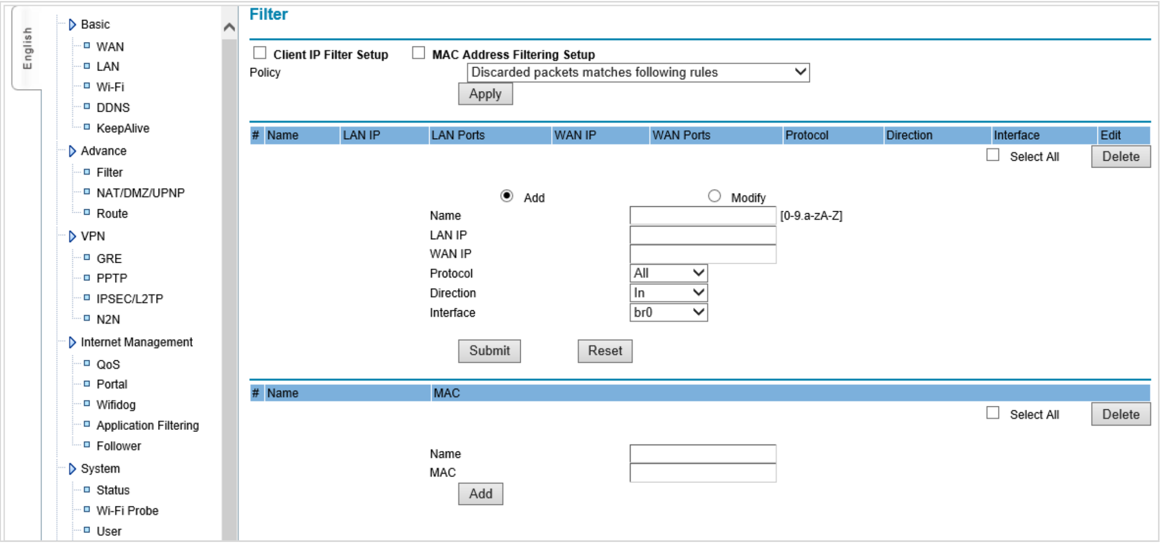
Object	Description
Rule 1: PING Mode	Wireless gateway checks destination IP address through PING (ICMP) packet periodically. When the referenced destination IP address device doesn’t respond to PING (ICMP), wireless gateway considers communication line is disconnected already, and it will release the original link, then dial-up again automatically, till communication link is smooth. So please make sure the selected IP server address is stable and on; otherwise, gateway will be judged to be off-line, and make gateway on-line and off-line frequently. **Note**: The selected destination IP address server is allowed to have PING; if not allowed, the destination IP address server doesn’t respond to PING, and thus the gateway will be considered to be off-line, and make gateway online

	and off-line frequently.
Rule 2: TCP Mode	Wireless gateway checks destination IP address and port through TCP syn packet periodically. When the destination IP address device doesn't respond, wireless gateway considers communication line is disconnected already. Wireless gateway will release the original link, then dial-up again automatically, till communication link is smooth. So please make sure the selected destination address IP server is stable and on; otherwise, gateway is considered to be off-line, and make gateway on and off-line frequently. **Note**: The selected destination IP address server is checking relevant port. If the selected destination IP address server is not stable or off or without checking relevant port, gateway is considered to be off-line, and make gateway on and off-line frequently.
Rule 3: Data Mode	In a certain period of time, if the gateway did not receive any data package, then it is believed that the communication link disconnected, and it will dial-up again till communication link is smooth
Rule 4: LCP Mode	Gateway checks online through LCP. In a certain period of time, if gateway did not receive package, it will restart. Please kindly note that the selected destination IP address server supports PAP/CHAP verification function in order to use LCP checking. If the selected destination IP address server is not stable or off or without supporting PAP/CHAP verification function, gateway will consider dropped, and then it will be on-line and off-line frequently. **Note**: 1. Make sure to select one kind of maintenance in online mode; otherwise, gateway can't restart after dropped. 2. The input destination address needs to be stable and supply corresponding services. 3. Keeping Online default is for public network; it needs to re-configure in special network to avoid dropping frequently.
No Reboot	While the gateway does not connect to Internet, the watchdog function will think the connection is disconnected and will continue to restart. You can enable "No Reboot" to disable the watchdog funciton.

5. ADVANCED CONFIGURATION

5.1 IP Table Filter

It is mainly used to filter wireless network data transmitting and receiving to prevent illegal and invalid data from gateway. It admits and refuses computers with LAN connected with gateway to get access to WAN, or admits and refuses WAN to get access to LAN connected with gateway.



Filter

□ Client IP Filter Setup □ MAC Address Filtering Setup

Policy: Discarded packets matches following rules

#	Name	LAN IP	LAN Ports	WAN IP	WAN Ports	Protocol	Direction	Interface	Edit

● Add ○ Modify

Name: [0-9.a-zA-Z]
LAN IP:
WAN IP:
Protocol: All
Direction: In
Interface: br0

#	Name	MAC

Name:
MAC:

Figure 5-1-1 Filter

The page includes the following fields:

Object	Description
Filter Mode	Client IP filtering and MAC address filtering -- Client can select according to their actual need.
Client IP Filtering	Filter data according to IP address based on appointed policy to admit or prevent corresponding IP address data.
MAC Filtering	Filter data according to MAC address based on appointed policy to admit or prevent corresponding MAC address data.
Running Rules	This device has two kinds of running rules.
Discard matching following rule data packets	Data packets complied to the following rules are not allowed to go through; other data packets can go through.
Receiving matching following rule data packets	Only receives data packets complied to the following rule; others are discarded.

5.1.1 IP Filter Rule Configuration

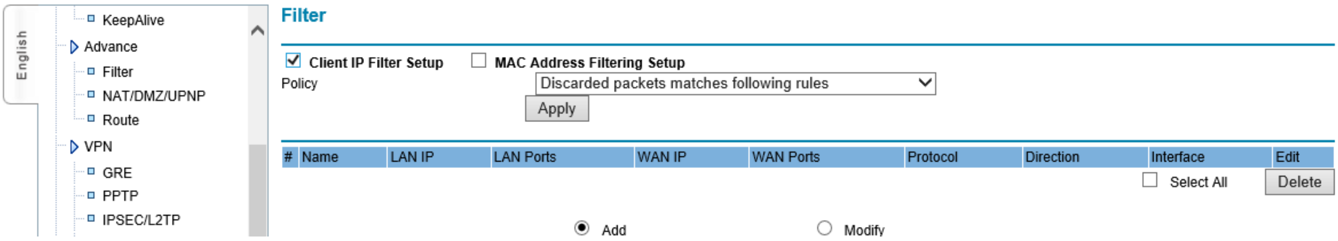
To realize IP address filtering rules by appointing, revising and deleting.

Object	Description
Rule Name	It is limited to use characters 0-9, a-z, and A-Z. Repeating the name is not possible.
LAN IP	The gateway connected LAN IP address
LAN Ports	The valid value of the LAN IP host address is 0~65535; please input from small to large.
WAN IP	Data packet destination IP address.
WAN Ports	The valid vaue of the data packet destination ports is 0~65535; please input from small to large.
Protocol	There are 3 types of the data packet protocols: ALL: All types of data packets. TCP: All TCP packets. UDP: All UDP packets.
Direction	The data packet direction is used to decide which one is the original address. There are 3 types: IN: From outside network to gateway. OUT: Transmit from gateway LAN. IN/OUT: Include IN and OUT
Interface	Data packet goes through interface, such as br0, PPP0 and so on.

Example 1 of IP addresses filtering:

1. If select "start client IP address filtering"

2. Running rules selection: "discard packets matching following rules"; click " Apply" to save running rule. Instructions: If "discard packets matching following rules" is selected, default rule is: wireless gateway allows all data to go through, but does not allow data packet to go through.



Filter

☑ Client IP Filter Setup □ MAC Address Filtering Setup

Policy: Discarded packets matches following rules

#	Name	LAN IP	LAN Ports	WAN IP	WAN Ports	Protocol	Direction	Interface	Edit

□ Select All

● Add ○ Modify

Figure 5-1-1-1 Discard Packets Matching Following Rules

3. Input parameters in IP rule.

This example parameter is:

Name：enableipfilter01

LAN IP: 192.168.1.23

WAN IP: 121.204.201.13

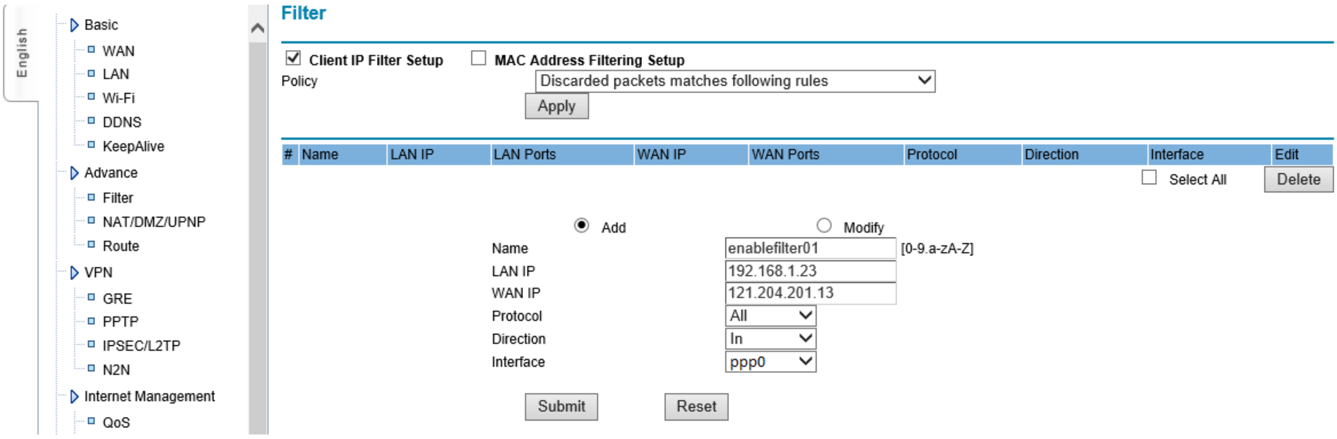
Protocol: all

Direction: IN

Interface: PPP0

4. Explanation and Introduction

After this rule is built, gateway will start IP address filtering function. According to running rule “Discard packet matching following rule”, gateway discards all protocol data packets (select “ALL”) from WAN “121.204.201.13” (select “IN”direction) in PPP0 interface (select “PPP0”interface), but other IP address data packets don't comply to this rule that can come and go normally.



☑ Client IP Filter Setup ☐ MAC Address Filtering Setup

Policy: Discarded packets matches following rules

#	Name	LAN IP	LAN Ports	WAN IP	WAN Ports	Protocol	Direction	Interface	Edit

● Add ○ Modify

Name: enablefilter01 [0-9.a-zA-Z]

LAN IP: 192.168.1.23

WAN IP: 121.204.201.13

Protocol: All

Direction: In

Interface: ppp0

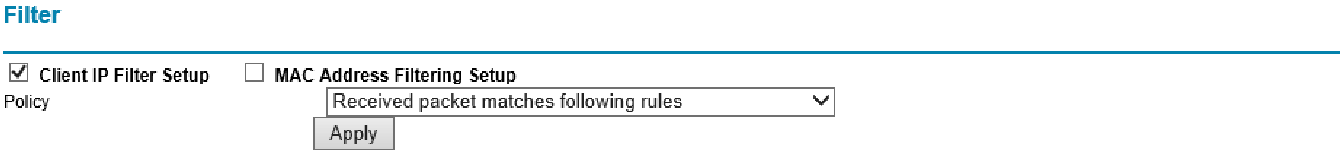
Figure 5-1-1-2 Add Filter

Example 2 of IP addresses filtering:

1. select “setup client IP filter”

2. Running rule: “receive packet matches following rules”; click “Apply” to save.

Instructions: If “receive packet matches following rules” is selected, default rule is: Gateway forbids all data packet to go through except data packet of picture.



☑ Client IP Filter Setup ☐ MAC Address Filtering Setup

Policy: Received packet matches following rules

Figure 5-1-1-3 Received Packet Matches Following Rules

3. Input parameters in IP rule.

This example parameter:

Name: enableipfilter02

LAN IP: 192.168.1.23

WAN IP: 121.204.201.13

Protocol: all

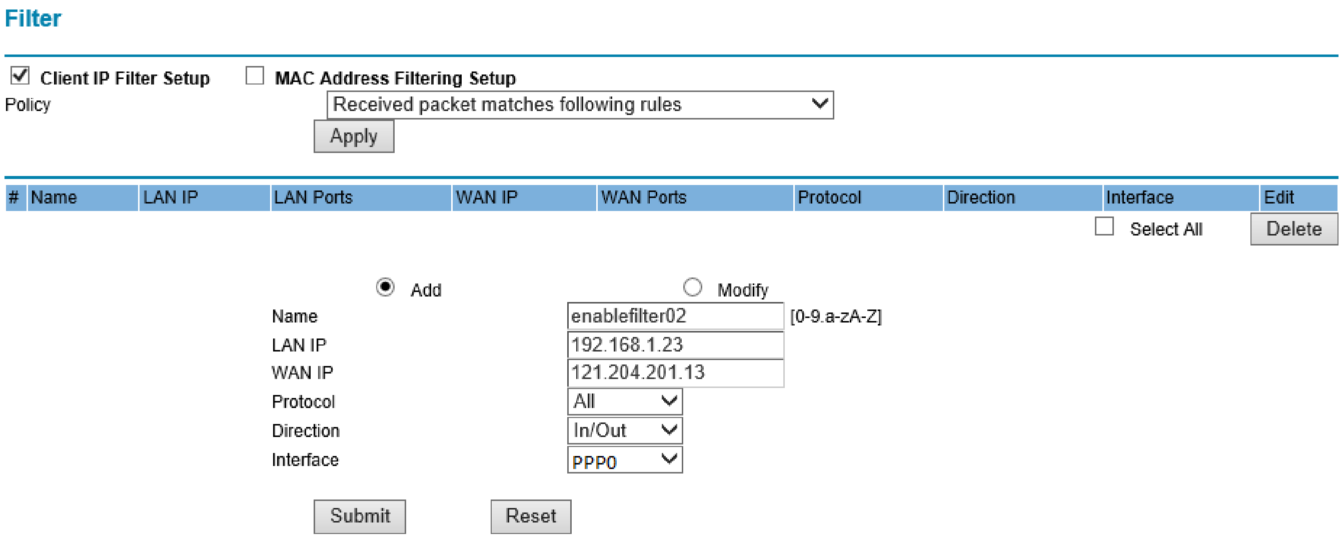
Direction: IN/OUT

Interface: PPP0

Click "Submit" to save.

4、Explanation and Instruction

After this rule is built, gateway will start IP address filtering function. According to running rule "Receive packet matching following rule", gateway forbids all data packet to go through, but only allows protocol data packets (select "ALL") from WAN "121.204.201.13"(select "IN/OUT" direction) to go through PPPO interface (select PPP0 interface). Usually this rule shields invalid IP address to go through gateway, can reduce data flow, or as bank application, can shield other IP addresses to access to bank IP address to realize filtering function and reduce data flow.



Filter

☑ Client IP Filter Setup ☐ MAC Address Filtering Setup

Policy: Received packet matches following rules

#	Name	LAN IP	LAN Ports	WAN IP	WAN Ports	Protocol	Direction	Interface	Edit

● Add ○ Modify

Name: enablefilter02 [0-9.a-zA-Z]

LAN IP: 192.168.1.23

WAN IP: 121.204.201.13

Protocol: All

Direction: In/Out

Interface: PPP0

Figure 5-1-1-4 Add Filter

5.1.2 MAC Filter Configuration

Object	Description
Rule Name	It is limited to use characters 0-9, a-z and A-Z. Repeating the same name is not possible.
MAC	Block or permit device MAC address; input format is"00:12:23:34:45:56"

Example 1:

1、If select “setup MAC address filtering”

2、Running rule select: “discard packet matching following fule ”

3、Input“00:00:23:34:45:56”in MAC.

So gateway will discard all data packets of the MAC address “00:00:23:34:45:56”, meanwhile it permits all data packets whose MAC address is not“00:00:23:34:45:56” to go through.

Example 2:

1、If select “setup MAC address filtering”

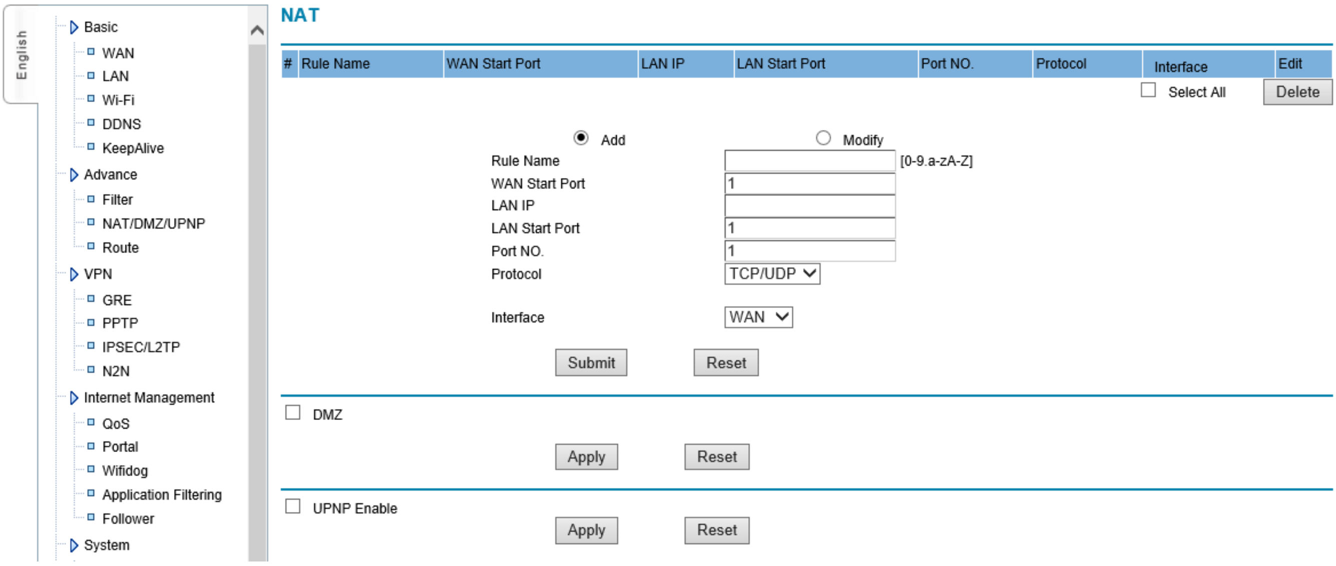
2、Running rule select: “receive packet matching following fule”

3、Input“00:00:23:34:45:56”in MAC.

So gateway only receives data packet whose MAC address is “00:00:23:34:45:56”, and discard all other data packets whose MAC address is not “00:00:23:34:45:56”.

5.2 NAT/DMZ Configuration

NAT (Network Address Translation) is a technology which translates LAN IP address into a legal network IP through different ports.



NAT

#	Rule Name	WAN Start Port	LAN IP	LAN Start Port	Port NO.	Protocol	Interface	Edit

□ Select All Delete

● Add ○ Modify

Rule Name	[0-9.a-zA-Z]
WAN Start Port	1
LAN IP	
LAN Start Port	1
Port NO.	1
Protocol	TCP/UDP
Interface	WAN

Submit Reset

□ DMZ

Apply Reset

□ UPNP Enable

Apply Reset

Mode 1: NAT

According to the appointed rule, it can translate data from WAN into an appointed LAN IP address or port.

Object	Description
Rule Name	It is limited to use characters 0-9, a-z and A-Z. Repeating the same name is not possible.
WAN Start Port	WAN data packet TCP/UDP start port value.
LAN IP	The translated LAN IP address
LAN Start Port	LAN computer start port
Port Number	Several continuous ports from start port. For example, start port is 5001, and port number is 5, so translate WAN 5001,5002,5003,5004,5005 into LAN computer 192.168.1.9 port 5001,5002,5003,5004,5005
Protocol	TCP/UDP, TCP, UDP

Mode 2: DMZ

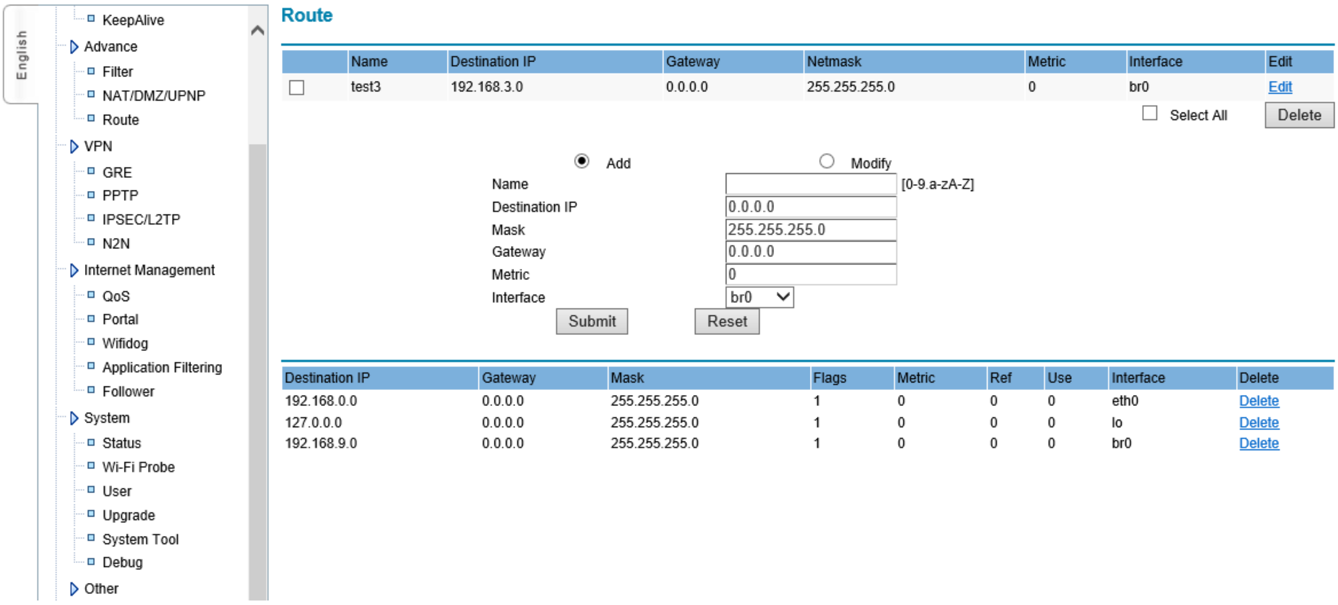
Expose one LAN computer to Internet completely to realize bi-directional communication. It needs to set this computer to be virtual server (DMZ host computer). When there is WAN user visiting this virtual server translated public address, device will transmit data packet to this virtual server directly. If one PC of wireless gateway LAN wants to communicate with internet, this can be finished quickly by starting DMZ.

Object	Description
DMZ	Set form is to select "Start DMZ"directly, then input virtual server IP in the IP address bar.

	Click “Apply”to save.

5.3 Router Configuration

Setup system static router setting and display system router information. System default router is to send all data to public internet. If user wants to visit an appointed network, please add router by hand.



Route

	Name	Destination IP	Gateway	Netmask	Metric	Interface	Edit
☐	test3	192.168.3.0	0.0.0.0	255.255.255.0	0	br0	Edit

☐ Select All Delete

● Add ○ Modify

Name	[0-9.a-zA-Z]
Destination IP	0.0.0.0
Mask	255.255.255.0
Gateway	0.0.0.0
Metric	0
Interface	br0

Submit Reset

Destination IP	Gateway	Mask	Flags	Metric	Ref	Use	Interface	Delete
192.168.0.0	0.0.0.0	255.255.255.0	1	0	0	0	eth0	Delete
127.0.0.0	0.0.0.0	255.255.255.0	1	0	0	0	lo	Delete
192.168.9.0	0.0.0.0	255.255.255.0	1	0	0	0	br0	Delete

Figure 5-3-1 Route

Object	Description
Name	It is limited to use characters 0-9, a-z and A-Z. Repeating the same name is not possible.
Destination IP address	Router destination IP can be host IP address,and also can be IP segment.
Subnet Mask	The added subnet, if it is the host IP address , please input 255.255.255.255
Gateway IP address	The next IP of the added router, if gateway is not needed, can be“0.0.0.0”
Metric	Default is 0
Interface	System interface

Note: If router can’t be added successfully (add rules successfully, but router information didn’t display), please confirm NSID whether to comply to requirements or not.

Gateway router configuration example:

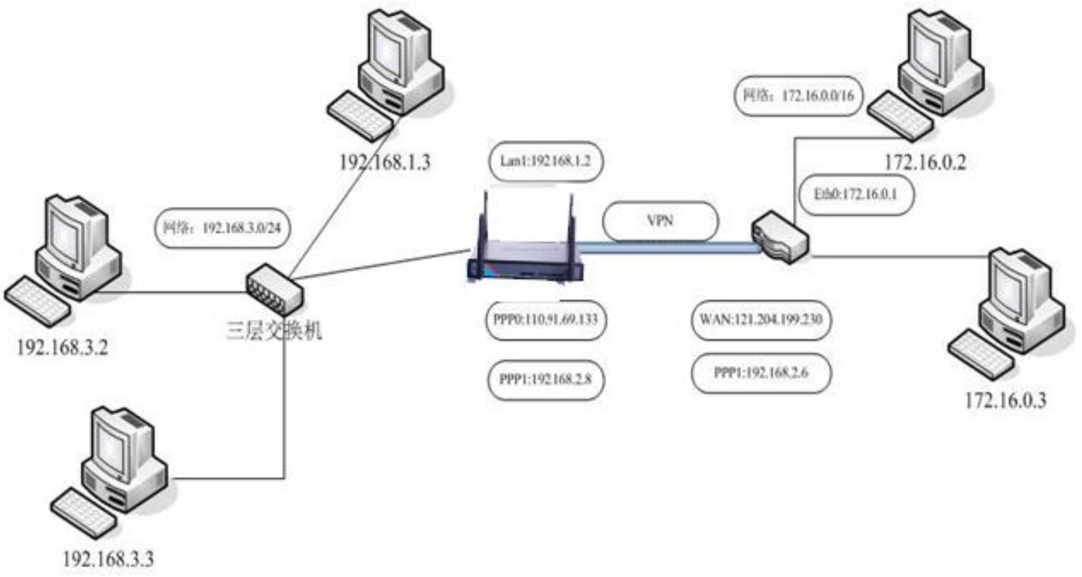


Figure 5-3-2 Topology

Introduction: There are three 192.168.1.0/24，192.168.3.0/24，192.168.2.0/24 networks.

192.168.1.2 is the gateway Ethernet LAN1-4 IP address.

110.91.69.133 is the ISP assigned PPP0 IP address when gateway dial-up is made.

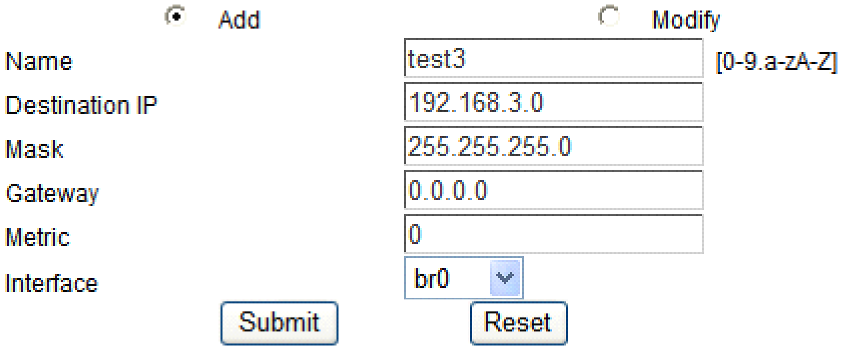
192.168.2.8 is the occurred PPP1 tunnel IP address when gateway connects with server to build VPN tunnel.

172.16.0.1 is the VPN server ETH0 IP.

121.204.199.230 is the VPN server public IP.

192.168.2.6 is the occurred tunnel0 IP address when VPN server and wireless gateway built the VPN tunnel.

If computer with IP 172.16.0.2 wants to visit computer with IP 192.168.3.2, it needs to add one routing on VPN server to visit 192.168.3.0/24 network. As for this adding step, please read our routing configuration user manual or contact with our technical engineers. After adding server gateway, it needs to add two routing on wireless gateway at the same time. One routing is from WAN data packets to 192.168.3.0/24 computer, the other routing is from 192.168.3.0/24 LAN computer to W172.16.0.0/16. The following is the introduction of gateway added configuration. Please add the following rules from "routing" of gateway under "advanced configuration".

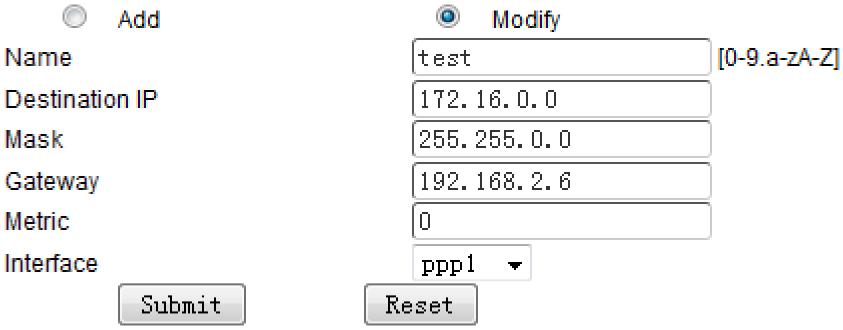


● Add ○ Modify

Name	test3	[0-9.a-zA-Z]
Destination IP	192.168.3.0	
Mask	255.255.255.0	
Gateway	0.0.0.0	
Metric	0	
Interface	br0	

Figure 5-3-3 Add Route

192.168.3.0 connects with gateway LAN1-4, so interface needs to select br0. This function is to send data of gateway destination IP address 192.168.3.0/24 from outside to br0 interface to realize sending data packet to 192.168.3.0.

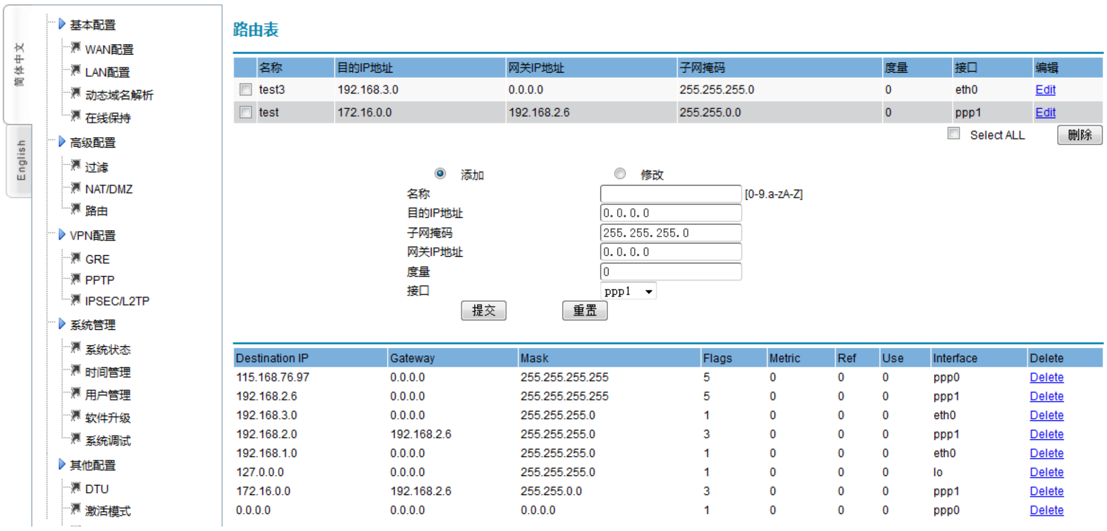


○ Add ● Modify

Name	test [0-9.a-zA-Z]
Destination IP	172. 16. 0. 0
Mask	255. 255. 0. 0
Gateway	192. 168. 2. 6
Metric	0
Interface	ppp1

Figure 5-3-4 Modify Route

This routing function is: data packet sent to wireless gateway, if destination IP address is 172.16.0.0/24; it transmits this data packet to PPP1 interface, meanwhile, this data packet gateway IP is 192.168.2.6. So through this routing, wireless gateway sends data packet to PPP1 directly when receiving data packet of destination IP 172.16.0.0/24, then arrive server 192.168.2.6, then transmits data packet to 172.16.0.0/24 through server's router to finish all routing work of data packets.



路由表

	名称	目的IP地址	网关IP地址	子网掩码	度量	接口	编辑
□	test3	192.168.3.0	0.0.0.0	255.255.255.0	0	eth0	Edit
□	test	172.16.0.0	192.168.2.6	255.255.0.0	0	ppp1	Edit

□ Select ALL 删除

● 添加 ○ 修改

名称	[0-9.a-zA-Z]
目的IP地址	0. 0. 0. 0
子网掩码	255. 255. 255. 0
网关IP地址	0. 0. 0. 0
度量	0
接口	ppp1

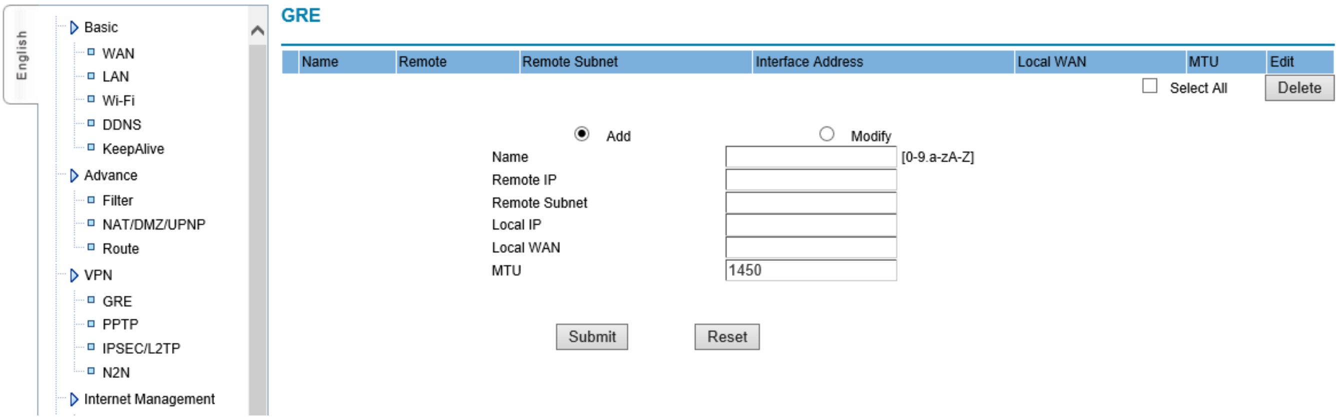
Destination IP	Gateway	Mask	Flags	Metric	Ref	Use	Interface	Delete
115.168.76.97	0.0.0.0	255.255.255.255	5	0	0	0	ppp0	Delete
192.168.2.6	0.0.0.0	255.255.255.255	5	0	0	0	ppp1	Delete
192.168.3.0	0.0.0.0	255.255.255.0	1	0	0	0	eth0	Delete
192.168.2.0	192.168.2.6	255.255.255.0	3	0	0	0	ppp1	Delete
192.168.1.0	0.0.0.0	255.255.255.0	1	0	0	0	eth0	Delete
127.0.0.0	0.0.0.0	255.255.255.0	1	0	0	0	lo	Delete
172.16.0.0	192.168.2.6	255.255.0.0	3	0	0	0	ppp1	Delete
0.0.0.0	0.0.0.0	0.0.0.0	1	0	0	0	ppp0	Delete

Figure 5-3-5 Routing Table

5.4 VPN Configuration

5.4.1 GRE

GRE is VPN（Virtual Private Network ）third tunnel protocol, that is to adopt Tunnel technology among protocols.



GRE

Name	Remote	Remote Subnet	Interface Address	Local WAN	MTU	Edit

□ Select All

● Add ○ Modify

Name		[0-9.a-zA-Z]
Remote IP		
Remote Subnet		
Local IP		
Local WAN		
MTU	1450	

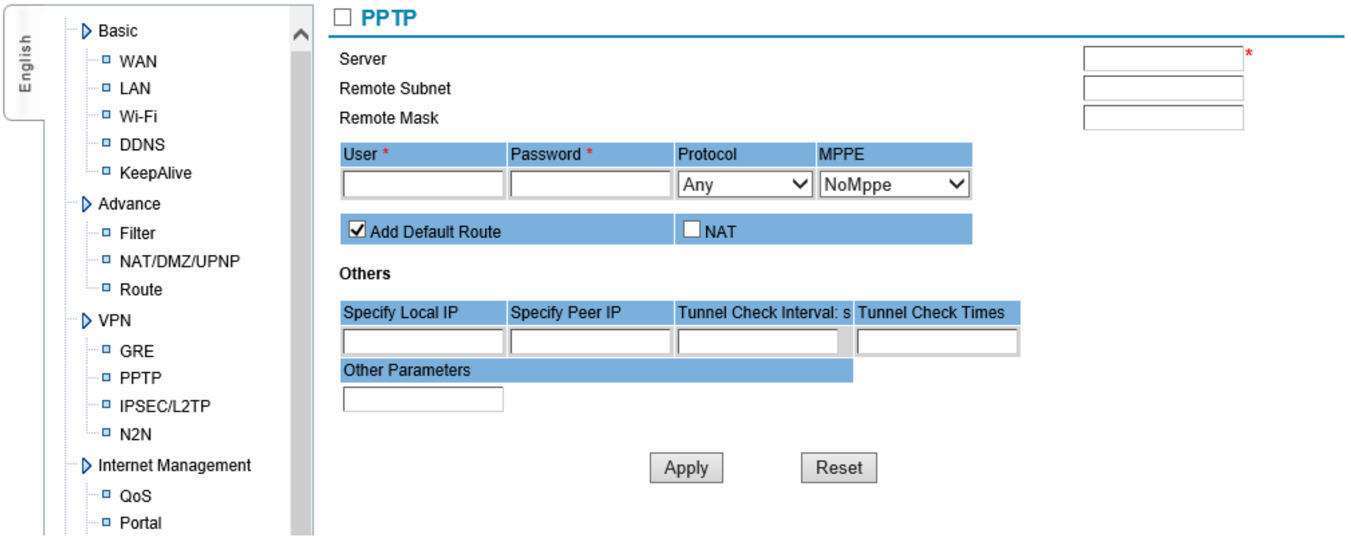
Figure 5-4-1-1 GRE Configuration

（Note: first to ensure that both ends of the established GRE can obtain the public IP address by dialing.）

Object	Description
Name	It is limited to use characters 0-9, a-z and A-Z. Repeating the same name is not possible.
Remote IP	Remote public network IP
Remote Subnet	Format is 192.168.1.0/24.
Interface IP address	The appointed virtual interface IP address.
Local WAN IP	IP address is used to create tunnel, if it is blank, it means to use WAN IP address.
MTU	The maximum data packets which can go through tunnel.

5.4.2 PPTP

GRE is VPN（Virtual Private Network ）third tunnel protocol, that is to adopt Tunnel technology among protocols.



□ PPTP

Server *

Remote Subnet

Remote Mask

User *	Password *	Protocol	MPPE
		Any	NoMppe

☑ Add Default Route □ NAT

Others

Specify Local IP	Specify Peer IP	Tunnel Check Interval: s	Tunnel Check Times

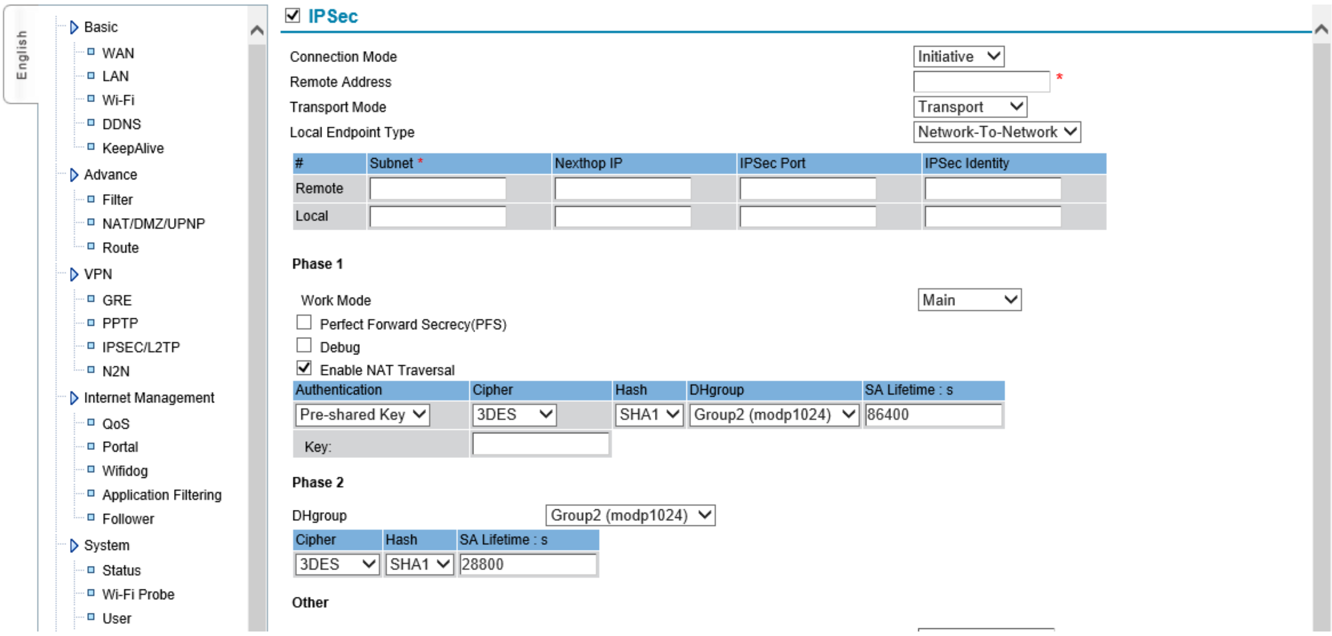
Other Parameters

Figure 5-4-2-1 PPTP Configuration

Object	Description
Server IP	Server IP or domain name
Remote Subnet, Remote Subnet Mask	Server LAN information
Username/Password	User name and password connected to server
Protocol	PPTP finishes ppp password validation format. There is the following authentication way
Pap	Adopt Pap, which user name and password are plain text transmitted, and the safety level is low.
Chap	adopt Chap MS-Chap: adopt MS-Chap. MS-Chap-V2: adopt MS-Chap-V2
Any	Can adopt any one of above mentioned 4 kinds, if there is no special situation, please adopt this one.
MPPE	No Mppe: Don’t supply MPPE encryption Mppe (40/128): Supply MPPE function, support MPPE40 and MPPE128 encryption way Mppe-Stateful: Supply MPPE stateful encryption
Add default route	If this function is used, all data visited this device will send to PPTP tunnel. Under this situation, computer host of this device can only visit VPN network.
Other parameters	Don’t need to input usually except service requested special negotiation parameters.
Specify Local IP /Specify Peer IP	If server allows, this device requests from server to specify local IP when ppp link is established. If server is assigned, it fails to establish tunnel.
Tunnel check interval (second)/Tunnel check times	Once tunnel is established, device can send interval LCP packets to check the link. If checking times fail, device will disconnect automatically and restart to connect.
Other parameters	It will be used when special parameters are needed to establish link. It doesn’t need to input usually, except for the services with special negotiation parameters. Parameter format is: novj; novjcomp, use “;” to separate parameters.

Note: If “default route” is enabled, all data packets will be sent to VPN server, that means equipment can’t visit public network. Please revise “keeping online” parameters according to actual situation. Otherwise, it will be off-line frequently.

5.4.3 IPSEC



☑ IPSec

Connection Mode: Initiative

Remote Address: *

Transport Mode: Transport

Local Endpoint Type: Network-To-Network

#	Subnet *	Nexthop IP	IPSec Port	IPSec Identity
Remote				
Local				

Phase 1

Work Mode: Main

☐ Perfect Forward Secrecy(PFS)

☐ Debug

☑ Enable NAT Traversal

Authentication	Cipher	Hash	DHgroup	SA Lifetime : s
Pre-shared Key	3DES	SHA1	Group2 (modp1024)	86400
Key:				

Phase 2

DHgroup: Group2 (modp1024)

Cipher	Hash	SA Lifetime : s
3DES	SHA1	28800

Other

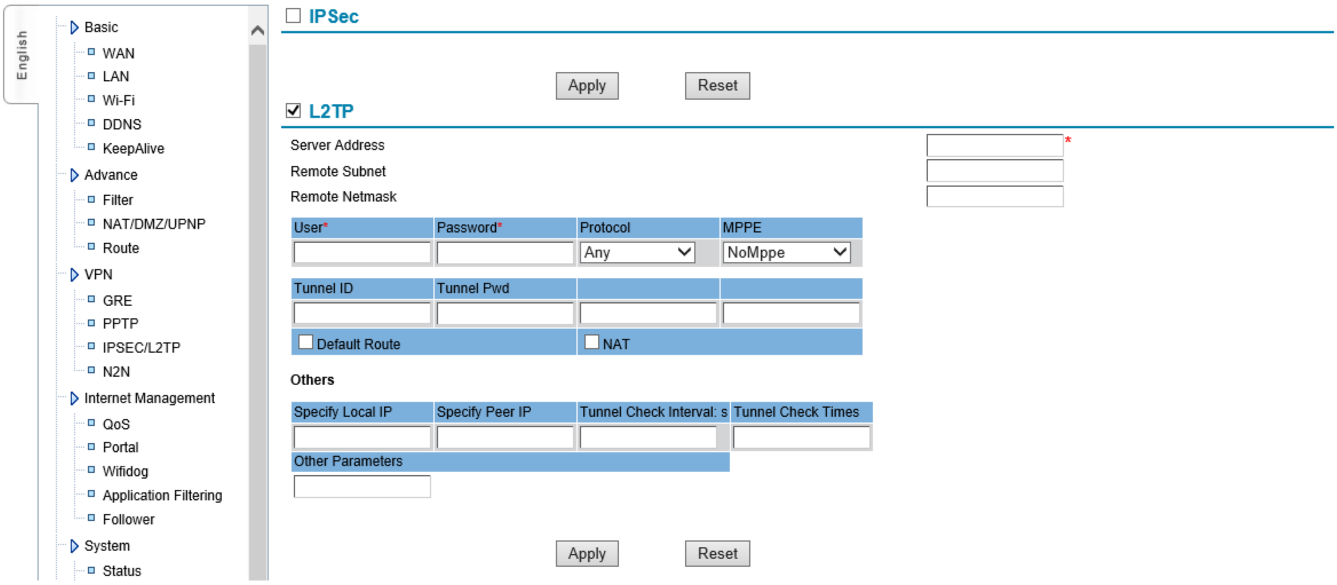
Figure 5-4-3-1 iPSec Configuration

Object	Description
Connection Mode	**Initiative Mode**: Initiate connection from this side **Passive Mode**: Wait for remote side connection
Remote Address	Server IP or domain name (compulsive to input)
Transport Mode	**Transport Mode**: usually used when gateway connects server **Tunnel Mode**: usually used when establishing tunnel between two gateways **Pass-through Mode**: allow IPSec protocol to pass through
Local Endpoint Type	**Network-to-Network**: used communication between equipment of gateway and equipment of server **Road Warrior**: connect to server as mobile clients end **Subnet**: It is subnet of both sides when working mode is Network-To-Network **Next-hop IP**: When device is in LAN, then this IP is the IP address of gateway that the device points to **IPSec Port**: when starts L2tp at the same time, L2tp monitor port and L2tp default port is 1701 **IPSec Identity**: the identification supplied to the opposite side when connects negotiation
Phase 1	If IPsec SA through consultation is established in the first stage, IPSec service for data communication will be supplied. **Work Mode**: Main and Aggressive mode **PFS**: Precise forwarding secrecy. Avoid affecting the whole communication system

	when single key leaks **Debug**: Enable debug information **NAT Traversal**: If this gateway doesn’t connect with public network directly, but transmit through IP original address, please use “NAT Traversal” **Authentication**: Pre-shared Key mode and Certificates X509 mode **Cipher**: DES, 3DES, AES and AES128 **Hash**: SHA1 and MD5 **DH group**: Group1, Group2, Group5, Group14, Group15, Group16, Group17 and Group18 **SA lifetime (s)**: phase negotiation valid time **Key**: when Pre-shared Key，it is shared key
Phase 2	Phase 2 is protected by phase 1, any message that was not protected by phase 1, SA will be refused. In phase 2, negotiate the communication protocol fast, changing secret key and establish communication. **DH group**: Group1, Group2, Group5, Group14, Group15, Group16, Group17 and Group18 **Lifetime (s)**: Phase negotiation valid time **Cipher**: DES, 3DES, AES and AES128 **Hash**: SHA1 and MD5 **DPS Timeout**: the default time of dps timeout is 120s **IPComp**: IP Payload Compression Protocol

5.4.4 L2TP

L2TP （Layer 2 Tunneling Protocol）, the Layer 2 channel protocol, is one kind of VPDN technology, used to the send layer data channel transmission. That is, encapsulating the second data unit, such as point-to-point protocol (PPP) data unit, into IP or UDP load to go through switch network (such as internet) successfully, then arrive.



□ IPSec

Apply Reset

☑ L2TP

Server Address *

Remote Subnet

Remote Netmask

User*	Password*	Protocol	MPPE
		Any	NoMppe

Tunnel ID	Tunnel Pwd		
□ Default Route		□ NAT	

Others

Specify Local IP	Specify Peer IP	Tunnel Check Interval: s	Tunnel Check Times

Other Parameters

Apply Reset

Figure 5-4-4-1 L2TP Configuration

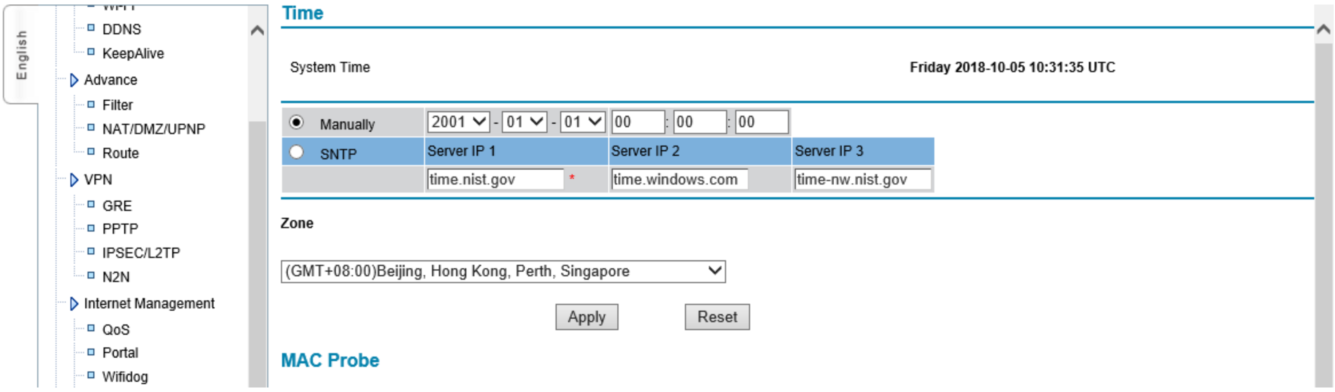
Object	Description
Server Address	Server IP or domain name
Remote Subnet, Remote Subnet Mask	Subnet information of server side
Username/Password	LAC account and password
Tunnel ID/ Tunnel Password	LNS account and password

6. System Management

6.1 Time Management

Manage the real-time clock of this device, supporting hand-setting and network time synchronization.

Set Time Manually



Time

System Time Friday 2018-10-05 10:31:35 UTC

● Manually 2001 - 01 - 01 00 : 00 : 00

○ SNTP Server IP 1 Server IP 2 Server IP 3

time.nist.gov * time.windows.com time-nw.nist.gov

Zone

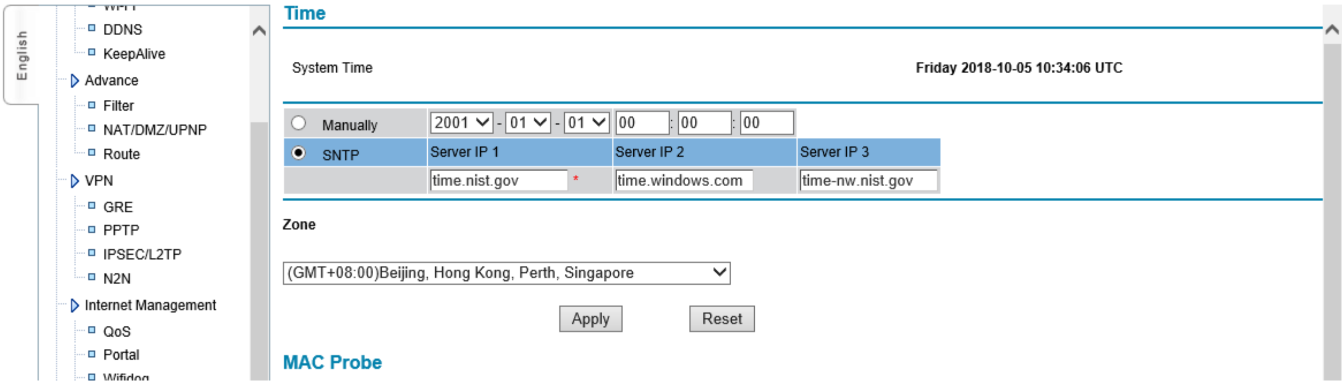
(GMT+08:00)Beijing, Hong Kong, Perth, Singapore

Figure 6-1-1 Time Configuration

Select "Manually", then choose the year, month, day, hour, minute and second to set.

Click "Apply" to finish set time system directly.

SNTP



Time

System Time Friday 2018-10-05 10:34:06 UTC

○ Manually 2001 - 01 - 01 00 : 00 : 00

● SNTP Server IP 1 Server IP 2 Server IP 3

time.nist.gov * time.windows.com time-nw.nist.gov

Zone

(GMT+08:00)Beijing, Hong Kong, Perth, Singapore

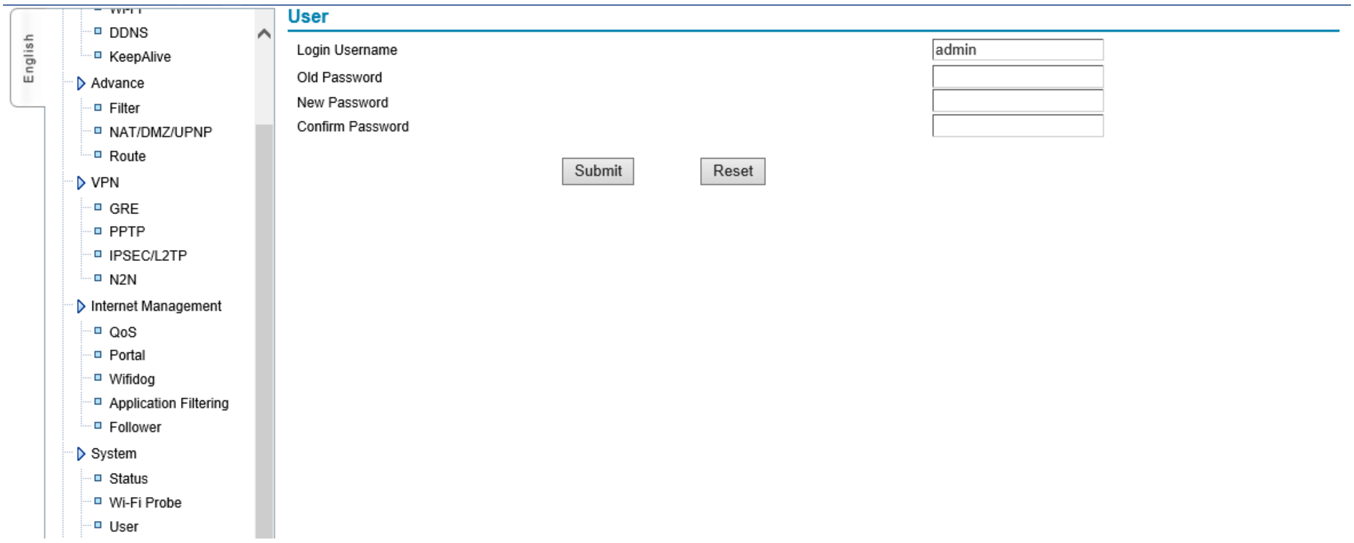
Figure 6-1-2 SNTP Configuration

Select "SNTP", the pre-settings are 3 international common time servers.

Note: The device needs to be able to access the Internet if it synchronizes with network time, so it cannot be applied in the 3G private network. And if it once starts, it will update every other hour.

6.2 User Management

Manage the user password of login web, Telnet and the serial port logged. Once forgot, please restore to default setting (refer to appendix 4).



User

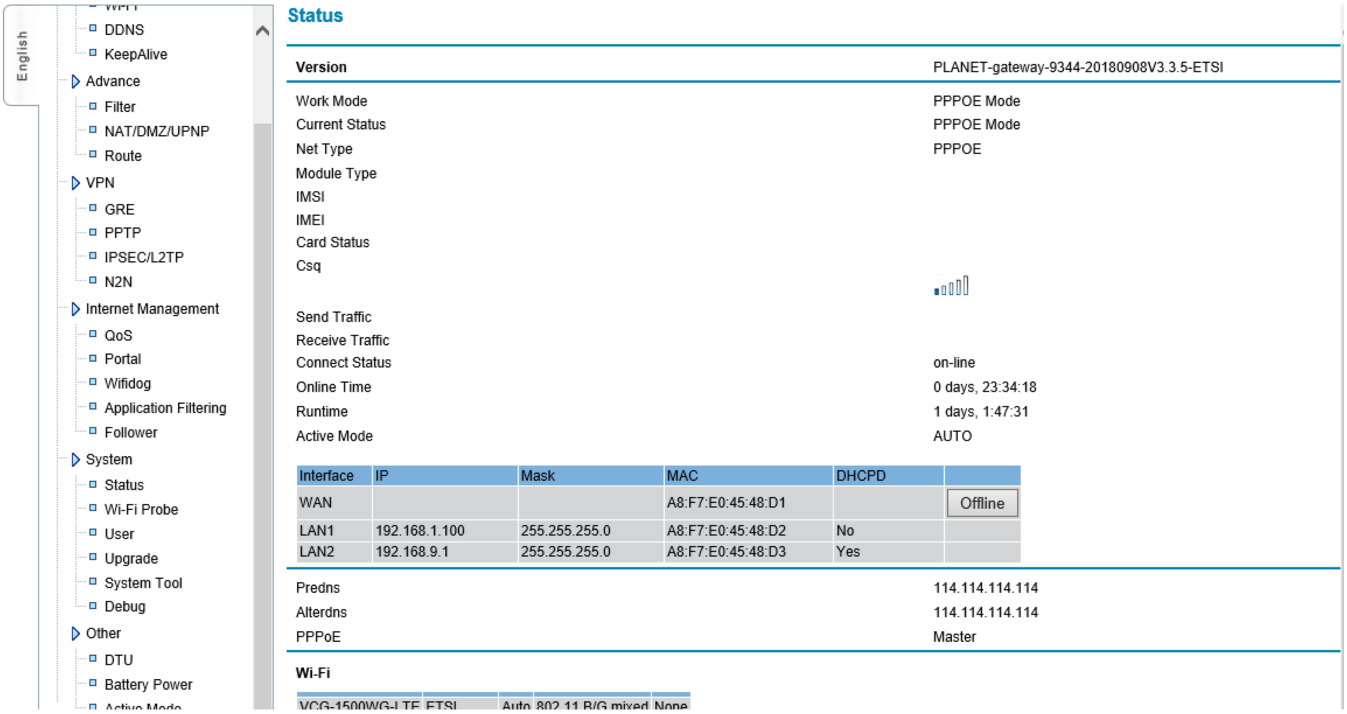
Login Username	admin
Old Password	
New Password	
Confirm Password	

Figure 6-2-1 User Management

User can revise the password from here. When revising the password, please input "login Username "at first, then input "old password", after that, input "new password", and next, input "confirm password", and click "submit" to save new password.

6.3 System Status

On the web, it displays the current system software version, WAN information, VPN information, DDNS (shows after starting DDNS), login status and information. Read the screenshot below:



Status

Version	PLANET-gateway-9344-20180908V3.3.5-ETSI
Work Mode	PPPOE Mode
Current Status	PPPOE Mode
Net Type	PPPOE
Module Type	
IMSI	
IMEI	
Card Status	
Csq	
Send Traffic	
Receive Traffic	
Connect Status	on-line
Online Time	0 days, 23:34:18
Runtime	1 days, 1:47:31
Active Mode	AUTO

Interface	IP	Mask	MAC	DHCPD	
WAN			A8:F7:E0:45:48:D1		Offline
LAN1	192.168.1.100	255.255.255.0	A8:F7:E0:45:48:D2	No	
LAN2	192.168.9.1	255.255.255.0	A8:F7:E0:45:48:D3	Yes	

Predns	114.114.114.114
Alterdns	114.114.114.114
PPPoE	Master

Wi-Fi

VCG-1500WG-LTE	ETSI	Auto	802.11 B/G mixed	None

Figure 6-3-1 System Status

6.4 Software Upgrade

Configure, manage and update the system, and after that the system will be reset to default.

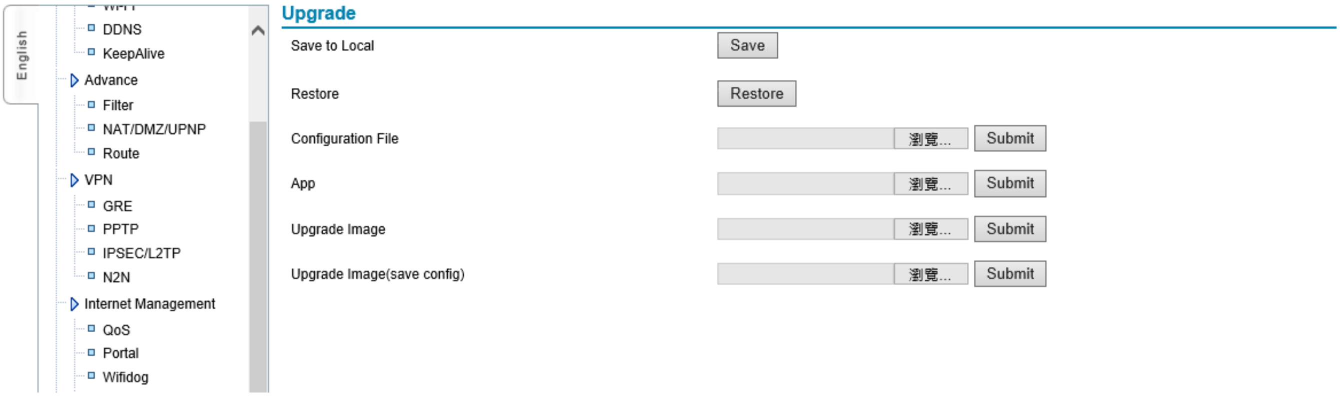


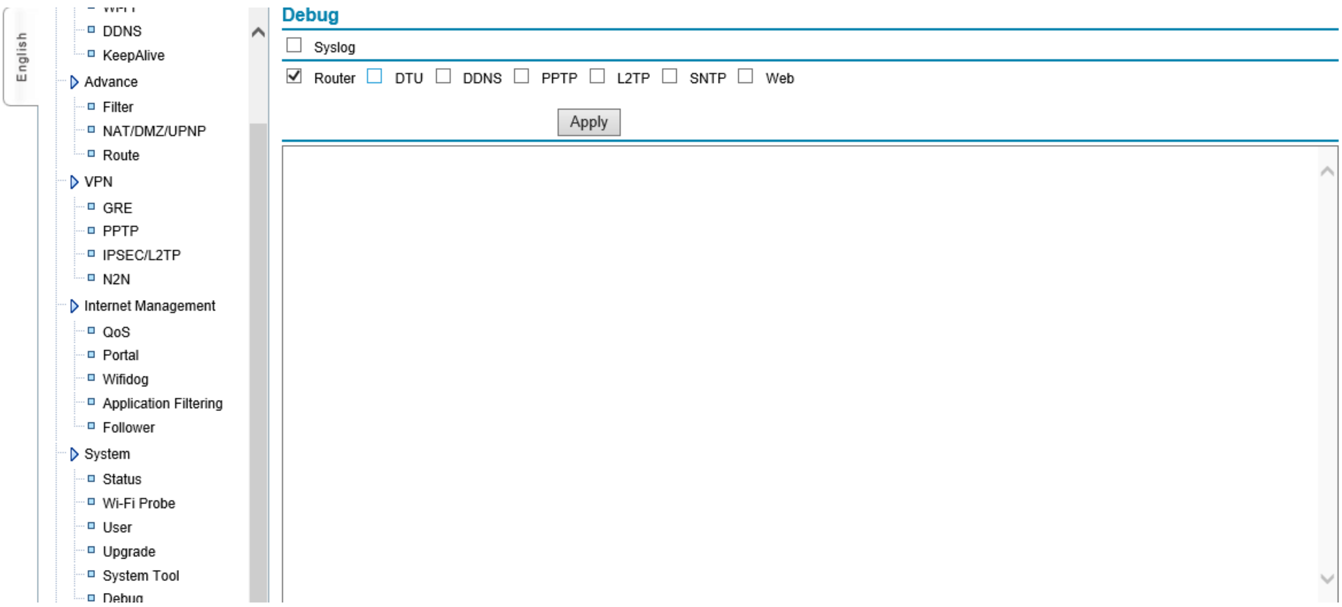
Figure 6-4-1 Upgrade

Object	**Description**
Save to Local	Back up the configuration file to the local PC
Restore	Restore current configuration to default status
Configuration File	Import the configuration to the device
Upgrade Image	Update the device according to the firmware supplied from the manufacturer

Note: Please don't power off when updating firmware, until it shows "Update successfully", and click "Confirm" when system updates successfully, and then, restart the system.

6.5 System Debug

It enables or disables the debug information of the main functions. In order to check debug information clearly and solve problem quickly, system has 7 optional debug modules:



Debug

☐ Syslog

☑ Router ☐ DTU ☐ DDNS ☐ PPTP ☐ L2TP ☐ SNTP ☐ Web

Figure 6-5-1 System Debug

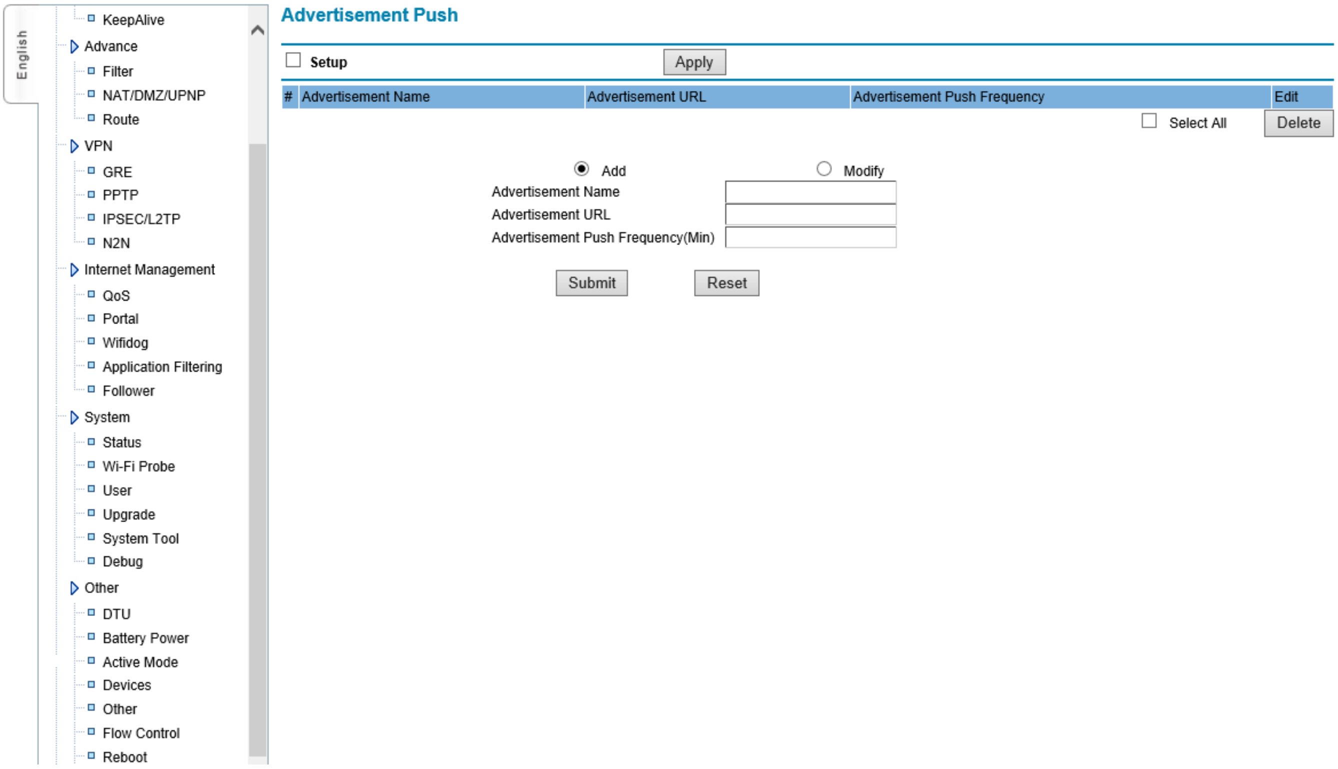
Object	Description
Router	Output the basic information of system, including dial-up information
DTU	Output DTU debugging of gateway
DDNS	Output DDNS debugging of gateway
PPTP	Output PPTP debugging of gateway
L2TP	Output L2TP debugging of gateway
SNTP	Output Internet Time debugging of gateway
Web	Output Web debugging of gateway

Select the corresponding function debugging and submit it, system will be restarted. After that, click "refresh" to update current debug information of system.

7. Internet Access Management

7.1 Captive Portal

Local push function is mainly used for pushing advertisement page link when using gateways access to the Internet. The users can define the advertising pages link, advertising push polling time and the time-frequency. Turn on this feature when users are in a networked process. The system will push "the first ad pages", then according to the ads URL list and frequency,when there are users clicking in an Internet,ad pages will be pushed. When reaching the polling time ad, it will push the "end advertising pages". The system starts to count polling time again, and do the cycles to push ads.



Advertisement Push

□ Setup Apply

#	Advertisement Name	Advertisement URL	Advertisement Push Frequency	Edit

□ Select All Delete

● Add ○ Modify

Advertisement Name

Advertisement URL

Advertisement Push Frequency(Min)

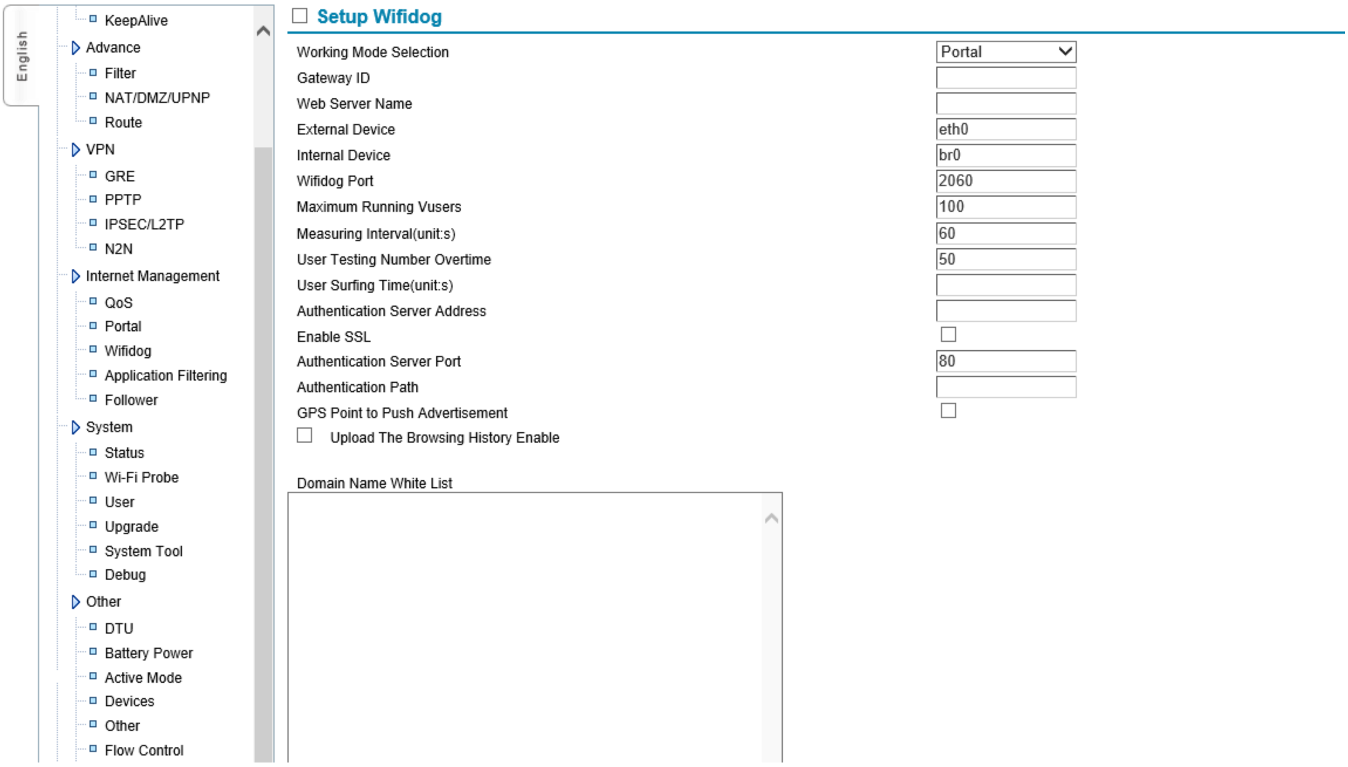
Submit Reset

Figure 7-1-1 Advertising Configuration

Object	Description
Ad push Port	Port number listened by push program
Ads polling time	The interval between the first pushed ad and the final pushed ads (min).
The first ad pages	Used for the first received the ad page after accessing the Internet; it is pushed just once under push polling time.
The Ended ad page	used for pushed ad page when polling time ends
Advertising Name	user-defined ad name
URL	User-defined ad link
Push Frequency	The repeat interval (min) for ad pushed to the client terminal

7.2 Wifidog Configure

Wifidog function is used for web authentication, when users connect to a wireless hotspot, requesting to send the data. It will first open the authentication page under the path of configured authentication server address to allow users to authenticate after the authentication succeeded. Then users can access Internet.



□ Setup Wifidog

Working Mode Selection	Portal
Gateway ID	
Web Server Name	
External Device	eth0
Internal Device	br0
Wifidog Port	2060
Maximum Running Vusers	100
Measuring Interval(unit:s)	60
User Testing Number Overtime	50
User Surfing Time(unit:s)	
Authentication Server Address	
Enable SSL	□
Authentication Server Port	80
Authentication Path	
GPS Point to Push Advertisement	□

□ Upload The Browsing History Enable

Domain Name White List

Figure 7-2-1 Wifidog Configuration

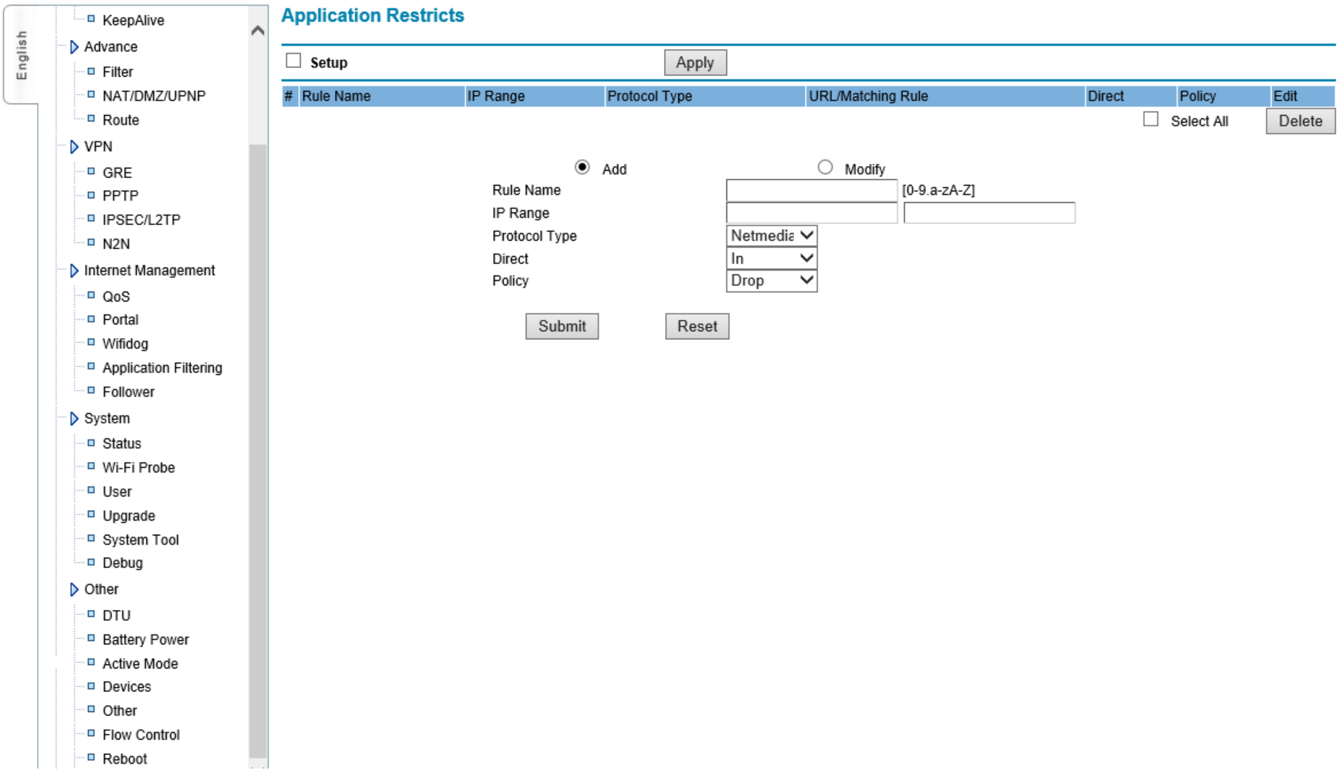
Object	Description
Gateway ID	Gateway mask which wifidog uploads messages to the server
Web server name	The user-defined server name
Internal port	The user data interface
Wifidog port	The wifidog port number
The maximum number of concurrent users	the largest number of users simultaneously request
Detecing interval	Detecting user traffic information and device status interval (s).
User Timeout detection times	determining user timeout detection times
Authentication Server Address	The authentication server address
Enable SSL	Docking whether the server uses SSL decryption

Authentication Server Port	The port number used by the server
Authentication server path	The server authentication path; the two path sides to be added with '/'.
Domain whitelist	Wifidog unshielded domain address, rule format is FirewallRule which allows tcp to XXX. It is generally used for server using some tools such as QQ, WeChat and other third-party tools to authenticate. It requires the corresponding domain to be added to the white list
Internet management rules and server synchronization	If the server's "Internet management" configuration synchronize to a local.
Whether upload browsing history	Choose whether to upload the user's URL browsing record.
Timing report	Report browsing history Interval; unit is sec.
Given byte report	It will be reported when it reaches set accumulated bytes' browsing record.Unit is bytes

Note: For the timing report and given bytes report, if one of them complied with the then records has to be reported.

7.3 Application Filtering

Set up certain users' application filtering, such as video, music, download, URL etc.



Application Restricts

☐ Setup

#	Rule Name	IP Range	Protocol Type	URL/Matching Rule	Direct	Policy	Edit

● Add ○ Modify

Rule Name [0-9.a-zA-Z]
IP Range
Protocol Type: Netmedia
Direct: In
Policy: Drop

Figure 7-3-1 Filtering Configuration

Object	Description
Rule name	Mark restricted rules' name
IP range	Limit IP segment
Protocol Type	Select the type of protocol to be filtered. (video, music, download, etc.)
Direction of the packet	Select the data source to be filtered, IN, OUT, IN / OUT
Strategy	The strategy for data processing of matched rule, accept or prohibit

7.4 Follower

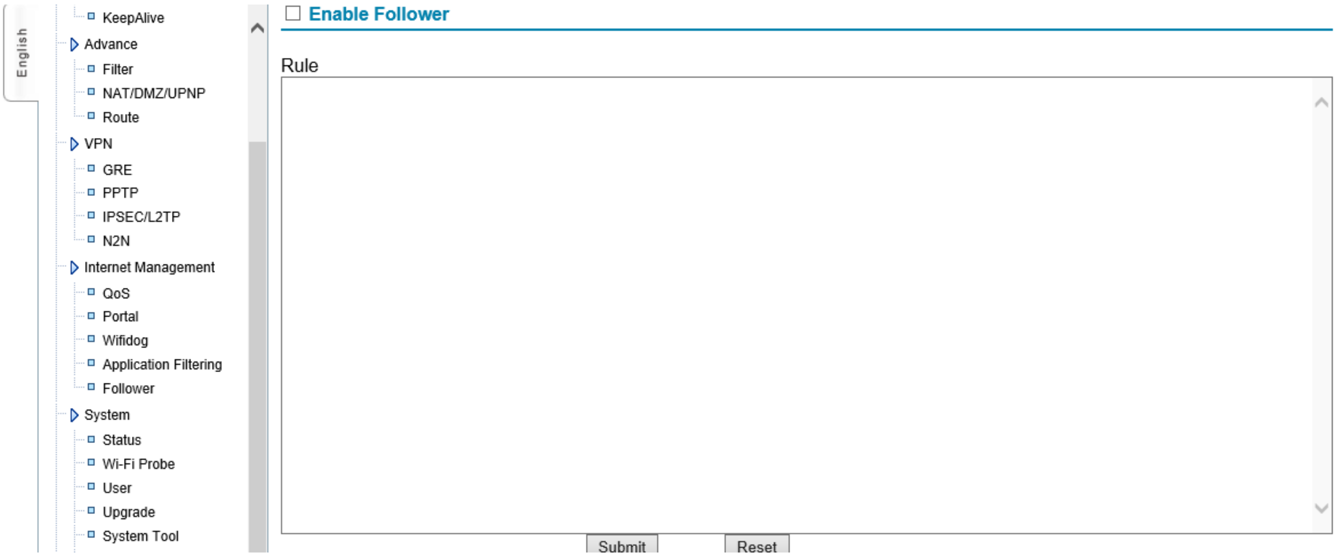
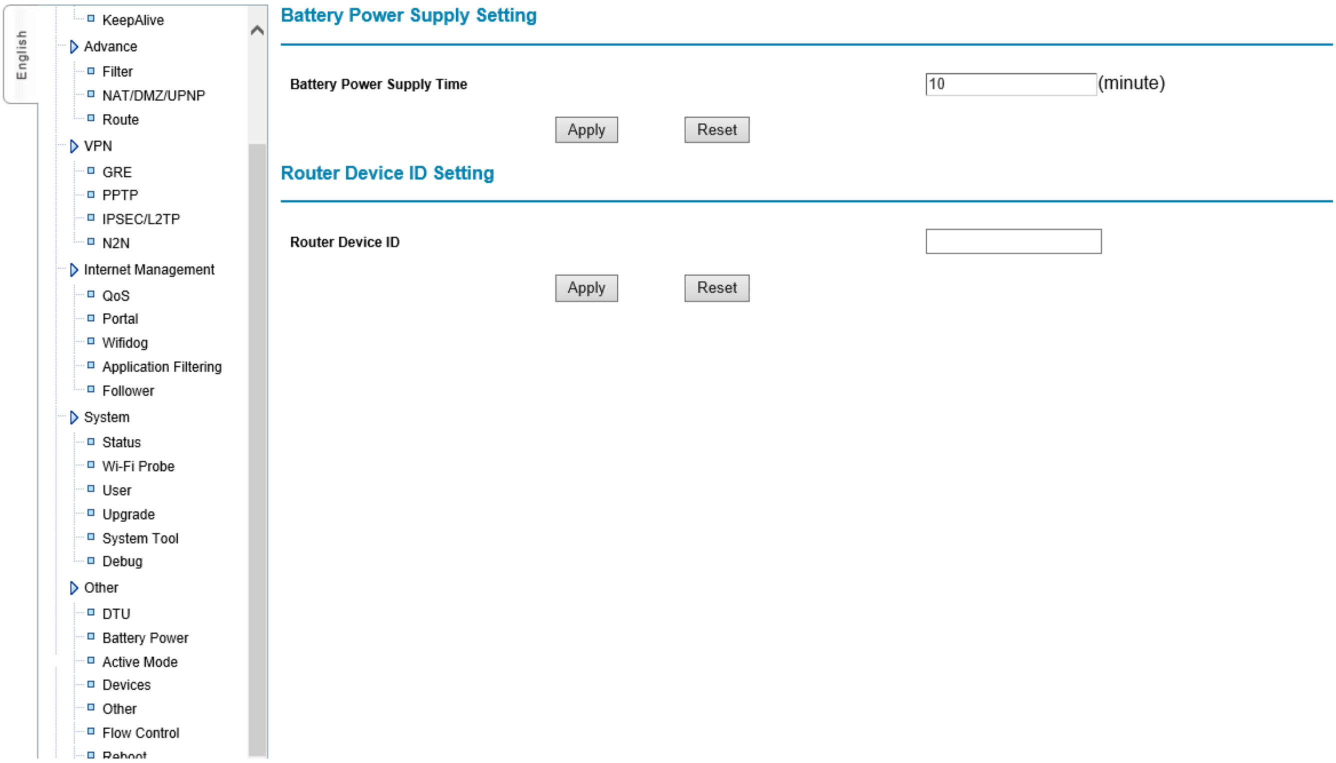


Figure 7-4-1 Follower Configuration

Object	Description
Enable	Enable the followed ads function
Rules configure	Configure replaced page content is that page inserted with advertising content, the rules of the first row FILTER: block-weeds, Second row: regular expression rules, such as s | page content | replaced contents $ 0 | g. After enabling it and the device connected, the ads can be viewed on the top of page when browsing the page

7.5 Battery Power Feature Config

This function is used to set the time of using battery supply when AC power is cut off. Using battery power supply is to be used when the AC power is cut off. It can continue to use battery power to make sure that the device can operate.



Battery Power Supply Setting

Battery Power Supply Time 10 (minute)

Router Device ID Setting

Router Device ID

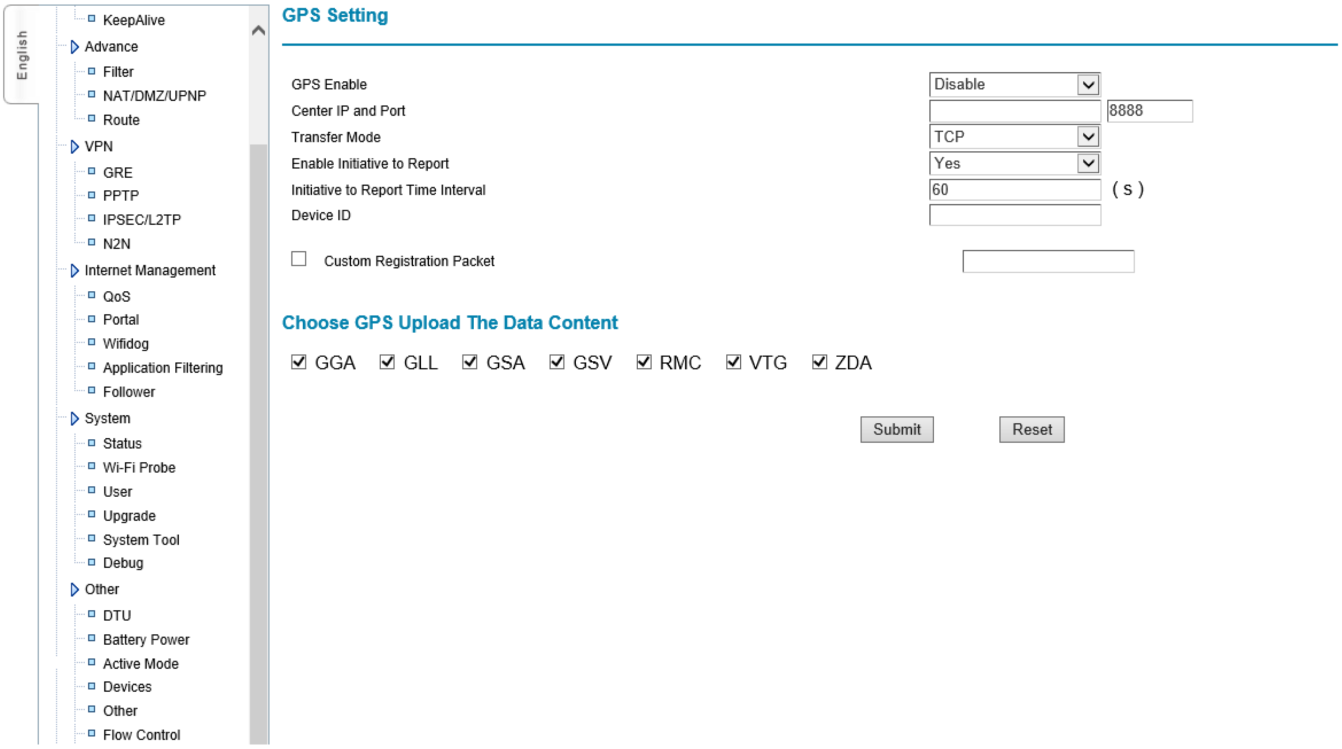
Figure 7-5-1 Battery Power Configuration

Object	Description
Battery backup time	The power supply duration after AC is cut off

Note: The battery supply voltage must be less than AC power supply voltage.

7.6 GPS Function

GPS function is to configure GPS data center address and port, enabling SNMP function. GPS data will be sent to the SNMP server. When initiative report is unable, center address terminals can send AT command to the device which captures the specified GPS data. When initiative report is enabled, the device can send GPS data content to center address during the set reported interval.



GPS Setting

GPS Enable: Disable

Center IP and Port: 8888

Transfer Mode: TCP

Enable Initiative to Report: Yes

Initiative to Report Time Interval: 60 (s)

Device ID

□ Custom Registration Packet

Choose GPS Upload The Data Content

☑ GGA ☑ GLL ☑ GSA ☑ GSV ☑ RMC ☑ VTG ☑ ZDA

Figure 7-6-1 GPS Configuration

Object	Description
Enable	Enable GPS function
Disable	Disable GPS function
Center address and port	set center address and port
TCP	TCP protocol which interacts with data center
UDP	UDP protocol which interacts with data center
Yes	Initiative to report GPS data to a central address
No	Not initiative to report the GPS data to a central address
Device ID	The user-defined gateway's mark
Custom registration package	the user-defined registration package
The uploaded GPS data option	Open the initiative to report and choose GPS data content uploaded to the central address. For GGA, GLL, GSA, GSV, RMC, VTG, ZDA data contents, see Appendix 7.

Note: Not the initiative to report then to receive AT command description.

Get Coordinates: AT + LOCATE: Re: Lon = 118.176565; Lat = 24.493771; (Lon = Longitude (ddmm.mmmm); Lat = Latitude (ddmm.mmmm)).

Get Time: AT + TIME: Re: Time = 125959; (12 H 59 M 59 S; Note: GPS reception time is world time, users need to convert it into local time according to their own time zone, such as China in the East eight zone, world time +8 hours).

Get Data Status: AT + STATUS: Re: Status = A; (A positioning data valid, V position data is invalid).

Get relative speed: AT + SPEED: Re: Speed = 1.13; (rate is 1.13 nm / hr).

Get altitude: AT + ALTITUDE: Re: Altitude = 58.2; (Altitude is 58.2m).

8. Other Configrations

8.1 Activation Mode

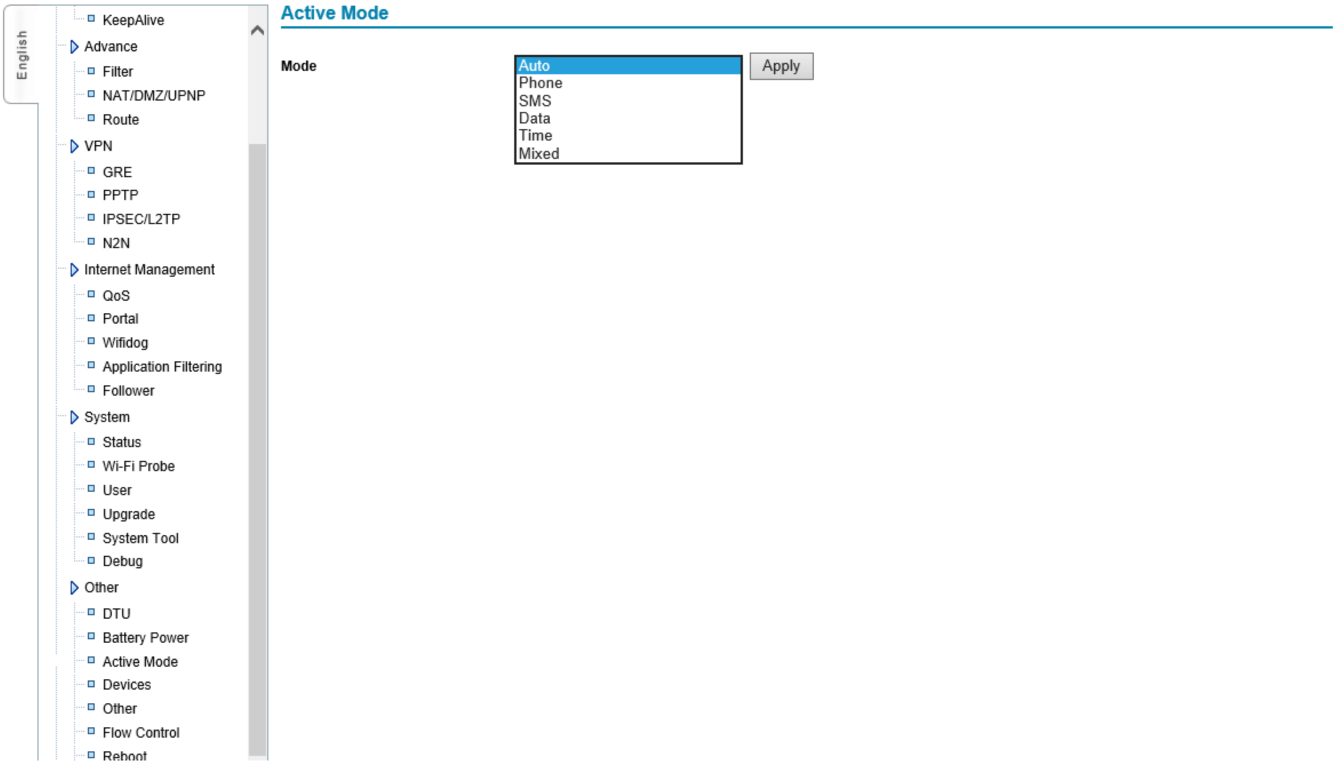


Figure 8-1-1 Activation Mode

Object	Description
Automatic modem	Device enters into auto dial-up status after power on. It is a factory default setting
Phone mode	Wake up by phone (the mobile number is SIM card number that is inserted on gateway). In this mode, gateway didn’t dial-up after power on. When there is a call, gateway dial-up is made after checking the ringing.
Idle Time	When “force offline” is not chosen, Idle Time is a period of time value after wireless gateway transmits and receives data packet. If arrives this time value, gateway will be offline automatically, releasing wireless communication link, and eliminate communication flow. For example, idle time is 600s, and meanwhile, select “force offline”, then after wireless gateway is online, it transmits or receives data continuously. After 600s, after finishing the data receiving or transmitting, wireless gateway will be offline automatically and close the communication link.
Force offline	When system is online and till it reaches the specified value of idle time, it will be offline immediately. That is also fixed communication time. The specified time is up; the system will be offline immediately.

	Note: If selecting “Idle Time” only, without “force offline”, please confirm whether “keeping online” rule has no data transmitting and receiving within “Idle Time”
SMS Mode	Gateway executes command after receiving SMS (it will receive SMS only when gateway hasn't dialed up to be online).
Idle Time	When “force offline” is not chosen, Idle Time is a period of time value after wireless gateway transmits and receives data packet. If arrives this time value, gateway will be offline automatically, releasing wireless communication link, and eliminate communication flow. For example, idle time is 600s, and in the meanwhile, selecting “force offline”, then after wireless gateway is online, it transmits or receives data continuously. After 600s, after finishing the data receiving or transmitting, wireless gateway will be offline automatically and close the communication link.
Force offline	When system is online and till it reaches the specified value of idle time, it will be offline immediately. That is also fixed communication time. The specified time is up; the system will be offline immediately
Wakeup password	user for the password of validating command validity
Data Mode	Device monitors local TCP pre-set port, to be the status of waiting for connection. When LAN host computer establishes TCP connection, LAN host computer sends command to control gateway to connect with network. After connected, LAN host computer sends the following commands to control device to connect with network. Command format is as follows: SMSPASSWD: password: CONNECT the device starts to connect with network SMSPASSWD: password: CLOSE turn off the Internet connection SMSPASSWD: password: REBOOT restarts the gateway Note: 1. Command is without case-sensitive (including wakeup password), so once device receives LAN host computer data, it disconnects TCP connection with LAN host computer immediately, and enters into monitor status again. 2. If selecting “Idle Time” only, without “force offline”, please confirm whether “keeping online” rule has no data transmitting and receiving within “Idle Time”.
Time Mode	Gateway dial-up is to be online or offline according to set timer; supports more rules. Once one rule is met, it will be online.
Support way	self defined: Set gateway online and offline time scope according to customers' need every year: Set gateway online and offline time scope of the certain period every year. every month: Set gateway online and offline time scope of the certain period every month every week: Set gateway online and offline time scope of the certain period every week every day: Set gateway online and offline time scope of the certain period every day

	every hour: Set gateway online and offline time scope of the certain period every hour. Note: need to confirm whether system time is correct or not
MIX mode	It is with the functions of SMS, PHONE and DATA wakeup. Once one is valid, it can wake up the gateway Note: 1. Command is without case-sensitive (including wakeup password), so once device receives LAN host computer data, it disconnects TCP connection with LAN host computer immediately and enters into monitor status again. 2. If selecting “Idle Time” only, without “force offline”, please confirm whether “keeping online” rule has no data transmitting and receiving within “Idle Time”

SMS wakeup command format:

SMSPASSWD: password: command: parameter

Command and parameter：

REBOOT

Function：Restart gateway

Command：REBOOT

Parameter：none

Format：SMSPASSWD: xxxxxx (password): REBOOT

CONNECT

Function：gateway dial-up at the same time, log in and start to transmit the data

Command：CONNECT

Parameter：none

Format：SMSPASSWD: xxxxxx (Password): CONNECT

DNS

Function：set the main DNS and backup DNS of wireless gateway

Command：CONNECT

Parameter：none

Format：SMSPASSWD: xxxxxx (password): DNS:201.101.103.55:201101.107.55

Instruction：set the main DNS as 202.101.103.55, backup DNS is 202.101.107.55

DNS

Function：Eliminate DNS

Command：CLEAR

Parameter：none

Format：SMSPASSWD: xxxxxx (password):DNS:CLEAR

ACTMODE

Function：The device revised to be auto activation (default)；wireless gateway dial-up automatically after power on.

Command：AUTO

Parameter：none

Format：SMSPASSWD: xxxxxx (password): ACTMODE:AUTO

Function：Device revised to be phone activation mode. Active gateway to be online by phone

Command：RING

Parameter：none

Format：SMSPASSWD: xxxxxx (password):ACTMODE:RING

Function：Device revised to be SMS activation mode. Activate gateway to be online by SMS

Command：SMS

Parameter：none

Format：SMSPASSWD: xxxxxx (password):ACTMODE:SMS

Function：Device revised to be DATA activation mode. Active gateway to be online by data, when gateway receives data, it is activated and be online.

Command：DATA

Parameter：none

Format：SMSPASSWD: xxxxxx (password):ACTMODE:DATA

Function：Device revised to be MIX activation mode. It is with all functions of SMS, PHONE and DATA. Once one function is met, gateway is activated and can be online

Command：MIX

Parameter：none

Format：SMSPASSWD: xxxxxx (password):ACTMODE:MIX

Note:

1. “:” in command is English character.

2. If select “Idle Time” only, without “force offline”, please confirm whether “keeping online” rule has no data transmitting and receiving within “Idle Time”

8.2 Bandwidth Management

Limit bandwidth of device according to IP address

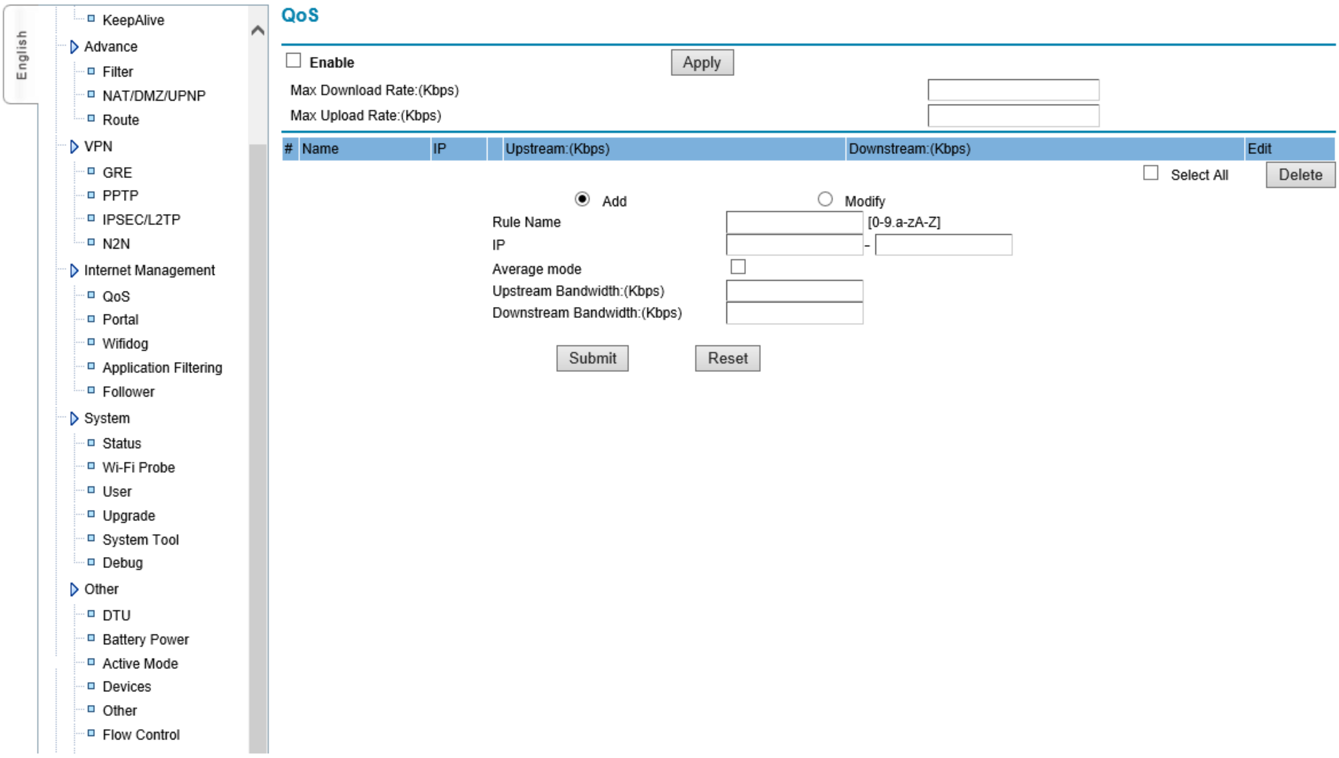
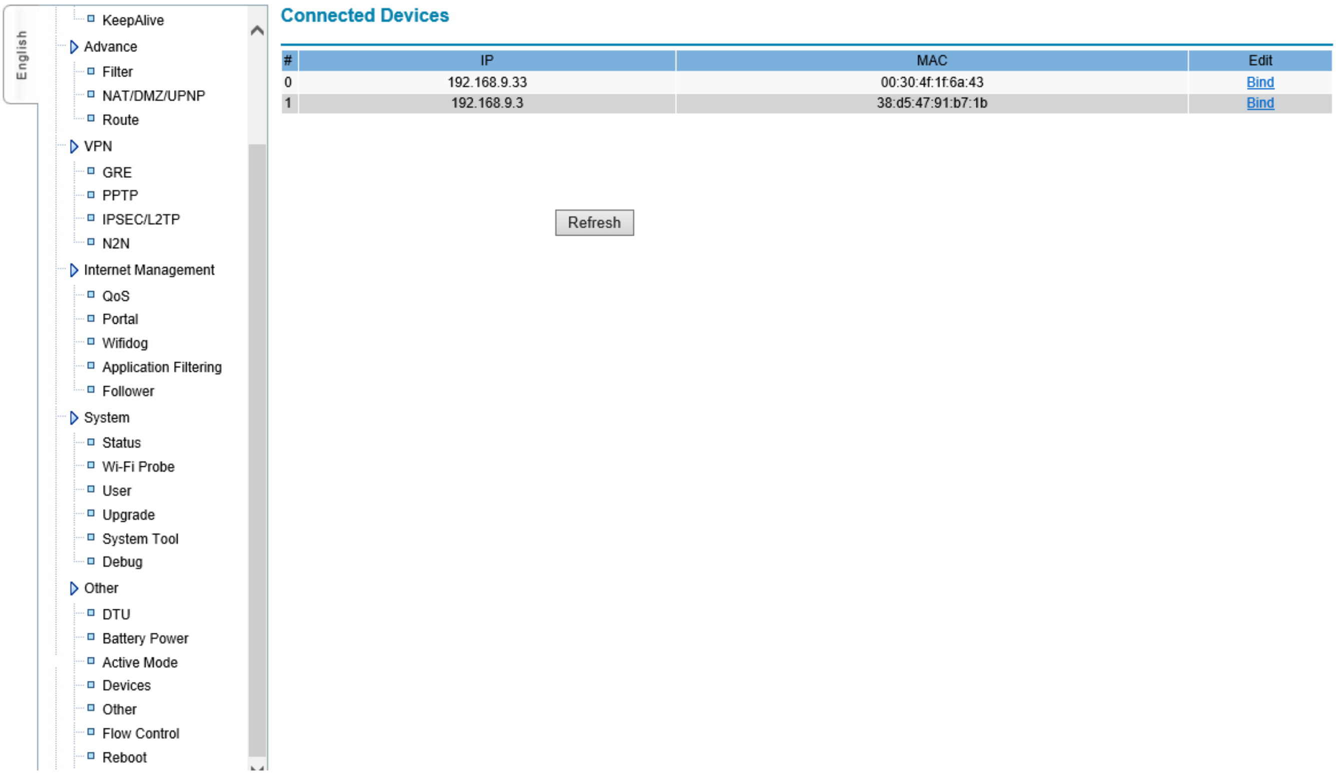


Figure 8-2-1 QoS Management

Object	Description
Name	It is limited to use characters 0-9, a-z and A-Z, and tautonymy is not allowed, as the identification of distinguishing the multi-rules
IP	Limit IP address scope
Upstream	Max. upstream bandwidth.
Downstream	Max. downstream bandwidth

8.3 Connecting Device (MAC Address Binding)

Realize MAC address binding to the connected devices to avoid ARP cheating and attack.



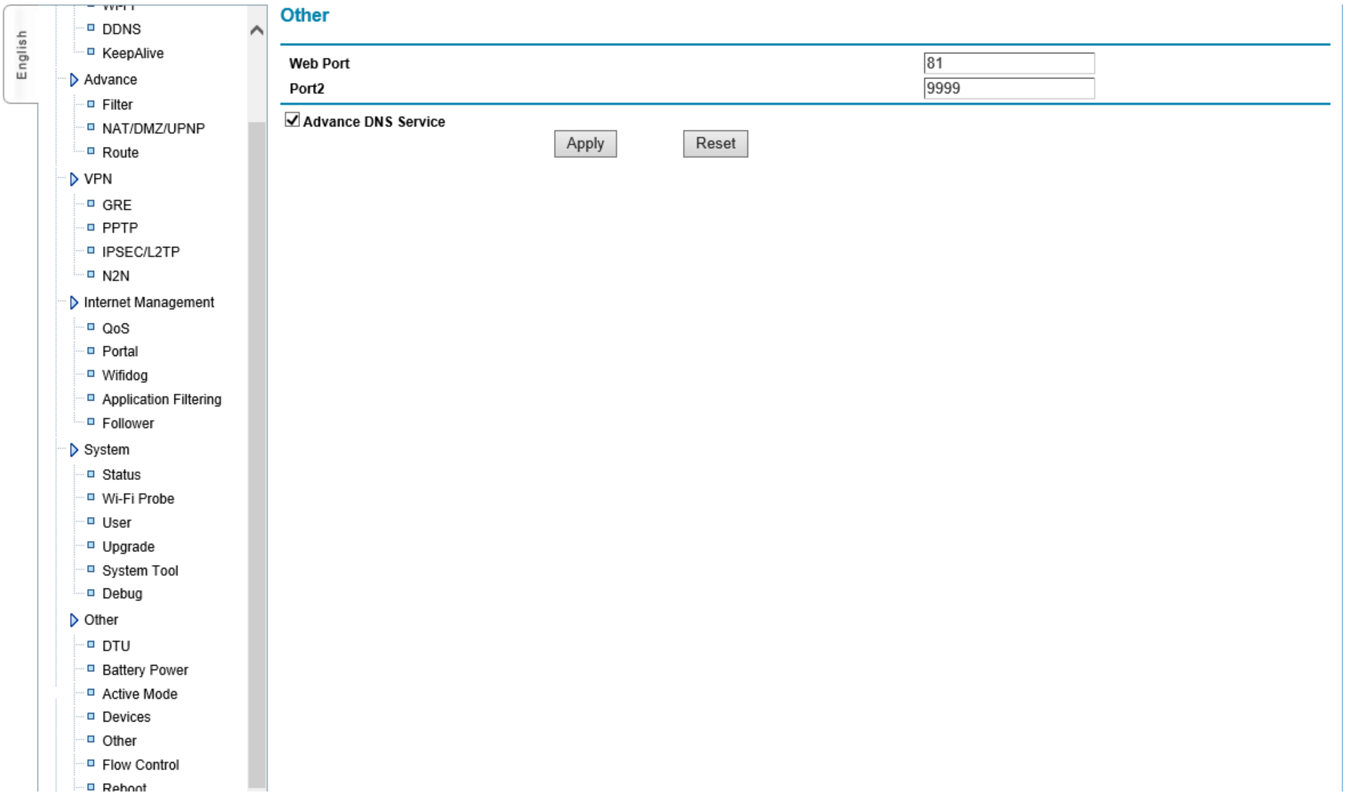
Connected Devices

#	IP	MAC	Edit
0	192.168.9.33	00:30:4f:1f:6a:43	Bind
1	192.168.9.3	38:d5:47:91:b7:1b	Bind

Figure 8-3-1 Connected Client Status

8.4 Other Configurations

Set Web visiting port and DNS re-direction



Other

Web Port	81
Port2	9999

☑ Advance DNS Service

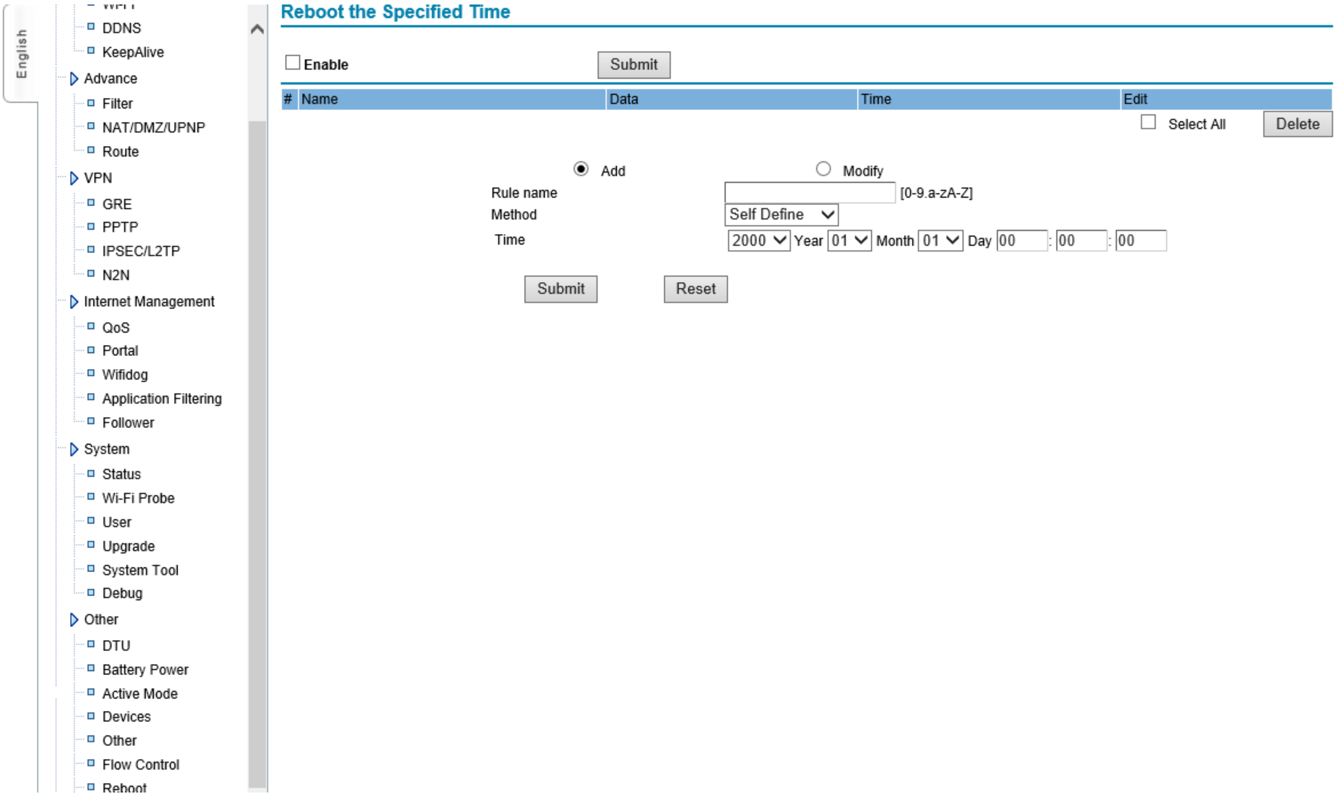
Figure 8-4-1 Port Management

Object	Description
Web port	Revise web port, and the default is 81. If revised to be 8080, it needs to log in gateway configuration: http://gateway IP: 8080
Advance DNS service	If start and make LAN host computer DNS address points gateway, then all LAN host computer domain name requests of gateway are sent to DNS server appointed by the device by force (please check system status "first DNS/standby DNS").

Note: At the same time, DHCP service will supply the LAN network card address that gateway is DNS to LAN DHCP clients

8.5 Timing Restart

Specify device to restart in a certain period



Reboot the Specified Time

□ Enable Submit

#	Name	Data	Time	Edit

□ Select All Delete

● Add ○ Modify

Rule name [0-9.a-zA-Z]

Method Self Define

Time 2000 Year 01 Month 01 Day 00 : 00 : 00

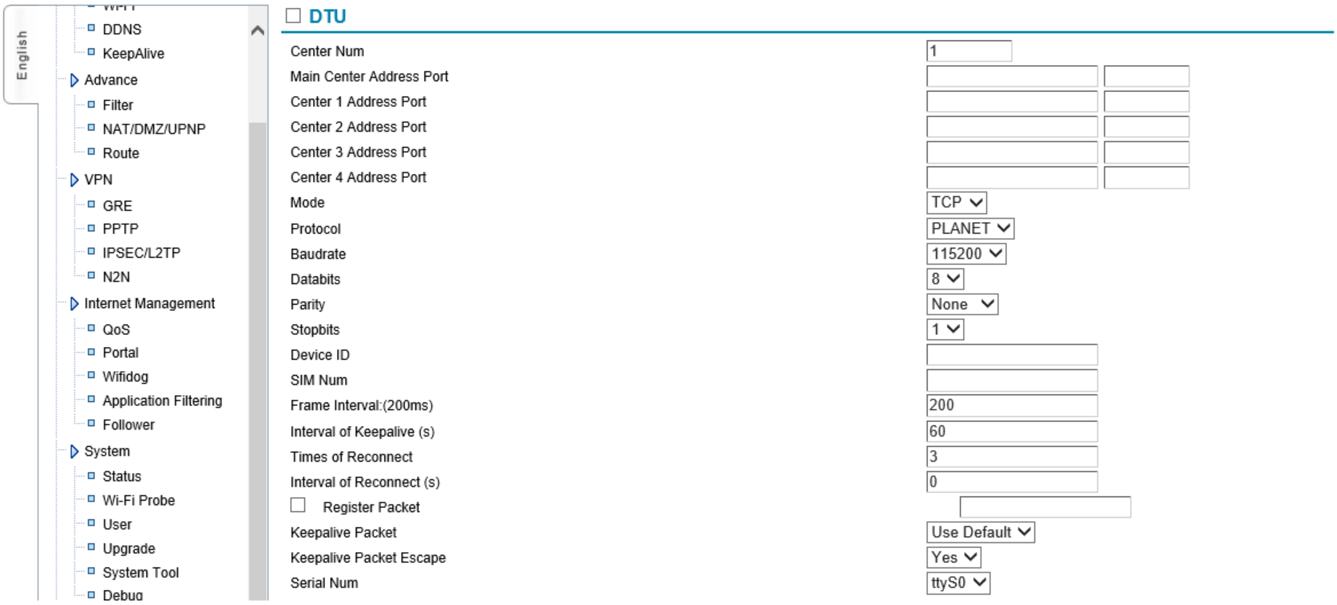
Submit Reset

Figure 8-5-1 Scheduled Reboot

Object	Description
Support way	self defined: Set gateway online time according to customers' need every year: Set gateway online time of the certain period every year. every month: Set gateway online time of the certain period every month every week: Set gateway online time of the certain period every week every day: Set gateway online time of the certain period every day every hour: Set gateway online time of the certain period every hour

8.6 DTU Configuration

The series port of wireless gateway (COM/LINE port) is used to configure gateway parameters or restore to default factory setting. It is used to configure data channel to realize DTU data communication. If control port COM/LINE is used as DTU series port, it needs to enable "DTU". The following is the explanation of DTU parameter configuration to use COM/LINE port as DTU.



□ DTU

Center Num	1
Main Center Address Port	
Center 1 Address Port	
Center 2 Address Port	
Center 3 Address Port	
Center 4 Address Port	
Mode	TCP
Protocol	PLANET
Baudrate	115200
Databits	8
Parity	None
Stopbits	1
Device ID	
SIM Num	
Frame Interval:(200ms)	200
Interval of Keepalive (s)	60
Times of Reconnect	3
Interval of Reconnect (s)	0
□ Register Packet	
Keepalive Packet	Use Default
Keepalive Packet Escape	Yes
Serial Num	ttyS0

Figure 8-6-1 DTU Configuration

Object	Description
Center Number	Input number according to the number of center server, when there is only 1 center server, please input 1. When there are more center servers, please input the corresponding number.
Center IP address and port	When there is only 1 center server, please input 1 in "center number", at this time, it only needs to configure "Main center IP and port", inputting center server IP and port into corresponding bars, read picture 4-5-10. If center server doesn't use fixed IP address, but domain name, please input domain name into corresponding IP address bar. Center 1 Address Port ~Center 4 Address Port don't need to input. When there are several center servers (main number is more than 1), input corresponding center server number in "center number", at this time, it needs to configure "Center 1 Address Port" ~ "Center X Address Port", X is number of center servers, input all center server IP address and port to corresponding bars, read picture 4-5-10. If center server doesn't use fixed IP address, but domain name, please input domain name into corresponding IP address bar. In this time, "Main center IP Address and Port" doesn't need to input.
Protocol	Set the working protocol. Default is PLANET DTU protocol. If customers need their own protocol, please select CUSTOM option.

Work Mode	Set transmission mode. There are TCP work mode and UDP work mode. Default is TCP protocol.
Baud Rate	Set up working Baud rate of serial port, scope is 110~230400BPS. Please set that baud rate to the same as that of user side equipment. Otherwise, series port can't communicate.
Data Bits	Set working data bits of serial port, and the value can be 7 and 8. Please set that data bits to the same as that of user side equipment. Otherwise, series port can't communicate
Parity	Set the parity of serial port, and the values can be NONE, ODD or EVEN. Please set that parity to the same as that of user side equipment. Otherwise, series port can't communicate
Stop Bits	Set stop bits of serial port, and the values can be 1 or 2. Please set that stop bits to the same as that of user side equipment. Otherwise, series port can't communicate.
Device ID	Number DTU, supplying one way of differentiating DTU for center server. ID is fixed to be 8 numbers. If it is not full of 8 numbers, please add 0 in front to make it full of 8 numbers.
SIM Number	Set mobile number which uses SIM card, and it is fixed to be 11 numbers. This parameter cannot change SIM card mobile number, but a kind of way for center server to differentiate connected devices
Frame Interval	Default is 200ms. Data that DTU receive packet rules as follows: 1. When serial port receives data whose length is more than appointed buffer 2048 bytes, DTU will packet the receiving data and send to center server. 2. Within the configured “frame interval” time, DTU equipment hasn't received any serial port data, DTU will packet the received data and send to center server. “Frame interval” time is set too small; it can result one data packet to be separated into more data packets. If set is too large, it can result in two or more data packets to be packed into one data packet and send to center server together. If it adopts our default value, one packet will be separated into more or more packets or it will be packed into one. If customer can't calculate the suitable value, please contact our technical support engineer.
Times of reconnection	Times of DTU are to connect with center server, and the default is 3. If trial times are more than configured “times of reconnection”, gateway will automatically power down and after a moment power on again, and dail-up, reconnecting center server till it is connected to server successfully
Interval of reconnection	Interval time of wireless gateway to reconnect with center server, the unit is second. When the connection with center server fails, if reconnect time is less than configured times, it will reconnect center server within the appointed time
Interval of keeping alive	Interval time of keeping alive data is sent periodically to maintain link. Unit is second. Default is 60s. Interval of keeping alive time can't be set too small, if so, it will cause flow

	increasing. It also can't be too large, if so, device can be detected after being offline for a long time. Suggested value is 10S<X<120S
Self-registered packet	When DTU establishes connection with center server, DTU will send registration information to center; if registration packet needs specific definition, please install the specific definition here
Keep alive packet define	After DTU is connected with wireless network; if there is no data transmission within a certain time, wireless network will disconnect with DTU automatically. In order to keep DTU connection with wireless network, it will send packet to data center from time to time. Option: None Function introduction: don' t send packet Option: Use Default Function introduction: use default 0xFE Option: Self Define Function introduction: Customers define their own packets according to actual situation.

Appendix: FAQs

1、 Frequently on/offline

- Please enter system status to check network signal situation and to confirm whether network signal is too weak.
- Please check corresponding parameters of keeping online, whether rules are met.
- If keeping-online destination IP uses domain name, please log in to gateway command terminal (appendix 1) to confirm whether decoding domain name and visiting destination address are normal.

2、 Forget passwords

- Please restore to default setting via reset button

3、 LAN indicator is off

- Please check whether network cable connects with gateway closely.
- If gateway connects with PC directly, please change cross network cable.
- Please connect gateway with switch to check network link is normal or not.

4、 Can't dial up to be online

- Please check WAN configuration information whether it is the same as information ISP supplied.
- Check signal by system status, if signal is weak, please check whether the antenna connects correctly.
- Please check whether this place is covered by network.
- Please check signal and card situation from system status. If card situation is wrong, please re-insert or change new card.

5、 Dial up to be online, but can't visit website

- Please check device gateway whether it points Gateway.
- Whether DNS is the same as gateway, if not, please revise (reference Appendix 6)
- If DNS information is input, please check whether they are correct.

If DNS is correct, please clear (use obtain DNS automatically), after dial-up is successful. Please input according to system status supplied DNS