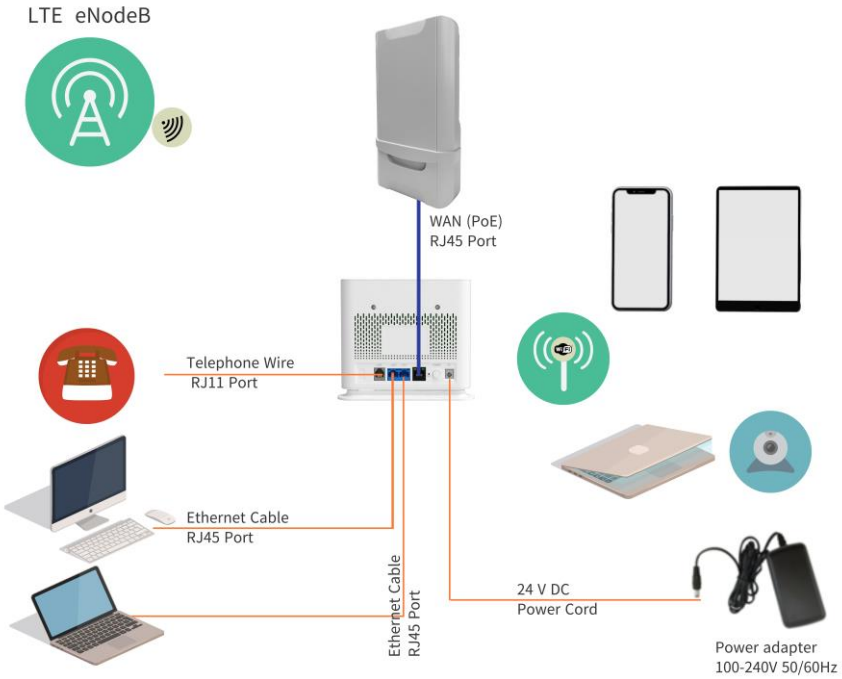
JATONTEC JT4300M LTE-A CPE
Administrator user Manual v1.0



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PLEASE READ THESE SAFETY PRECAUTIONS!

RF Energy Health Hazard

The radio equipment described in this guide uses radio frequency transmitters. Although the power level is low, the concentrated energy from a directional antenna may pose a health hazard. Do not allow human body to keep close contact with the device for long period of time while the transmitter is operating.

Protection from Rain and Lightning

The device needs to operate in an indoor environment where no rain or water leakage can be exposed to the device. Before connecting this instrument to the power line, make sure that the voltage of the power source matches the requirements of the instrument. The unit must be standards.

Disposal and Recycling Information

Pursuant to the WEEE EU Directive electronic and electrical waste must not be disposed of with unsorted waste. Please contact your local recycling authority for disposal of this product.

Reduction of Hazardous Substances

This CPE is compliant with the EU Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Regulation (Regulation No 1907/2006/EC of the European Parliament and of the Council) and the EU Restriction of Hazardous Substances (RoHS) Directive (Directive 2002/95/EC of the European Parliament and of the Council).

FCC Notice, USA

This CPE unit can comply with Part 15B of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This device is specifically designed to be used under Part 90Z, Subpart E of the FCC Rules and Regulations. Any unauthorized modification or changes to this device may void the operator's authority to operate this device.

Furthermore, this device is intended to be used only when installed in accordance with the instructions outlined in this manual. Failure to comply with these instructions may also void the operator's authority to operate this device and/or the manufacturer's warranty.

EC Conformance Declaration

Marking by the above symbol indicates compliance with the Essential Requirements of the RED Directive of the European Union (2014/53/EU). This equipment can meet the following conformance standards:

• EN 60950-1 (IEC 60950-1) - Product Safety
• EN 301 489-1, EN 301 489-17, EN 300 328 - EMC requirements for radio equipment

This device is intended for use in all European Community countries.

1. Overview

The JT4300M CPE is a highly advanced LTE outdoor multi-service product solution specifically designed to meet integrated data, voice and Wi-Fi access needs for residential, business and enterprise users. The product consists of an outdoor data CPE unit (ODU) and an indoor multiservice gateway unit (HGW) that supports advanced networking, VoIP gateway and WLAN AP functionalities. It enables wide service coverage and provides high data throughput and networking features to customers who needs easy broadband access, low cost VoIP service and Wi-Fi connectivity.

■ Operator Device Specification

Model	Description & User Interface
IDU	· 1 RJ45 10/100/1000M ETH (PoE), · 2 RJ45 10/100/1000M ETH, · 1 RJ11/FXS Line · SYS, NET, SIG(Tri color) , 2.4G Wi-Fi, 5G Wi-Fi, LAN1-2, LINE · 48V/0.5A DC · Dimensions: 170 mm × 138 mm × 55mm · Weight: < 300g
ODU	· 1 RJ45 10/100/1000M LAN Port · PWR, NET, SIM, Poe, ACT, RF(5LEDs) · 48V/0.5A PoE supply, ODU Power <15 Watts · Dimensions: 164 mm (L) × 56 mm (W) × 280 mm (D) · Weight: <1.5 Kg

■ Radio Interface Specification

Frequency Bands	Band 42
Radio Access	3GPP E-UTRA Release 10
Operation Mode	TDD/FDD, 2Tx DL MIMO
Output Power	23dBm
Throughput	Category 7
SIM Support	SIM card slot (2FF)

■ Wi-Fi Interface

Radio Access	802.11a/b/g/n/ac (2.4GHz 300 Mbps, 5GHz 867Mbps)
Output Power	15 ± 1dBm
Antenna	3dBi built-in antenna
Security	64/128-bit WEP, WPA/WPA2

2. Getting Started

■ Packing list and CPE Unit

Upon receiving the product, please unpack the product package carefully. Each product is shipped with the following items:

Table 2-1 Packing List

Outdoor CPE Products	Quantity
ODU unit	1
IDU unit	1
Mounting brackets	1
48V DC Power adapter	1
Ethernet Cable	1

If you find any of the items is missing, please contact our local distributor immediately.

CPE Unit：

Unpacking the Equipment Table 2-1 lists all the standard parts that are supplied in your LTE CPE Unit Installation Package. Please take the time to unpack the package and check its contents against this list.

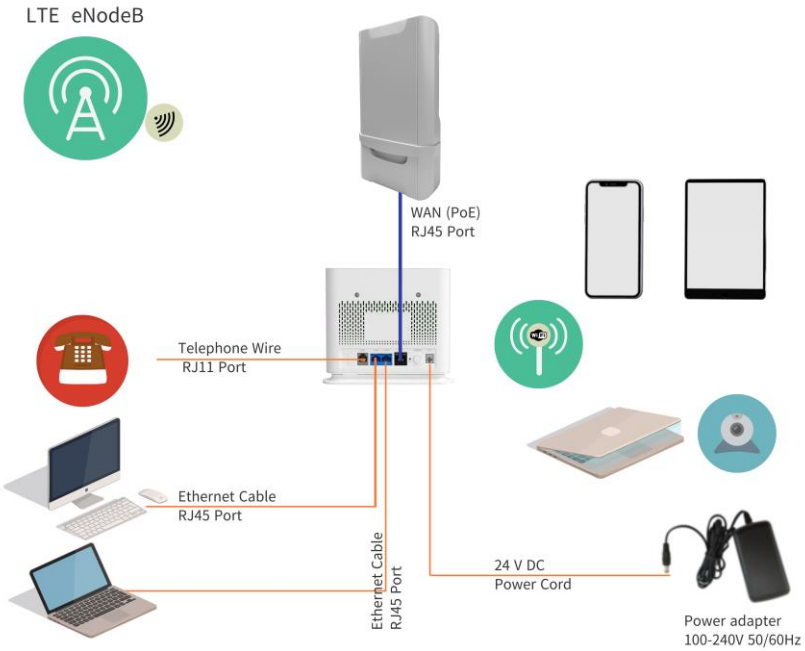
■ Installing and power on

For outdoor CPE product, it is suggested that the CPE device be installed in a shaded area to avoid direct sun light exposure and prolong the device life.

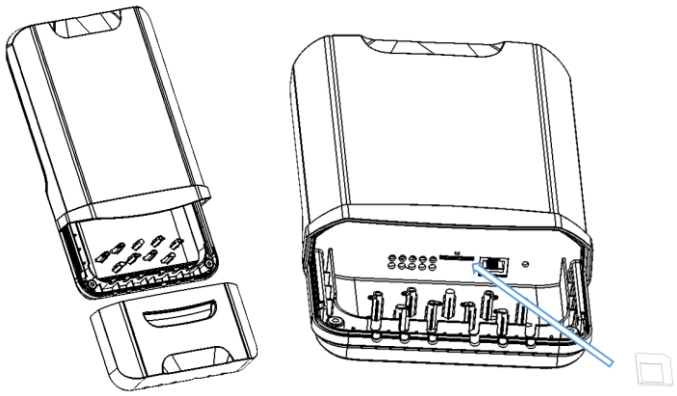
To power on the device, the CPE must use a 48V DC power supply adapter. The power adapters can operate in 90-250V AC range and therefore can be used in different country. An Ethernet cable is required to connect the WAN port of IDU with the POE(LAN) port of ODU. By the way, the ODU don't support the hot-plugging. Once the device is powered up, the user should wait for about 2 minutes before the device becomes operational. For CPE with the SYS LED indicator, a solid light indicates the system has completed the startup procedure.

To connect PC, LAN switch or other type of IP device to the CPE product, the user should use standard CAT6 Ethernet cable and connect to the appropriate LAN port. Once connected, the CPE(IDU) LAN LED indicator should be on.

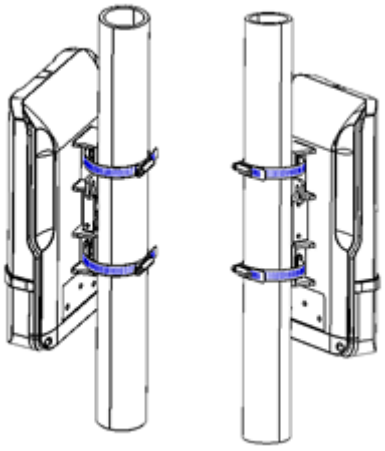
To use the phone service(Optional), operator can simply plug the phone line to the CPE RJ11 port in the back. If the line is not registered or configured, a fast-busy tone will be provided and the corresponding LINE LED light will be off.



■ Insert SIM Card



■ Installing Outdoor Unit (ODU) – Clamp



■ LED Display

Type	LED	Function	Description
IDU	SYS	Power indicator	Green color – Device is powered on.
	NET	WAN port status	Blinking green – The data is in transmission.
	SIG	RF signal indicator	Red: RSRP < -118dBm Green: -118dBm <= RSRP < -105dBm Blue: -105dBm <= RSRP
	2.4G & 5G	Wi-Fi indicator	Light is on –2.4G & 5G Wi-Fi is on.
	LAN1&LAN2	LAN port status	Solid green – LAN port is up. Blinking green – LAN data activity in progress.
	Line (Optional)	POTS line status	OFF – Line is not registered or provisioned. Green Color – The line is ready and registered Green Blinking – Voice Call in progress

Type	LED	Function	Description
ODU	PWR	Power indicator	Solid green – Device is power on.
	SYS	System run indicator	Solid green – Device is in normal operation.
	SIM	SIM card indicator	Light is on – SIM card state is ready, Blinking Green – SIM card is error.
	LINK	LAN port status	Solid Green – LAN port is up.
	ACT	LAN port status	Blinking Green – LAN data transmission.
	RF (5LEDs)	RF Signal Strength	5 level signal strengths indication by 5 green LEDs. 1st Green LED: -115dBm < RSRP 2nd Green LED: -115dBm <= RSRP < -105dBm 3rd Green LED: -105dBm <= RSRP < -95dBm 4th Green LED: -95dBm <= RSRP < -85dBm 5th Green LED: -85 <= RSRP

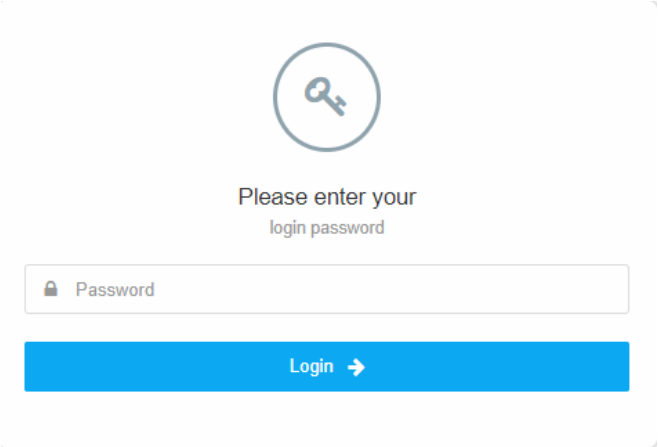
3. Managing CPE Device

The JT4300M offers rich management features which facilitate the task of service provider. It supports local management access, Telnet, WEB, and centralized remote OTA configuration, upgrades management and device monitoring via standard TR-069 ACS systems. The following describes the basic procedures for configuring the device for LTE operation.

■ WEB Login

It is a preferred to setup the CPE using a Web browser from a local PC connected to device LAN port. The operator should ensure that the connected PC has acquired IP address via DHCP from the device. After IP connectivity is established between the PC and CPE device, the operator

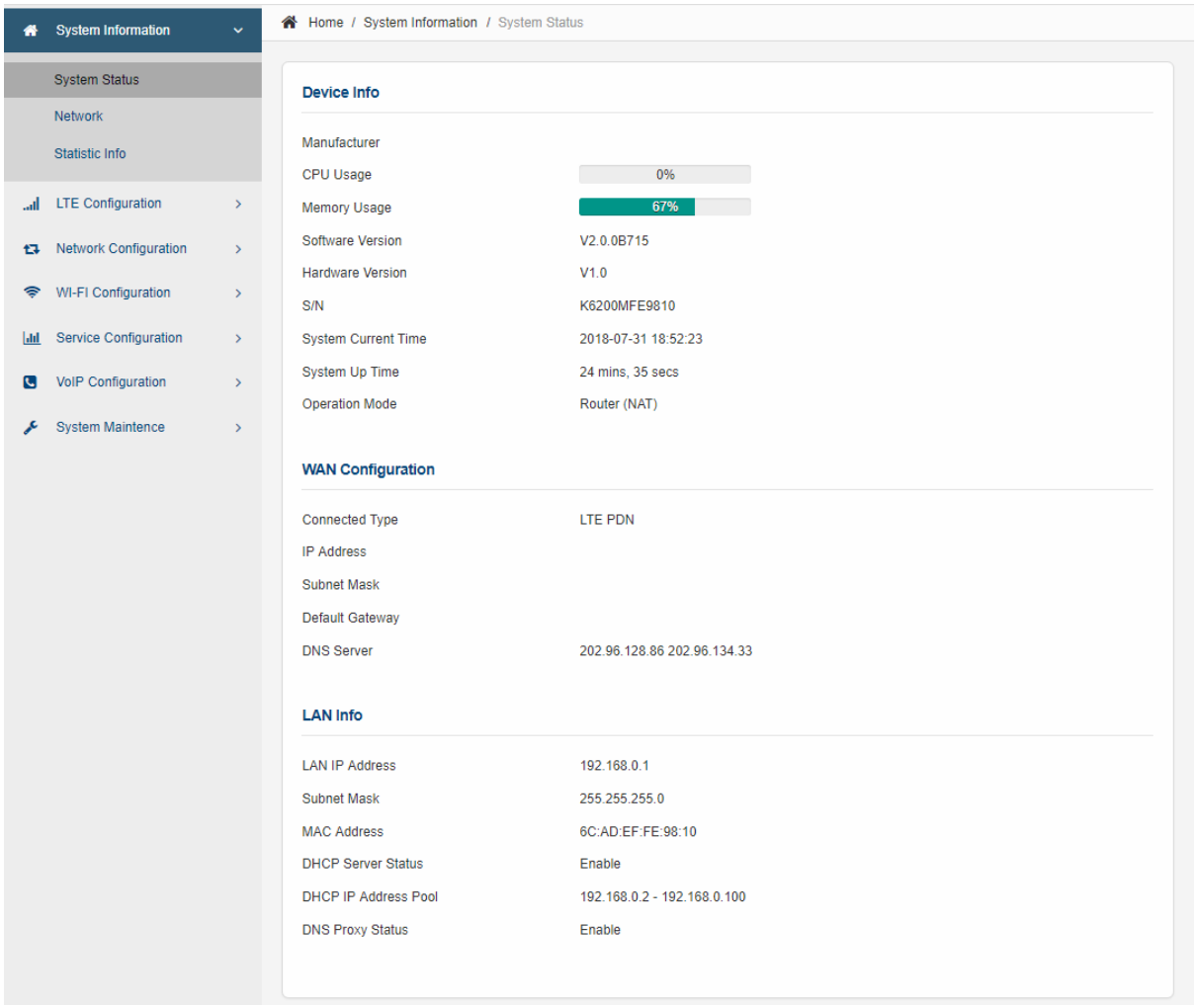
may launch a Web browser and specify http://172.16.1.1 in the address bar. A window will pop up requesting password. Input the user login password and then click the "**Log in**" button. After successful log on, the default home page of the WEB GUI interface will appear. Note the default password is "admin123".



4. System Information

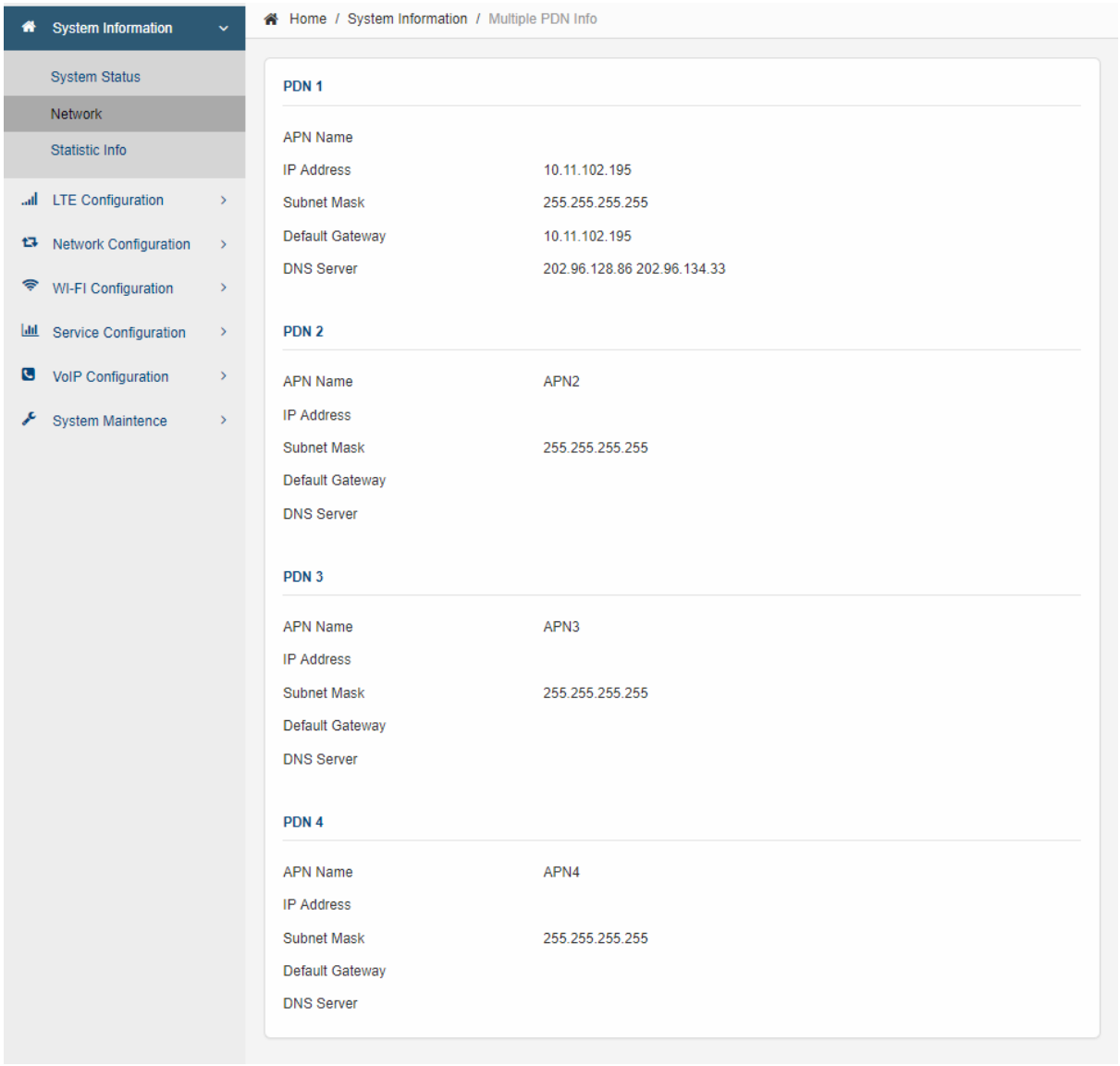
■ System Status

The menu shows the general system info of the CPE device. It includes system, general, WAN, LAN, Wi-Fi information.



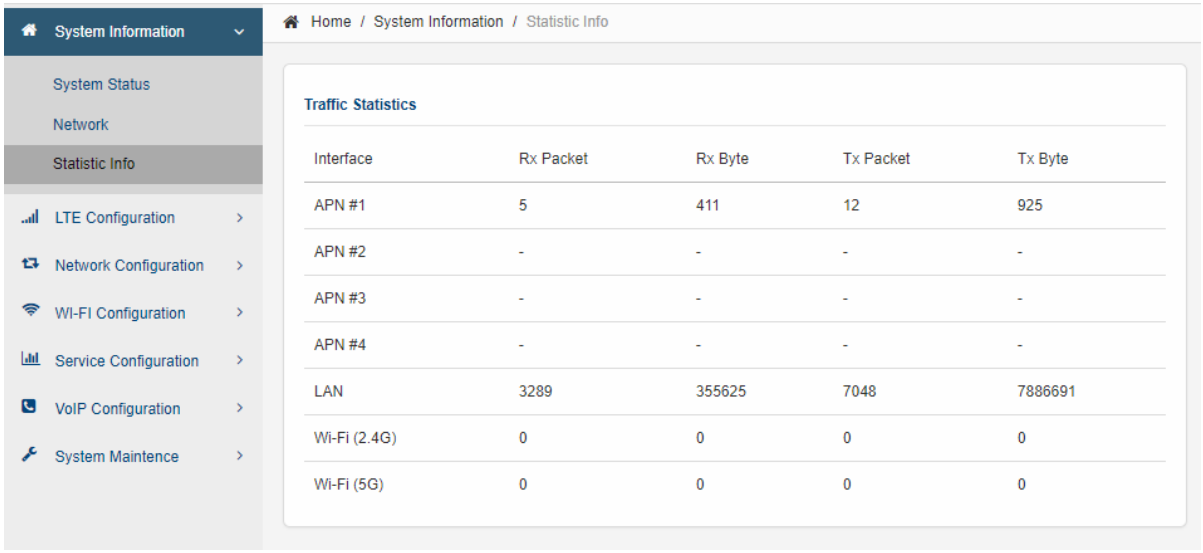
■ Network

The menu shows the general network status that includes PDN interface info.



■ Statistics Info

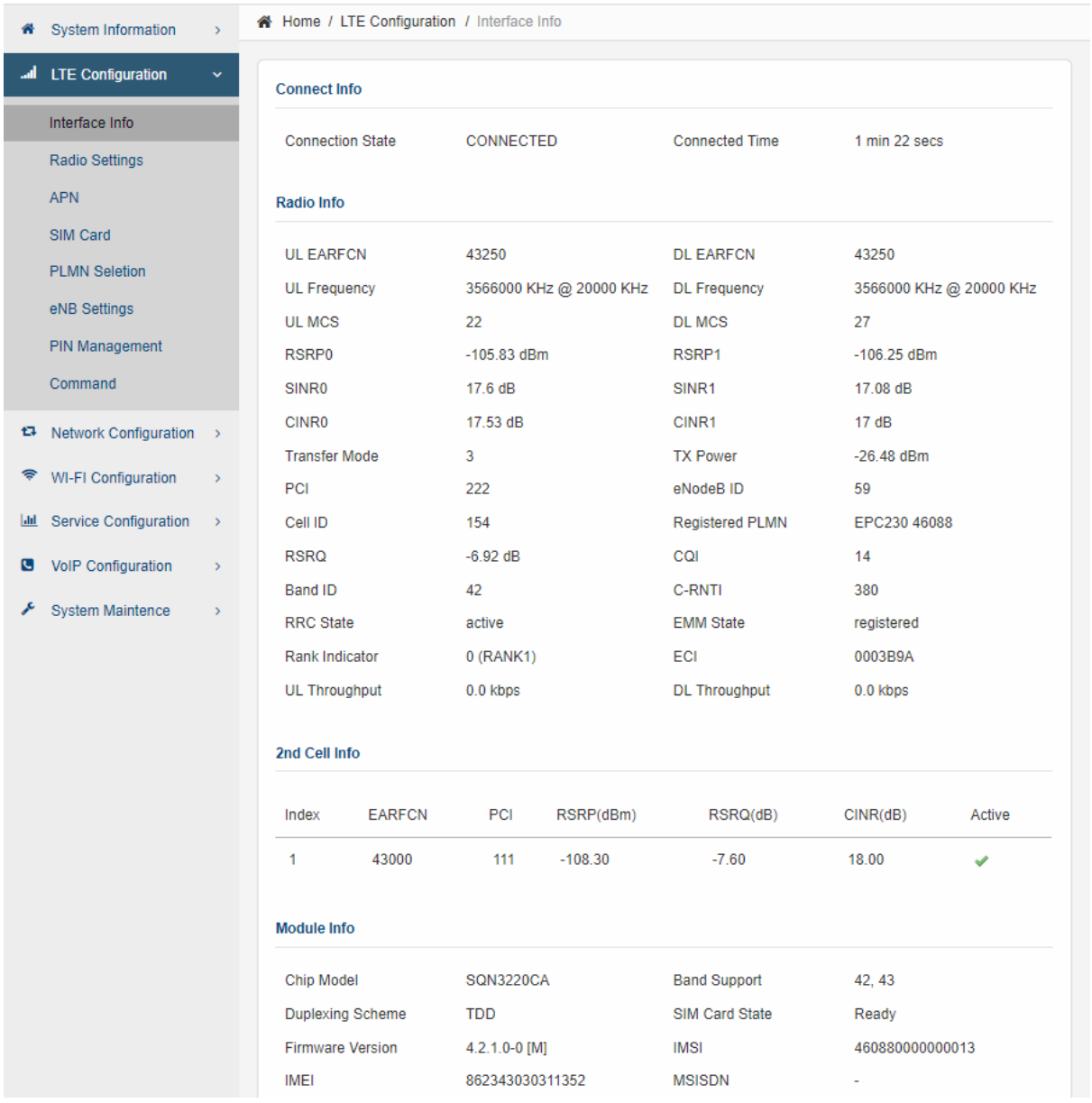
The menu shows the CPE device traffic statistics and memory usage information.



5. LTE Configuration

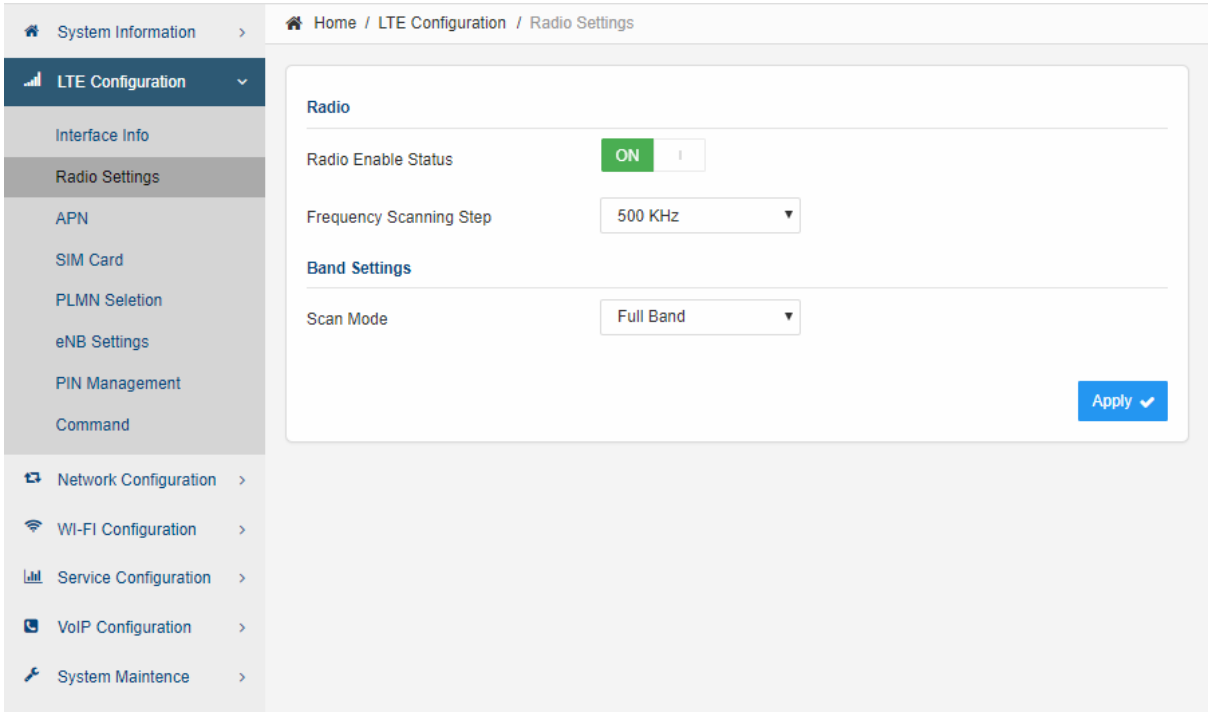
■ Interface Info

The LTE interface info GUI gives detailed LTE information about the radio connection, the UL/DL Bandwidth, UL/DL Frequency, the receiving signal strength of the device by the LTE Info WEB GUI.



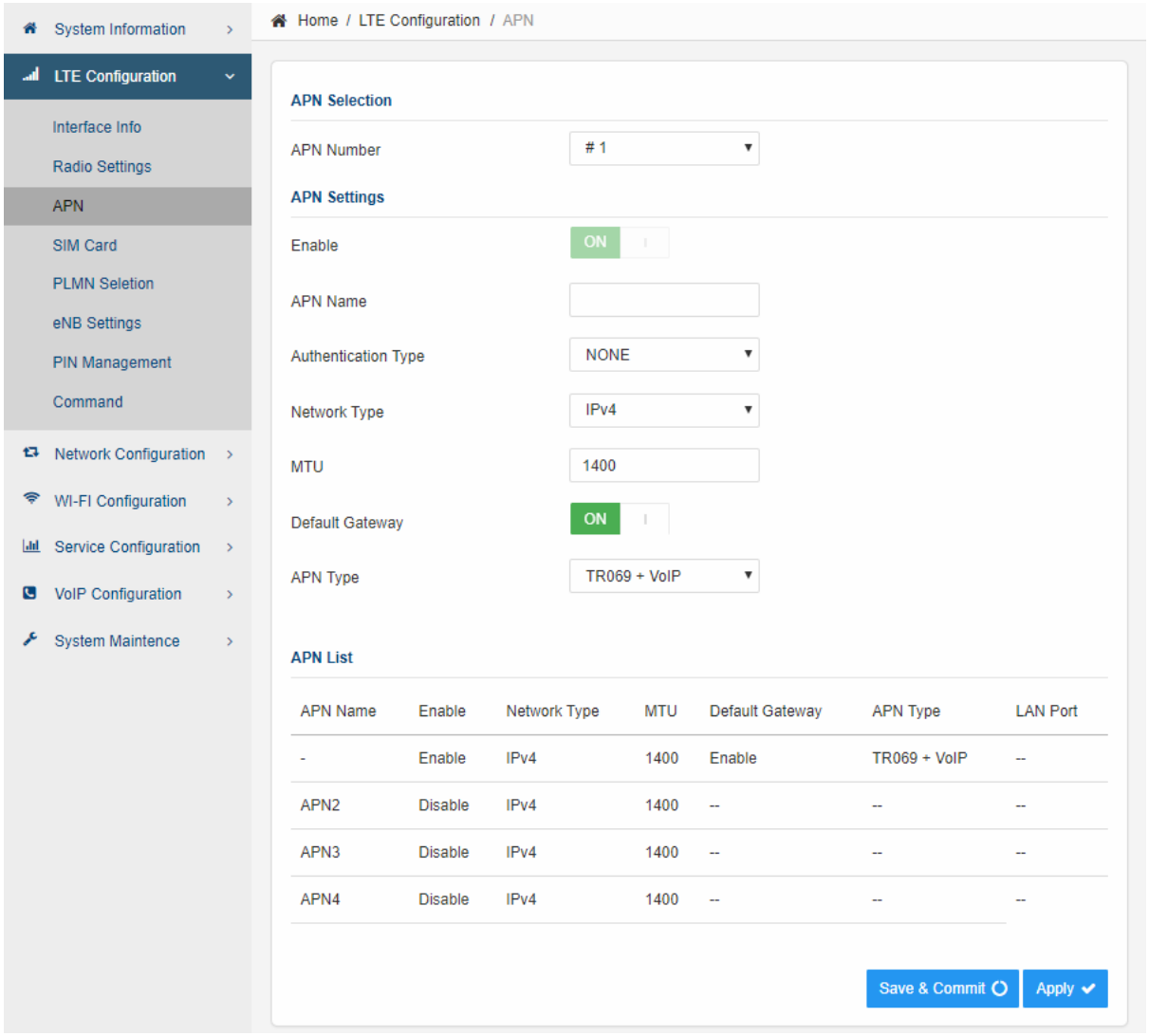
■ Radio Settings

The LTE radio can be enabled or disabled via 4G Radio setting. The radio can also be reset via Reconnect. Frequency scanning step and channel settings can all be configured as follow. By default, 500KHz frequency scanning step is assumed.



■ PDN

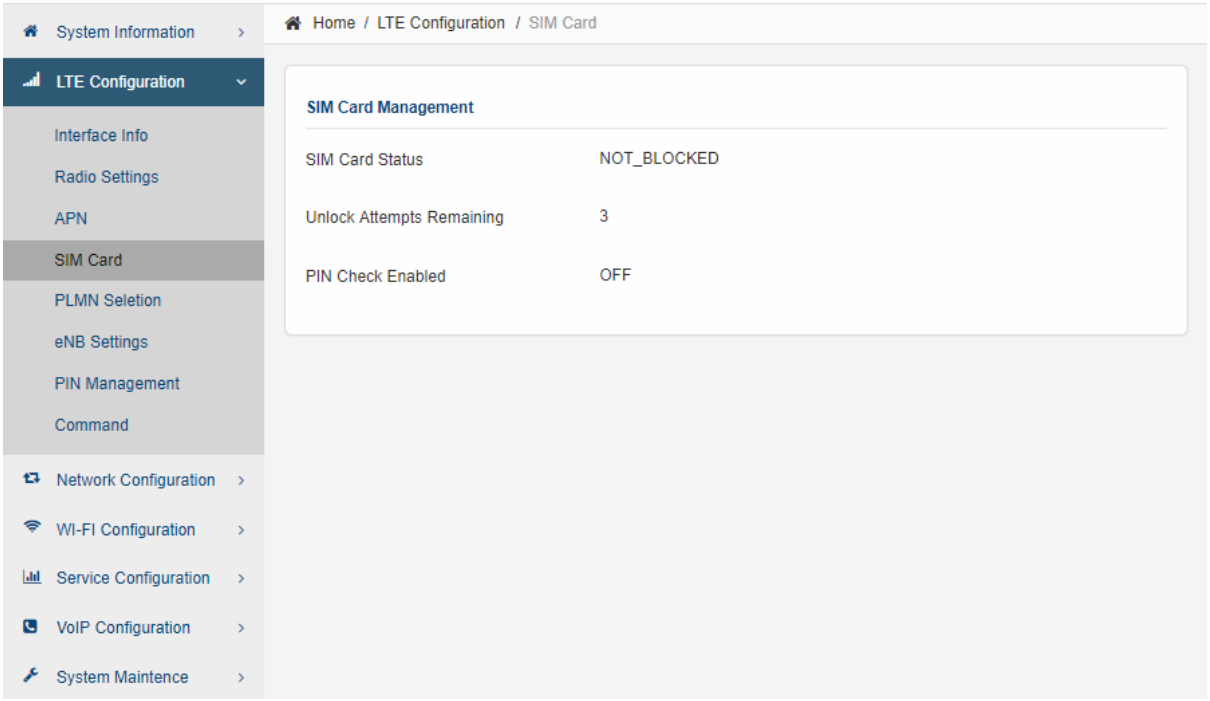
This menu is used to configure the operator APN profile. You can configure single or multiple APNs for the operator network. The below shows an example of two APN configuration.



The user can view the APN status info in the System Information - Network menu.

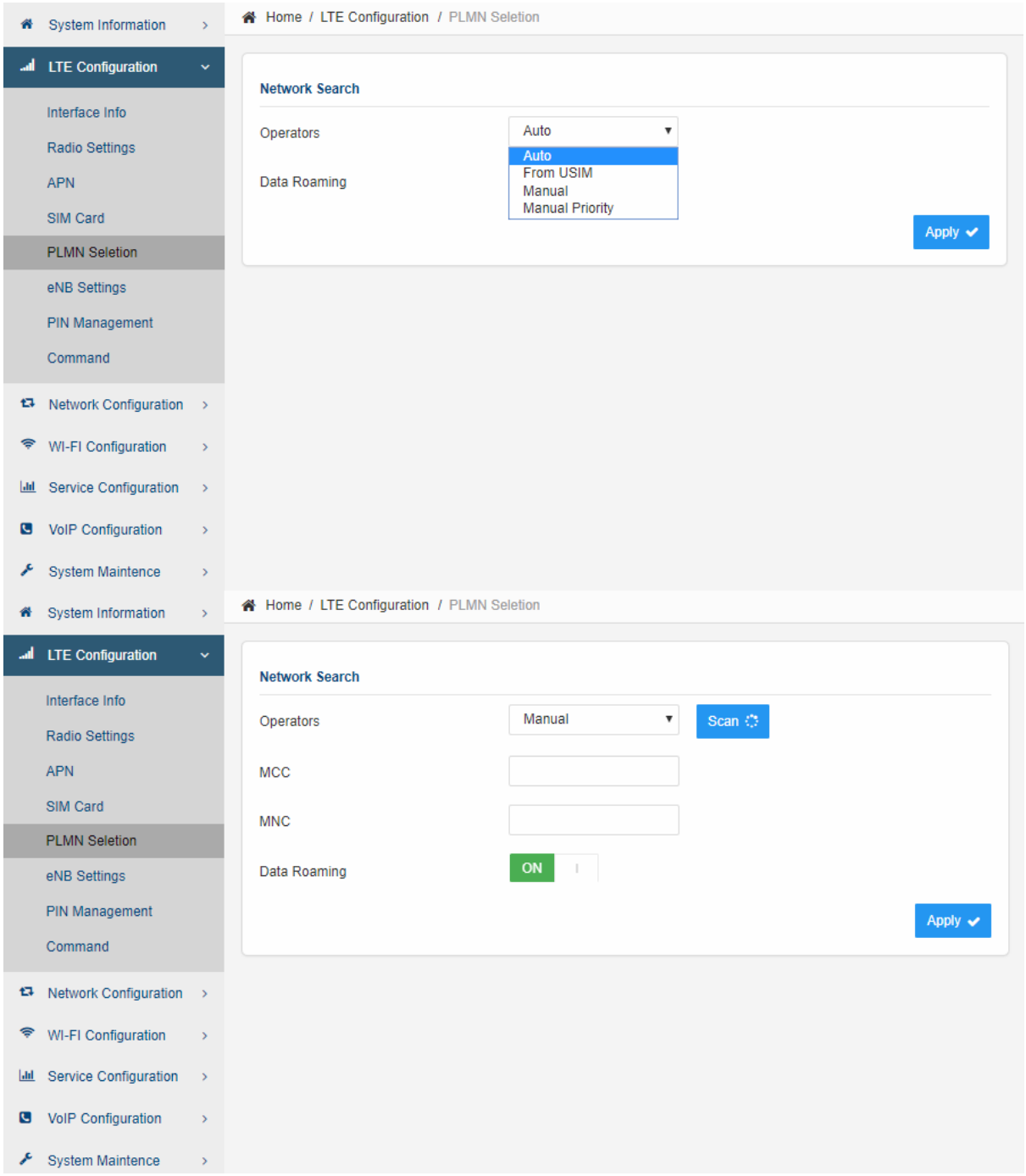
■ SIM Card

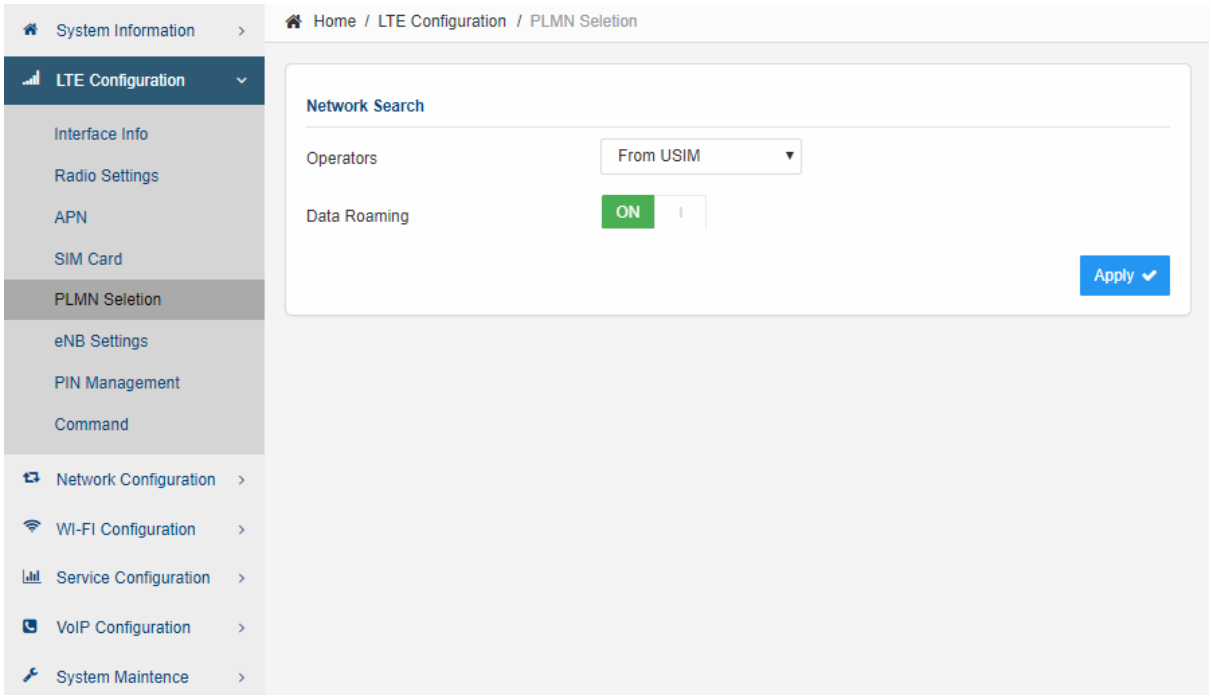
The SIM card menu is used to view the SIM card status and perform card restriction for SIM card.



■ PLMN Selection

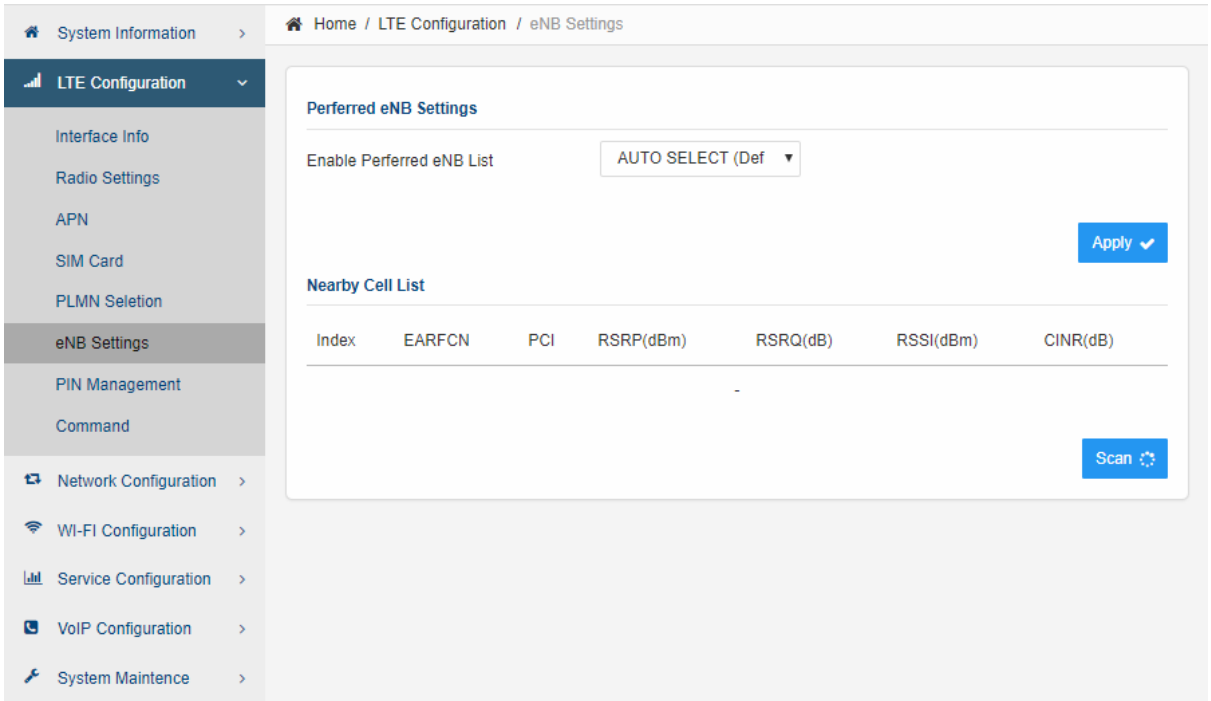
The user can add and configure the PLMN list to restrict the CPE to attach. The CPE will attach to network according to the PLMN priority assigned.





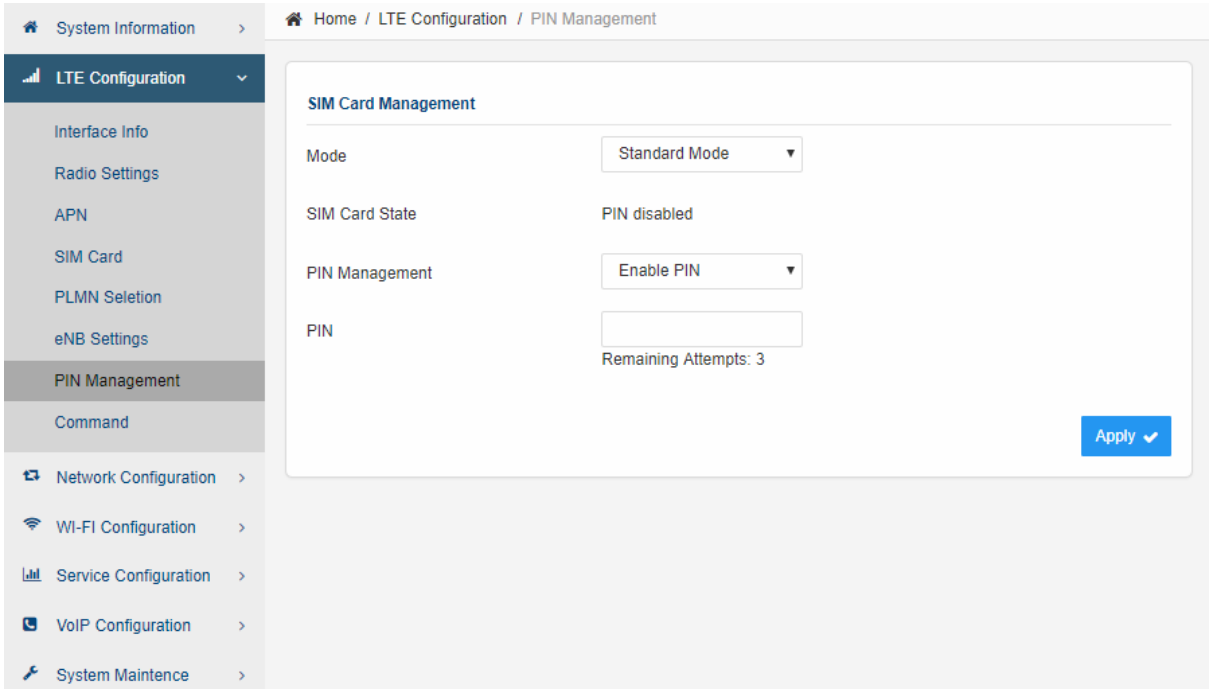
■ Cell Selection

The cell selection menu is used to configure how CPE will select the best cell. User can configure the “Auto Select” mode to select cell based 3GPP standard. When configured with “Auto Select & Lock”, user add the desired cell ID to the list and the CPE will attach to the appropriate cell after a full scan. If configured with “Manual Select”, the CPE will not connect to any cell if they are in the list.



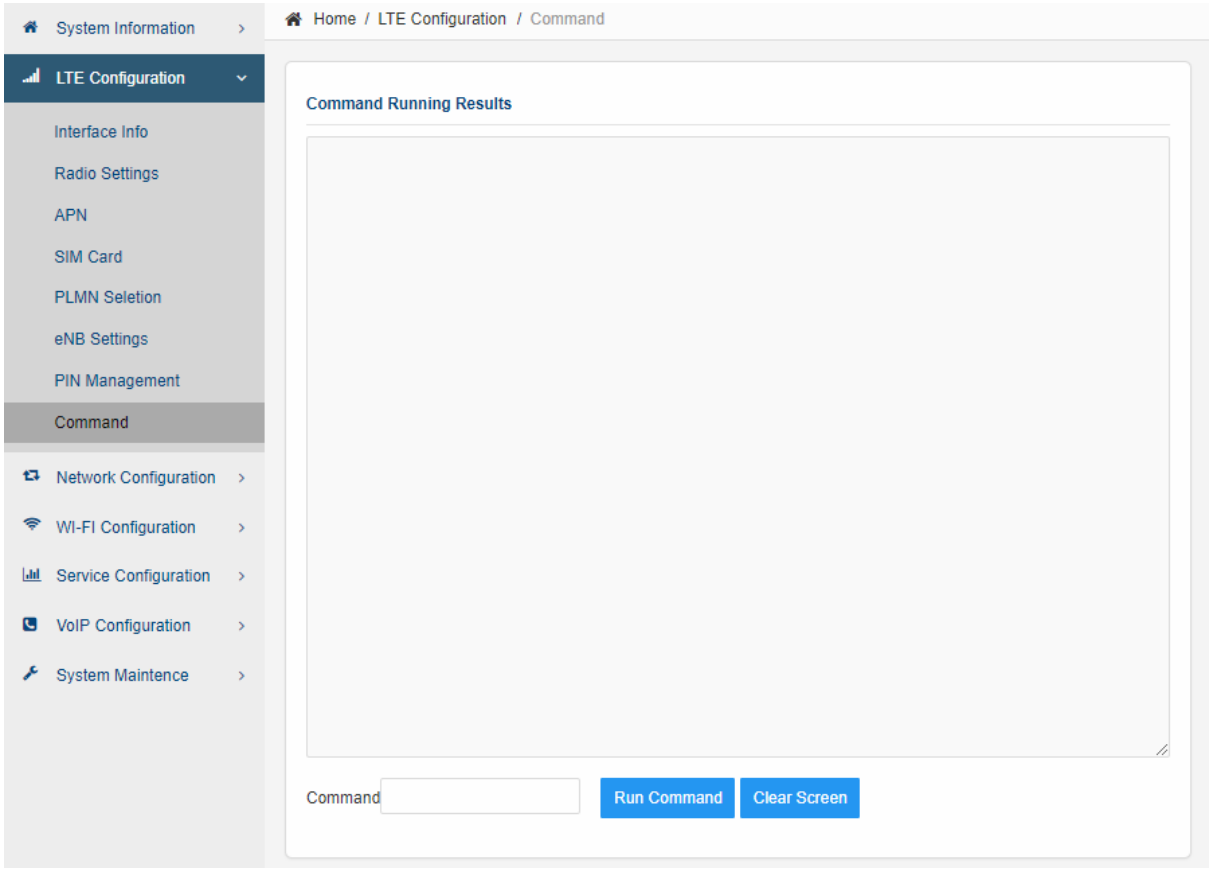
■ PIN Management

The PIN Management menu is used to view the SIM card status and perform PIN code management for SIM card. You disable or enable the SIM card PIN check on the CPE to bind the SIM card inserted.



■ Command

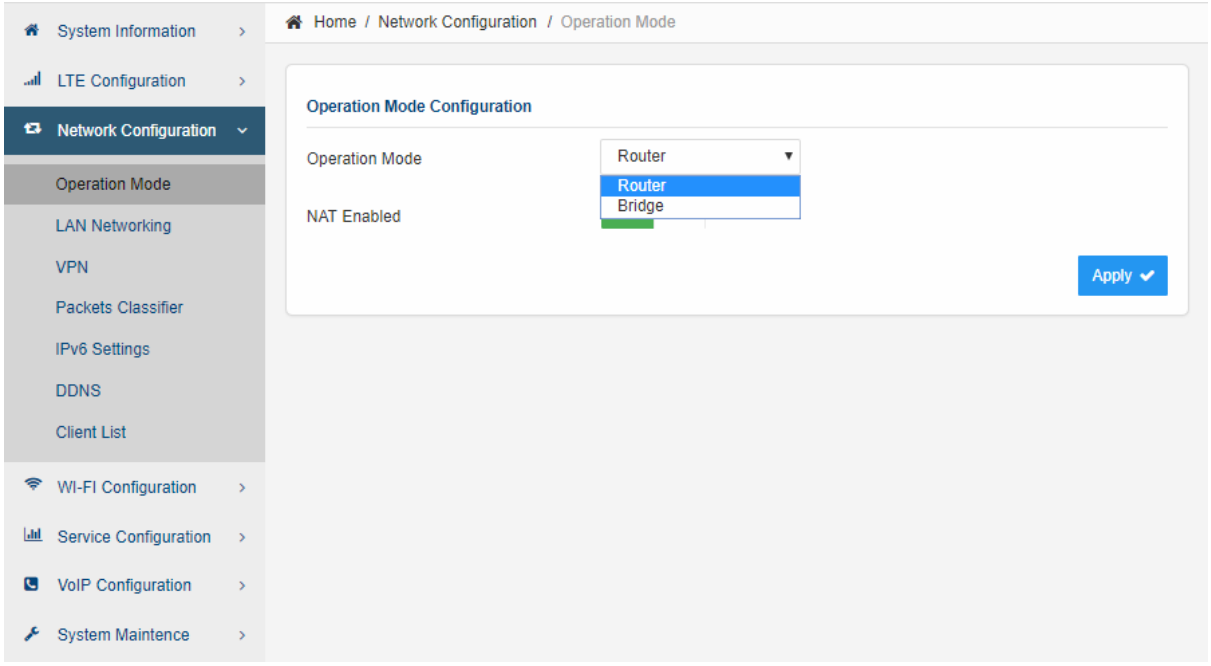
The Command menu is used to run LTE command via the WEB GUI interface. The user can type the command and click the “Run Command” button to execute.



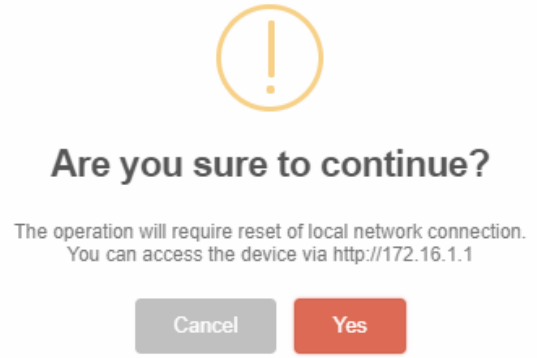
6. Network Configuration

■ Operation Mode Setting

The default device Operation Mode is Router, and the PC connected to device LAN port will obtain IP address via DHCP client.



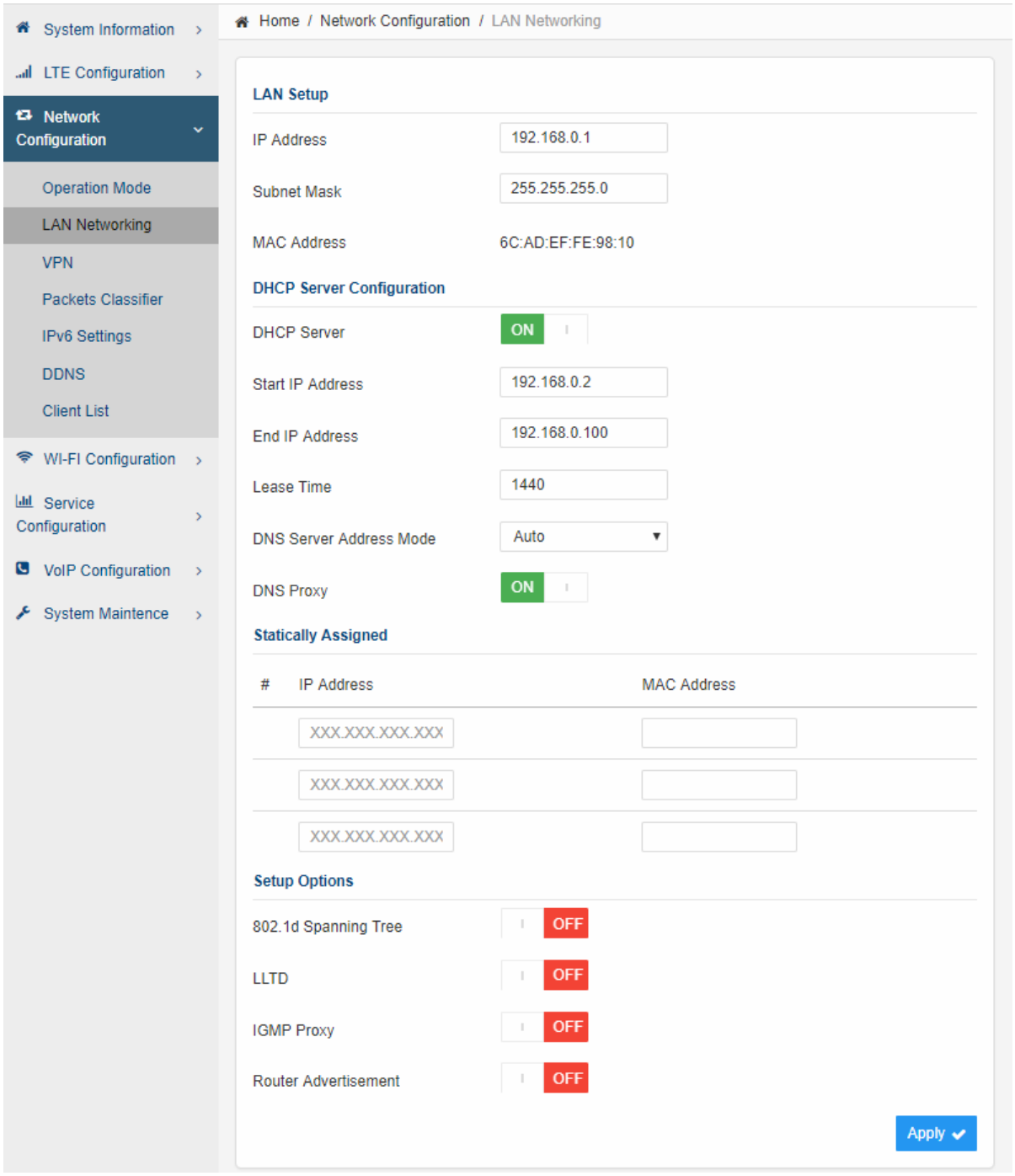
The device operation mode could be changed from Router to Bridge if necessary as show by the following diagram:



In Bridge mode, the PC which connected the LAN port of the CPE will obtain the IP directly from the network. However, the device WEB GUI may still be accessed via port 8080 from remote side if remote management is enabled. For local LAN access, the user or operator can configure LAN PC with a static IP address as 172.16.1.x and login the WEB GUI via http://172.16.1.1.

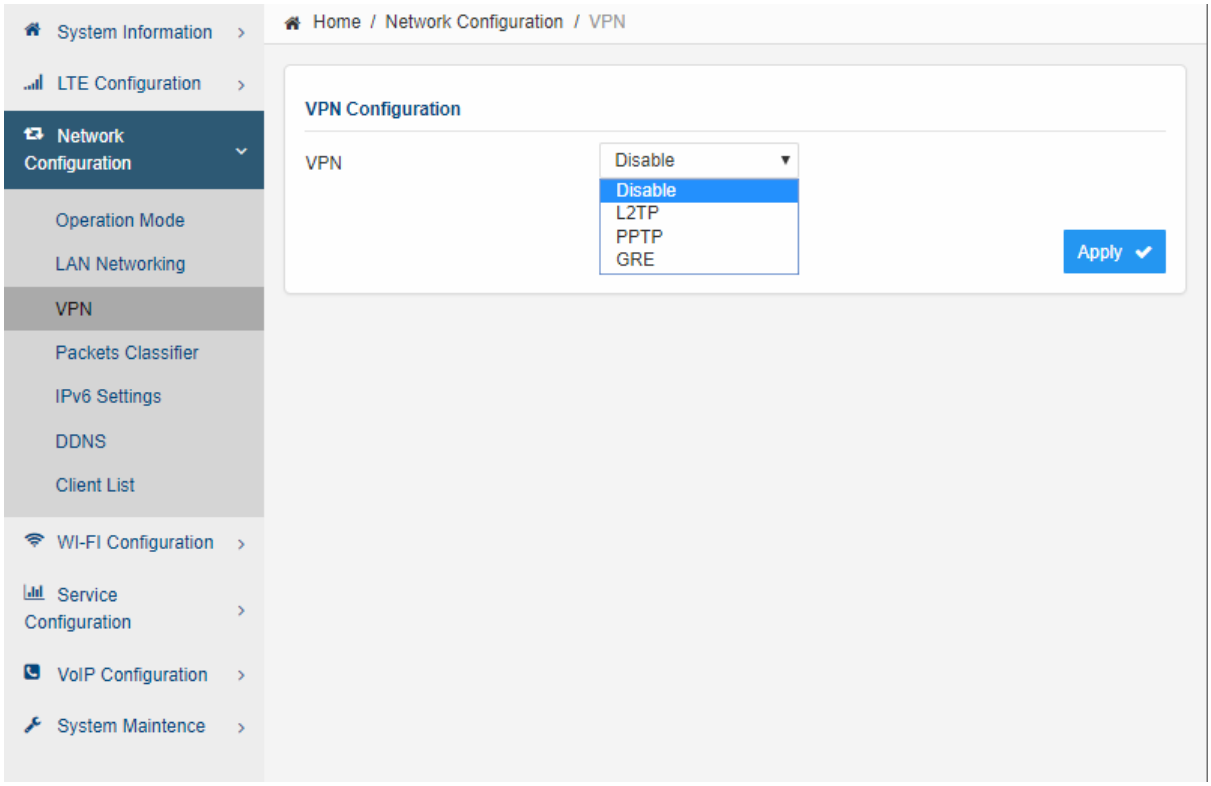
■ LAN Networking

The LAN setting allows user to specify the device LAN IP, DHCP server setting, Local DNS and etc. When Router mode is selected, the DHCP server should be enabled by default.
User is advised to leave the default setting unchanged for quick configuration and smooth device operation.

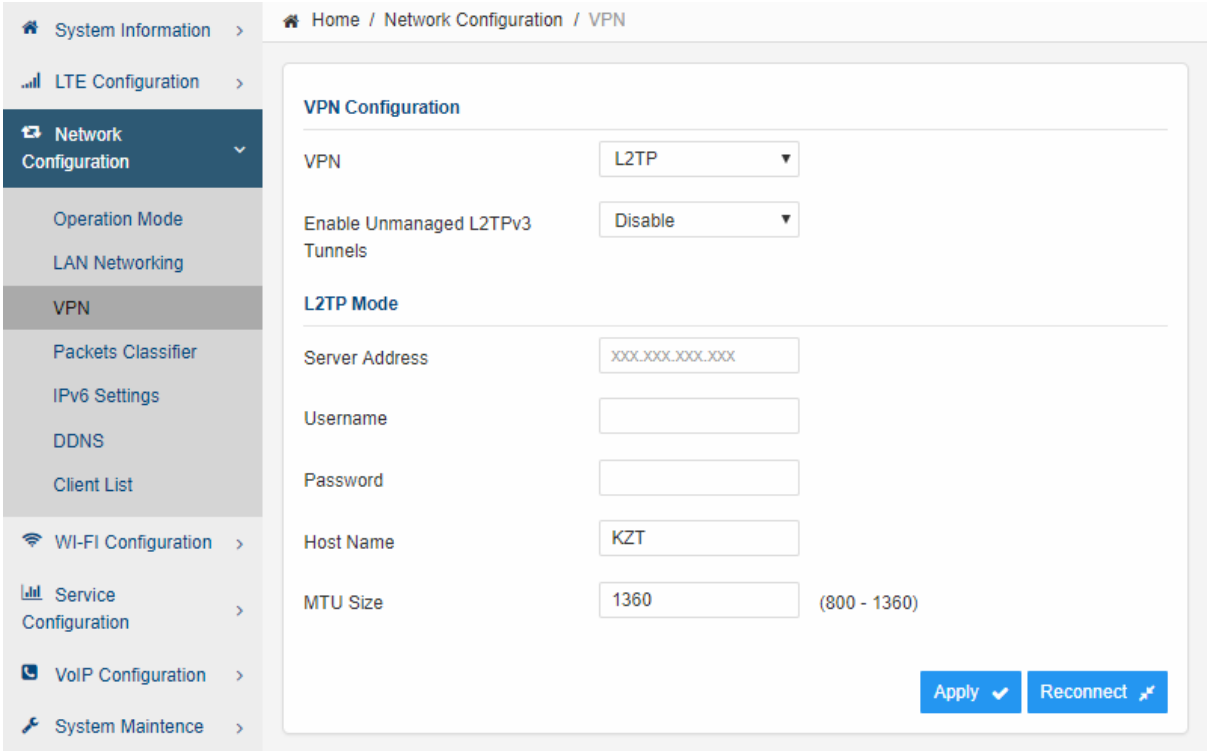


■ VPN Setting Under Router Mode

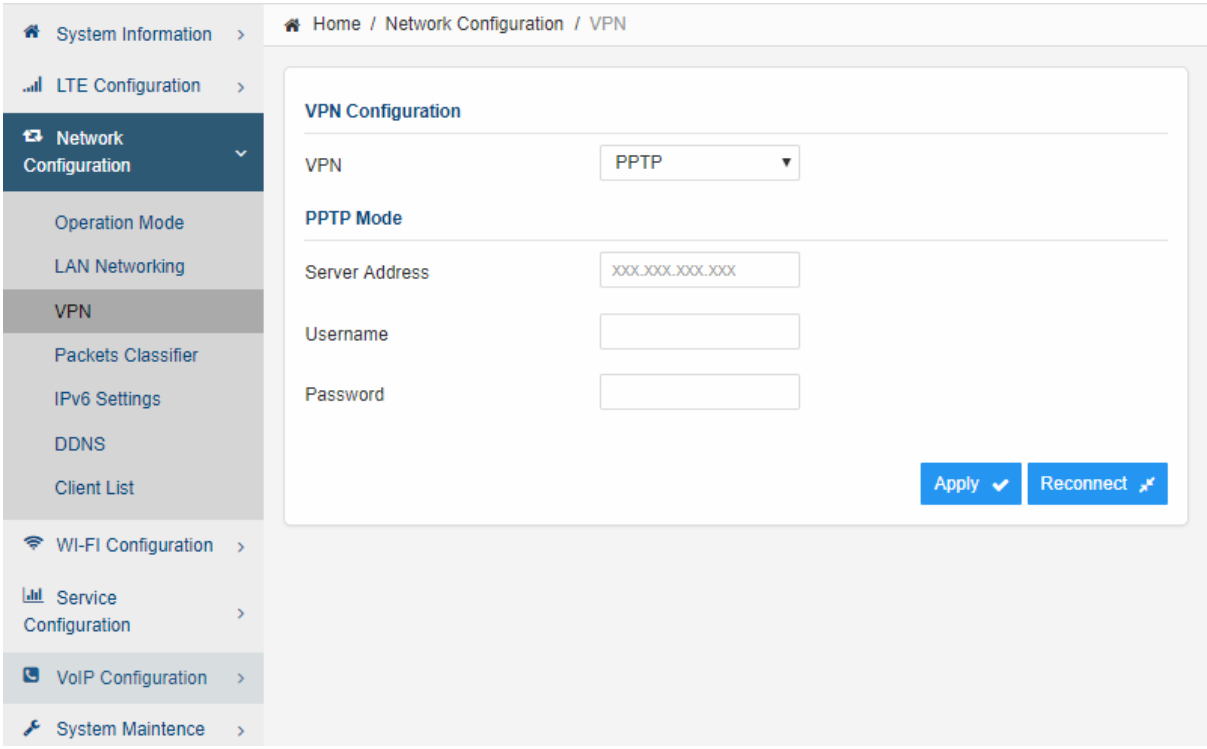
This section allows user to configure VPN service for selected connection mode. In router mode, PPTP, L2TP and GRE can be selected. In L2 Bridge mode, only L2 GRE can be configured. The router mode VPN configuration is shown below.


System Information
LTE Configuration
Network Configuration
Operation Mode
LAN Networking
VPN
Packets Classifier
IPv6 Settings
DDNS
Client List
WI-FI Configuration
Service Configuration
VoIP Configuration
System Maintence
Home / Network Configuration / VPN
VPN Configuration
VPN
Disable
Disable
L2TP
PPTP
GRE
Apply

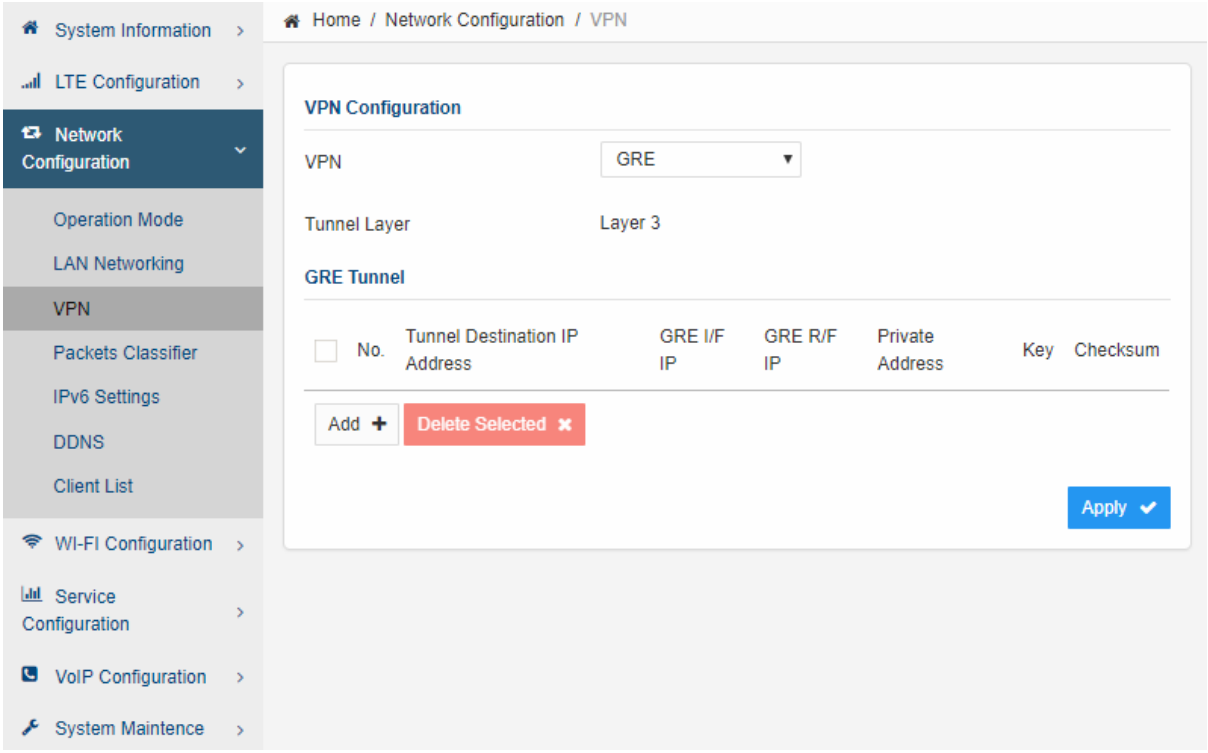
The L2TP configuration under router mode is shown below.



The PPTP configuration under router mode is shown as follows.

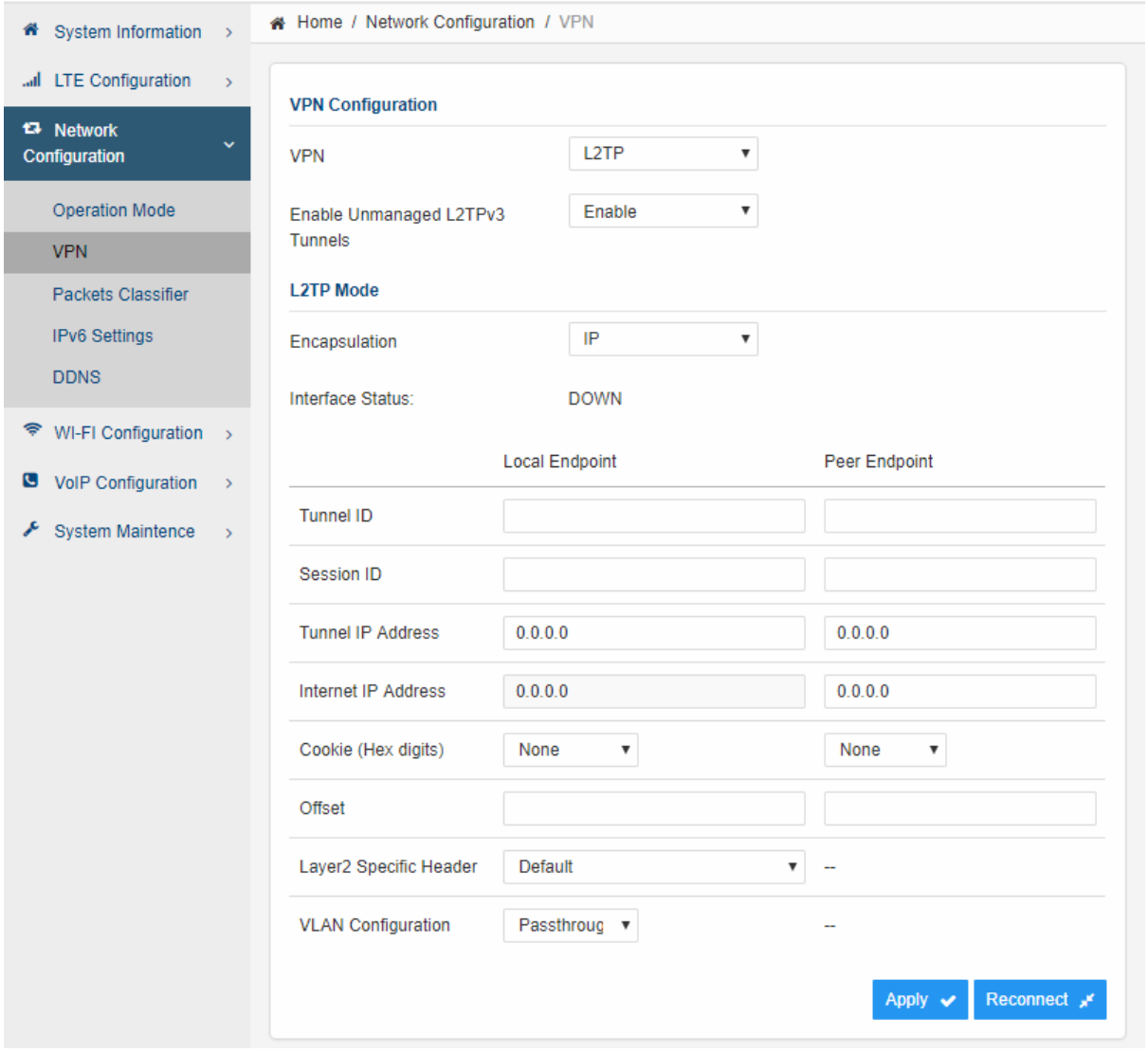


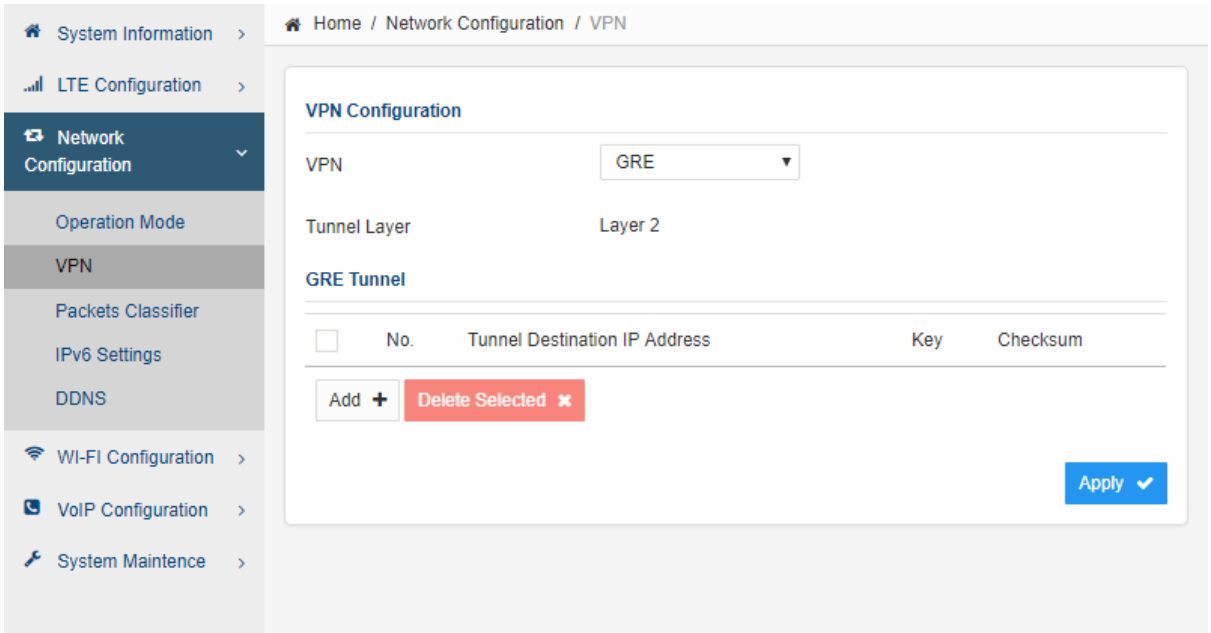
The L2 GRE configuration under router mode is shown below.



■ VPN Setting Under L2 Bridge Mode

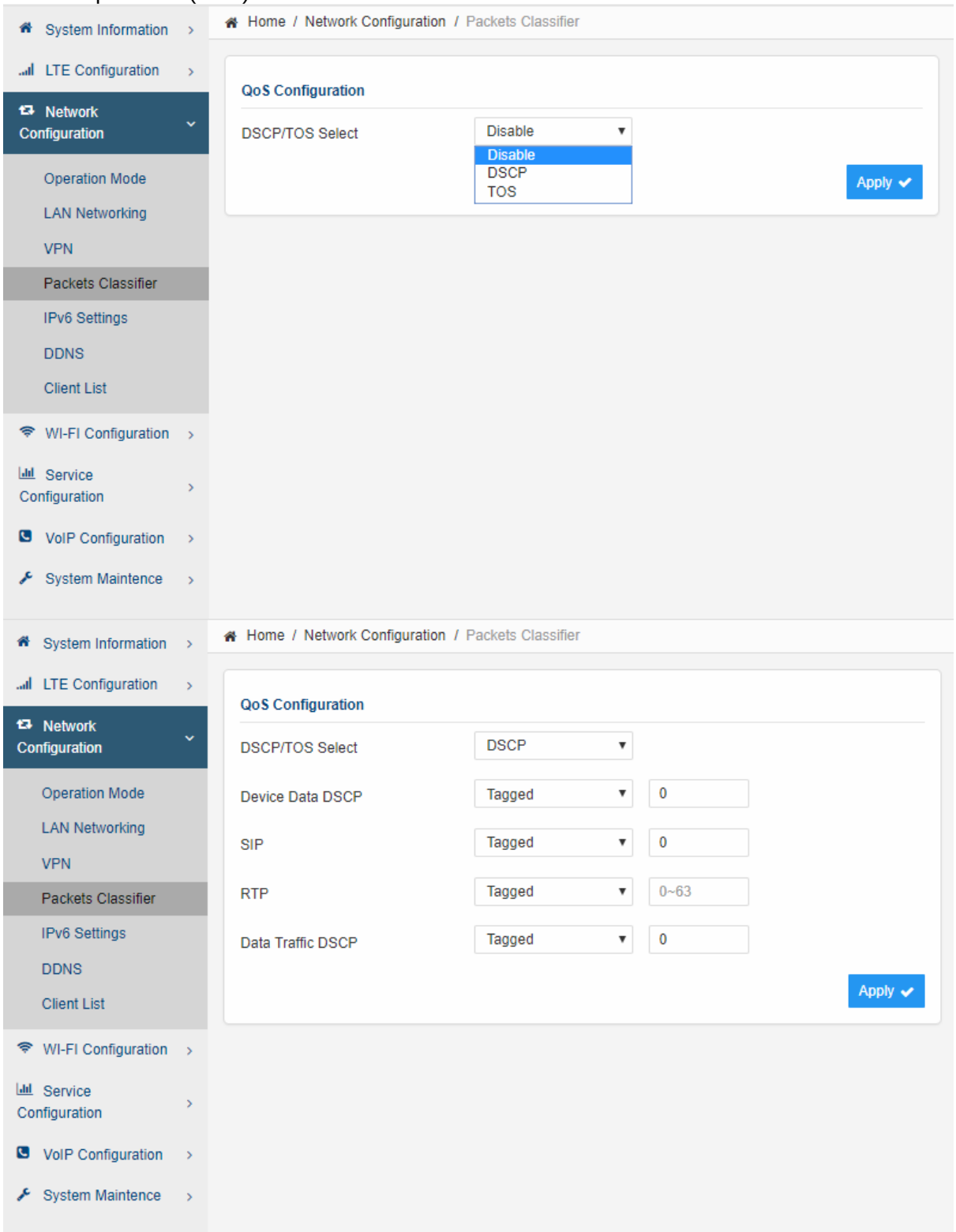
Under the L2 Bridge connection mode, L2 GRE or L2TP can be configured as follows.

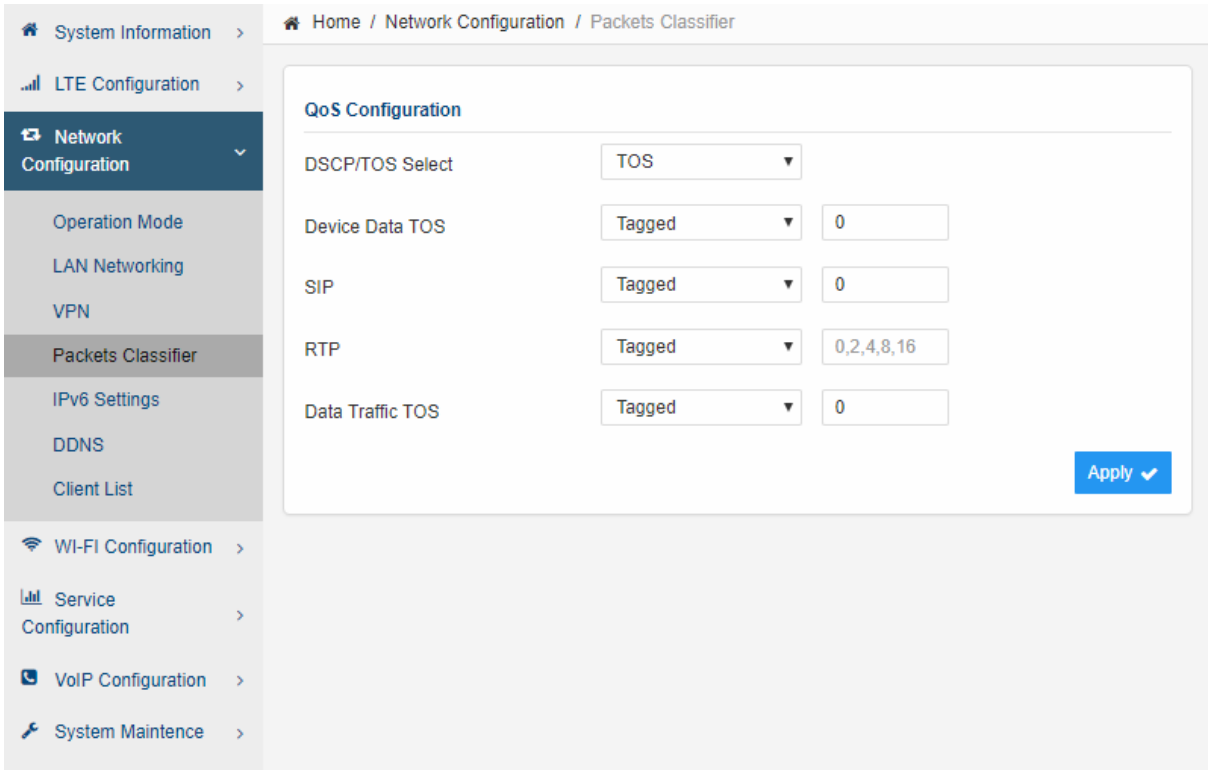

System Information
LTE Configuration
Network Configuration
Operation Mode
VPN
Packets Classifier
IPv6 Settings
DDNS
WI-FI Configuration
VoIP Configuration
System Maintence
Home / Network Configuration / VPN
VPN Configuration
VPN
L2TP
Enable Unmanaged L2TPv3 Tunnels
Enable
L2TP Mode
Encapsulation
IP
Interface Status:
DOWN
Local Endpoint
Peer Endpoint
Tunnel ID
Session ID
Tunnel IP Address
0.0.0.0
0.0.0.0
Internet IP Address
0.0.0.0
0.0.0.0
Cookie (Hex digits)
None
None
Offset
Layer2 Specific Header
Default
--
VLAN Configuration
Passthroug
--
Apply
Reconnect


System Information
LTE Configuration
Network Configuration
Operation Mode
VPN
Packets Classifier
IPv6 Settings
DDNS
WI-FI Configuration
VoIP Configuration
System Maintence
Home / Network Configuration / VPN
VPN Configuration
VPN
GRE
Tunnel Layer
Layer 2
GRE Tunnel
No.
Tunnel Destination IP Address
Key
Checksum
Add
Delete Selected
Apply

■ Packets Classifier

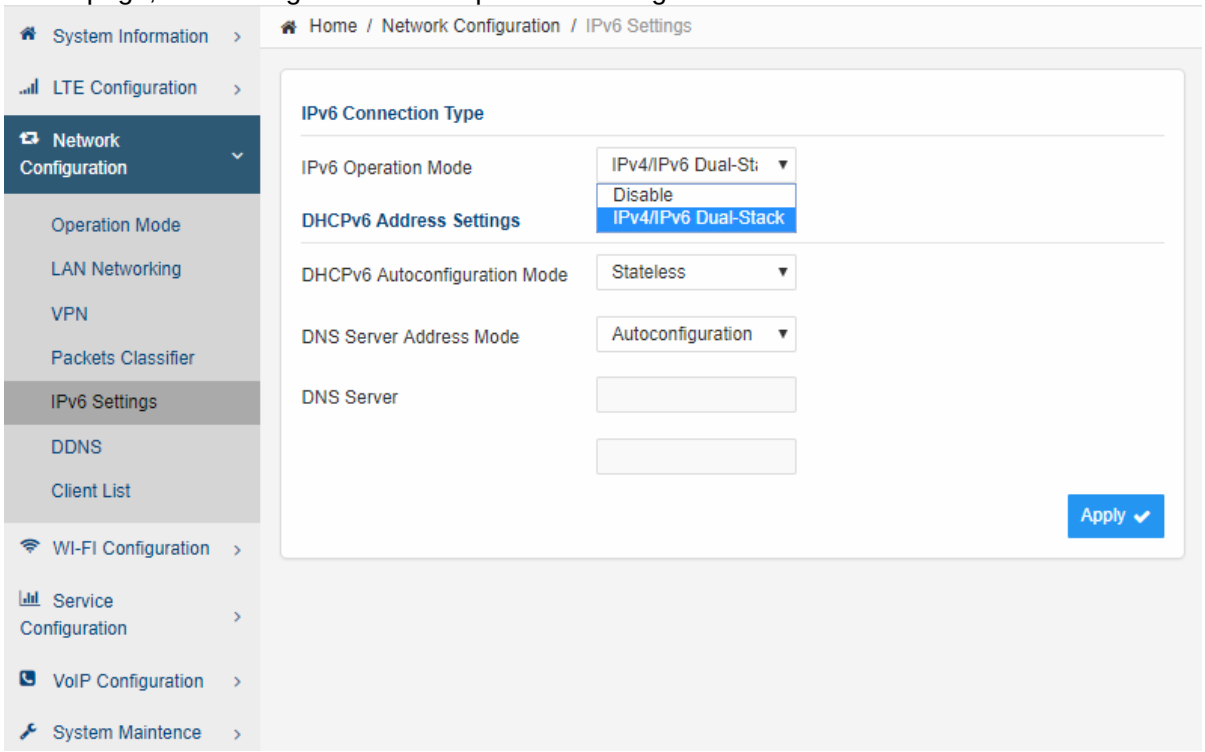
This configuration menu allows user to tag DSCP or TOS value for CPE local data (Management) and LAN port data (Data).





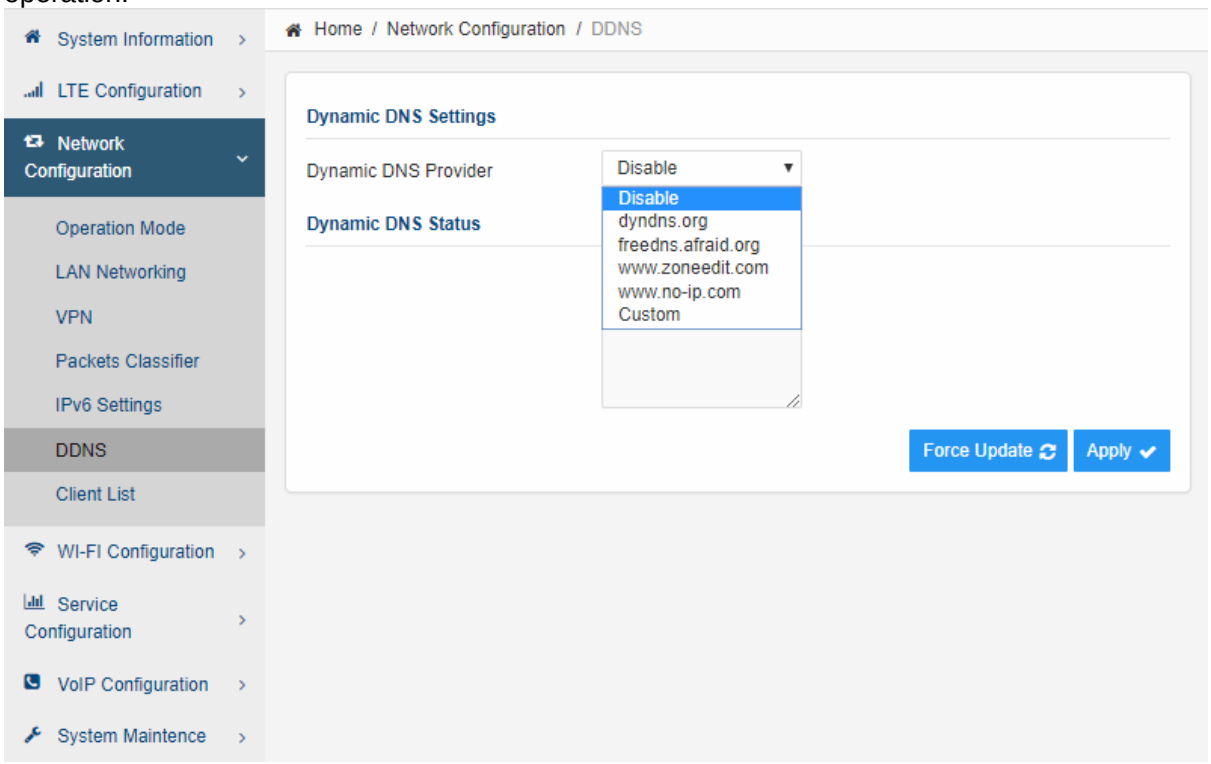
■ IPv6 Setting

In this page, user configure the IPv6 operation setting for the CPE device.



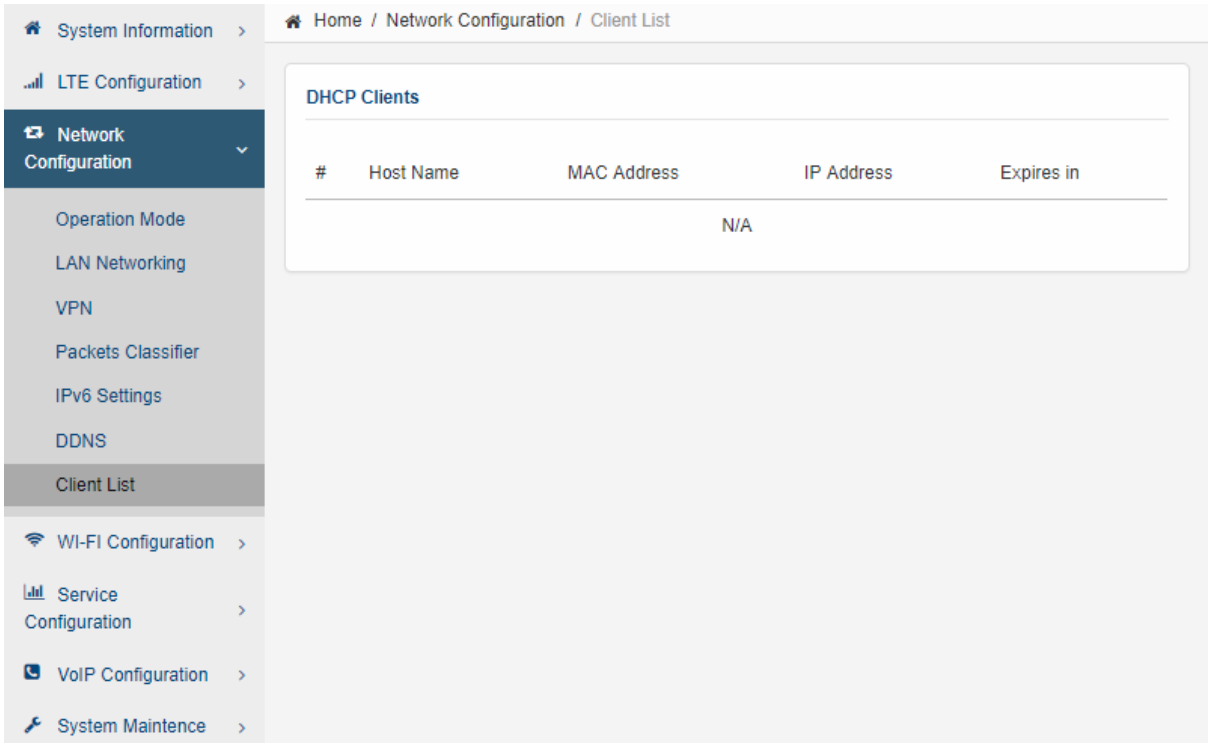
■ DDNS Setting Under Router Mode

This configuration menu allows user to configure use of different DDNS service for router mode operation.



■ Client List

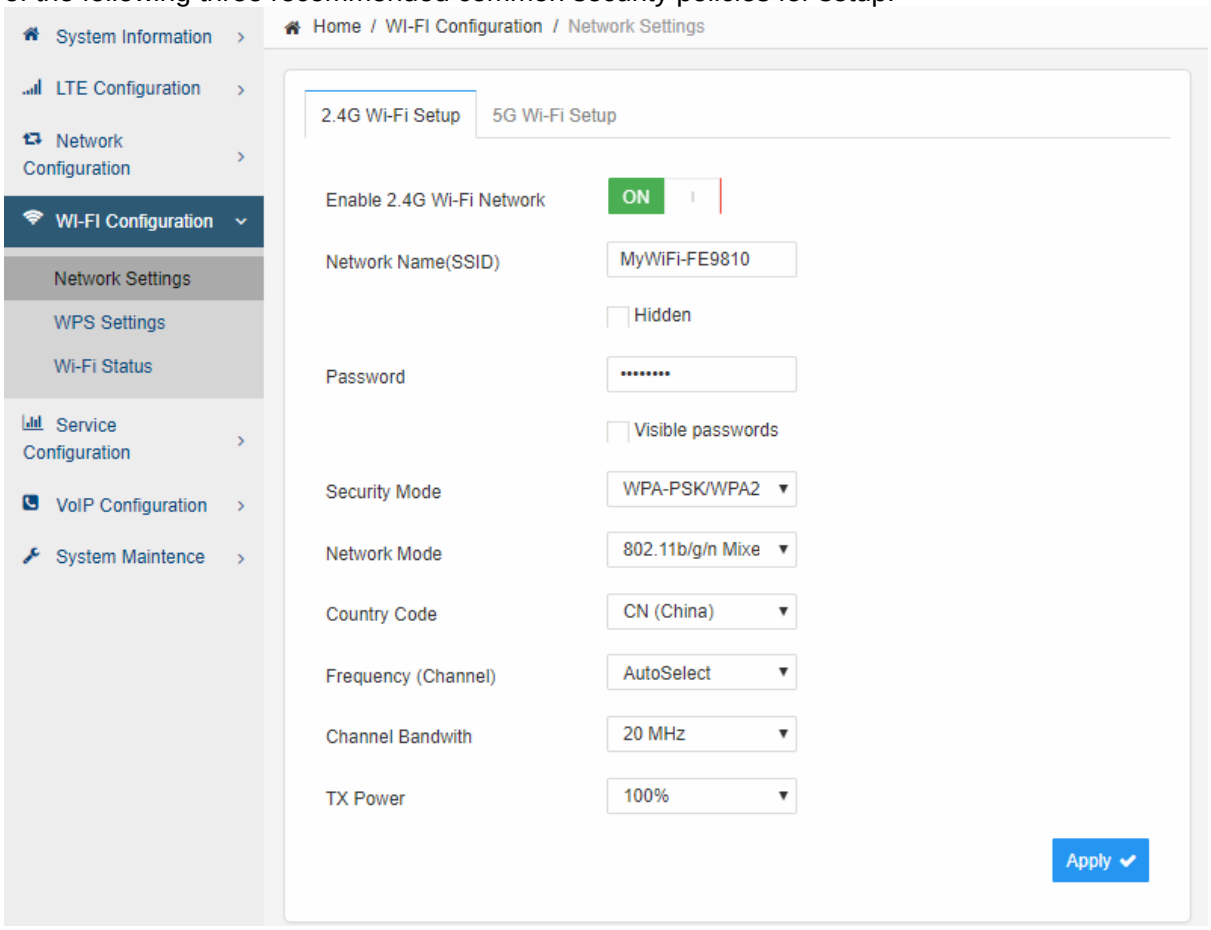
This shows all the LAN clients that are connected to the CPE device.



7. Wi-Fi Configuration

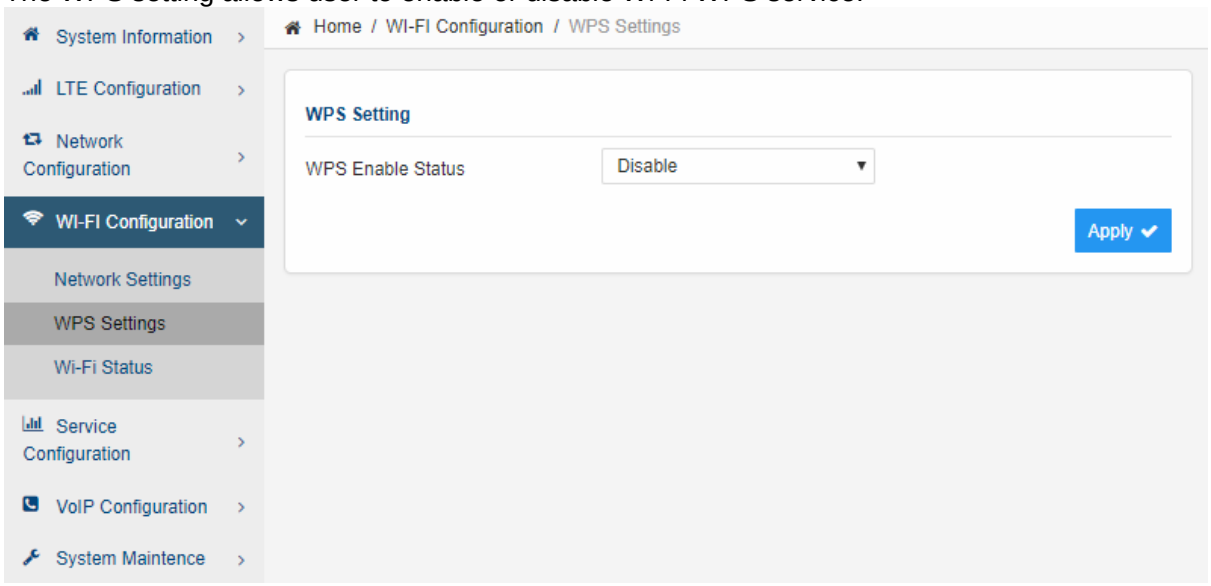
■ Network Settings

In the Wi-Fi configuration, the operator can modify the default SSID and select the desired Security Policy to protect device Wi-Fi access. For easy configuration, the operator can use one of the following three recommended common security policies for setup.



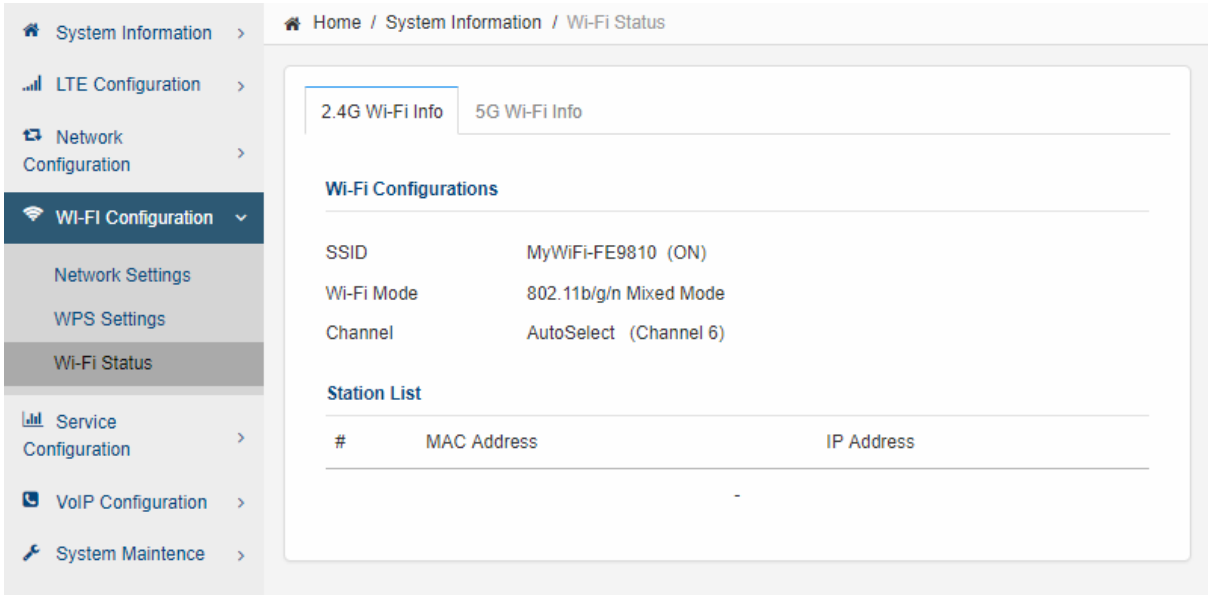
■ WPS setting

The WPS setting allows user to enable or disable Wi-Fi WPS service.



■ Wi-Fi Status

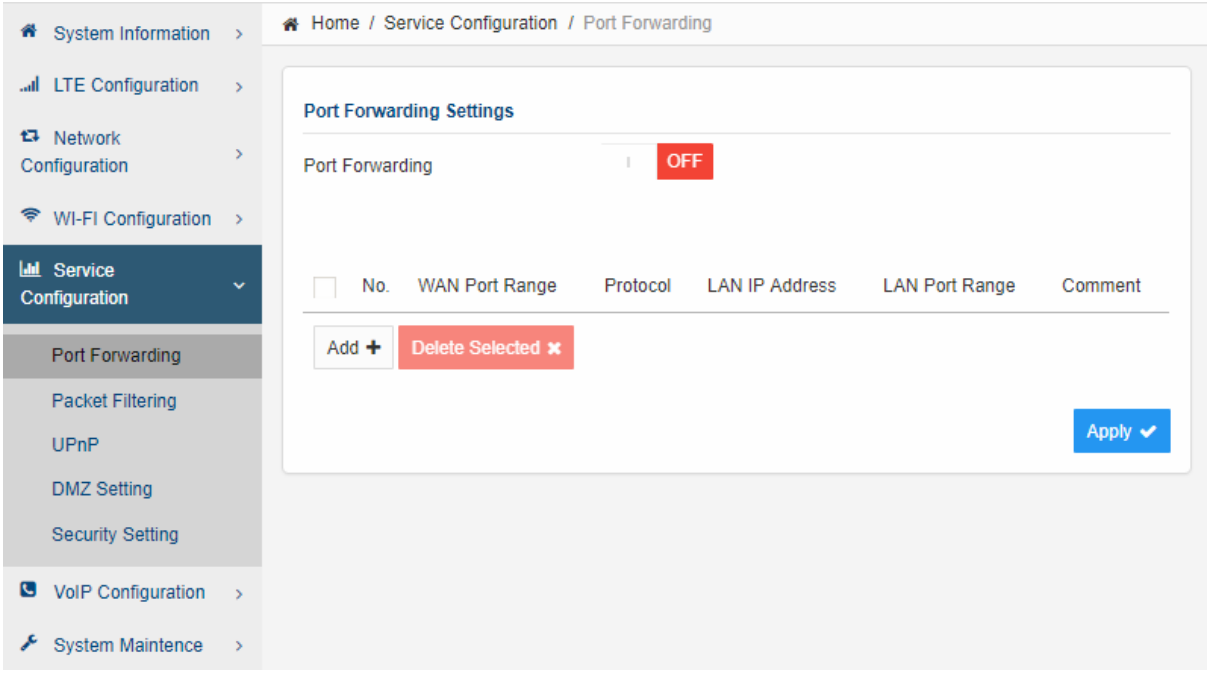
The menu shows the Wi-Fi info of the CPE device.



8. Service Configuration

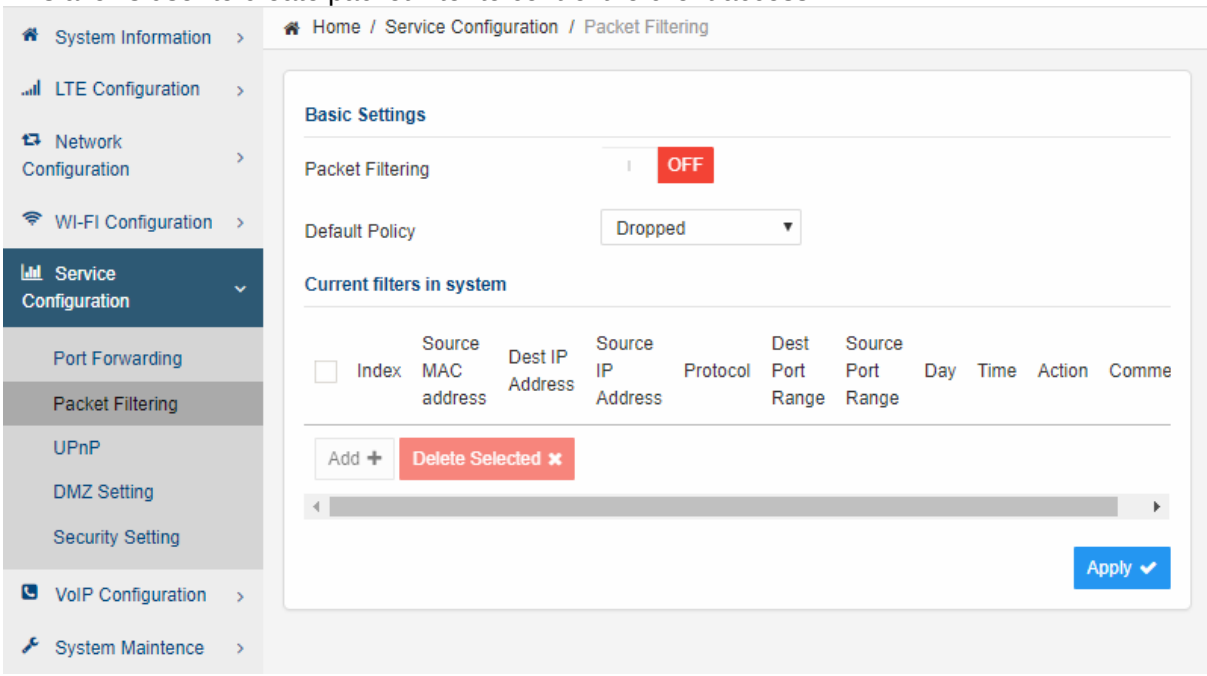
■ Port Forwarding

This menu allows user to configure the port forwarding rules for the CPE in router mode.



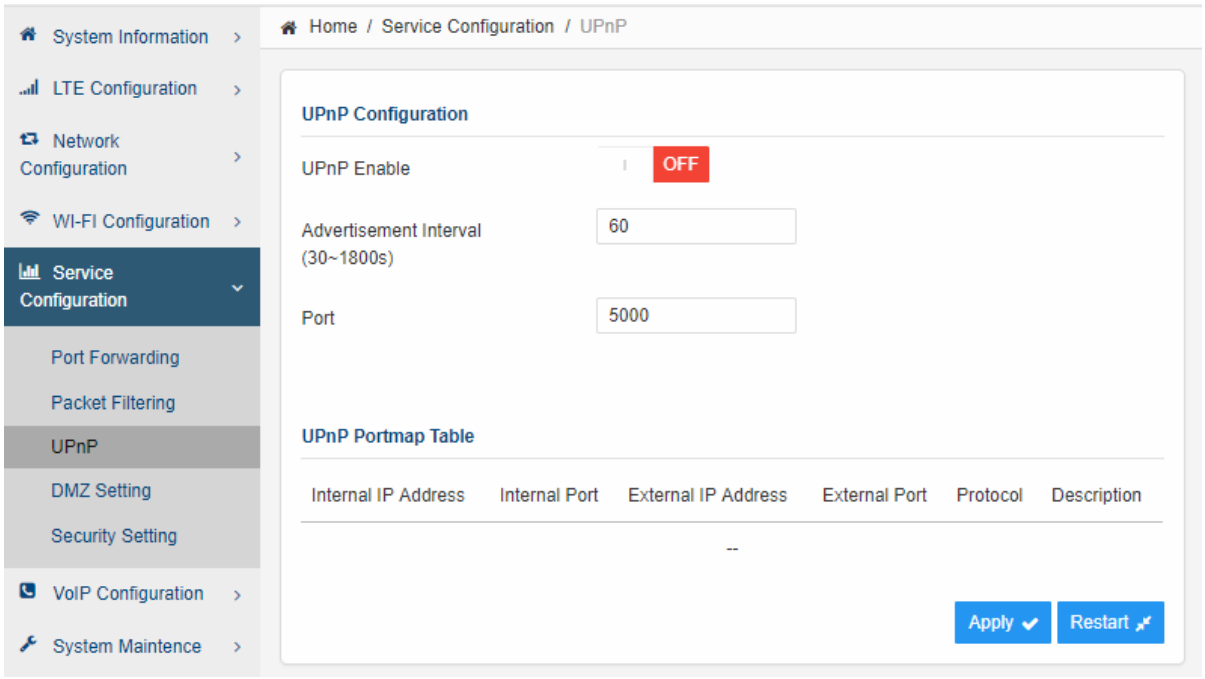
■ Packet Filtering

This allows user to create packet filter to control the client access.



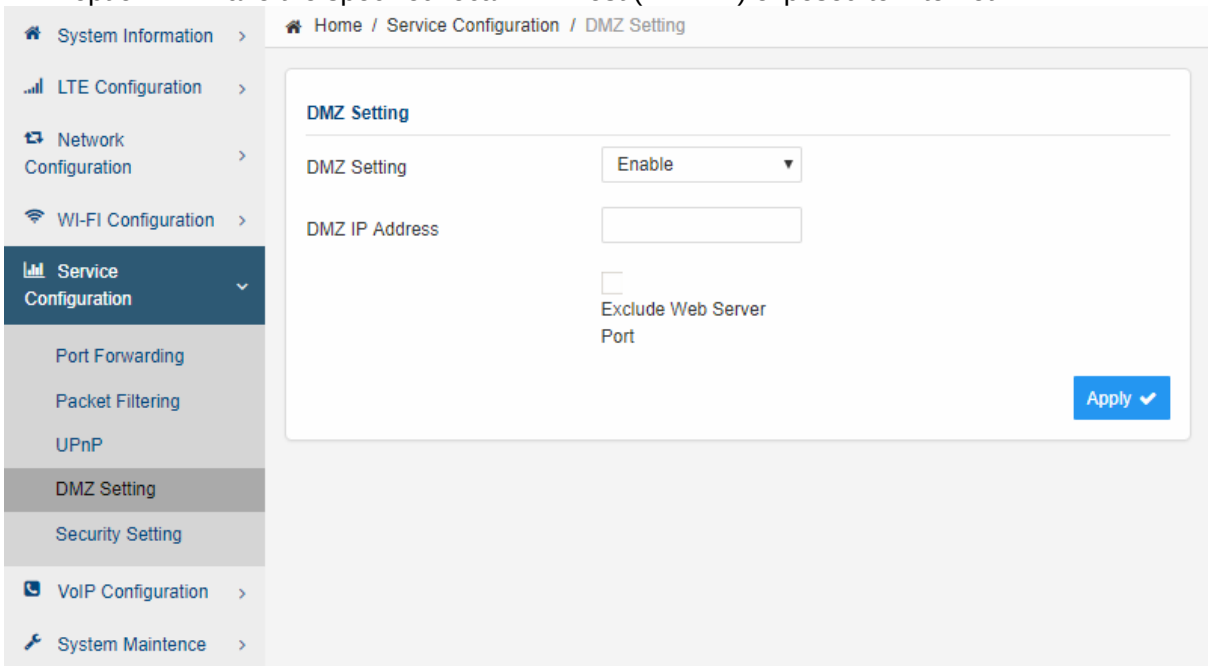
■ UPnP

This menu allows user to configure the UPnP application for on-demand “DMZ” support. The current forwarding rules created can be viewed and cleared if required.



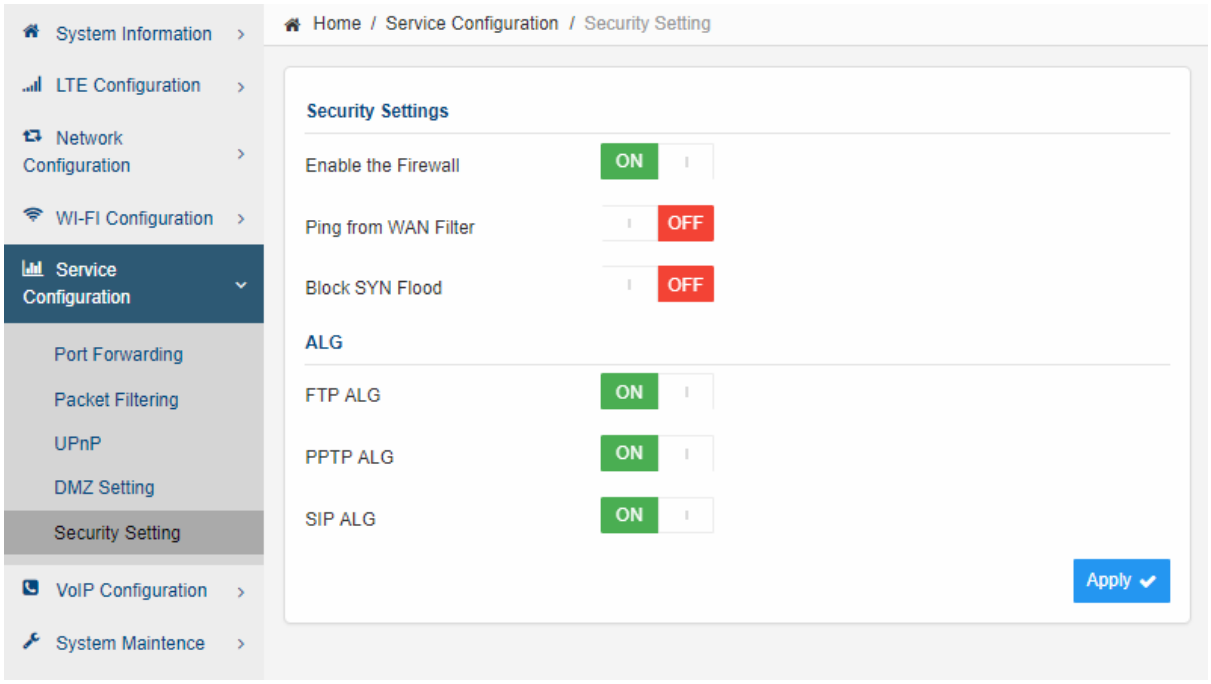
■ DMZ Setting

This menu allows user to configure the DMZ setting for CPE in router mode. Web server, Telnet/SSH and Ping Service port can be exempted from DMZ mapping if required. By enabling DMZ option will make the specified local LAN host (DMZ IP) exposed to Internet.



■ Security Setting

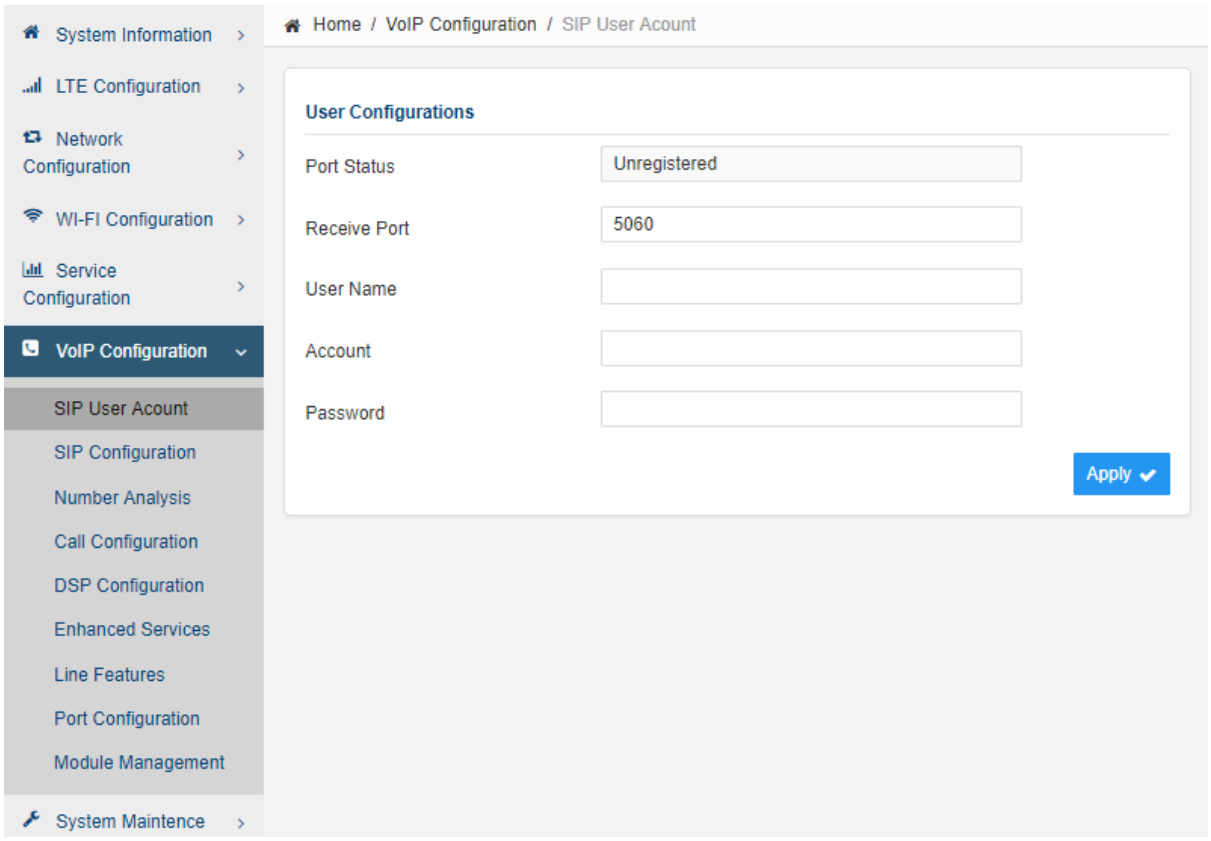
This allows to configure security protection and ALG options.

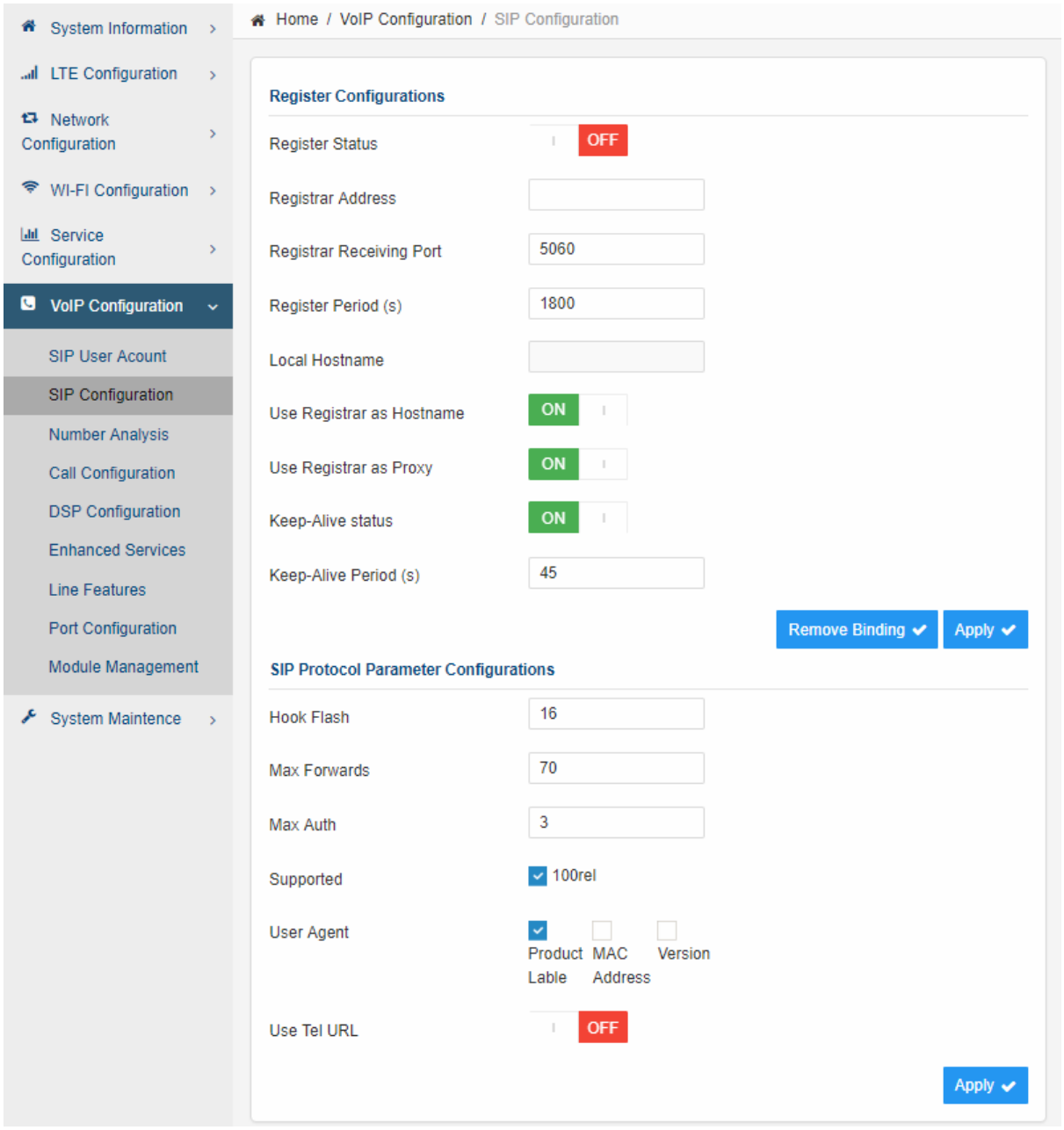

System Information
LTE Configuration
Network Configuration
WI-FI Configuration
Service Configuration
Port Forwarding
Packet Filtering
UPnP
DMZ Setting
Security Setting
VoIP Configuration
System Maintence
Home / Service Configuration / Security Setting
Security Settings
Enable the Firewall
ON
Ping from WAN Filter
OFF
Block SYN Flood
OFF
ALG
FTP ALG
ON
PPTP ALG
ON
SIP ALG
ON
Apply

9. VoIP Configuration

In this configuration page, the operator requires to enter the SIP operator name, account and password information if he desires to configure the VoIP networking. The register status check box must be enabled to allow device SIP registration.

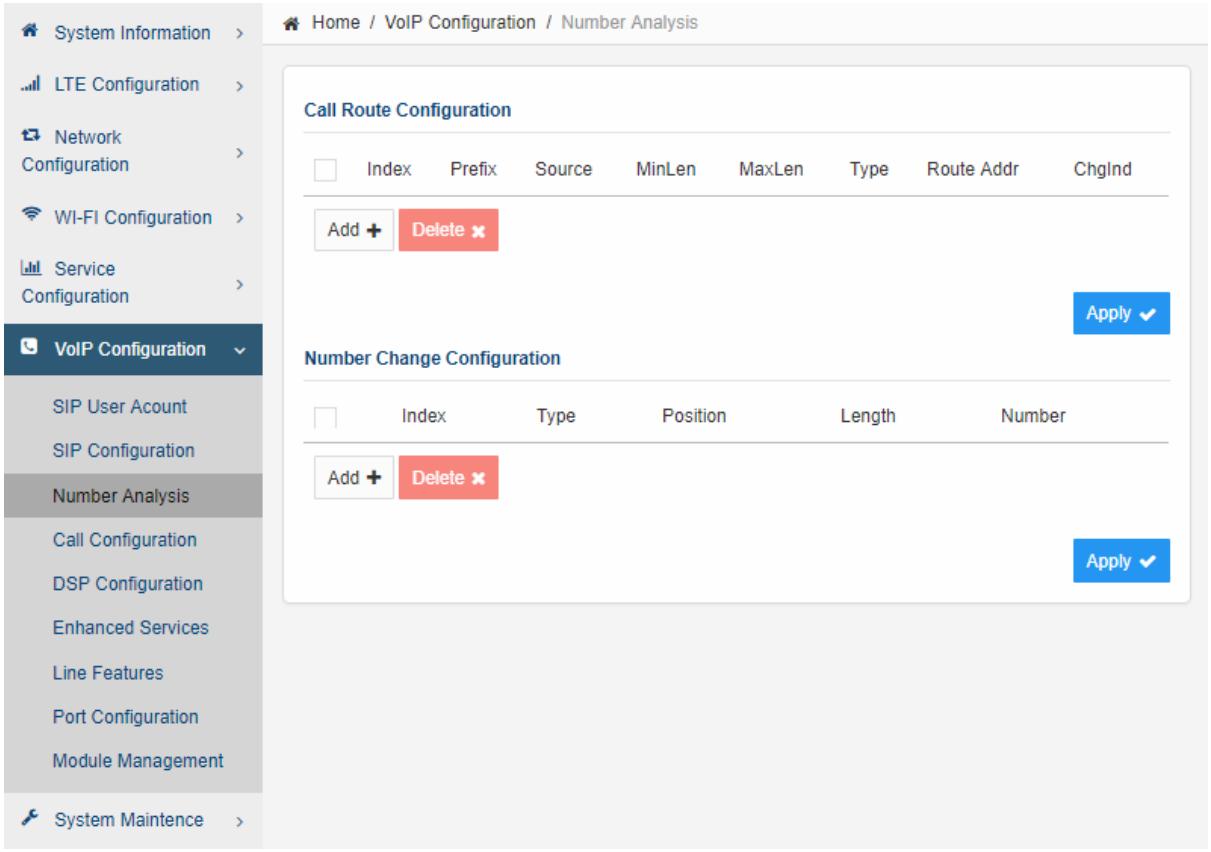
The SIP register and proxy server configuration should be performed by the network operator via administration management interface. The SIP account status is displayed for operator information. When the SIP line is registered and ready, the Line LED in the front panel will be light up. If the device VoIP function is not working properly, the operator is advised to contact the network operator for assistance.




System Information
LTE Configuration
Network Configuration
WI-FI Configuration
Service Configuration
VoIP Configuration
SIP User Acount
SIP Configuration
Number Analysis
Call Configuration
DSP Configuration
Enhanced Services
Line Features
Port Configuration
Module Management
System Maintence
Home / VoIP Configuration / SIP Configuration
Register Configurations
Register Status
OFF
Registrar Address
Registrar Receiving Port
5060
Register Period (s)
1800
Local Hostname
Use Registrar as Hostname
ON
Use Registrar as Proxy
ON
Keep-Alive status
ON
Keep-Alive Period (s)
45
Remove Binding
Apply
SIP Protocol Parameter Configurations
Hook Flash
16
Max Forwards
70
Max Auth
3
Supported
100rel
User Agent
Product Lable
MAC Address
Version
Use Tel URL
OFF
Apply

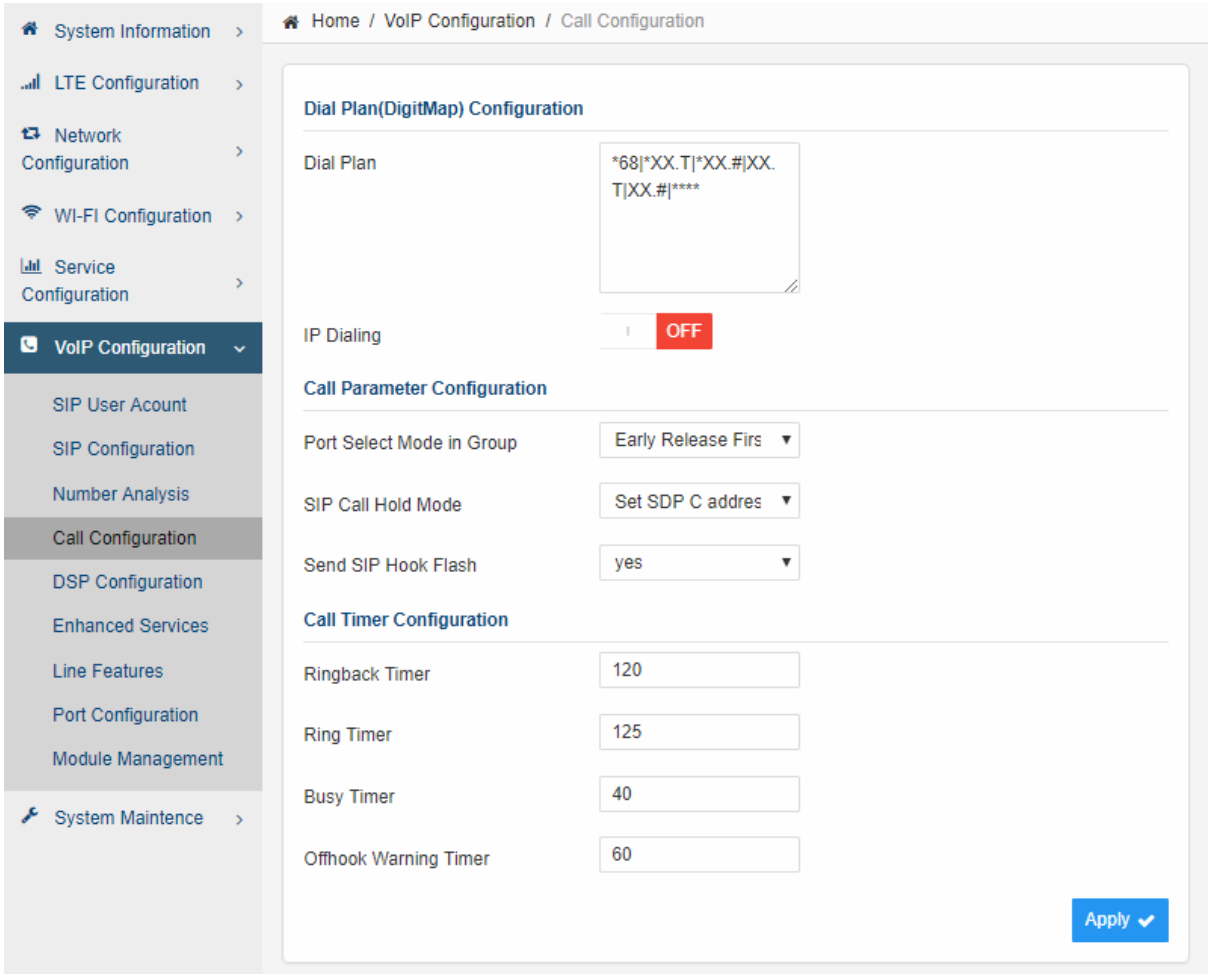
■ Number Analysis

The device is collects dial numbers from external phone or fax. Dialed digits are analyzed before being sent out to another element in a VoIP network. Dial numbers can be modified according to specific needs. Rules can be setup to modified a dial number, if it meets certain condition.



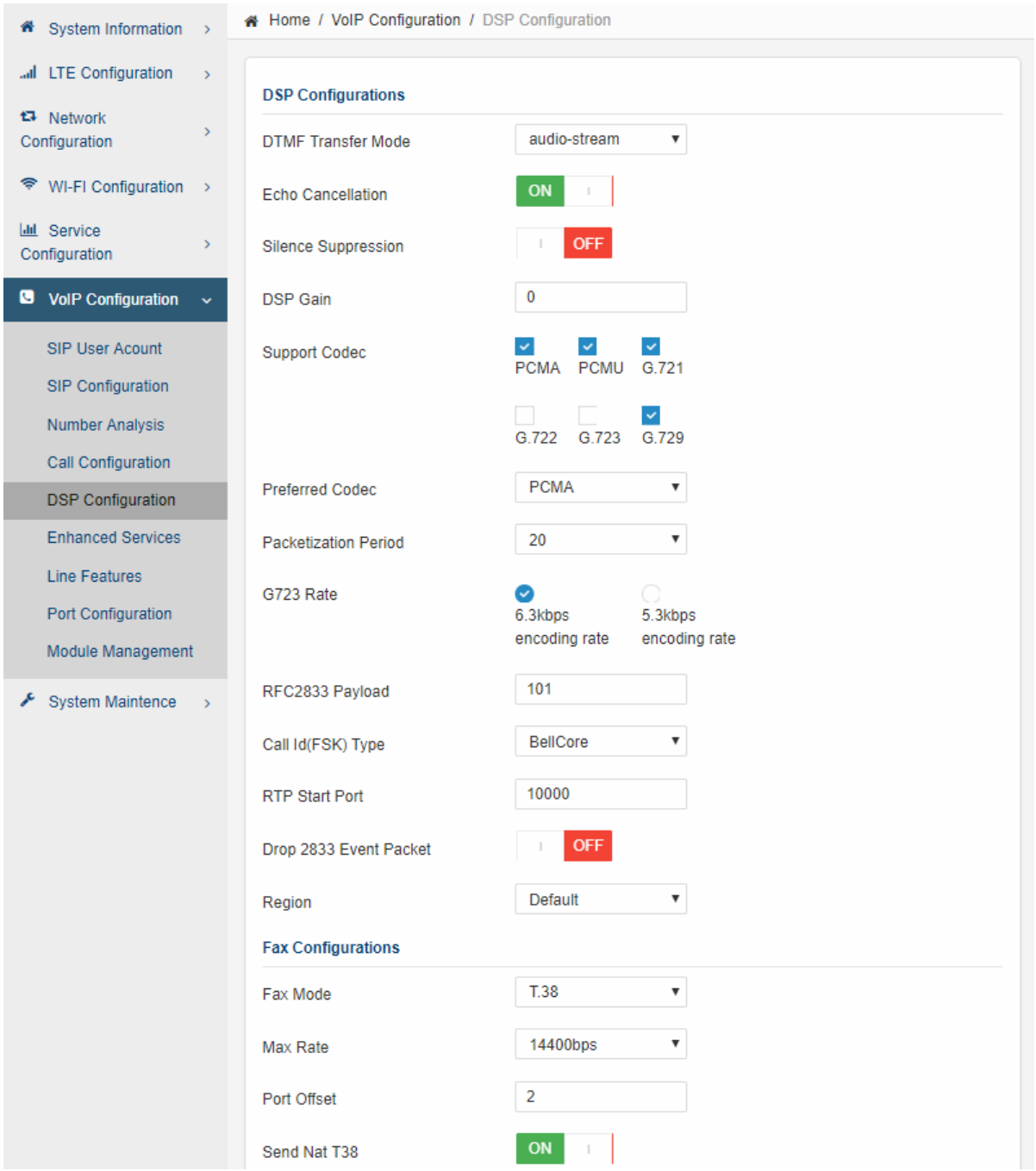
■ Call

Call Configuration section defined a few behaviors when a call is outgoing or incoming.



■ DSP

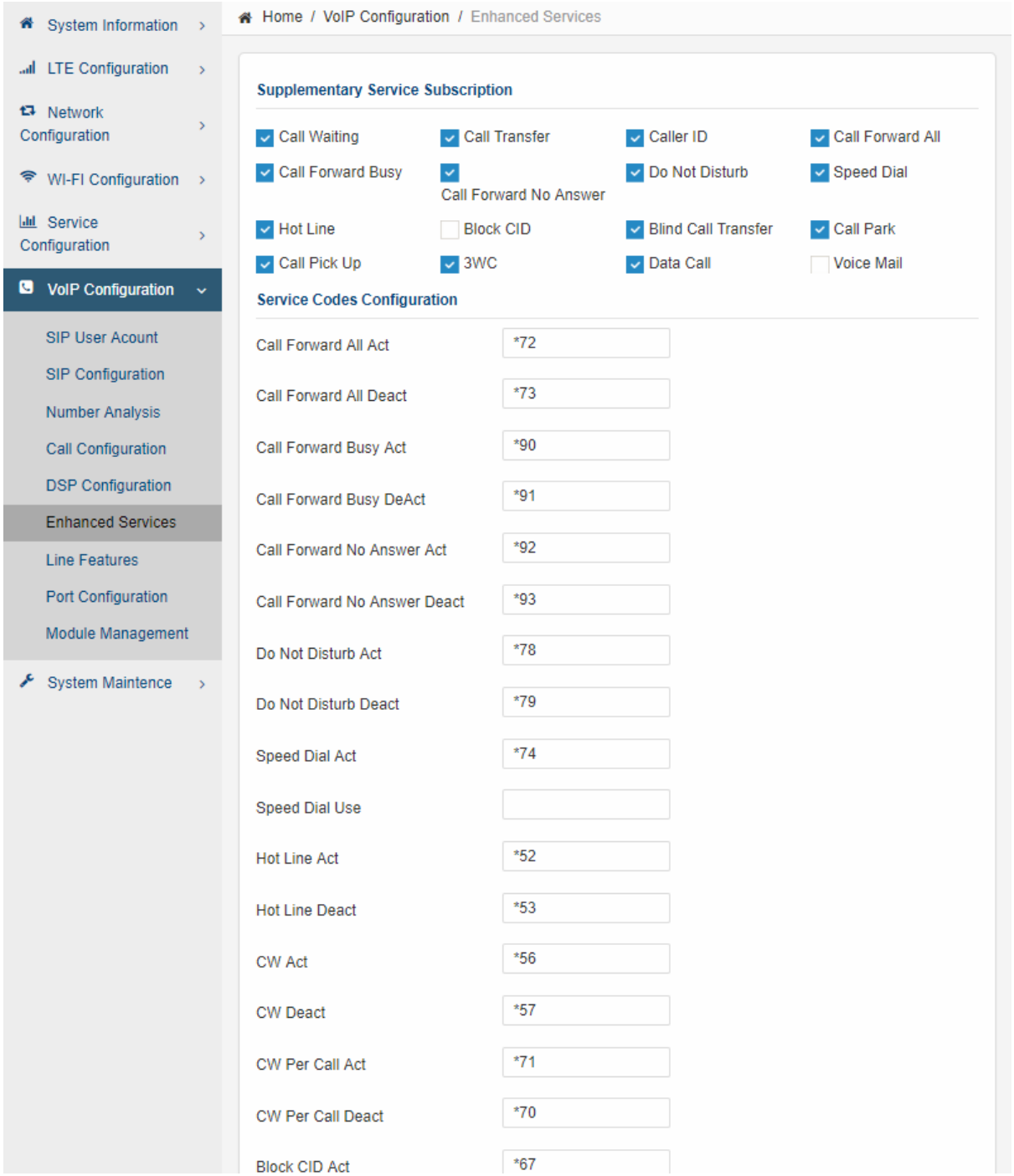
Voice is sampled and coded into digital bit stream, before they are packetized into IP packets. The following sections discuss various codecs supported by the device.



■ Enhanced Services

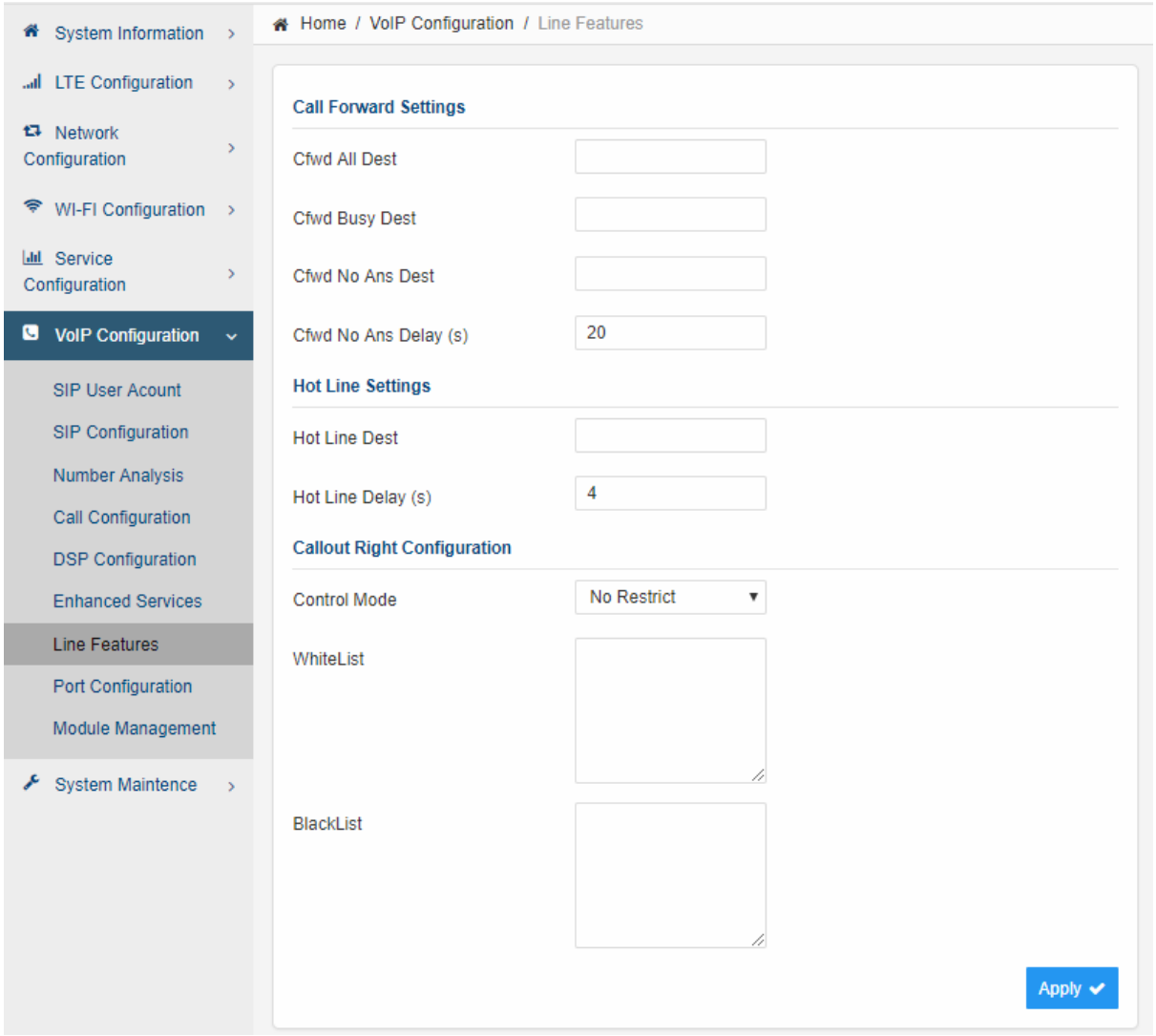
The device supports a rich set of supplementary services. Click on “Enhanced Services Configuration”, the following Supplementary Service Subscription are displayed in the right frame of browser window:

Many of the enhanced services need to be provisioned with the proper activation codes to work with the soft switch. The default service codes are displayed below. Service codes are configurable.



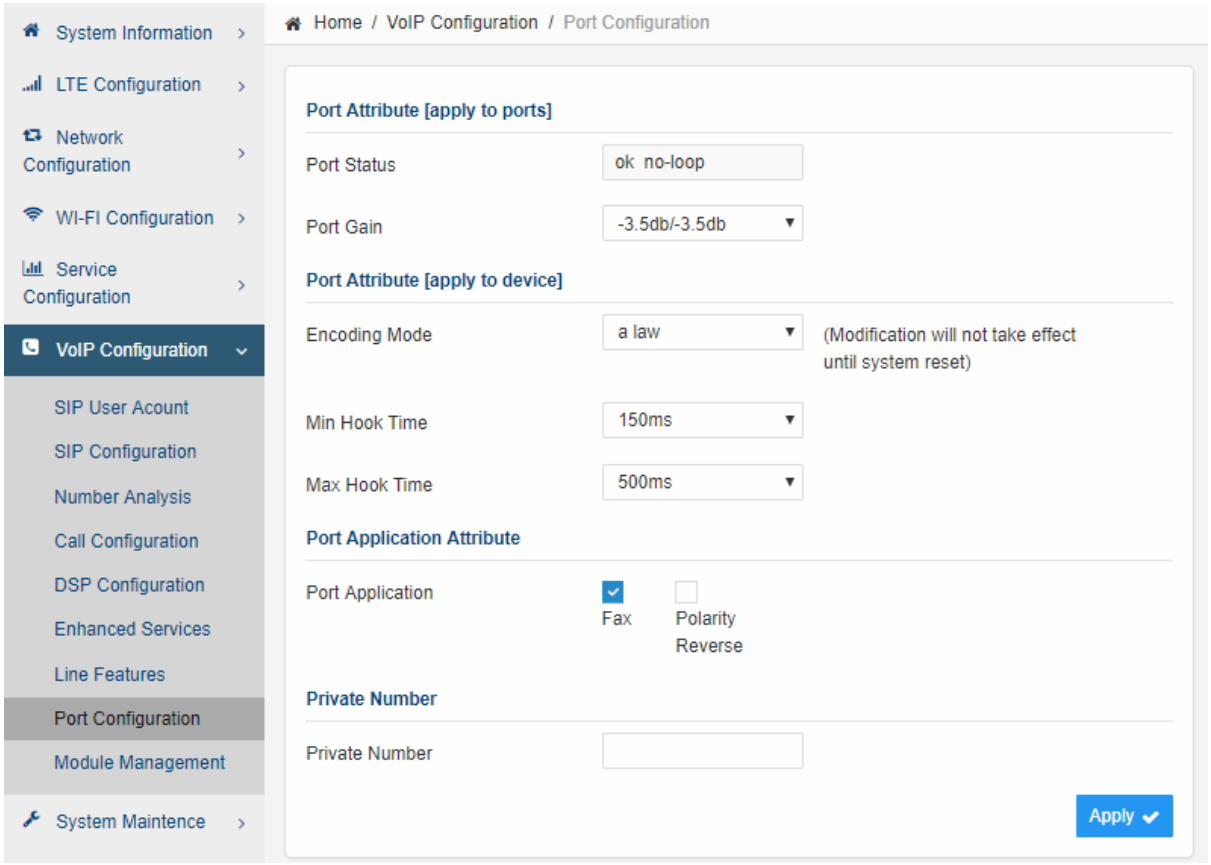
■ Line Features

Line Settings specify user specific parameters for supplementary services. These settings will remain even their associated features are deactivated, so that users are not required to set them next time.



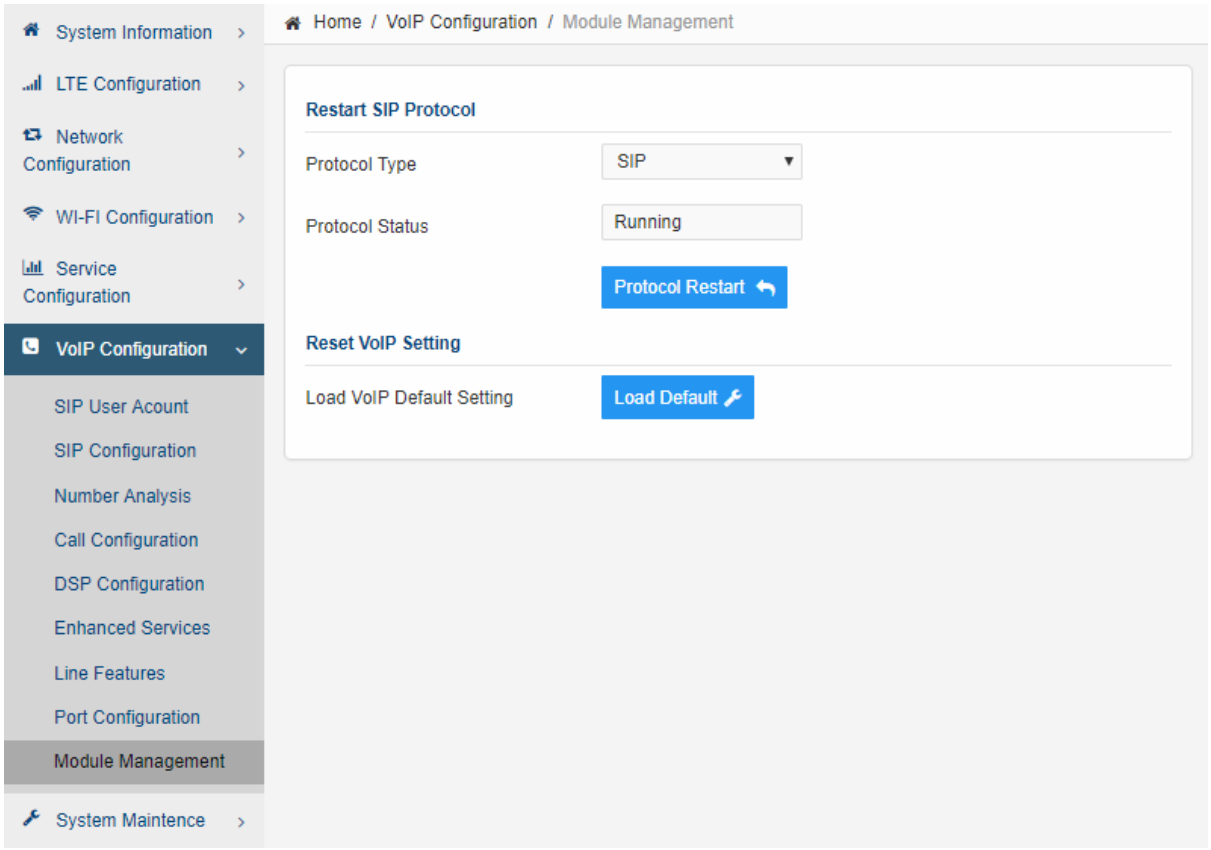
■ Port

Port configuration defines physical and electrical layer parameters, such as port transmit power.



■ Module Management

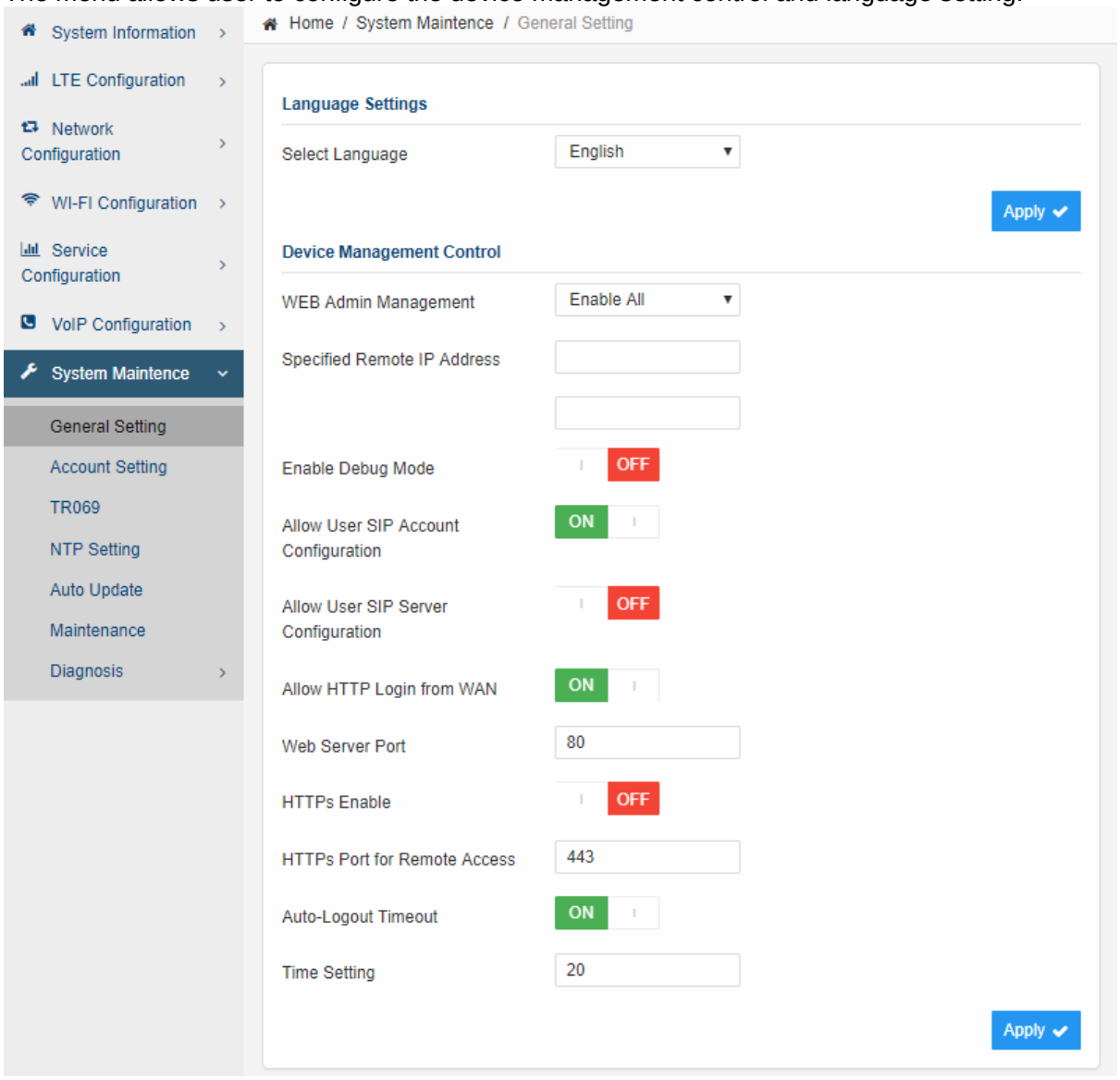
The device need not be reset if changes are made are at application level, e.g. Proxy IP address change. However, the media protocol can be restarted to effect changes.


System Information
LTE Configuration
Network Configuration
WI-FI Configuration
Service Configuration
VoIP Configuration
SIP User Acount
SIP Configuration
Number Analysis
Call Configuration
DSP Configuration
Enhanced Services
Line Features
Port Configuration
Module Management
System Maintence
Home / VoIP Configuration / Module Management
Restart SIP Protocol
Protocol Type
SIP
Protocol Status
Running
Protocol Restart
Reset VoIP Setting
Load VoIP Default Setting
Load Default

10. System Maintenance

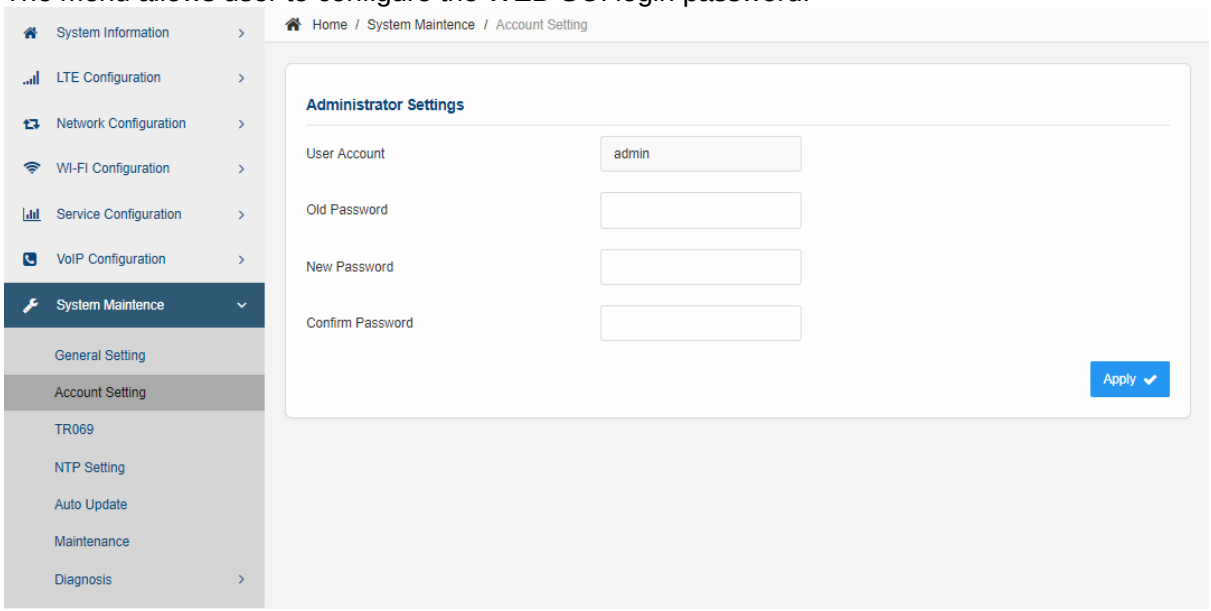
■ General Setting

The menu allows user to configure the device management control and language setting.



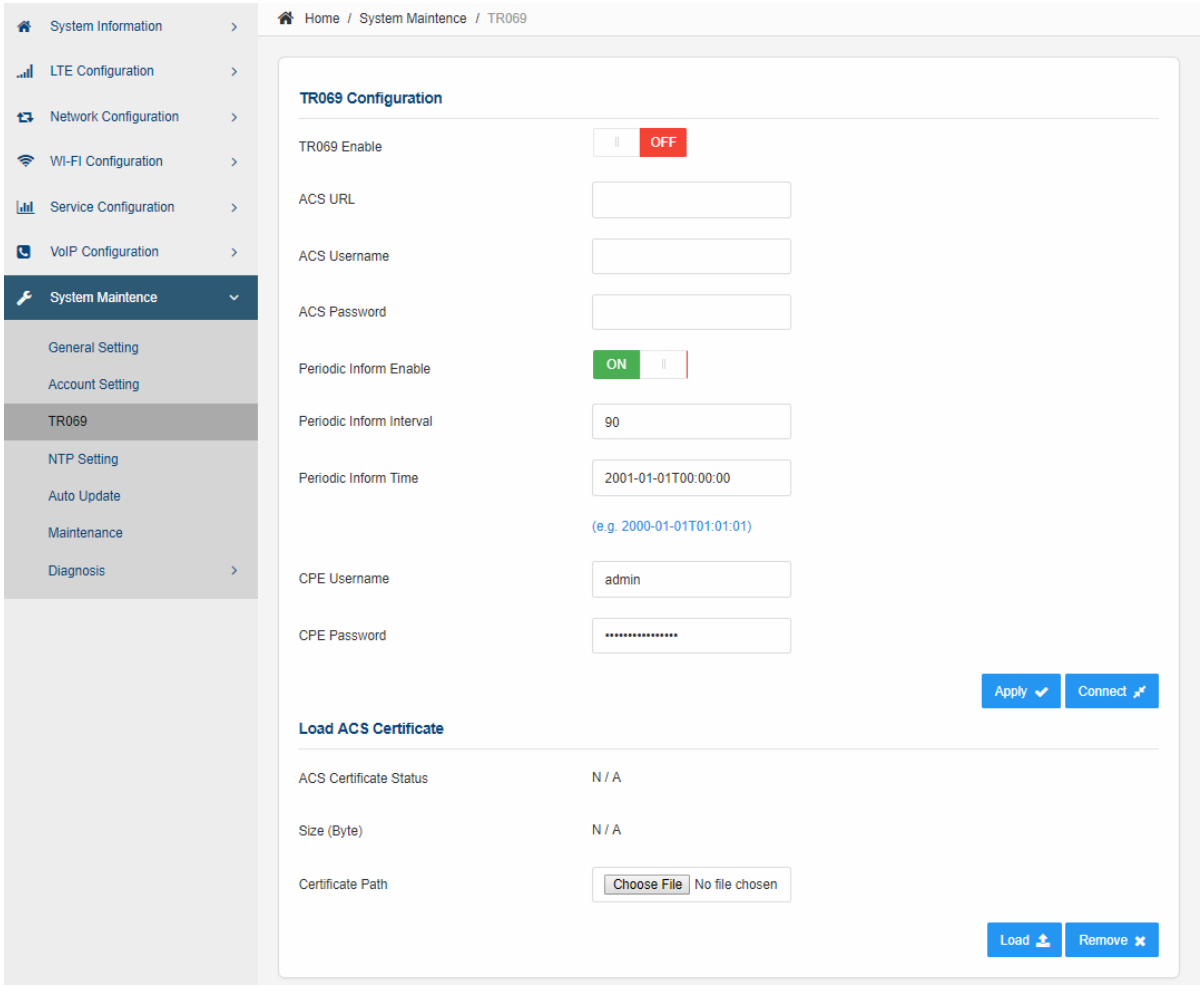
■ General Setting

The menu allows user to configure the WEB GUI login password.



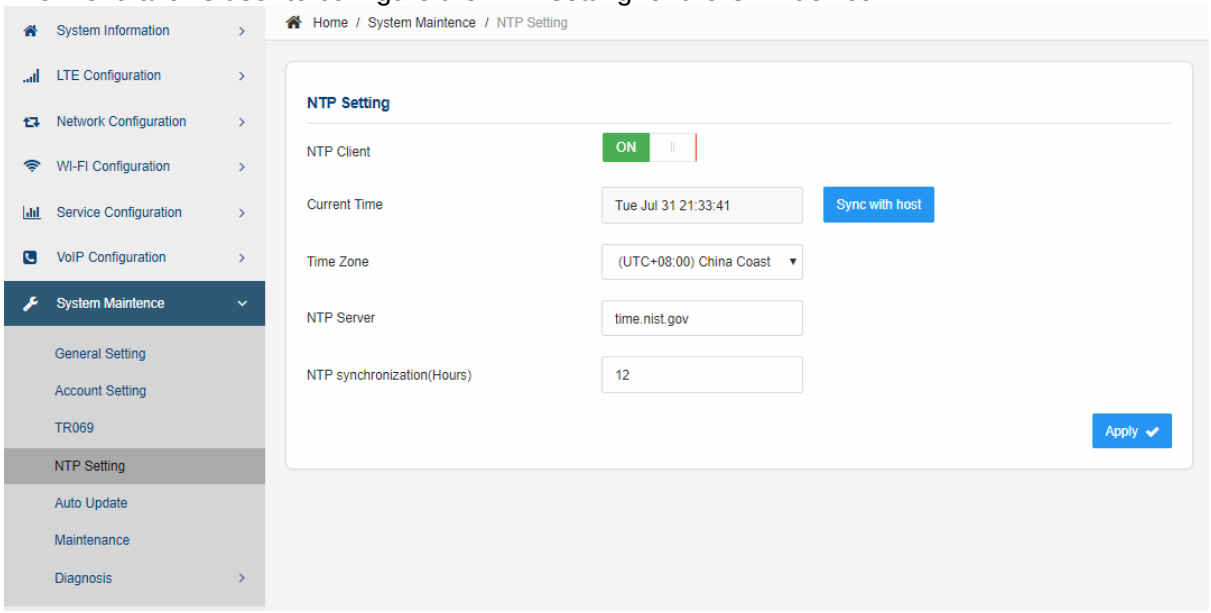
■ TR069

The menu allows user to configure the necessary setting for TR069 management of the CPE device.



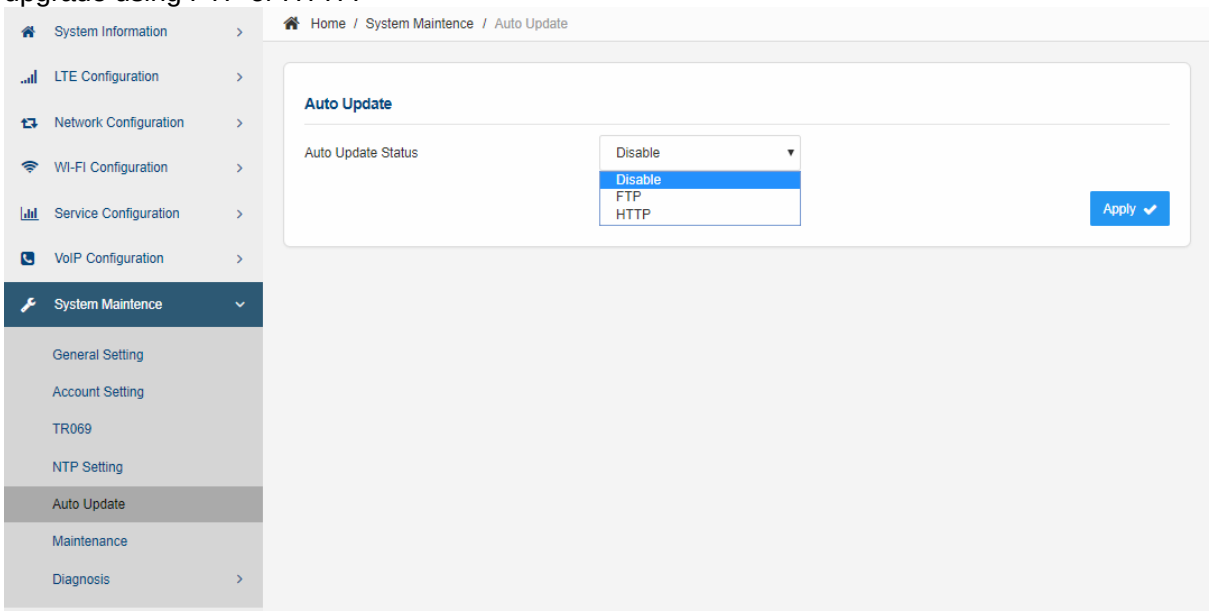
■ NTP Setting

The menu allows user to configure the NTP setting for the CPE device.



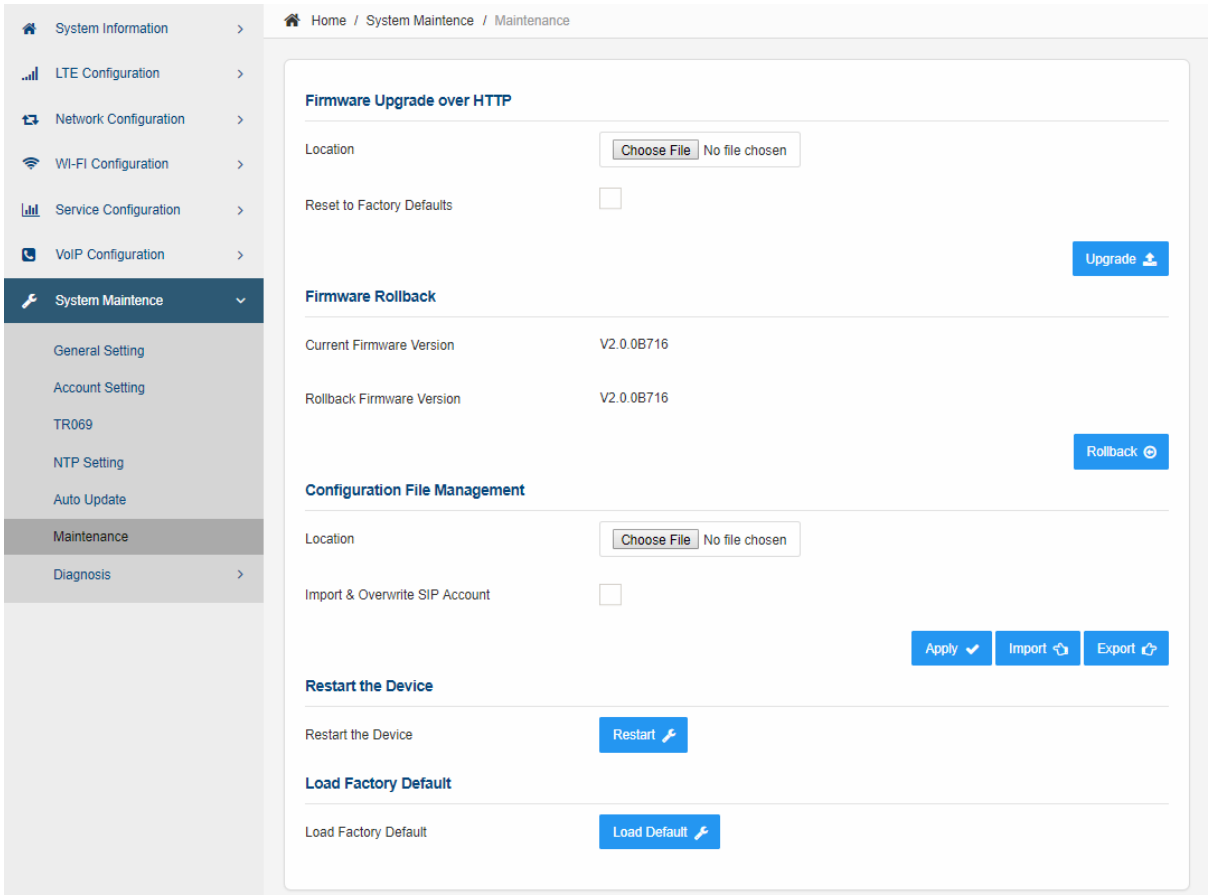
■ Auto Update

The user can select the Auto Update device's firmware. This menu can configure the remote upgrade using FTP or HTTP.



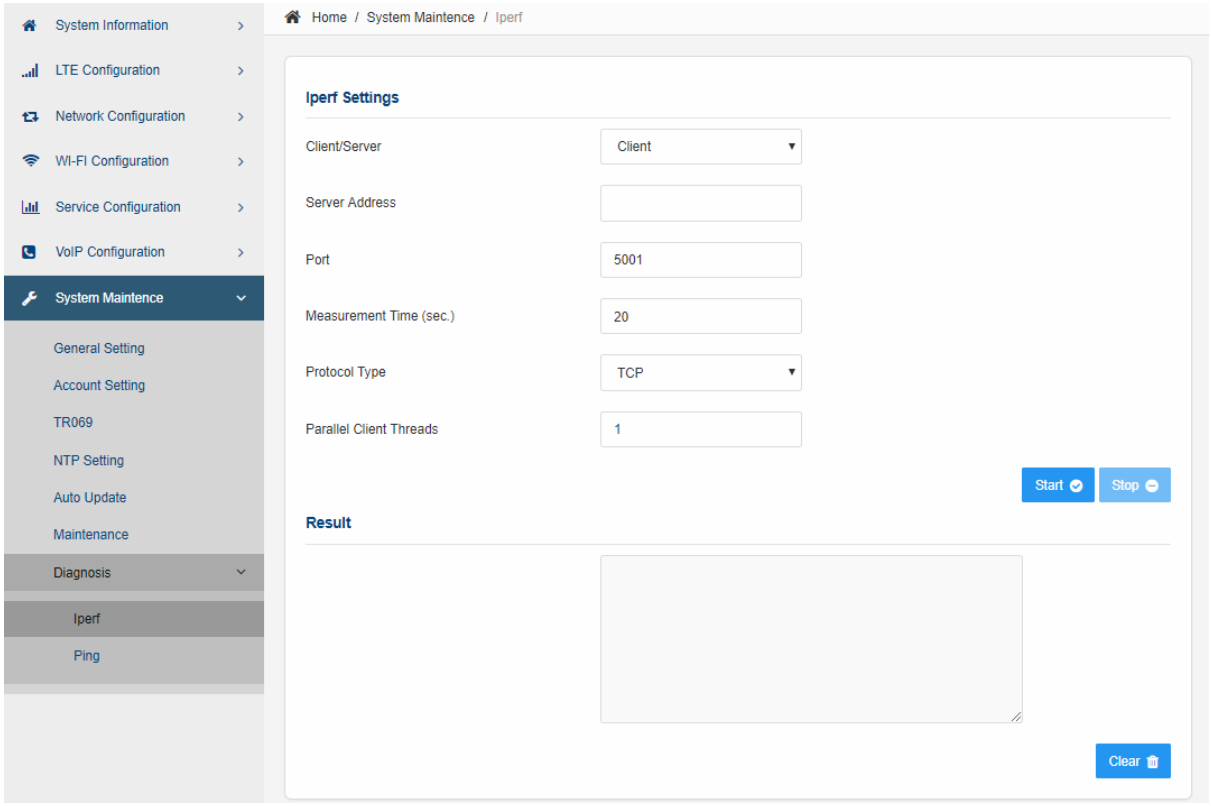
■ Maintenance

This menu allows user to perform firmware upgrade via WEG GUI with option to reset to factory setting. It can also configure the remote upgrade using FTP, TFTP or HTTP.



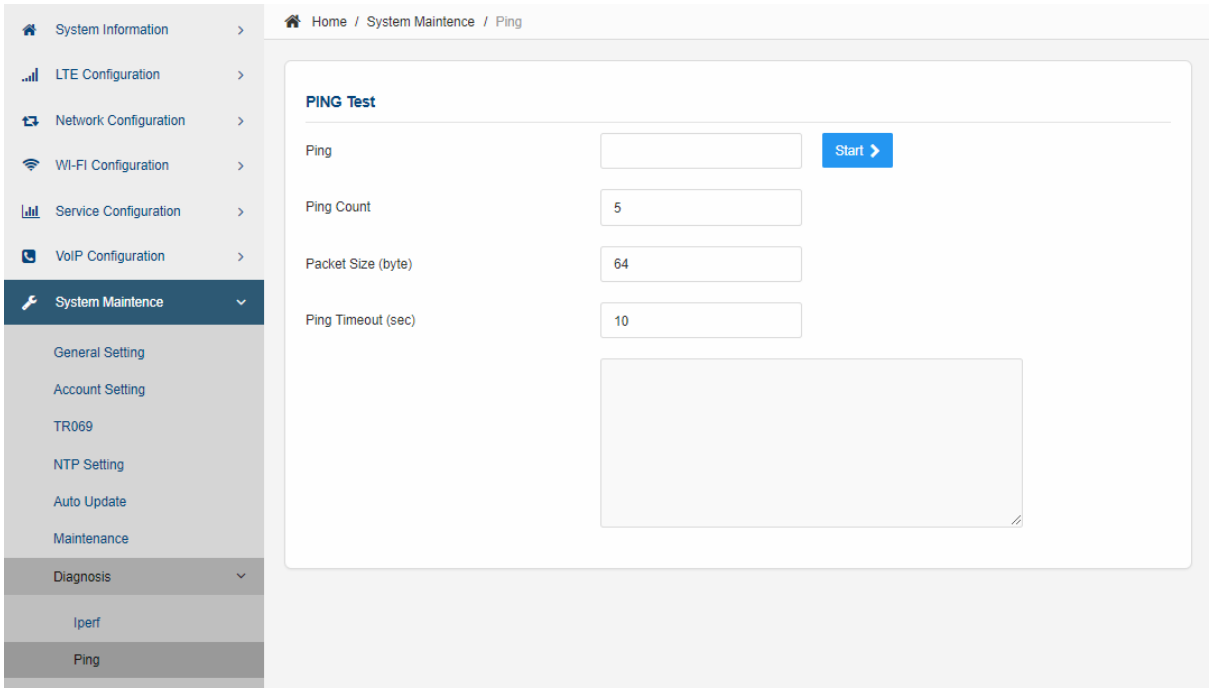
■ Iperf

This menu allows user to configure iPerf testing using WEB GUI interface. Both TCP and UDP tests can be supported. Remote iPerf server is required to conduct the tests.



■ Ping

This menu allows user to perform PING tests using WEB GUI interface. Both IPv4 and IPv6 can be supported.



11. FAQ and Troubleshooting

1) My PC cannot connect to the CPE.

- Re-plug the PC Ethernet cable and check if the PC LAN connection is up or showing activity.
- Check if the SYS LED is on. If it is not, check the power cord and make sure it is connected properly. Also verify that the AC power supply is available.
- If the PC LAN shows no activity and CPE SYS LED is off but the power cord and ETH cable are connected properly and there is AC supply, then it is likely the power adapter is damaged. Please contact distributor to obtain replacement part.

2) My PC cannot acquire IP from the CPE.

- First check if the Network card is up and working properly. Then check the PC Network card configuration and make sure the DHCP is enabled.
- To release and renew the correct IP address, please unplug the Ethernet cable from PC and wait for about 5 seconds, then connect it again.
- If the problem persists, please contact the operator or distributor for further diagnoses.

3) My CPE networking is not working properly.

- You may want to check if the LTE connection is up and running properly. You can do this by login the WEB GUI and check the Interface Info page.
- You may want to perform a factory reset and see if the problem is being corrected. You can do this by log into the WEB GUI using "**admin123**" password and perform restore the unit to default factory setting.
- If the problem cannot be corrected by factory reset, please contact the operator or distributor for further diagnoses.

4) I forget the login password and like to reset the unit to factory default.

- You may press and hold the RESET button in the back of the unit for 5 seconds. The unit will reset and reboot. Please wait until the unit finishes rebooting to regain access the device WEB GUI using default login credentials.
- After device reset, if the device cannot connect to the network, please contact the operator or distributor for further support. Additional device provision may be required.