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LTE Outdoor CPE8100/8101

January 2018

System Manual

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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 people to come in close proximity to the front of the antenna while the transmitter is operating.

Protection from Lightning

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 Parliamentand of the Council) and the EU Restriction of Hazardous Substances (RoHS) Directive (Directive 2002/95/EC of the European Parliament and of the Council).

CE Conformance Declaration

Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment can meet the following conformance standards:

- EN 60950/22 - Product Safety
- EN301489 EN301908 EN62311 - EMC requirements for radio equipment

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

FCC USA CBRS Band Category B device

The CPE8100 requires installation by a CPI (Certified Professional Installer) as defined in Section 96.39 and 96.45 of FCC part 96 requirements. The Compact is Classified as a Category B CBSD which requires the following info be recorded and uploaded as part of the CPI process per section 96.45

All CBSDs:	Category B Devices:
• Geographic location • Antenna height AGL (m) • CBSD class (Category A or B) • Requested authorization status (PAL or GAA)[9] • FCC ID • Call sign (PALs only) • User contact info • Air interference technology • Serial # • Sensing capability (if supported)	• Limited to Outdoor operation • Antenna gain • Antenna Beam-width • Antenna Azimuth • Antenna Down tilt angle

The CPE8100 (Category B CBSD) must report to a SAS to register and obtain spectrum grants per FCC part 96. Local administration should be executed through the domain proxy and all freq, bandwidth and power adjustments must be handled in coordination with the SAS and grant process. The device is not authorized to transmit without a grant and ships with TX disabled. It is the responsibility of the CPI to populate the CPI database and obtain a grant before the Device is permitted to Transmit. Location will be recorded by the professional installer and reported to the CPI database along with the other parameters listed in the above table

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 50cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Industry Canada statement

This device complies with RSS-192 & RSS-197 of the Industry Canada Rules. Operation is subject to the following two conditions:

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

Ce dispositif est conforme à la norme CNR-192 & CNR-197 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Users can obtain Canadian information on RF exposure and compliance from the Canadian Representative:Nick Dewar Nick.Dewar@Telrad.com

Table of Contents

1. Overview

CPE8100/CPE8101 is a high performance LTE CPE family (Customer Premises Equipment) product designed to enable quick LTE service deployment to the remote customers. It provides high data throughput and networking features to end users who need both bandwidth and data roaming capabilities in the remote area.

■ CPE 8100\CPE 8101 – Common LTE Features

	LTE Interface
Standard Compliance	3GPP Rev. 9, UE Cat 4 3GPP Rev. 9, UE Cat 5 (Telrad BS Only)
Duplex Mode	TDD
Frequency Bands	B40 (2.3-2.4GHz), B41(2.4-2.7GHz) 3.3-3.4GHz, B42 (3.4-3.6GHz), 43 (3.6-3.8GHz)
Channel bandwidth (MHz)	*5, 10, *15, 20 *note only 10/20MHz supported on part 96 certified CPE8100
Modulation	DL: MCS1 - MCS28 (QPSK, 16QAM, 64QAM) UL: MCS1 – MCS28 (QPSK, 16QAM, 64QAM) Uplink 64QAM with Telrad eNodeB
L1	MIMO TM1, TM2, TM3,TM4 ,TM8
L2 & L3	Multiple APN PLMN and Cell Selection
Authentication	USIM and SIM function
QoS	Non-GBR, GBR
MTU Size	Layer 2 - 1,600 bytes Layer 3 – 1,500 bytes (1,400 bytes - 3GPP recommended)

■ CPE 8100 Product Highlights

Frequency Bands	3.3-3.8GHz (Band 42, Band 43 & 3.3GHz) *B48(3.55-3.7) * B48 only in US with use of domain proxy and Certified professional installer is required
LTE UE Category	Category 4 (Any BS) Category 5 (Telrad BS Only)
LTE Tx Power	27 dBm
Peak Antenna Gain	15dBi
User management	Web Gui / TR69
Dimensions	203 x 203 x 76 mm / 1.5Kg 8.0 x 8.0 x 3.0 in / 3.3 lb
Environmental	IP67 rating
Operational Temperature	Temperature range : -40℃ ~ 55℃
Package content	CPE, POE, Power cable (US or EU), Mount Kit, Ethernet cable

■ CPE 8100 Electrical / Physical Specifications

Physical Interface	LAN – 10/100/1000M Base-T port SIM - 1.8V and 3.3V
Antenna	1TX/2RX, 15dBi
Power Source	PoE
Environmental	IP67 - withstands harsh weather and outdoor environments
Operating Temperature	-40° to 55°C
Humidity	5% to 95% non-condensing
Regulatory Compliance	FCC IC CE

■ CPE8100 PoE Adapter Specification

Power Source	100~240VAC
Output Power (PoE)	48V / 0.32A
User Interfaces	Data only model : 1xLAN RJ45 10/100/1000 Mb
Maximum cable length	100m

■ CPE 8101 Product Highlights

Frequency Bands	B40 – B41 , B42-B43 * 8101 not certified for use in US
LTE UE Category	Category 4 (Any BS) Category 5 (Telrad BS Only)
LTE Tx Power	23 dBm
Peak Antenna Gain	12 dBi
User management	Web Gui / TR69
Dimensions	310 mm (L) × 122 mm (W) × 75 mm (D)
Environmental	IP67 rating
Operational Temperature	Temperature range : -40 ~55℃
Package content	CPE, POE, Power cable (US or EU), Mount Kit, Ethernet cable

■ CPE 8101 Electrical / Physical Specifications

Physical Interface	LAN – 10/100 M Base-T port SIM - 1.8V and 3.3V
Maximum Transmit Power	23 dBm
Antenna	1TX/2RX, 12 dBi
Power Source	PoE
Environmental	IP67 - withstands harsh weather and outdoor environments
Operating Temperature	-40° to 55° C
Humidity	5% to 95% non-condensing
Regulatory Compliance	CE

■ CPE8101 PoE Adapter Specification

Power Source	100~240VAC
Output Power (PoE)	24V DC 0.5A
User Interfaces	Data only model : 1xLAN RJ45 10/100 Mb
Maximum cable length (POE To CPE)	100m

2. Getting Started – CPE8100

1) Packing list

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
PoE adapter	1
Power cord	1
Mounting brackets	1
PC Ethernet Cable	1
Quick User Guide	1

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

2) 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.

3) Installing the Equipment

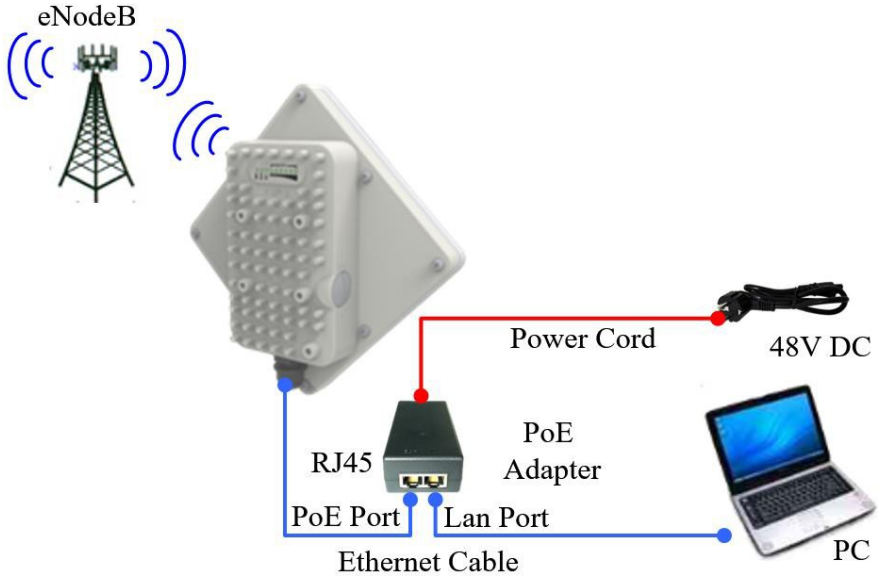
■ Device Logic connection

For outdoor CPE product, it is suggested that the CPE device be installed in a shaded area to avoid direct sun light exposure which may cause over heat in certain extreme weather

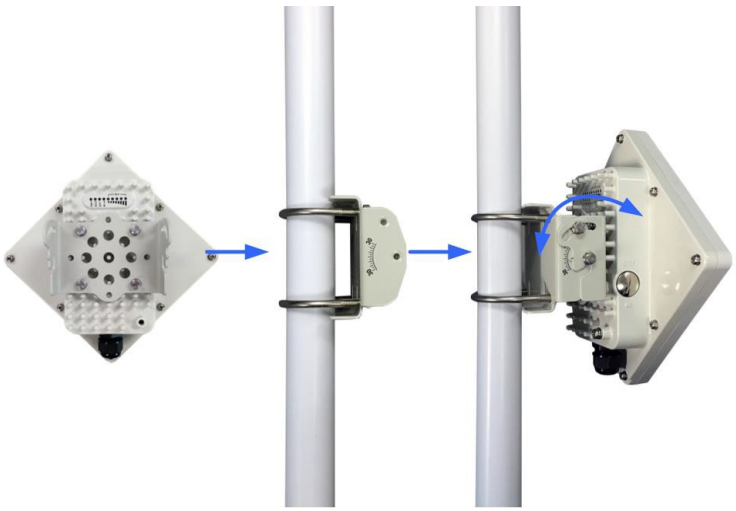
condition. The CPE should be properly grounded for proper protection against lighting or power surge.

To power on the device, the outdoor CPE must use a 48V PoE integrated DC power supply adapter. The power adapters can operate in 100-240V AC range and therefore can be used in different country. Once the device is powered up, the user should wait for about 2 minutes before the device becomes operational. When the RUN LED becomes solid green, it indicates the system has completed the startup procedure.

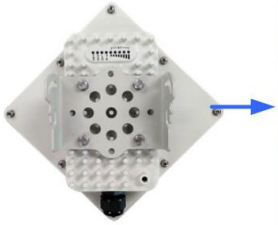
To connect PC, LAN switch or other type of IP device to the CPE product, the user should use standard CAT5 Ethernet cable and connect to the appropriate LAN port. Once connected, the ETH LED indicator should come on.



■ Installing Outdoor Unit (ODU) – Pole Mount



■ Installing Outdoor Unit (ODU) – Wall Mount



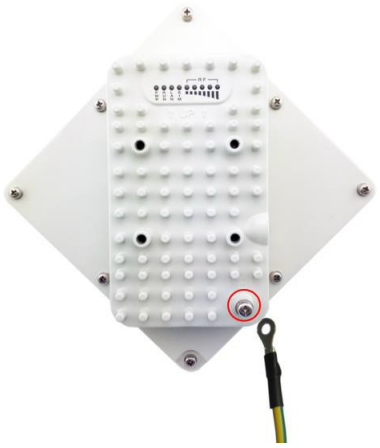
Note: The wall screws and screw anchors are not part of the package. Recommended screw size minimum 50mm length and 6-8mm diameter.

■ Header Connection

■ Grounding

Make sure that the installation of the outdoor unit, antenna and cables is performed in accordance with all relevant national and local building and safety codes. Even where grounding is not mandatory according to applicable regulation and national codes, it is highly recommended to ensure that the outdoor unit and the antenna mast are grounded and suitable lightning protection devices are used so as to provide protection against voltage surges and static charges. In any event, Telrad is not liable for any injury, damage or regulation violations associated with or caused by installation, grounding or lightning protection.

The Grounding screw is located on the lower part at the back of the unit (see Figure below). Use 10 AWG cable for grounding.



Connect one of a grounding cable to the grounding screw and firmly tighten the grounding screw. Connect the opposite end of the grounding cable to a good ground(earth) connection.

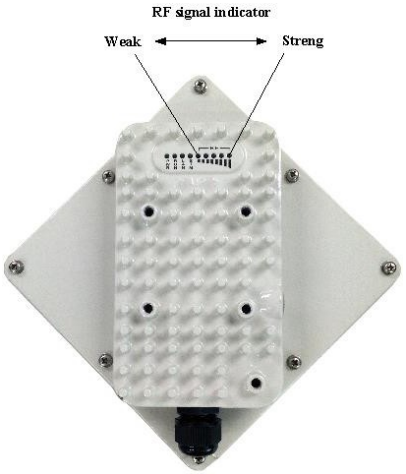
■ LED Display

LED Indicator	Function	Description
PWR	Power Indicator	Green Color – Device is powered on
RUN	System Run Indicator	Fast Blinking – Device is rebooting Slow Blinking – Device is in normal operation
LAN	LAN port status	Solid Green – LAN port is up Blinking Green – LAN data activity in progress
SIM	SIM Card Indicator	Light is on – SIM Card Ready
RF (5 LEDs)	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

■ RF Signal Adjustment

After the CPE outdoor unit has installed, the direction of antenna's azimuth and pitch angle needs to adjust for the best signal strength. In near line of sight condition, the CPE will have the best signal when the antenna is directly pointing the base station.

User can adjust the holder to change the direction and angle of the antenna while observing the RF LED on the outdoor unit which indicates the signal strength.



3. Getting Started – CPE8101

4) Packing list

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
PoE adapter	1
Power cord	1
Clamp	2
PC Ethernet Cable	1
Quick User Guide	1

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

5) 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.

6) Installing the Equipment

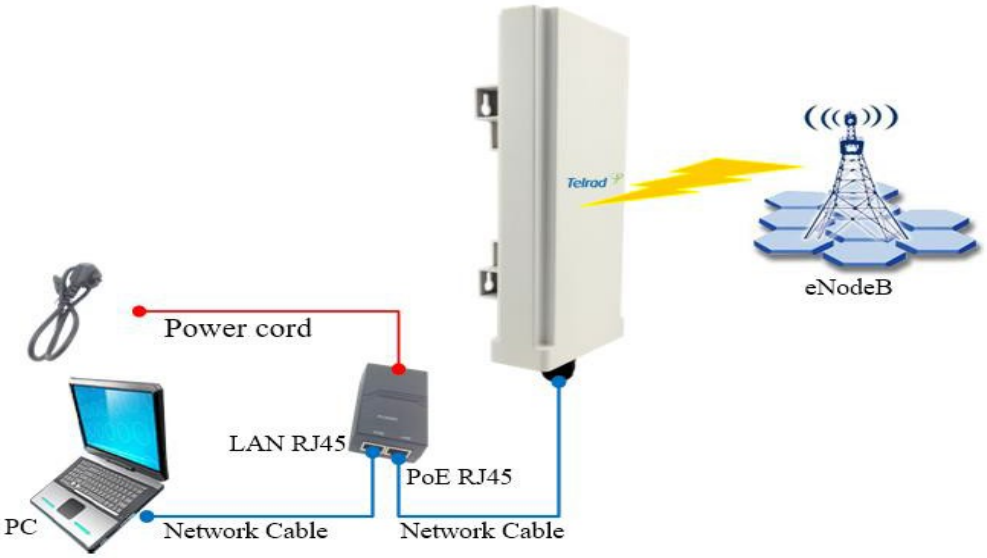
■ Device Logic connection

For outdoor CPE product, it is suggested that the CPE device be installed in a shaded area to avoid direct sun light exposure which may cause over heat in certain extreme weather condition. The CPE should be properly grounded for proper protection against lighting or power surge.

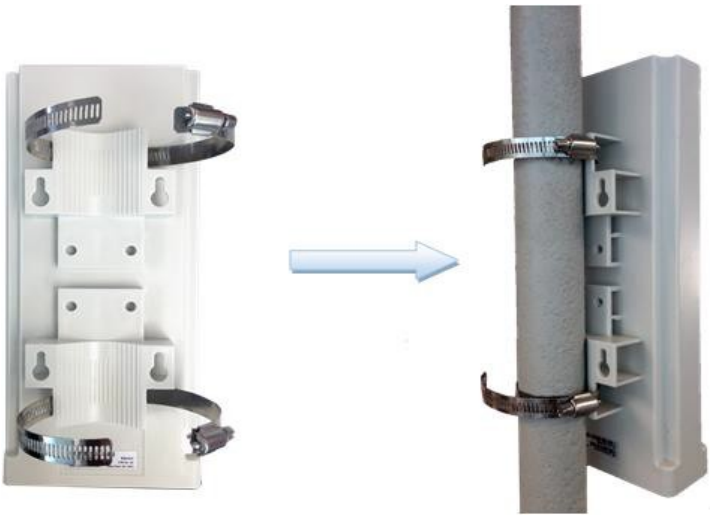
To power on the device, the outdoor CPE must use a 24V PoE integrated DC power supply adapter. The power adapters can operate in 100-240V AC range and therefore can be used in different country. Once the device is powered up, the user should wait for about 2 minutes before the device becomes operational. When the SYS LED becomes solid green, it indicates

the system has completed the startup procedure.

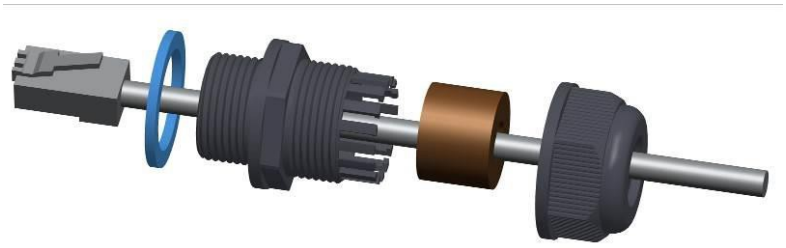
To connect PC, LAN switch or other type of IP device to the CPE product, the user should use standard CAT5 Ethernet cable and connect to the appropriate LAN port. Once connected, the ETH LED indicator should come on.



■ Installing Outdoor Unit (ODU) – Clamp



■ Header Connection



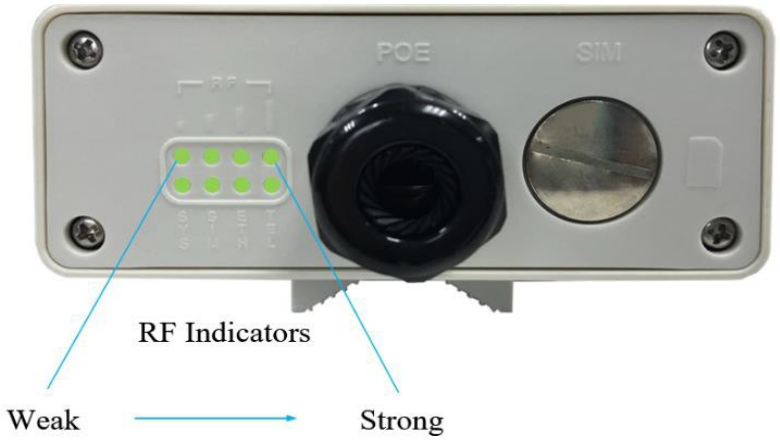
■ LED Display

Type	LED	Function	Description
ODU	SYS	System run indicator	Fast Blinking – Device is rebooting. Solid green – Device is in normal operation.
	SIM	SIM card indicator	Light is on – SIM card state is ready.
	ETH	LAN port status	Solid Green – LAN port is up. Blinking Green – LAN data transmission.
	TEL	VoIP Line Status	OFF (Not used for CPE8101)
	RF (4LEDs)	RF Signal Strength	4 level signal strengths indication by 4 green LEDs. 1st: RSRP < -105dBm 2nd: -105dBm <= RSRP < -95dBm 3rd: -95dBm <= RSRP < -85dBm 4th: -85dBm <= RSRP

■ RF Signal Adjustment

After the CPE outdoor unit has installed, the direction of antenna's azimuth and pitch angle needs to adjust for the best signal strength. In near line of sight condition, the CPE will have the best signal when the antenna is directly pointing the base station.

User can adjust the holder to change the direction and angle of the antenna while observing the RF LED on the outdoor unit which indicates the signal strength.

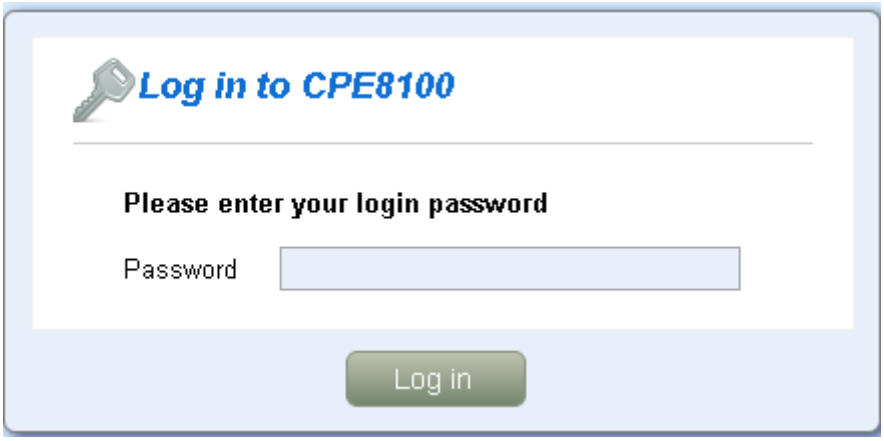

POE
SIM
RF Indicators
Weak
Strong

2 Managing CPE Device

CPE8101 is a user-friendly LTE CPE, and very easy to configure and setup. Subscribers can just connect the device to their computer or home switch/router and the device is ready to provide Internet Services.

■ WEB Login

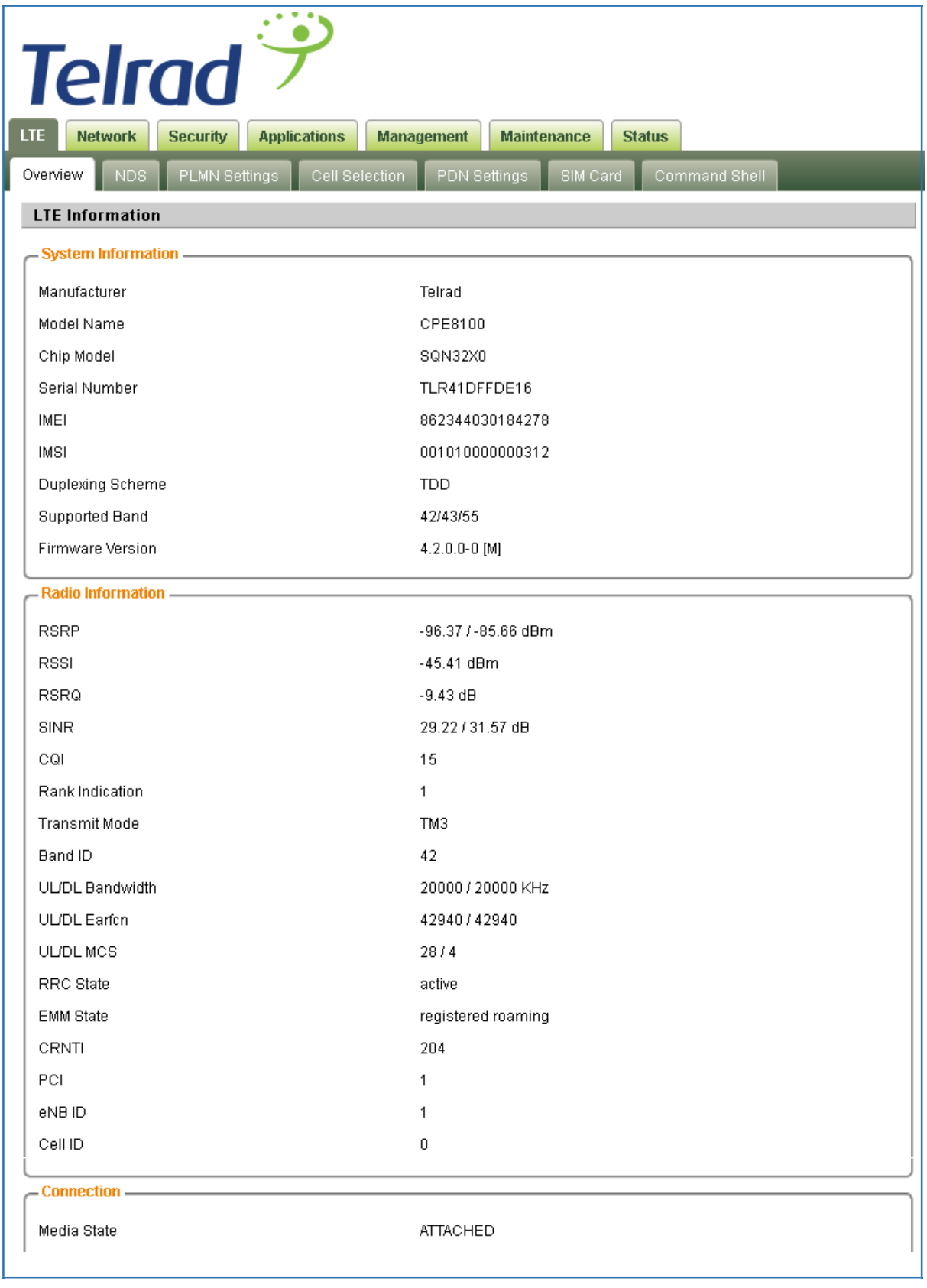
It is a preferred to setup the CPE using a Web browser from a local PC connected to device LAN port. The user should ensure that the connected PC has acquired IP address via DHCP from the device. After IP connectivity is established between the PC and CPE device, the user may launch a Web browser and specify http://192.168.254.251 in the address bar. A window will pop up requesting password. Input the user or administrator login password and then click the "Log in" button. After successful log on, the default home page will appear. Note the default user & administrator passwords are "Telrad4G" and "admin" respectively.



3 LTE Configuration

■ Overview

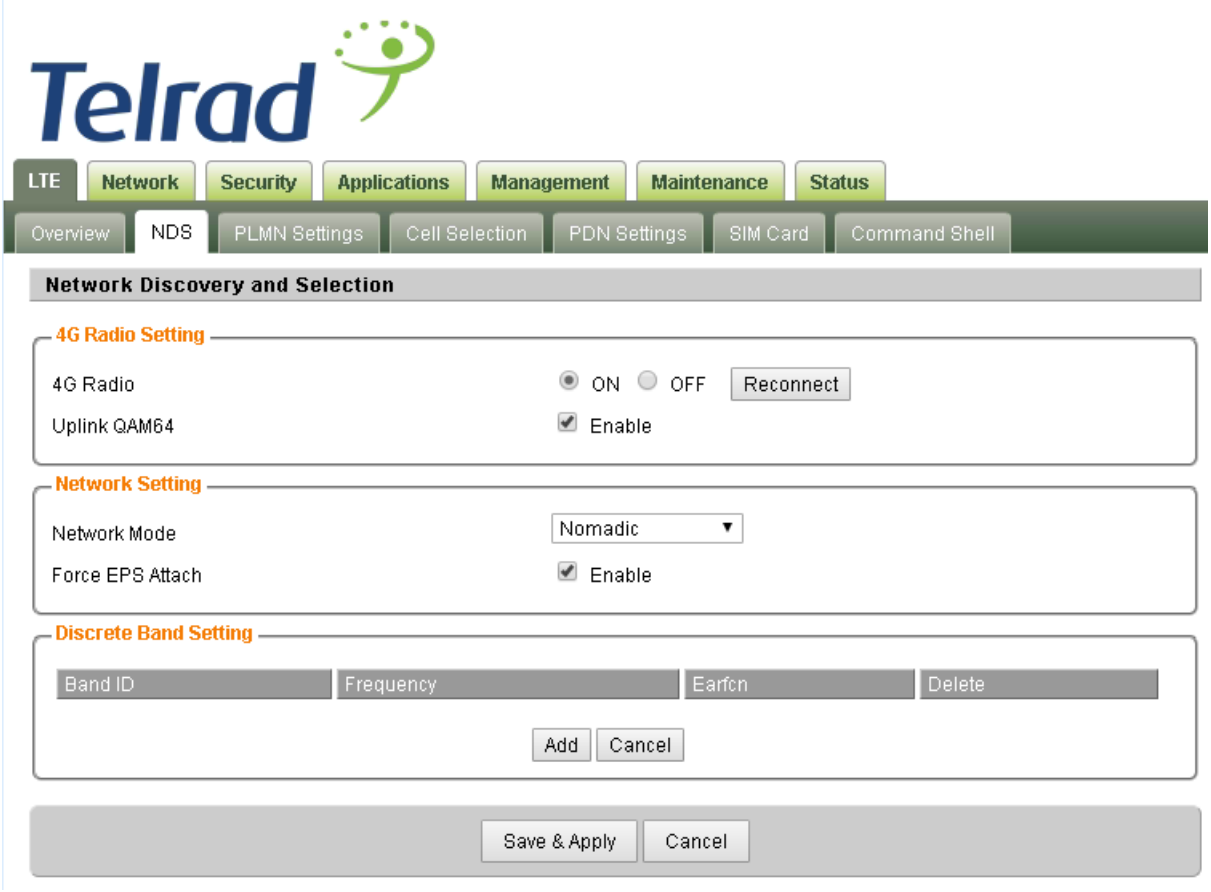
Once the user is logged in, the following window device status window will be prompted for viewing. It contains the system information, networking and device information configured for the device.


Telrad
LTE
Network
Security
Applications
Management
Maintenance
Status
Overview
NDS
PLMN Settings
Cell Selection
PDN Settings
SIM Card
Command Shell
LTE Information
System Information
Manufacturer Telrad
Model Name CPE8100
Chip Model SQN32X0
Serial Number TLR41DFFDE16
IMEI 862344030184278
IMSI 001010000000312
Duplexing Scheme TDD
Supported Band 42/43/55
Firmware Version 4.2.0.0-0 [M]
Radio Information
RSRP -96.37 / -85.66 dBm
RSSI -45.41 dBm
RSRQ -9.43 dB
SINR 29.22 / 31.57 dB
CQI 15
Rank Indication 1
Transmit Mode TM3
Band ID 42
UL/DL Bandwidth 20000 / 20000 KHz
UL/DL Earfcn 42940 / 42940
UL/DL MCS 28 / 4
RRC State active
EMM State registered roaming
CRNTI 204
PCI 1
eNB ID 1
Cell ID 0
Connection
Media State ATTACHED

■ ND&S Configuration

The LTE radio can be enabled or disabled via 4G Radio setting. The radio can also be reset via Reconnect.

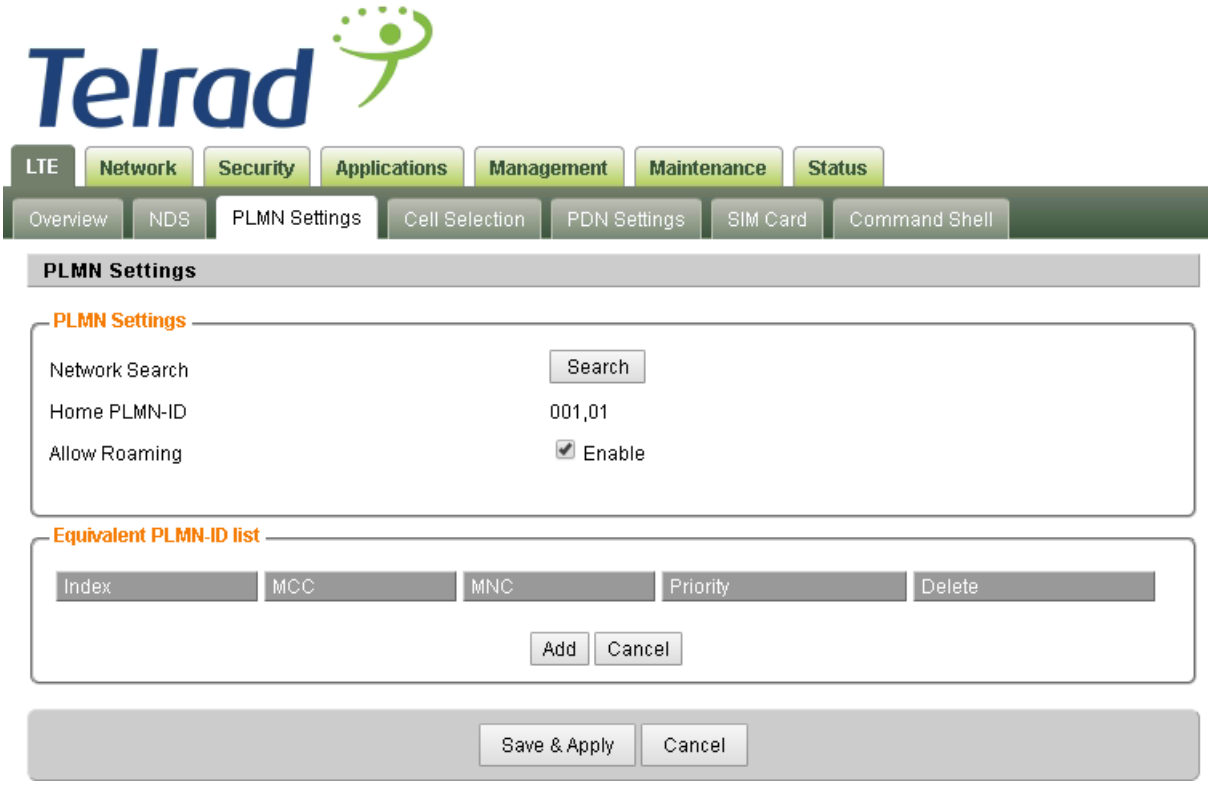
The CPE support both Mobile and Nomadic network selection mode. The Mobile mode will automatically scan the network and attach soon as the system has completed the startup procedure. The Nomadic mode allows user to configure up to 32 fixed channel and perform PLMN & cell selection based on certain criteria as specified in "Cell Selection" tab.



Note: After configure any parameters of the device, you must click the "Save & Apply" button to save the configuration. Otherwise the configuration will not take effect.

■ PLMN Selection

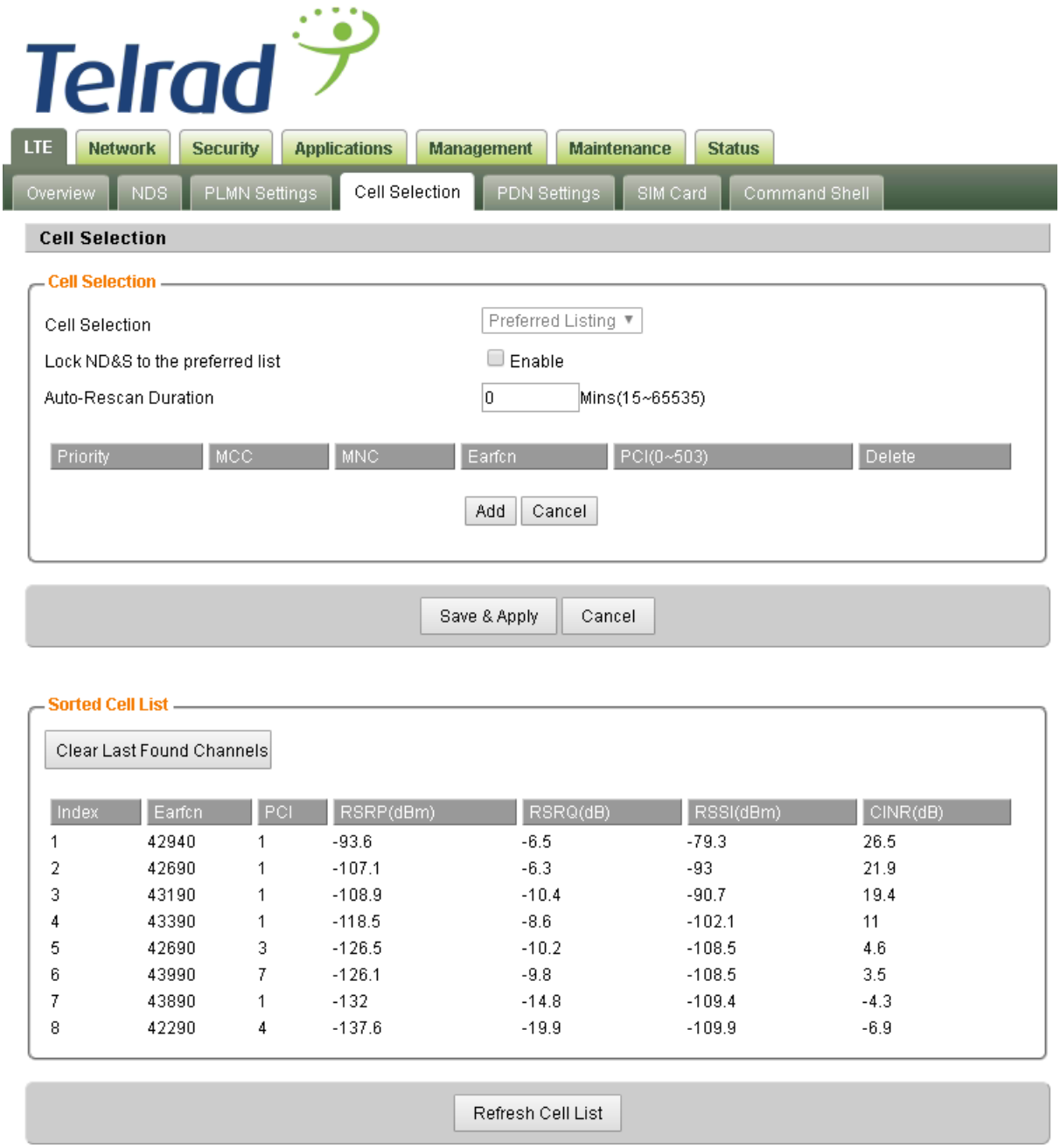
If the network mode is configured to be Nomadic in the ND&S menu, then you can add and configure the PLMN list to restrict the CPE to attach. The CPE will attach to network according to the PLMN priority assigned.



■ Cell Selection

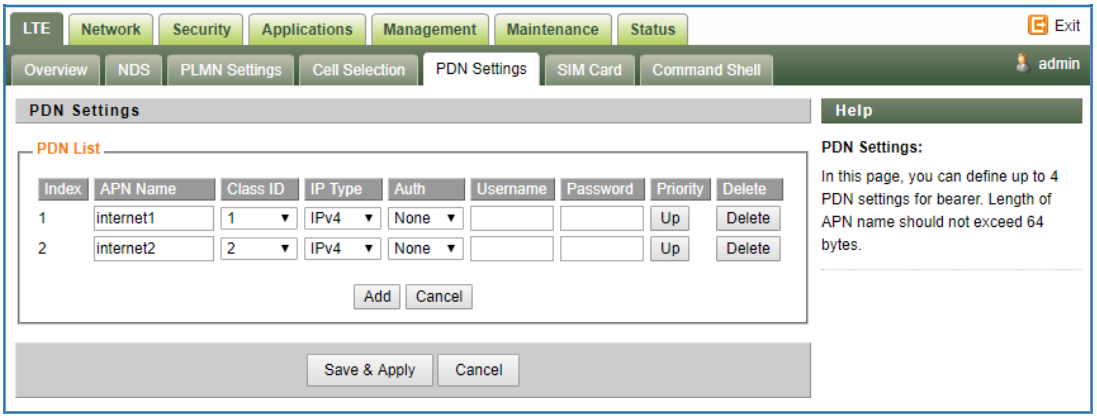
The cell selection menu is used to configure how CPE will select the best cell. User can configure the "Auto Select" mode to select cell based 3GPP standard. When configured with "preferred Listing", user can add up to 8 desired cell ID to the list and the CPE will attach to the appropriate cell after a full scan. If Lock ND&S to the preferred list is enabled, the CPE will not connect to any cell if they are in the list.

Note the Cell Selection and PLMN setting will work together when ND&S network mode is set to Nomadic.



■ PDN Setting

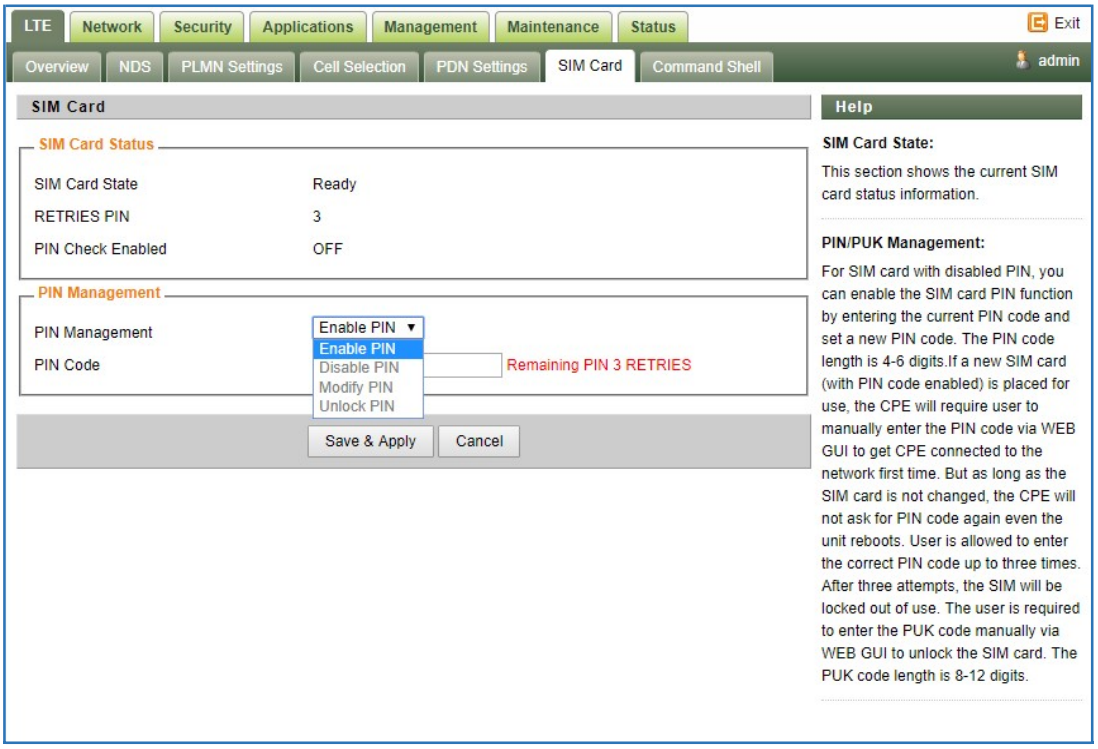
This menu is used to configure the operator APN profile. You can configure single or multiple APNs for the operator network. The below shows an example of two APN configuration.



You can view the APN status info in the Status menu.

■ SIM Card

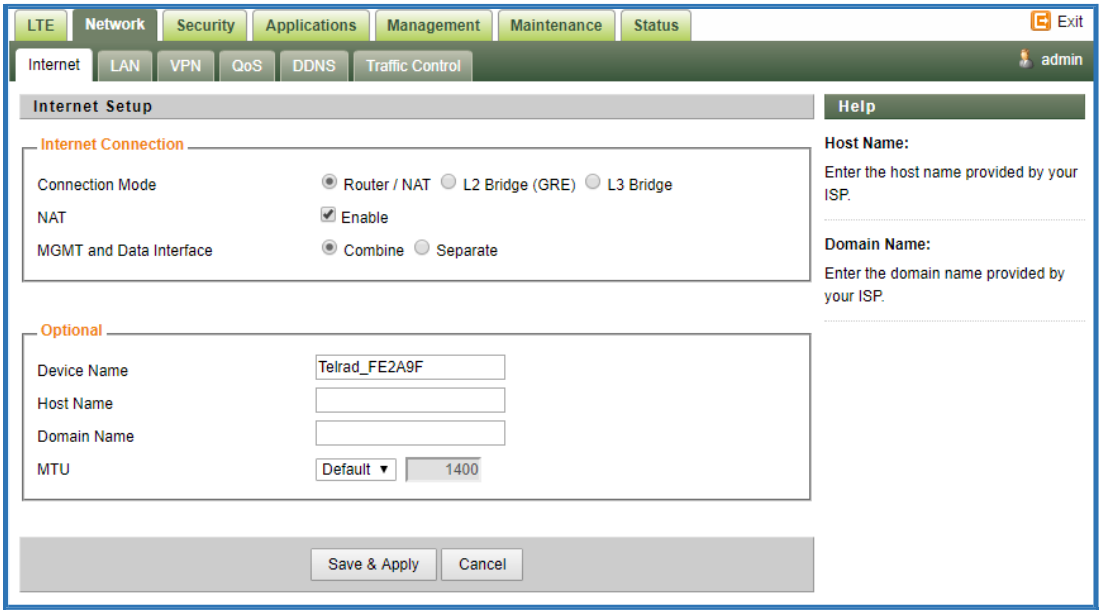
The SIM card menu is used to view the SIM card status and perform PIN code management for SIM card. You disable or enable the SIM card PIN check on the CPE to bind the SIM card inserted.



4 Network Configuration

■ Internet

This section allows user to configure the CPE operation mode, device name, MTU and etc. The CPE default Operation Mode is Router, and the LAN PC connected to device LAN port will obtain IP address via DHCP server of the device.



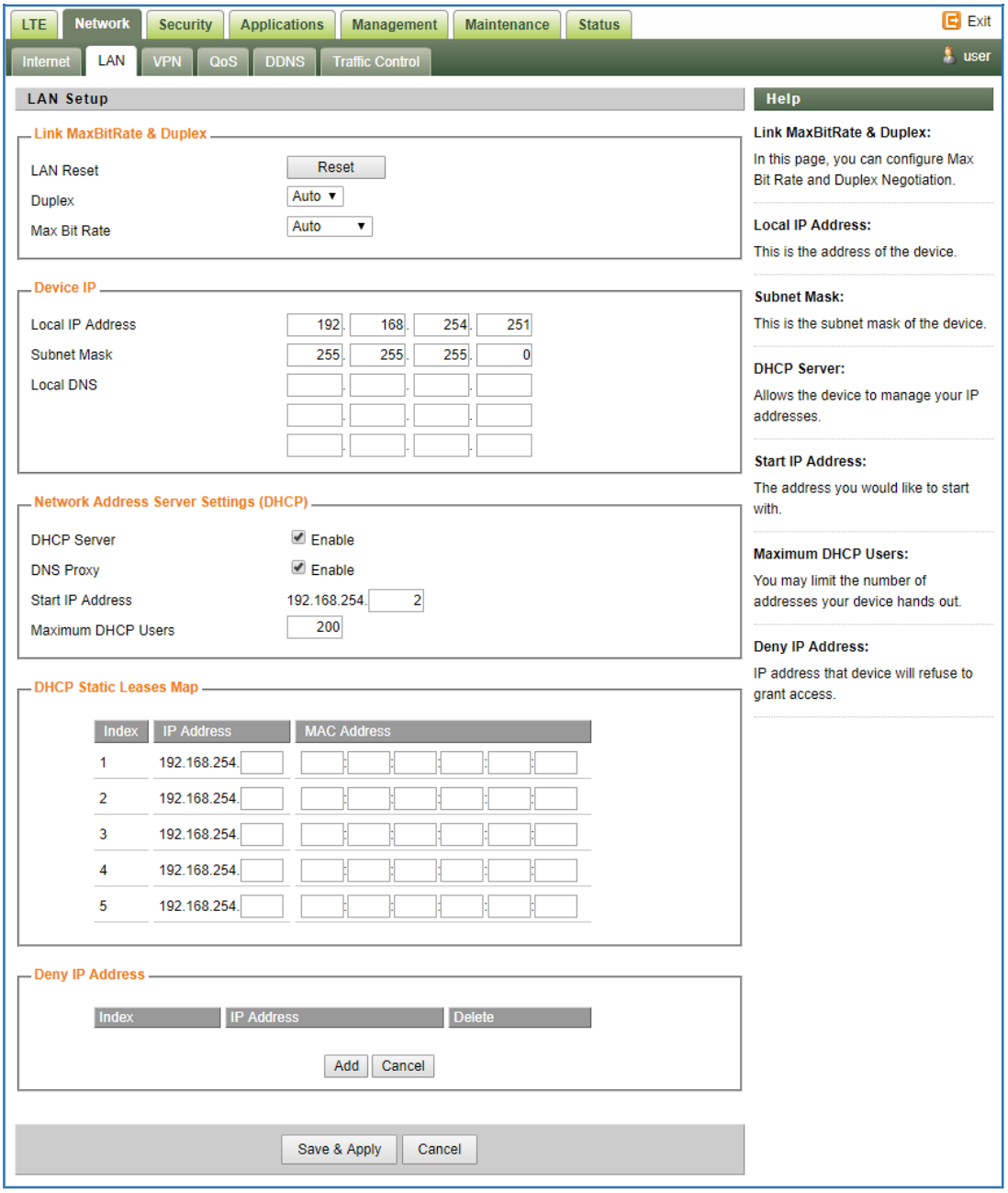
Note when setting the connection mode as L2 Bridge or L3 Bridge, there will be a warning window pops up. Remember the management IP address 192.168.254.251 and click the "ok" button.

When the user wants to manage the home page again, the PC should be configured a static IP address as 192.168.254.x manual in order to visit the CPE managing page http://192.168.254.251.

■ LAN Setting

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.



■ Router/ NAT mode

The following parameters should be configured (please, refer to the settings shown in the below screenshot):

Connection Mode – defines the CPE networking mode. Should be set to "Router/ NAT"

NAT Mode – enables/ disables NAT functionality. Should be checked.

MGMT and Data interface – enables Management and Data (router) functions to use the same ("combined") or different ("separate") WAN-side interfaces. When configured in "separate" mode, multiple PDNs (one for Management and one for Data) must be configured. The default

PDN is for Management and additional PDN is for data traffic. For "single PDN" mode, set this parameter to "combined".

Device Name, Host Name and Domain Name are optional parameters, used e.g. in DHCP. Recommended to leave the default values.

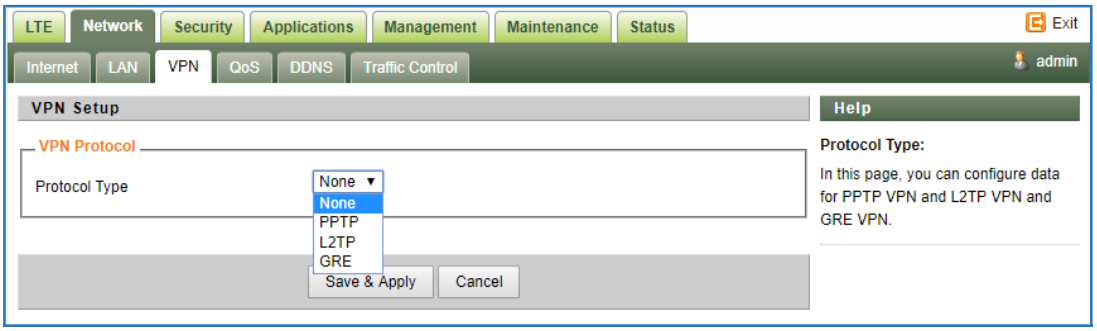
MTU – defines the Maximum Transmit Unit (maximum IP-level datagram size) before IP-layer fragmentation. 3GPP recommends use of 1400 bytes (default) to avoid packet drops and fragmentation on S1-U interface between eNB and EPC. Use the default value (1400).

IP Type – defines the IP stack of the CPE. The following values are available – IPv4, IPv6, IPv4v6 (dual stack). Set to IPv4.

■ VPN Setting Under Router Mode

This section allows user to configure VPN service for selected connection mode. In router mode (Layer 3 bridge) - PPTP, L2TP and GRE can be selected. Note: This mode is not supported and not recommended to be used. Alternatively, In L2 Bridge mode, L2 GRE can be configured as part of Telrad Layer 2 solution end-to-end solution.

The router mode VPN configuration is shown below.



■ L2 bridge mode

The following parameters should be configured (please, refer to the settings shown in the below screenshot):

Connection Mode – defines the CPE networking mode. Should be set to "L2 Bridge"

MGMT and Data interface – not relevant for the L2 bridge mode. Leave default value "combined".

MTU – defines the Maximum Transmit Unit (maximum IP-level datagram size) before IP-layer fragmentation. For L2 traffic, it should be changed to "Manual" with value "1600" (bytes). The actual supported L2 datagram maximum packet size will be 1576 bytes.

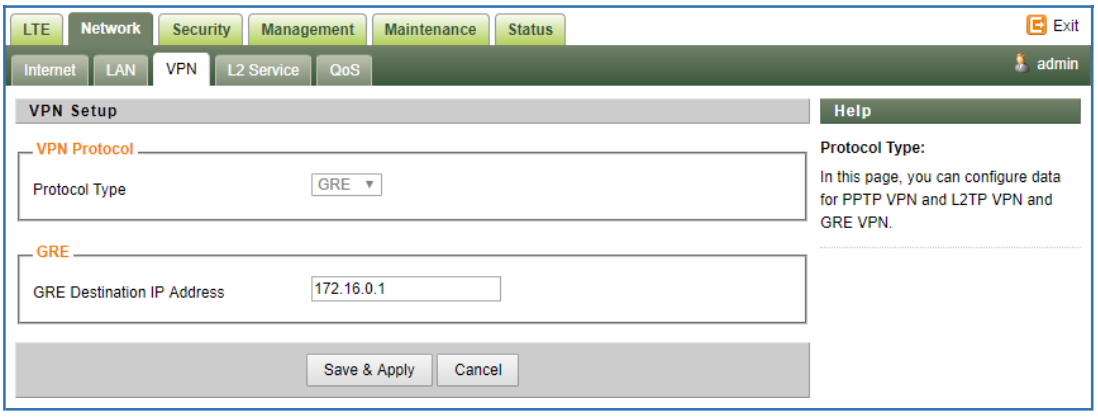
IP Type – defines the IP stack of the CPE. The following values are available – IPv4, IPv6, IPv4v6 (dual stack). Set to IPv4.

When setting the CPE into the "L2 bridge" mode, verify that TSDF flow endpoint is configured correctly – i.e. matching the BreezeWAY EPC virtual IP ("TSDF L2 end point IP Address" value).

This should be configured in Network/ VPN tab. Verify that "GRE Destination IP address" is matching the BreezeWAY EPC parameter "TSDF L2 end point IP Address" in Networking/ Virtual Network EPC menu.

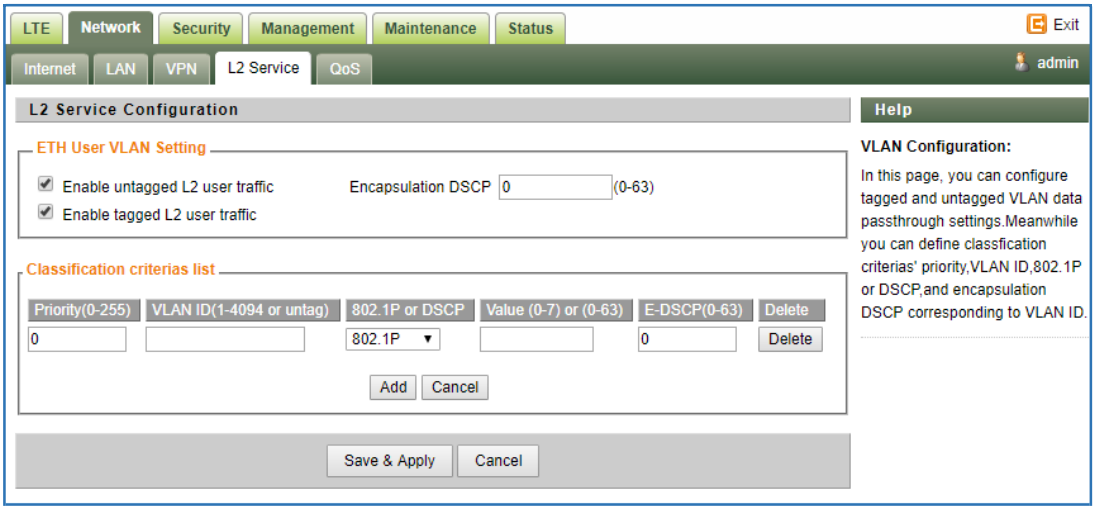
■ VPN Setting Under L2 Bridge Mode

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



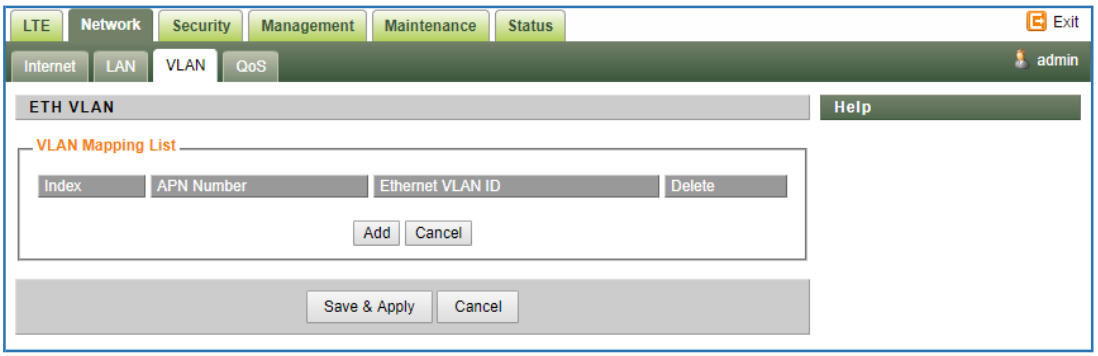
■ L2 Service Under L2 Bridge Mode

Under the L2 Bridge connection mode, the user can use L2 Service configuration to manage and tag 802.1p or DSCP for different VLAN packets.



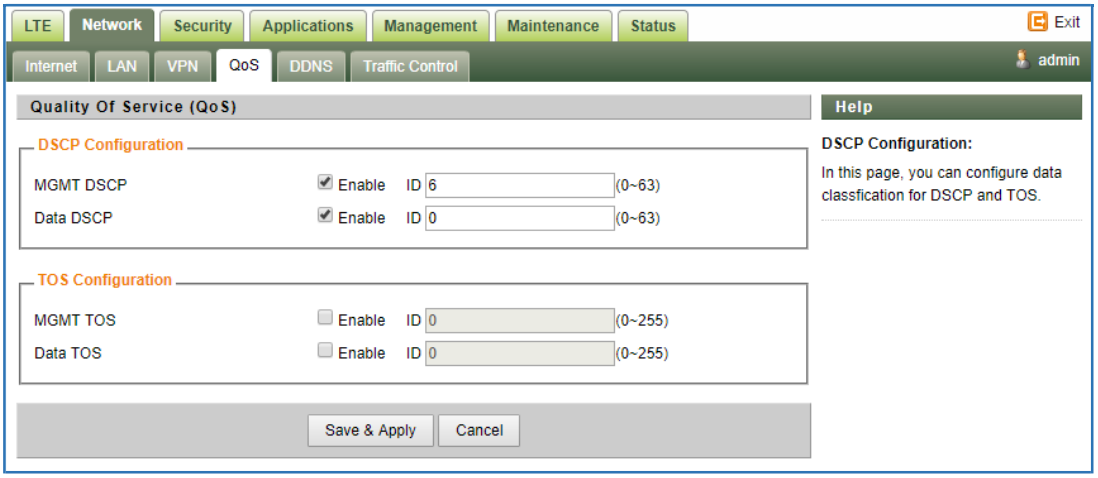
■ VLAN Setting Under L3 Bridge Mode

Under the L3 Bridge connection mode, the following VLAN setting can be configured. When multiple APNs are configured, different VLAN LAN packets can be forwarded to different APN.



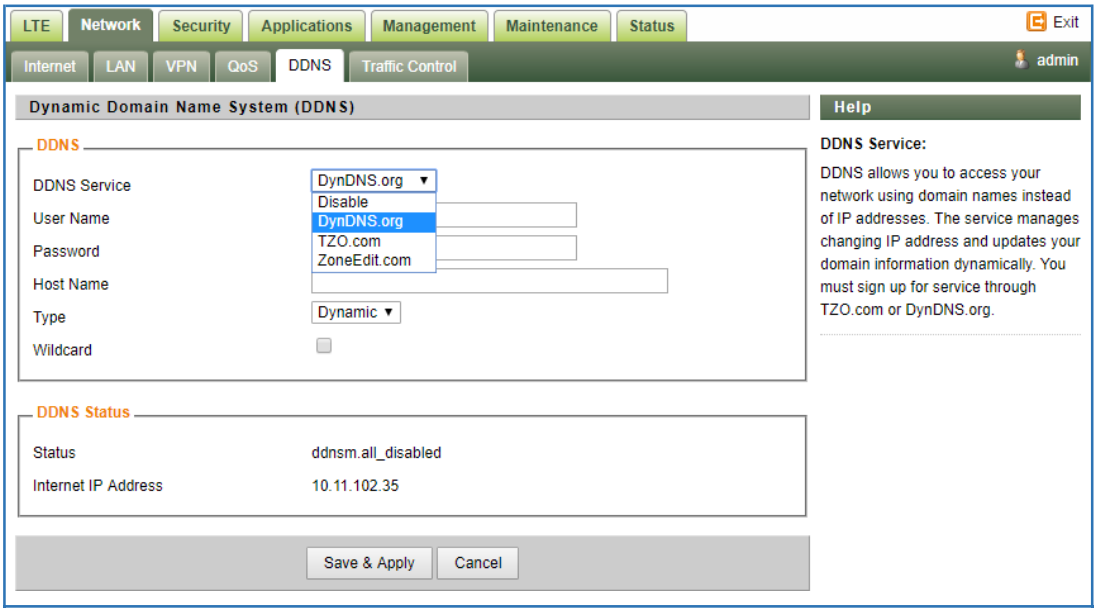
■ QoS Setting

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



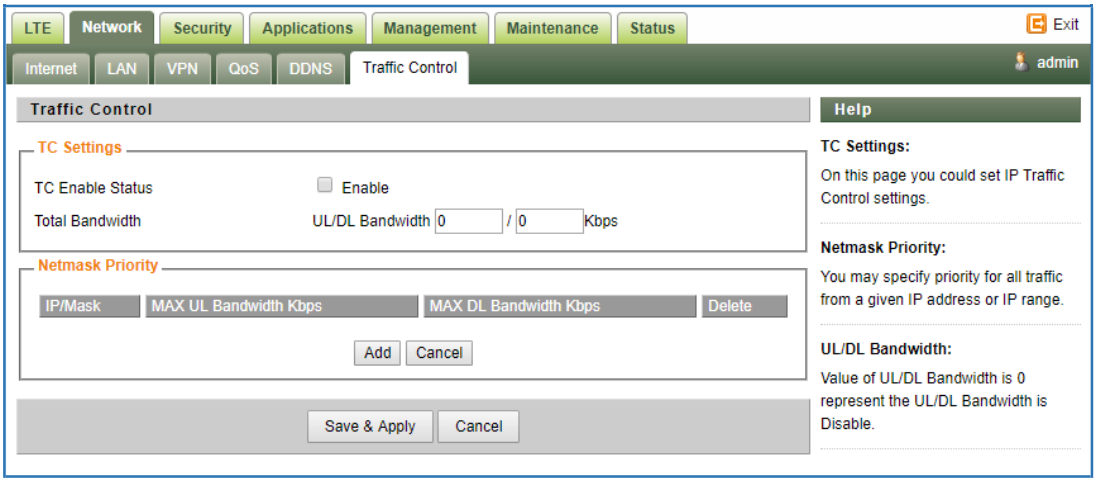
■ DDNS Setting Under Router Mode

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



■ Traffic Control Setting Under Router Mode

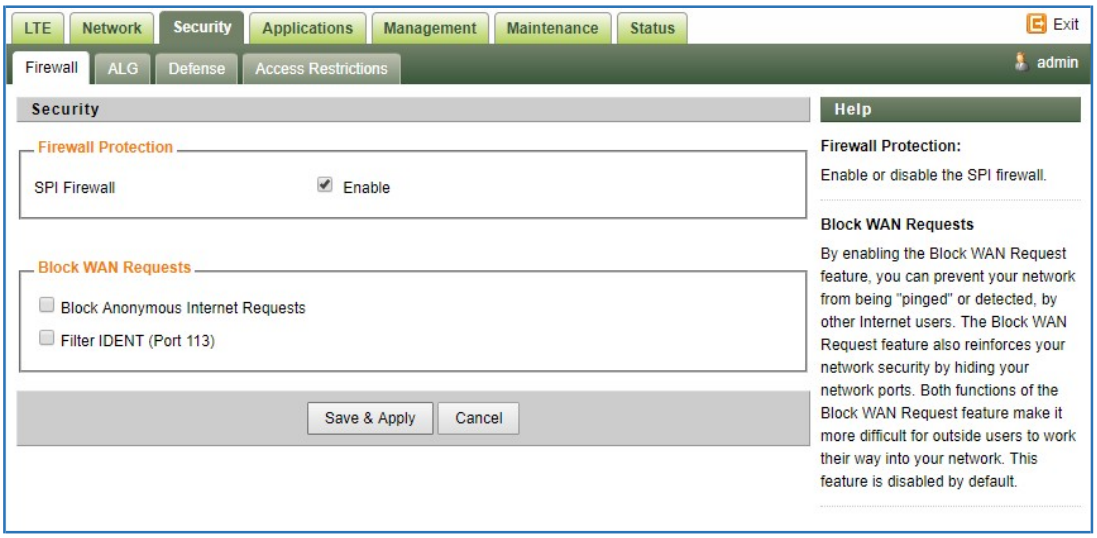
This configuration menu allows user to configure the data priority and allowed bandwidth for LAN data traffic.



5 Security Configuration

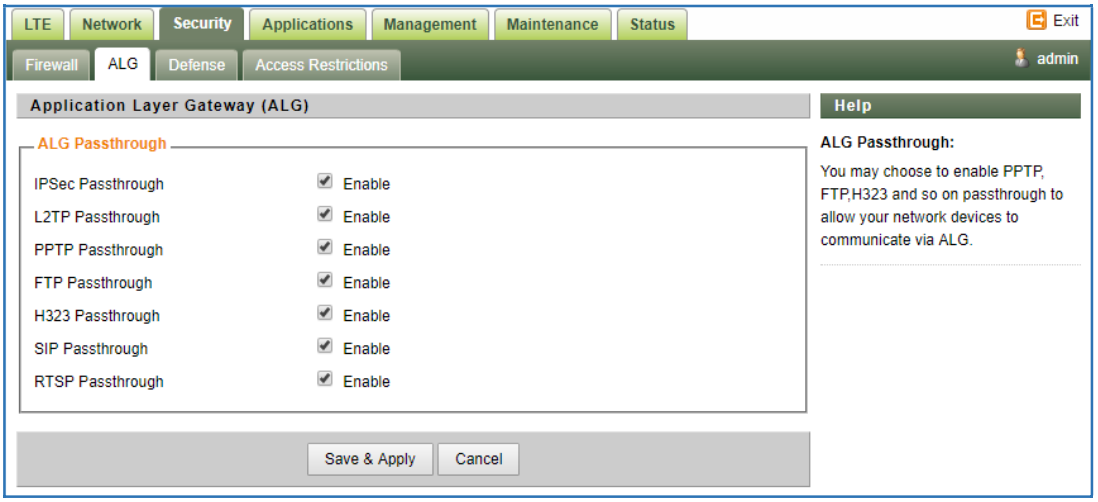
■ Firewall

This allows user to configure CPE firewall.



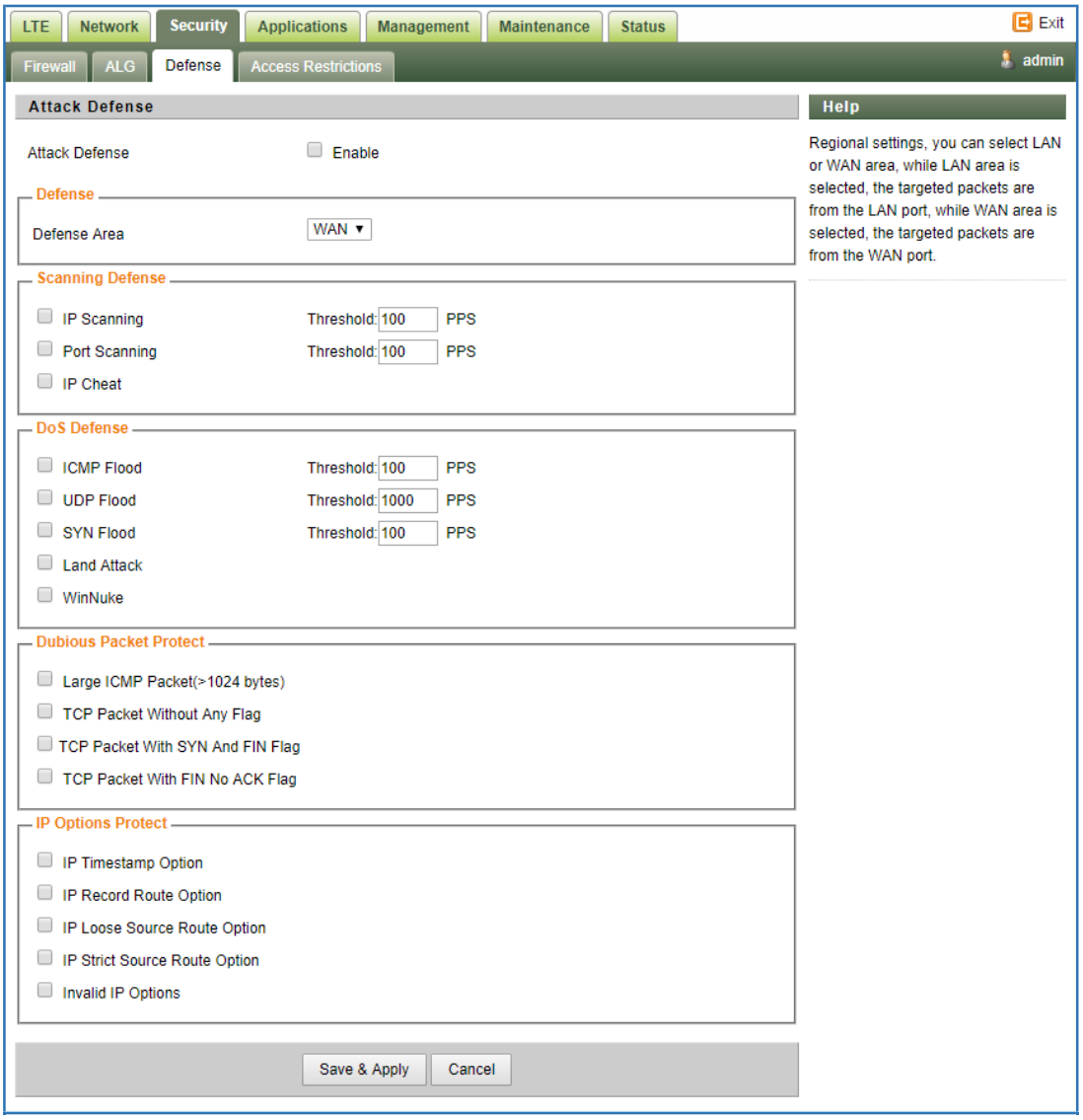
■ ALG

This allows user to configure the application level gateways for many common applications.



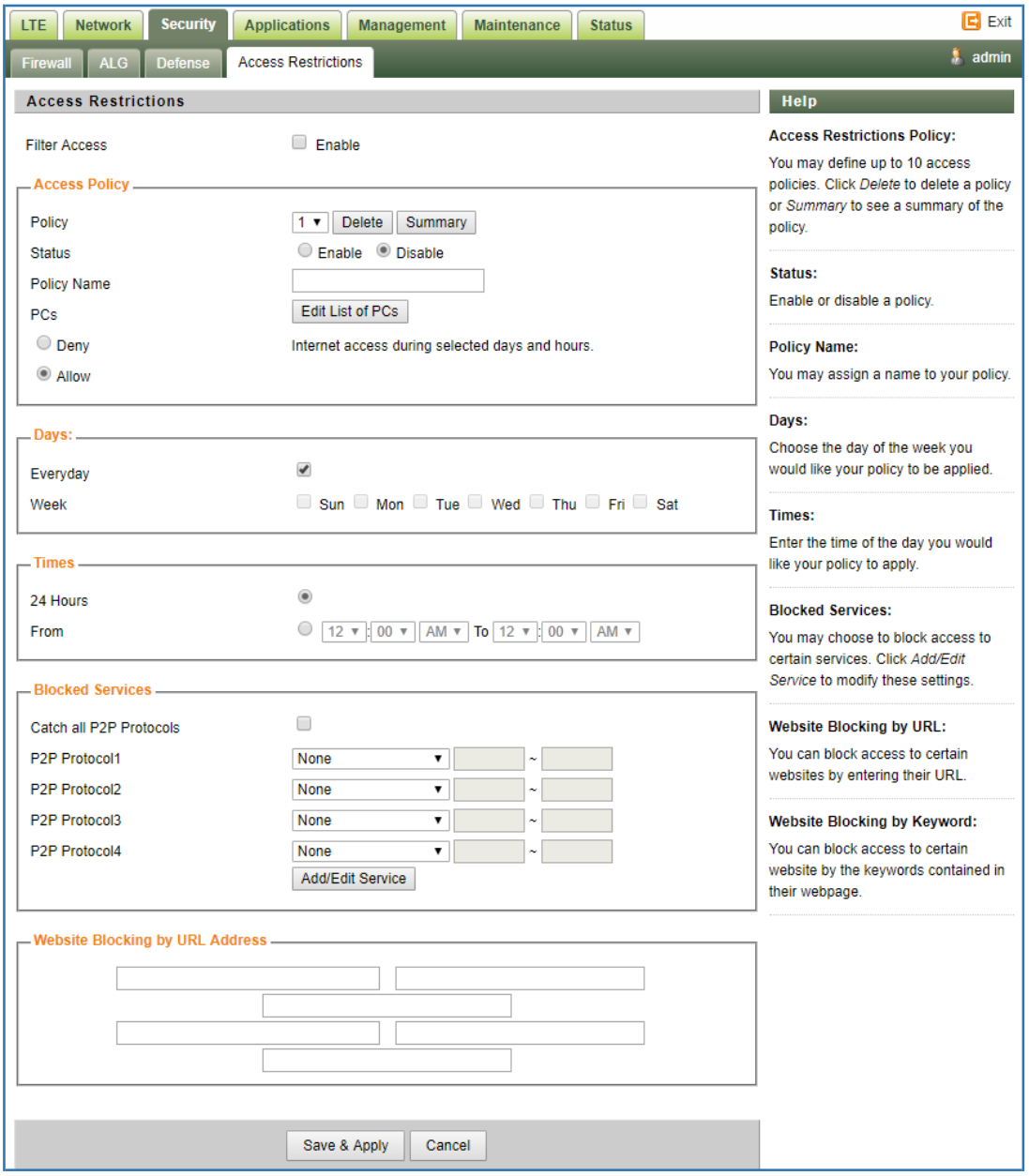
■ Defense

This allows user to configure defense policy for the LTE and local LAN interface to prevent hostile attack.



■ Access Restrictions

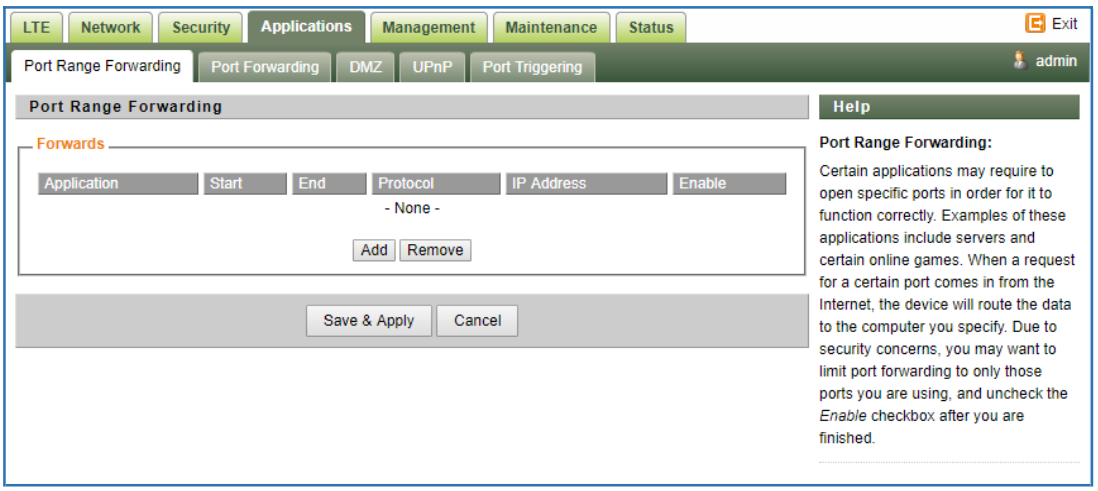
This allows user to define access policy for LAN devices. It can support URL blocking as well.


LTE
Network
Security
Applications
Management
Maintenance
Status
Exit
Firewall
ALG
Defense
Access Restrictions
admin
Access Restrictions
Filter Access
Enable
Access Policy
Policy
1
Delete
Summary
Status
Enable
Disable
Policy Name
PCs
Edit List of PCs
Deny
Allow
Internet access during selected days and hours.
Days:
Everyday
Week
Sun
Mon
Tue
Wed
Thu
Fri
Sat
Times
24 Hours
From
12
00
AM
To
Blocked Services
Catch all P2P Protocols
P2P Protocol1
P2P Protocol2
P2P Protocol3
P2P Protocol4
None
Add/Edit Service
Website Blocking by URL Address
Save & Apply
Cancel
Help
Access Restrictions Policy:
You may define up to 10 access policies. Click Delete to delete a policy or Summary to see a summary of the policy.
Status:
Enable or disable a policy.
Policy Name:
You may assign a name to your policy.
Days:
Choose the day of the week you would like your policy to be applied.
Times:
Enter the time of the day you would like your policy to apply.
Blocked Services:
You may choose to block access to certain services. Click Add/Edit Service to modify these settings.
Website Blocking by URL:
You can block access to certain websites by entering their URL.
Website Blocking by Keyword:
You can block access to certain website by the keywords contained in their webpage.

6 Applications Configuration

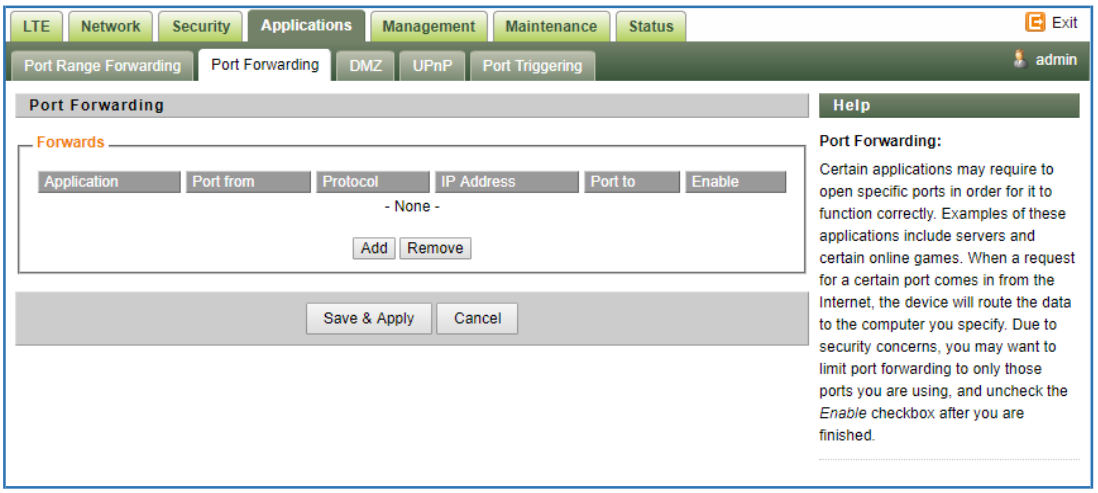
■ Port Range Forwarding

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



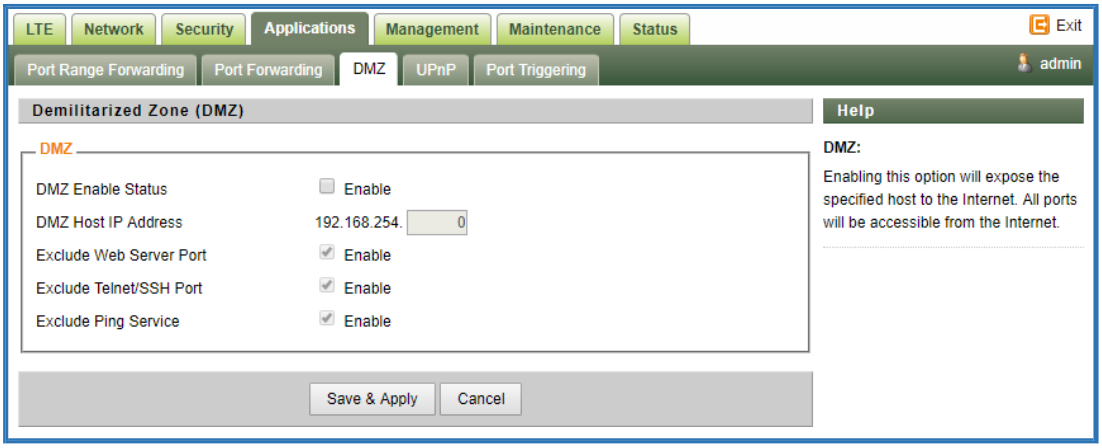
■ Port Forwarding

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



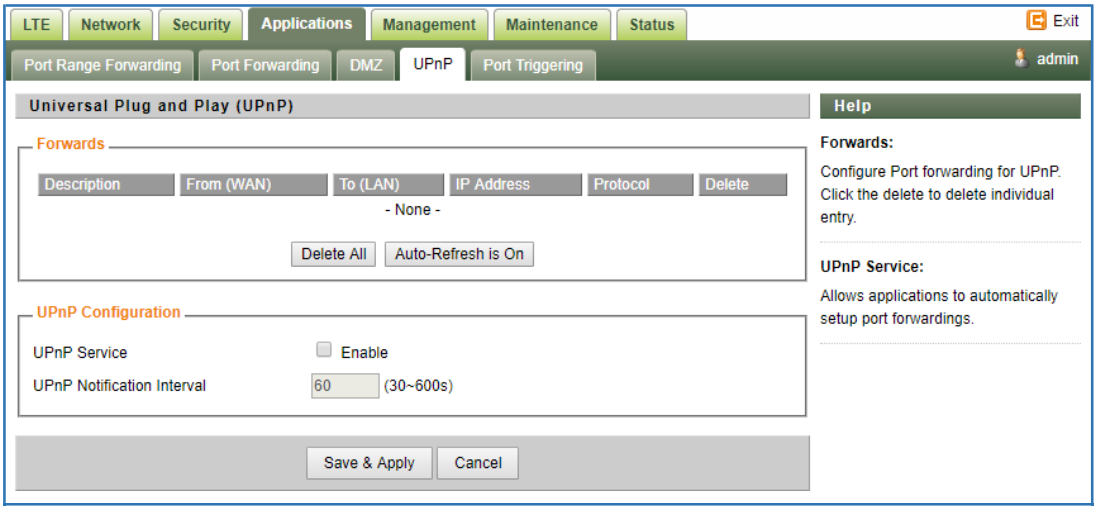
■ DMZ

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.



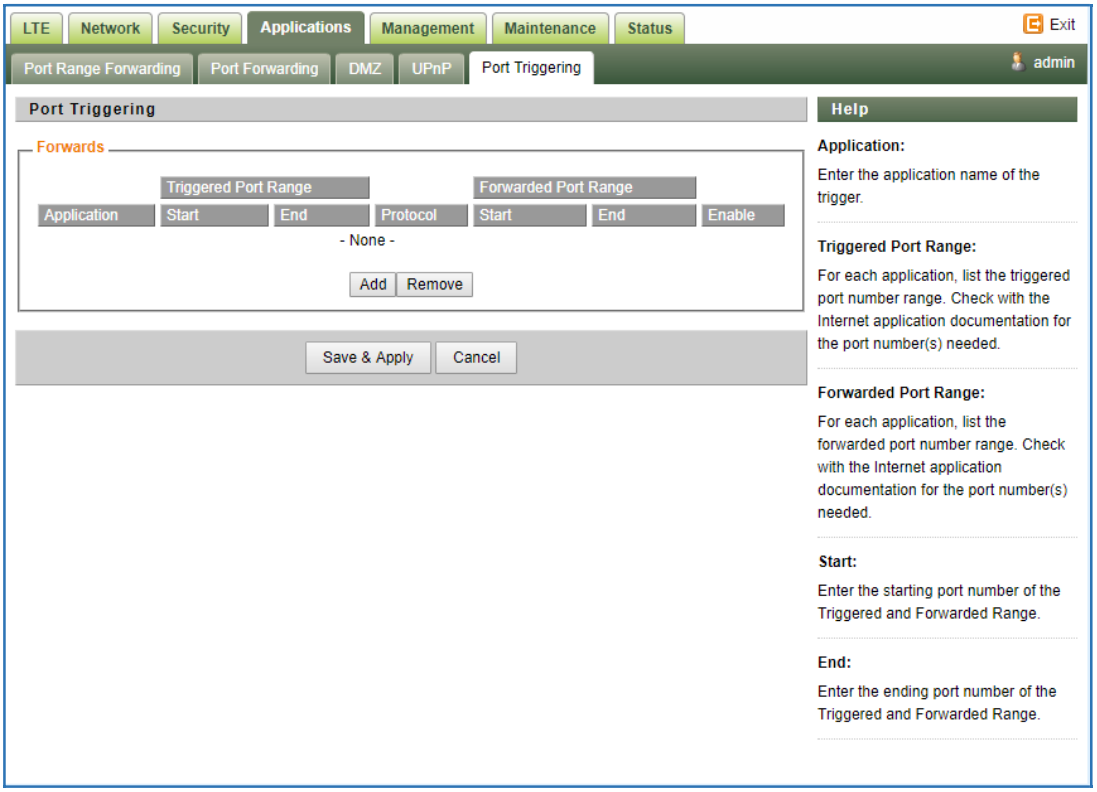
■ UPnP

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.



■ Port Triggering

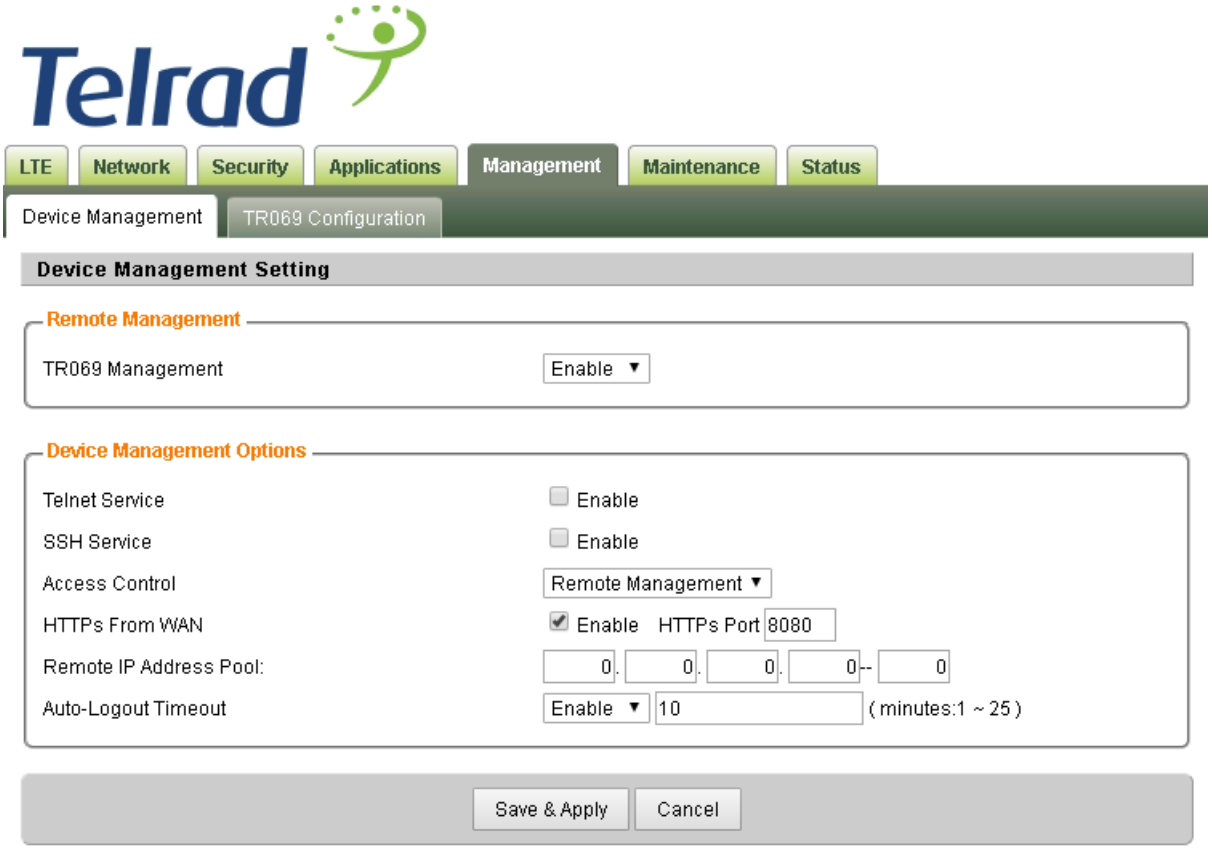
This menu allows user to configure forward certain port range to different port range for specific protocol.



7 Management

■ Device Management

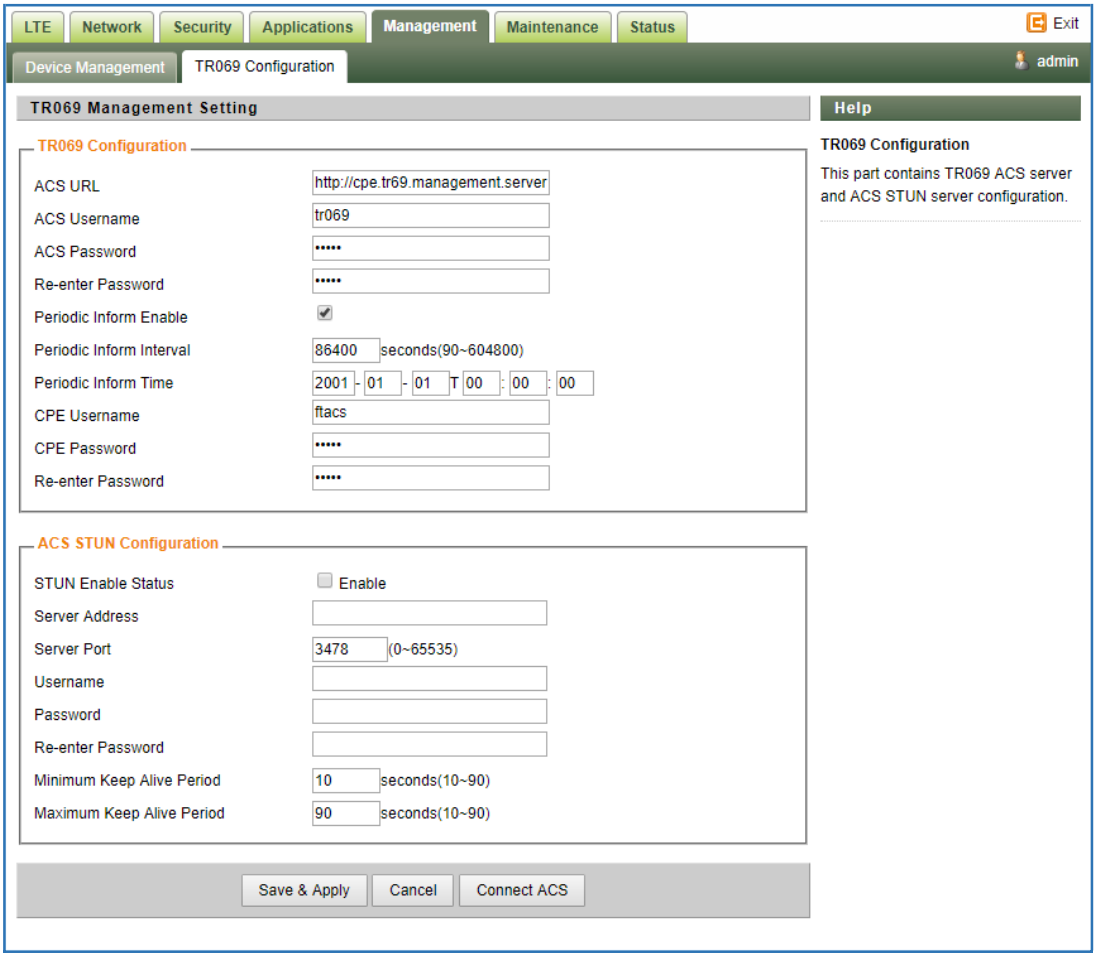
The menu allows user to configure device management mode and various control. Telnet, SSH for Telrad R&D, and HTTPs can be enabled or disabled via configuration. Auto WEB GUI logout can also be configured.



Note: Telnet is enabled only for development purposes, for normal deployment it shall be disabled.

■ TR069

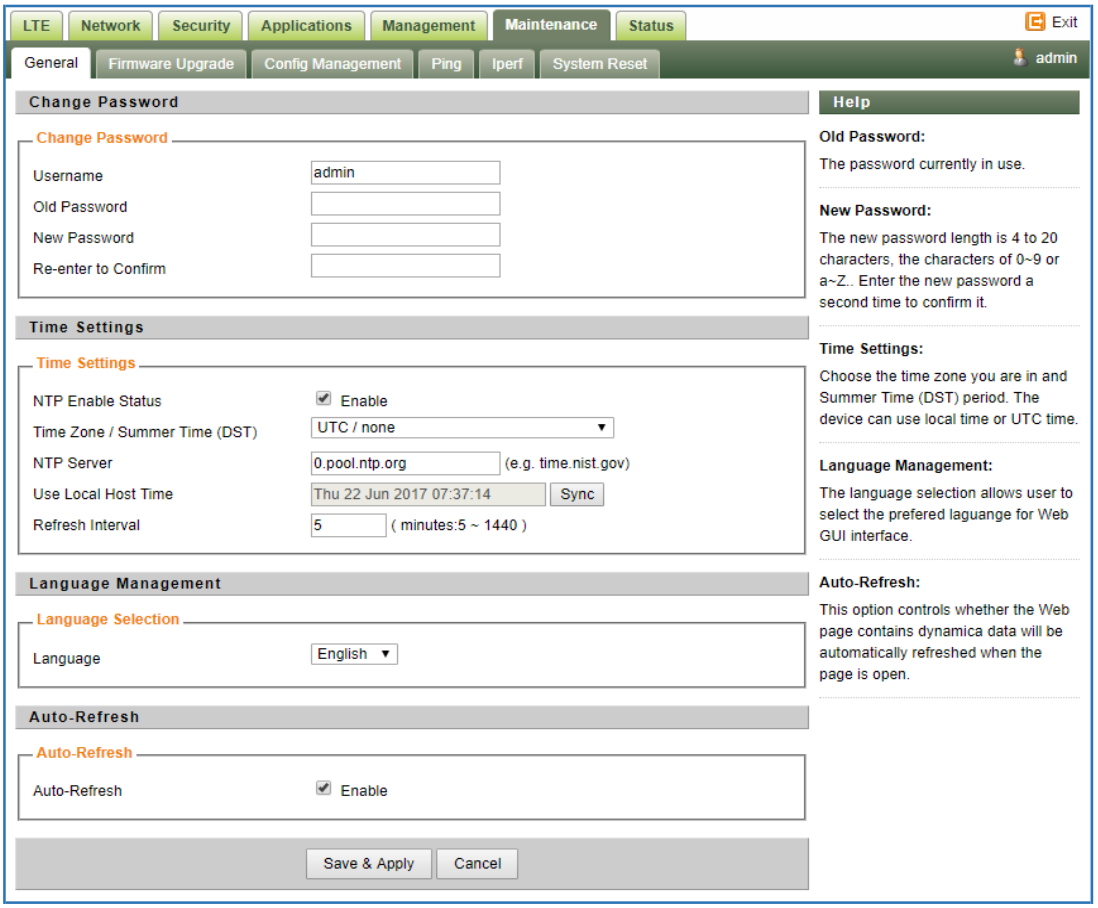
The menu allows user to configure the necessary setting for TR069 management of the CPE device.



8 Maintenance

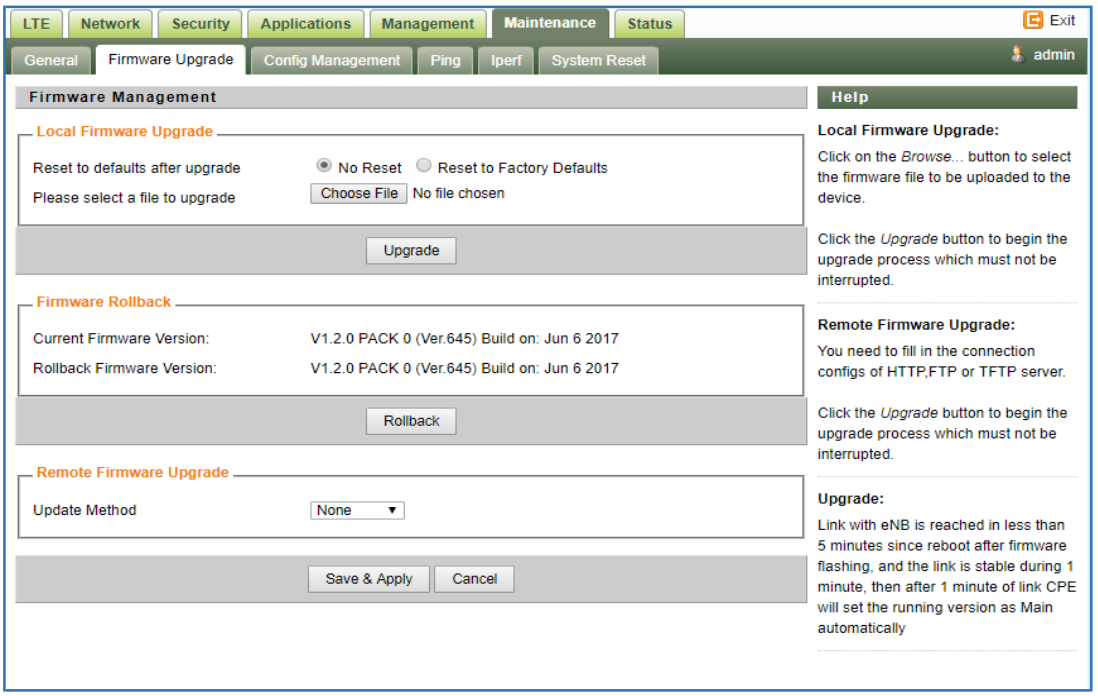
■ General

The menu allows user to configure the WEB GUI login password, time and language setting.



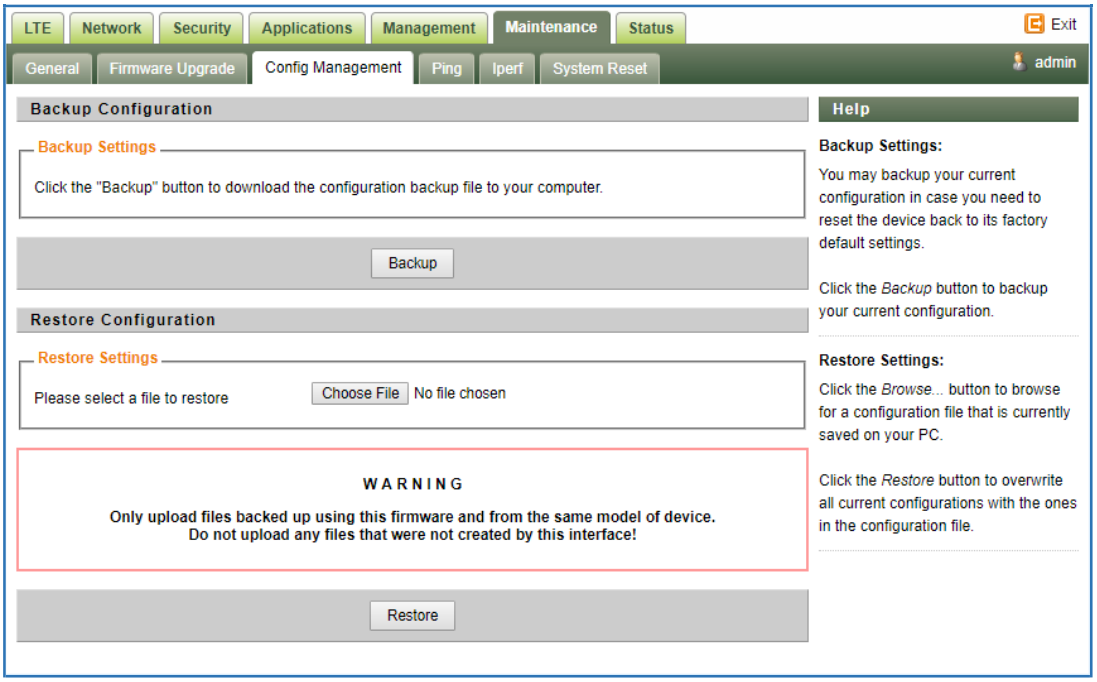
■ Firmware Upgrade

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.



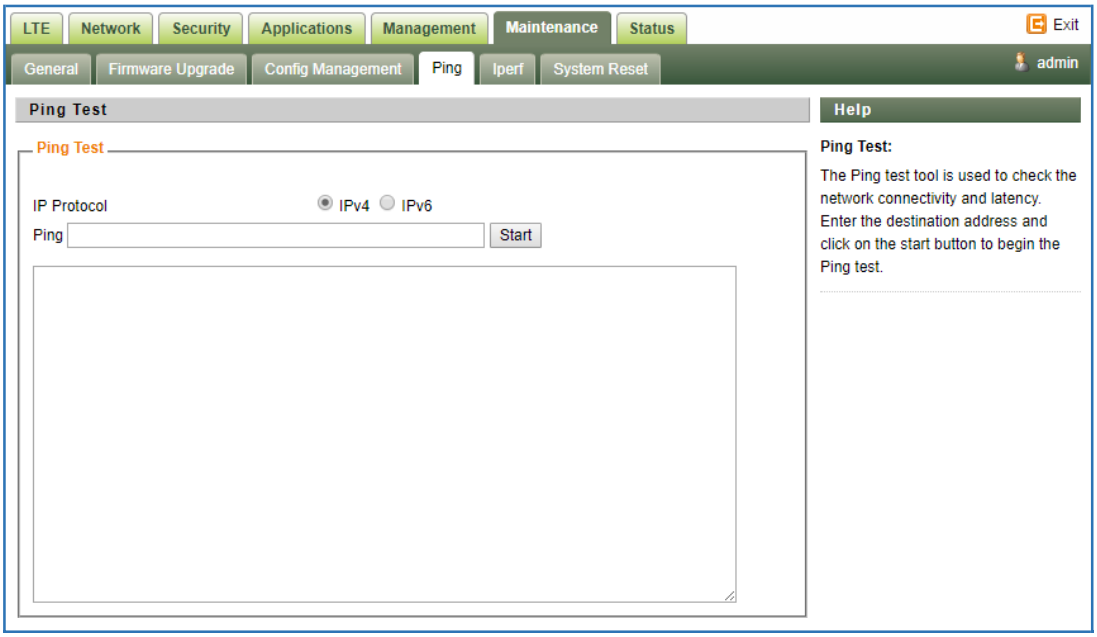
■ Config Management

This menu allows user to backup or restore device configuration file.



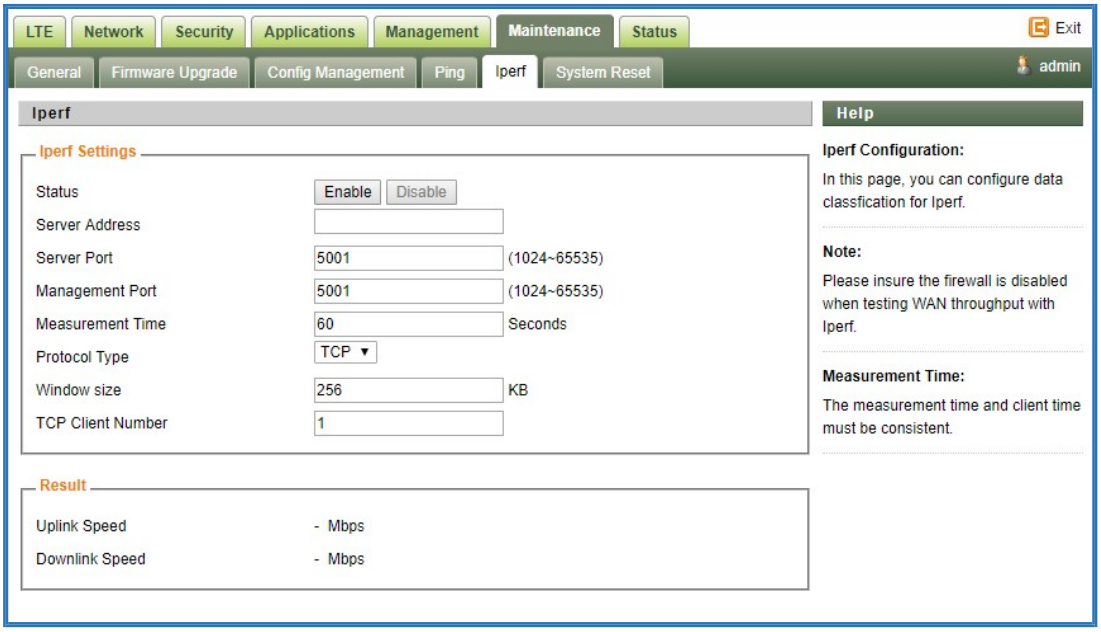
■ Ping

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



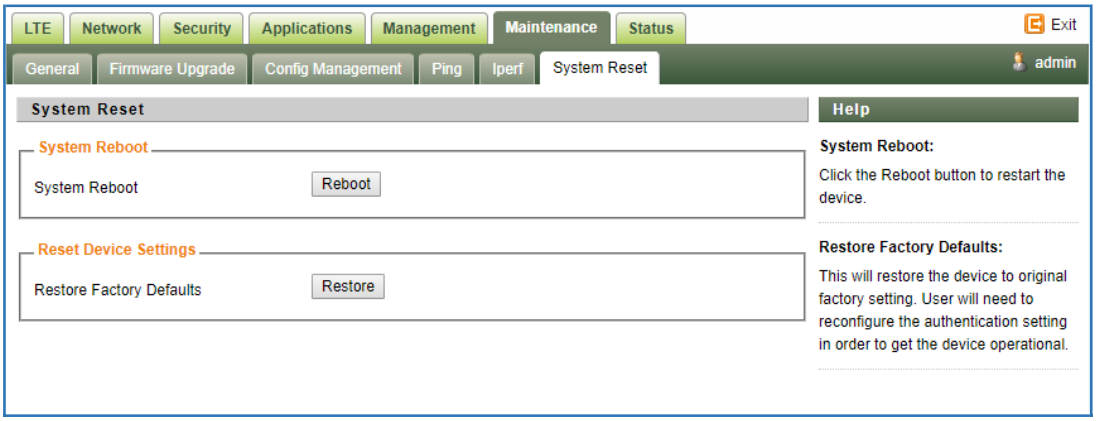
■ Iperf

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.



■ System Reset

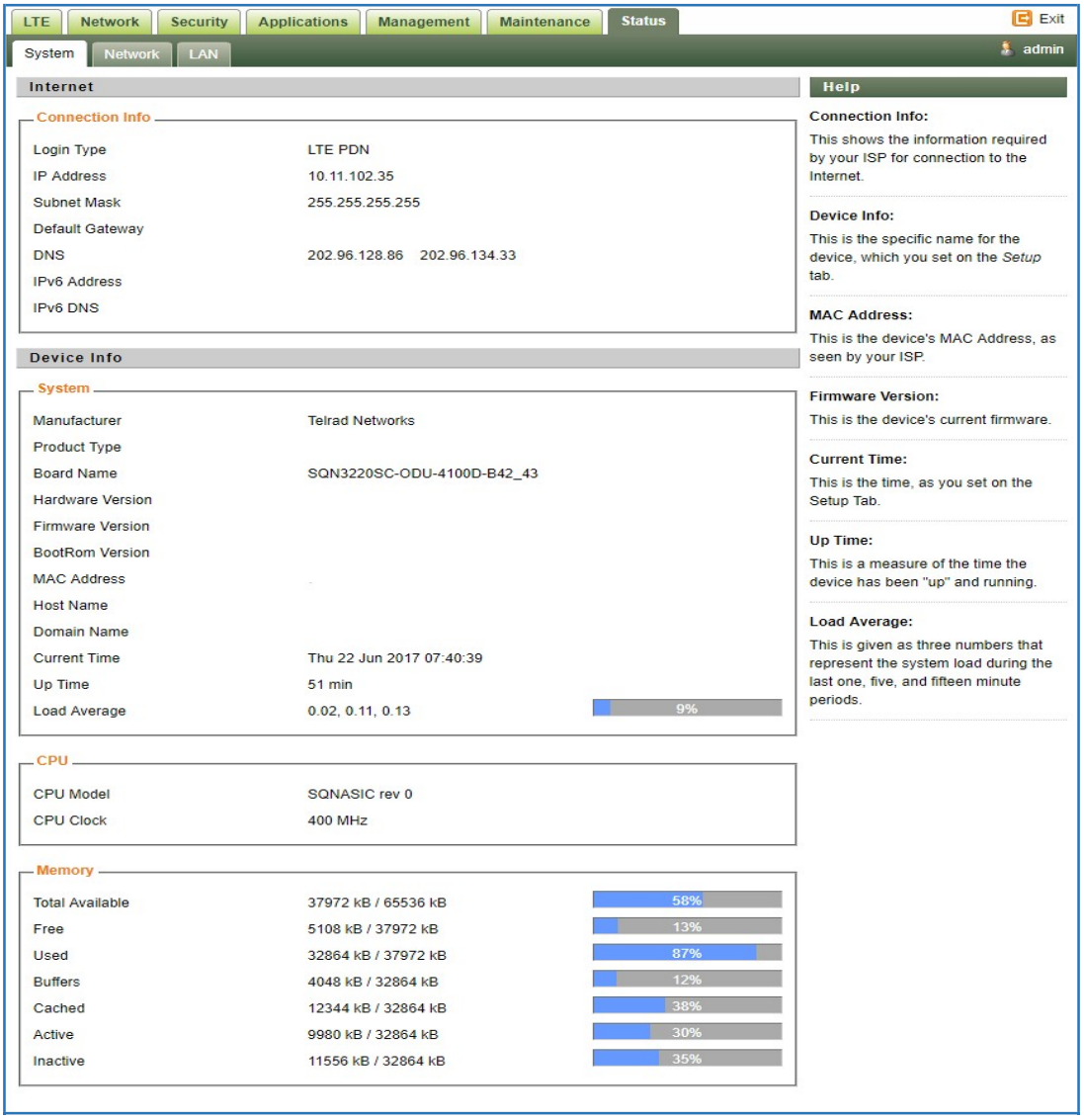
This menu allows user to reboot the device or restore the device to factory defaults. Special care needs to be taken when restoring factory defaults.



9 Status

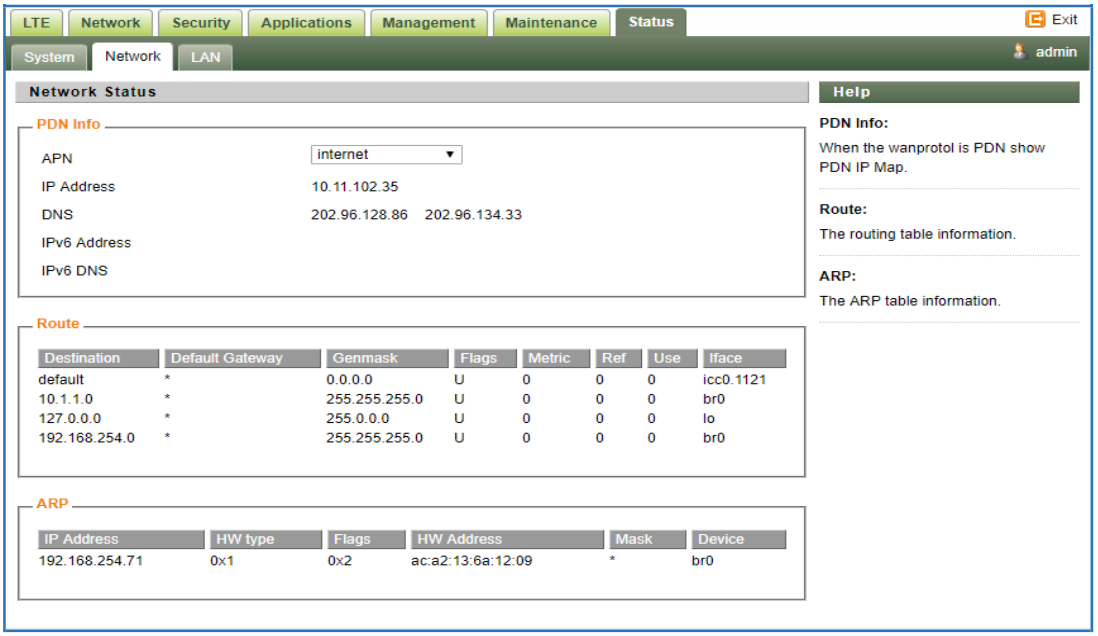
■ System

The menu shows the general system info of the CPE device. It includes connection, system, CPE and memory usage information.



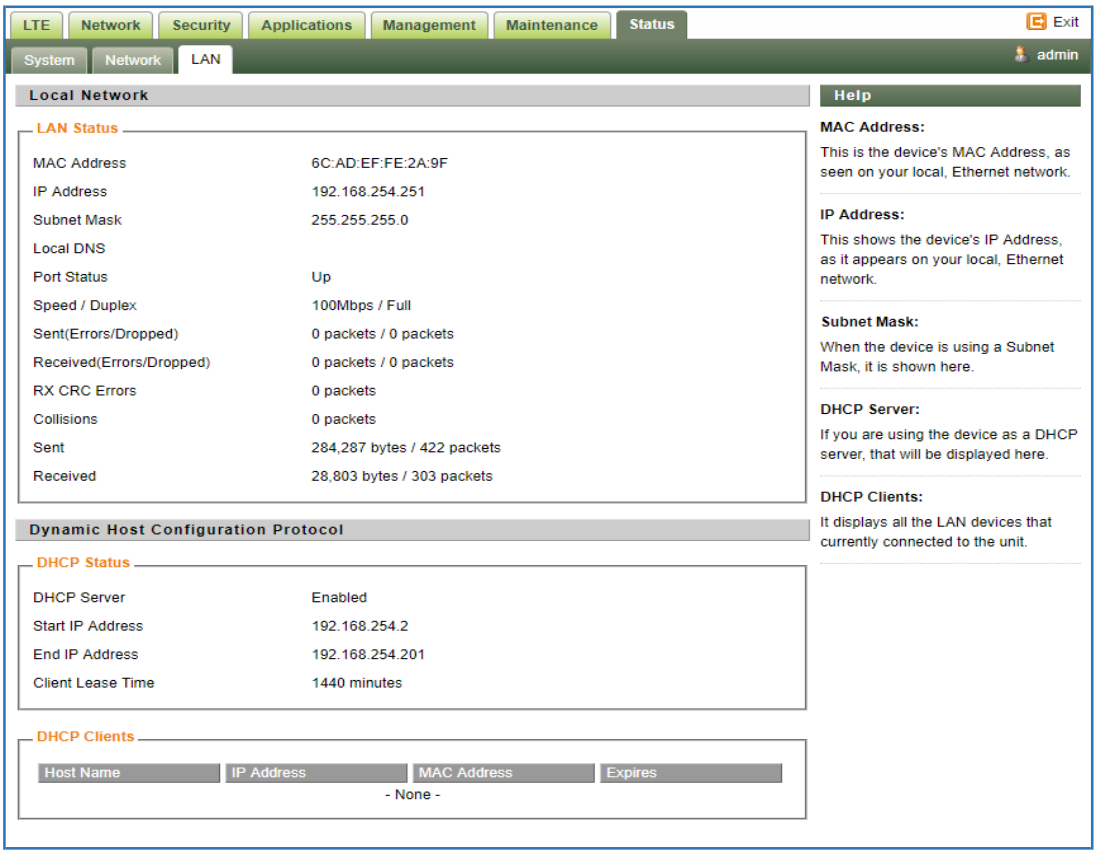
■ Network

The menu shows the general network status that includes PDN interface info, device routing info, and ARP table.



■ LAN

The menu shows the local LAN network status including the LAN interface and DHCP Server setting and current DHCP clients connected.



10 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 PoE power adapter 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 PoE adapter LED is off but the power cord is connected properly and there is AC supply, then it is likely the PoE adapter is damaged. Please contact distributor to obtain replacement part.

2) My PC cannot acquire IP from the CPE.

- First check if the PC NIC interface is up and working properly. Then check the PC NIC configuration. If the device is running in router mode, then make sure the PC DHCP is enabled. Open the MS-DOS or CMD window, enter "ipconfig /release" and "ipconfig /renew" commands and see if PC can obtain IP correctly.
- If the device is configured to operate in bridge mode, the PC NIC IP should be manually configured to be 192.168.254.10 / 255.255.255.0 in order to gain access to the device WEB GUI. When you are done with the device configuration, the PC NIC IP should be reconfigured to use DHCP for proper LTE networking.
- If the problem persists, please contact the operator or distributor for further diagnose.

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 the "Telrad4G" administrator 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 diagnose.

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

- Please look up the IMEI number in the CPE unit label. The unit can be reset to factory default setting by entering the IMEI number in the WEB login window.
- After the unit is reset to factory default, you can login using the default password.