



LTE Outdoor CPE8100/8101



January 2018

**System
Manual**

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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 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).

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	9
■	CPE 8100\CPE 8101 – COMMON LTE FEATURES.....	9
■	CPE 8100 PRODUCT HIGHLIGHTS.....	10
■	CPE 8100 ELECTRICAL /PHYSICAL SPECIFICATIONS	10
■	CPE8100 PoE ADAPTER SPECIFICATION.....	10
■	CPE 8101 PRODUCT HIGHLIGHTS.....	11
■	CPE 8101 ELECTRICAL /PHYSICAL SPECIFICATIONS	11
■	CPE8101 PoE ADAPTER SPECIFICATION.....	11
2.	GETTING STARTED – CPE8100.....	12
■	DEVICE LOGIC CONNECTION	12
■	INSTALLING OUTDOOR UNIT (ODU) – POLE MOUNT	13
■	INSTALLING OUTDOOR UNIT (ODU) – WALL MOUNT.....	14
■	HEADER CONNECTION.....	14
■	GROUNDING	14
■	LED DISPLAY	16
■	RF SIGNAL ADJUSTMENT	16
3.	GETTING STARTED – CPE8101	17
■	DEVICE LOGIC CONNECTION	17
■	INSTALLING OUTDOOR UNIT (ODU) – CLAMP	18
■	HEADER CONNECTION.....	18
■	LED DISPLAY.....	19
■	RF SIGNAL ADJUSTMENT	19
2	MANAGING CPE DEVICE.....	21
■	WEB LOGIN	21
3	LTE CONFIGURATION	21
■	OVERVIEW	21
■	ND&S CONFIGURATION.....	23
■	PLMN SELECTION	23
■	CELL SELECTION.....	24
■	PDN SETTING	25
■	SIM CARD	26
4	NETWORK CONFIGURATION	26
■	INTERNET.....	26
■	LAN SETTING.....	27
■	ROUTER/ NAT MODE.....	28
■	VPN SETTING UNDER ROUTER MODE	29
■	L2 BRIDGE MODE.....	29

■	VPN SETTING UNDER L2 BRIDGE MODE	30
■	L2 SERVICE UNDER L2 BRIDGE MODE	30
■	VLAN SETTING UNDER L3 BRIDGE MODE	31
■	QoS SETTING.....	31
■	DDNS SETTING UNDER ROUTER MODE	32
■	TRAFFIC CONTROL SETTING UNDER ROUTER MODE	32
5	SECURITY CONFIGURATION.....	33
■	FIREWALL	33
■	ALG	33
■	DEFENSE.....	34
■	ACCESS RESTRICTIONS.....	35
6	APPLICATIONS CONFIGURATION	37
■	PORT RANGE FORWARDING	37
■	PORT FORWARDING	37
■	DMZ	37
■	UPnP	38
■	PORT TRIGGERING	38
7	MANAGEMENT	39
■	DEVICE MANAGEMENT.....	39
■	TR069	40
8	MAINTENANCE.....	41
■	GENERAL	41
■	FIRMWARE UPGRADE.....	42
■	CONFIG MANAGEMENT	43
■	PING.....	43
■	IPERF.....	43
■	SYSTEM RESET	44
9	STATUS	44
■	SYSTEM.....	44
■	NETWORK	45
■	LAN.....	46
10	FAQ AND TROUBLESHOOTING	47

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°C ~ 55°C
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°C
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

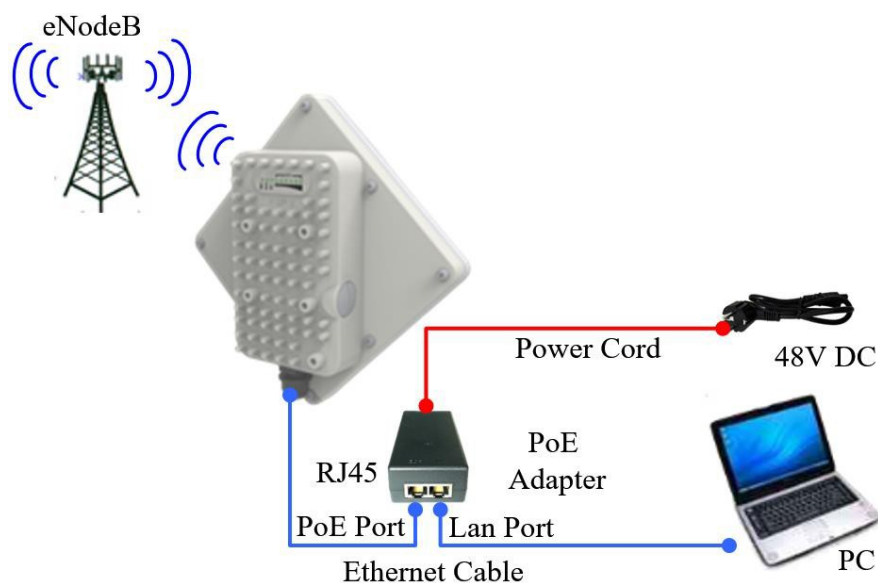
■ Device Logic connection

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

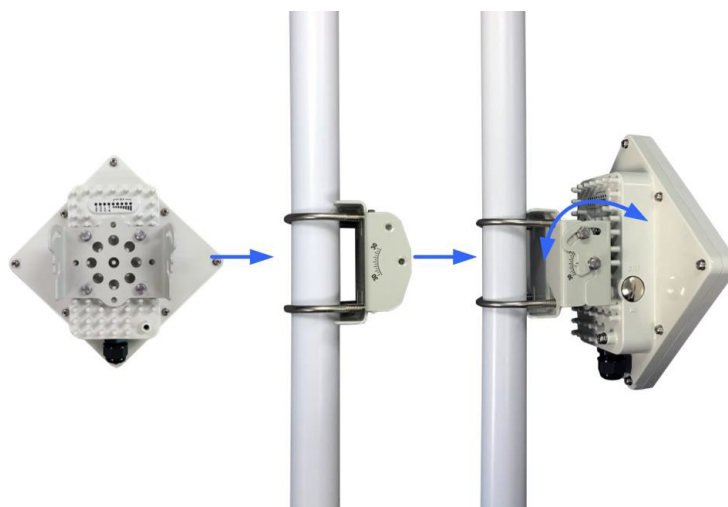
condition. The CPE should be properly grounded for proper protection against lightning or power surge.

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.

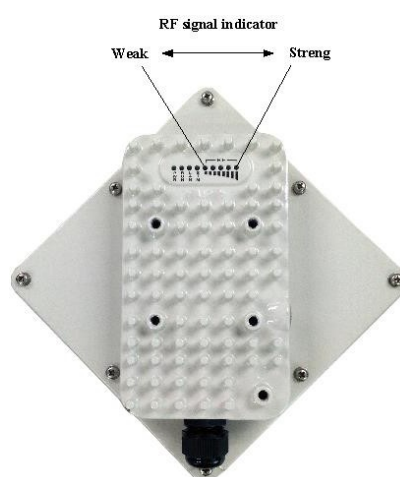
■ LED Display

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: $-115\text{dBm} < \text{RSRP}$ 2nd Green LED: $-115\text{dBm} \leq \text{RSRP} < -105\text{dBm}$ 3rd Green LED: $-105\text{dBm} \leq \text{RSRP} < -95\text{dBm}$ 4th Green LED: $-95\text{dBm} \leq \text{RSRP} < -85\text{dBm}$ 5th Green LED: $-85 \leq \text{RSRP}$

■ 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

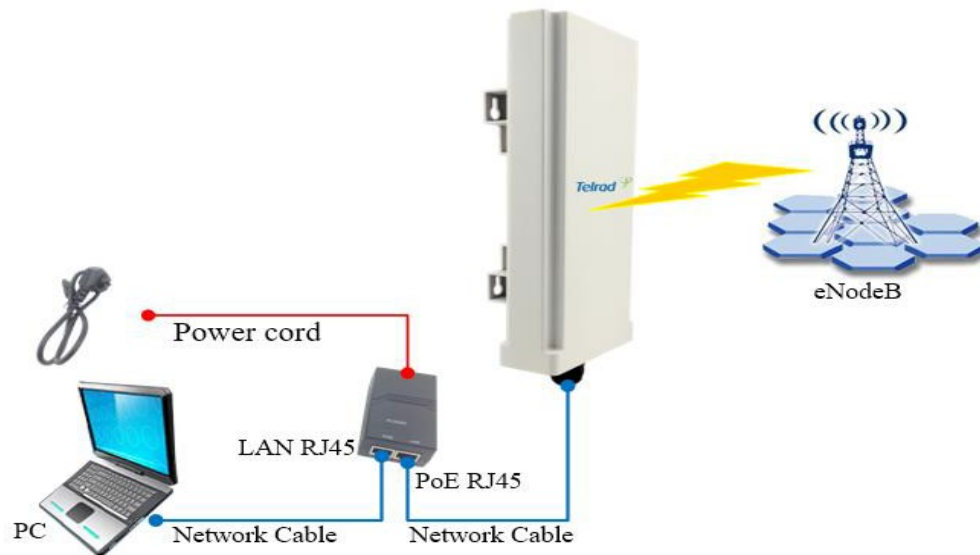
■ Device Logic connection

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 lightning or power surge.

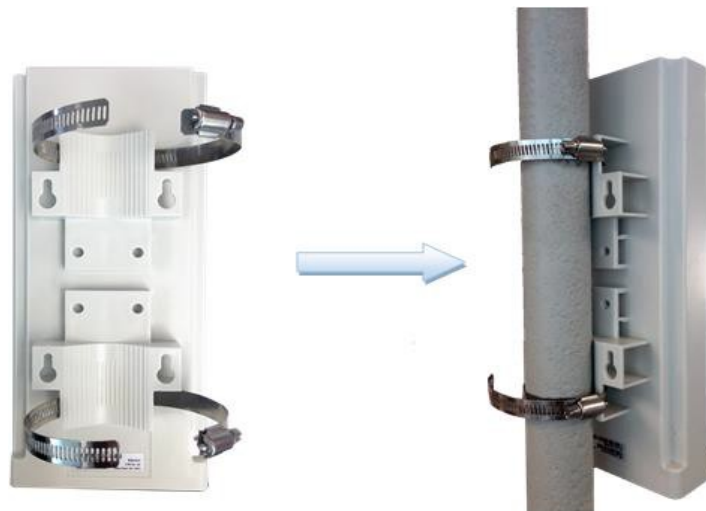
To power on the device, the outdoor CPE must use a 24V PoE integrated DC power supply adapter. The power adapters can operate in 100-240V AC range and therefore can be used in different country. Once the device is powered up, the user should wait for about 2 minutes before the device becomes operational.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

the system has completed the startup procedure.

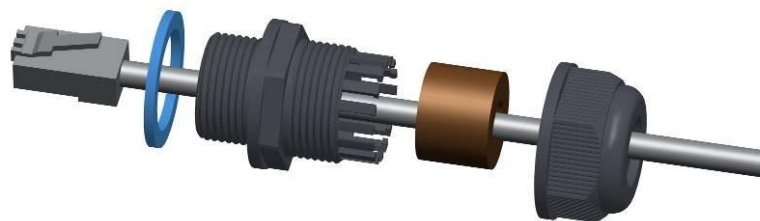
To connect PC, LAN switch or other type of IP device to the CPE product, the user should use standard CAT5 Ethernet cable and connect to the appropriate LAN port. Once connected, the ETH LED indicator should come on.



■ 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.

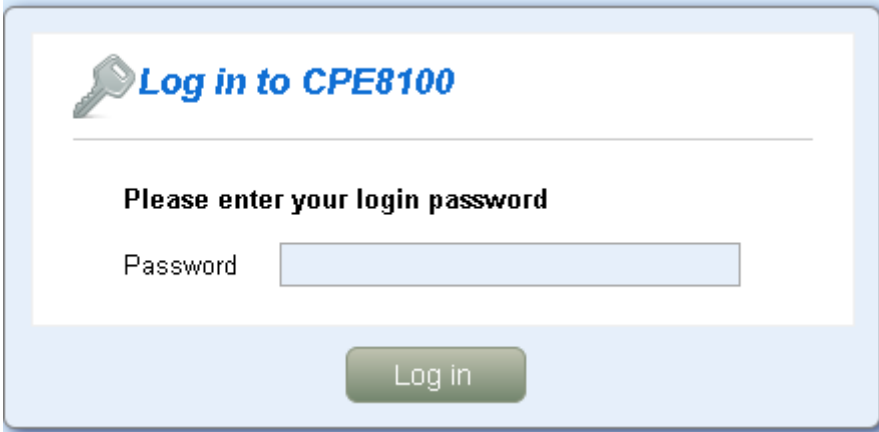


2 Managing CPE Device

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.

The image shows a web browser window with a light blue border. At the top left, there is a key icon and the text "Log in to CPE8100" in blue. Below this, a horizontal line separates the header from the main content. The main content area has a white background and contains the text "Please enter your login password" in bold. Below this text is a label "Password" followed by a text input field. At the bottom of the window, there is a green button with the text "Log in" in white.

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.

LTE Information

System Information

Manufacturer	Telrad
Model Name	CPE8100
Chip Model	SGN32X0
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.

The screenshot shows the Telrad web interface for ND&S Configuration. The top navigation bar includes tabs for LTE, Network, Security, Applications, Management, Maintenance, and Status. Below this is a sub-navigation bar with tabs for Overview, NDS, PLMN Settings, Cell Selection, PDN Settings, SIM Card, and Command Shell. The main content area is titled "Network Discovery and Selection" and contains three sections: "4G Radio Setting", "Network Setting", and "Discrete Band Setting".

4G Radio Setting

4G Radio ☒ ON ☐ OFF

Uplink QAM64 ☒ Enable

Network Setting

Network Mode

Force EPS Attach ☒ Enable

Discrete Band Setting

Band ID	Frequency	Earfcn	Delete
---------	-----------	--------	--------

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.



LTE

Network

Security

Applications

Management

Maintenance

Status

Overview

NDS

PLMN Settings

Cell Selection

PDN Settings

SIM Card

Command Shell

PLMN Settings

PLMN Settings

Network Search

Search

Home PLMN-ID

001,01

Allow Roaming

☒ Enable

Equivalent PLMN-ID list

Index	MCC	MNC	Priority	Delete
Add Cancel				

Save & Apply

Cancel

■ 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.

Cell Selection

Cell Selection

Cell Selection

Preferred Listing ▼

Lock ND&S to the preferred list

☐ Enable

Auto-Rescan Duration

0 Mins(15~65535)

Priority

MCC

MNC

Earfcn

PCI(0~503)

Delete

Add

Cancel

Save & Apply

Cancel

Sorted Cell List

Clear Last Found Channels

Index	Earfcn	PCI	RSRP(dBm)	RSRQ(dB)	RSSI(dBm)	CINR(dB)
1	42940	1	-93.6	-6.5	-79.3	26.5
2	42690	1	-107.1	-6.3	-93	21.9
3	43190	1	-108.9	-10.4	-90.7	19.4
4	43390	1	-118.5	-8.6	-102.1	11
5	42690	3	-126.5	-10.2	-108.5	4.6
6	43990	7	-126.1	-9.8	-108.5	3.5
7	43890	1	-132	-14.8	-109.4	-4.3
8	42290	4	-137.6	-19.9	-109.9	-6.9

Refresh Cell List

■ 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.

PDN Settings

PDN List

Index	APN Name	Class ID	IP Type	Auth	Username	Password	Priority	Delete
1	internet1	1	IPv4	None			Up	Delete
2	internet2	2	IPv4	None			Up	Delete

Add Cancel

Save & Apply Cancel

Help

PDN Settings:

In this page, you can define up to 4 PDN settings for bearer. Length of APN name should not exceed 64 bytes.

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.

SIM Card

SIM Card Status

SIM Card State: Ready

RETRIES PIN: 3

PIN Check Enabled: OFF

PIN Management

PIN Management: Enable PIN (selected)

PIN Code: Remaining PIN 3 RETRIES

Save & Apply Cancel

Help

SIM Card State:

This section shows the current SIM card status information.

PIN/PUK Management:

For SIM card with disabled PIN, you can enable the SIM card PIN function by entering the current PIN code and set a new PIN code. The PIN code length is 4-6 digits. If a new SIM card (with PIN code enabled) is placed for use, the CPE will require user to manually enter the PIN code via WEB GUI to get CPE connected to the network first time. But as long as the SIM card is not changed, the CPE will not ask for PIN code again even the unit reboots. User is allowed to enter the correct PIN code up to three times. After three attempts, the SIM will be locked out of use. The user is required to enter the PUK code manually via WEB GUI to unlock the SIM card. The PUK code length is 8-12 digits.

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.

The screenshot shows the 'Internet Setup' configuration page. The 'Internet Connection' section has the following settings:

- Connection Mode: ☒ Router / NAT, ☐ L2 Bridge (GRE), ☐ L3 Bridge
- NAT: ☒ Enable
- MGMT and Data Interface: ☒ Combine, ☐ Separate

The 'Optional' section has the following settings:

- Device Name: Telrad_FE2A9F
- Host Name: [Empty field]
- Domain Name: [Empty field]
- MTU: Default (1400)

On the right side, there are fields for Host Name and Domain Name with instructions: 'Enter the host name provided by your ISP.' and 'Enter the domain name provided by your ISP.' At the bottom, there are 'Save & Apply' and 'Cancel' buttons.

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.

LTE

Network

Security

Applications

Management

Maintenance

Status

Exit

Internet

LAN

VPN

QoS

DDNS

Traffic Control

user

LAN Setup

Help

Link MaxBitRate & Duplex

LAN Reset

Reset

Duplex

Auto

Max Bit Rate

Auto

Device IP

Local IP Address

192

168

254

251

Subnet Mask

255

255

255

0

Local DNS

Network Address Server Settings (DHCP)

DHCP Server

☒ Enable

DNS Proxy

☒ Enable

Start IP Address

192.168.254.

2

Maximum DHCP Users

200

DHCP Static Leases Map

Index	IP Address	MAC Address
1	192.168.254.	
2	192.168.254.	
3	192.168.254.	
4	192.168.254.	
5	192.168.254.	

Deny IP Address

Index	IP Address	Delete

Add

Cancel

Save & Apply

Cancel

Link MaxBitRate & Duplex:

In this page, you can configure Max Bit Rate and Duplex Negotiation.

Local IP Address:

This is the address of the device.

Subnet Mask:

This is the subnet mask of the device.

DHCP Server:

Allows the device to manage your IP addresses.

Start IP Address:

The address you would like to start with.

Maximum DHCP Users:

You may limit the number of addresses your device hands out.

Deny IP Address:

IP address that device will refuse to grant access.

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.

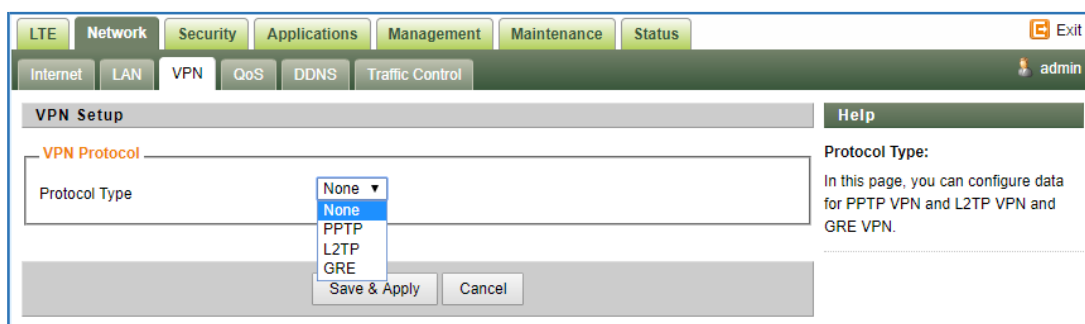
MTU – defines the Maximum Transmit Unit (maximum IP-level datagram size) before IP-layer fragmentation. 3GPP recommends use of 1400 bytes (default) to avoid packet drops and fragmentation on S1-U interface between eNB and EPC. Use the default value (1400).

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.



Firmware: CPE8000 V2.2.1 PACK 9 (Ver.881)

LTE Network Security Applications Management Maintenance Status

Internet LAN VPN QoS DDNS admin

Internet Setup

Internet Connection

Connection Mode: ☐ Router / NAT ☒ L2 Bridge (GRE) ☐ L3 Bridge

MGMT and Data Interface: ☐ Combine ☒ Separate

Optional

Device Name: Telrad_FFEEC4

Host Name:

Domain Name:

MTU: Manual

IP Type: ☒ IPv4 ☐ IPv6 ☐ IPv4v6

Save & Apply Cancel

Help

Host Name:
Enter the host name provided by your ISP.

Domain Name:
Enter the domain name provided by your ISP.

DS-Lite Connection:
Enter the AFTR address information provided by your Internet Service Provider(ISP).

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.

LTE Network Security Management Maintenance Status

Internet LAN VPN L2 Service QoS admin

VPN Setup

VPN Protocol

Protocol Type: GRE

GRE

GRE Destination IP Address: 172.16.0.1

Save & Apply Cancel

Help

Protocol Type:
In this page, you can configure data for PPTP VPN and L2TP VPN and GRE VPN.

■ 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.

L2 Service Configuration

ETH User VLAN Setting

☒ Enable untagged L2 user traffic Encapsulation DSCP 0 (0-63)

☒ Enable tagged L2 user traffic

Classification criteria list

Priority(0-255)	VLAN ID(1-4094 or untag)	802.1P or DSCP	Value (0-7) or (0-63)	E-DSCP(0-63)	Delete
0		802.1P		0	Delete

Add Cancel

Save & Apply Cancel

Help

VLAN Configuration:

In this page, you can configure tagged and untagged VLAN data passthrough settings. Meanwhile you can define classification criterias' priority, VLAN ID, 802.1P or DSCP, and encapsulation DSCP corresponding to VLAN ID.

■ 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.

ETH VLAN

VLAN Mapping List

Index	APN Number	Ethernet VLAN ID	Delete
-------	------------	------------------	--------

Add Cancel

Save & Apply Cancel

■ QoS Setting

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

Quality Of Service (QoS) Help

DSCP Configuration

MGMT DSCP ☒ Enable ID (0~63)

Data DSCP ☒ Enable ID (0~63)

TOS Configuration

MGMT TOS ☐ Enable ID (0~255)

Data TOS ☐ Enable ID (0~255)

DSCP Configuration:
In this page, you can configure data classification for DSCP and TOS.

■ DDNS Setting Under Router Mode

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

Dynamic Domain Name System (DDNS) Help

DDNS

DDNS Service

User Name

Password

Host Name

Type

Wildcard ☐

DDNS Status

Status ddns.all_disabled

Internet IP Address 10.11.102.35

DDNS Service:
DDNS allows you to access your network using domain names instead of IP addresses. The service manages changing IP address and updates your domain information dynamically. You must sign up for service through TZO.com or DynDNS.org.

■ Traffic Control Setting Under Router Mode

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

The screenshot shows the 'Traffic Control' configuration page. The top navigation bar includes tabs for LTE, Network, Security, Applications, Management, Maintenance, and Status. Below this, a sub-navigation bar shows Internet, LAN, VPN, QoS, DDNS, and Traffic Control (selected). The main content area is titled 'Traffic Control' and contains two sections: 'TC Settings' and 'Netmask Priority'. In 'TC Settings', there is a checkbox for 'TC Enable Status' (unchecked) and a 'Total Bandwidth' section with 'UL/DL Bandwidth' set to 0 / 0 Kbps. The 'Netmask Priority' section has a table with columns for IP/Mask, MAX UL Bandwidth Kbps, MAX DL Bandwidth Kbps, and a Delete button. Below the table are 'Add' and 'Cancel' buttons. At the bottom of the main area are 'Save & Apply' and 'Cancel' buttons. On the right side, there is a 'Help' section with text explaining the settings.

Traffic Control

TC Settings

TC Enable Status ☐ Enable

Total Bandwidth UL/DL Bandwidth 0 / 0 Kbps

Netmask Priority

IP/Mask	MAX UL Bandwidth Kbps	MAX DL Bandwidth Kbps	Delete
Add Cancel			

Help

TC Settings:
On this page you could set IP Traffic Control settings.

Netmask Priority:
You may specify priority for all traffic from a given IP address or IP range.

UL/DL Bandwidth:
Value of UL/DL Bandwidth is 0 represent the UL/DL Bandwidth is Disable.

5 Security Configuration

■ Firewall

This allows user to configure CPE firewall.

The screenshot shows the 'Firewall' configuration page. The top navigation bar includes tabs for LTE, Network, Security, Applications, Management, Maintenance, and Status. Below this, a sub-navigation bar shows Firewall (selected), ALG, Defense, and Access Restrictions. The main content area is titled 'Security' and contains two sections: 'Firewall Protection' and 'Block WAN Requests'. In 'Firewall Protection', there is a checkbox for 'SPI Firewall' (checked). In 'Block WAN Requests', there are two checkboxes: 'Block Anonymous Internet Requests' (unchecked) and 'Filter IDENT (Port 113)' (unchecked). At the bottom of the main area are 'Save & Apply' and 'Cancel' buttons. On the right side, there is a 'Help' section with text explaining the settings.

Security

Firewall Protection

SPI Firewall ☒ Enable

Block WAN Requests

☐ Block Anonymous Internet Requests

☐ Filter IDENT (Port 113)

Help

Firewall Protection:
Enable or disable the SPI firewall.

Block WAN Requests
By enabling the Block WAN Request feature, you can prevent your network from being "pinged" or detected, by other Internet users. The Block WAN Request feature also reinforces your network security by hiding your network ports. Both functions of the Block WAN Request feature make it more difficult for outside users to work their way into your network. This feature is disabled by default.

■ ALG

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

LTE

Network

Security

Applications

Management

Maintenance

Status

Exit

Firewall

ALG

Defense

Access Restrictions

admin

Application Layer Gateway (ALG)

Help

ALG Passthrough

IPSec Passthrough	☒ Enable
L2TP Passthrough	☒ Enable
PPTP Passthrough	☒ Enable
FTP Passthrough	☒ Enable
H323 Passthrough	☒ Enable
SIP Passthrough	☒ Enable
RTSP Passthrough	☒ Enable

ALG Passthrough:

You may choose to enable PPTP, FTP,H323 and so on passthrough to allow your network devices to communicate via ALG.

Save & Apply

Cancel

■ Defense

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

LTE

Network

Security

Applications

Management

Maintenance

Status

Exit

Firewall

ALG

Defense

Access Restrictions

admin

Attack Defense

Help

Attack Defense

☐ Enable

Defense

Defense Area

WAN

Scanning Defense

☐ IP Scanning

Threshold: 100 PPS

☐ Port Scanning

Threshold: 100 PPS

☐ IP Cheat

DoS Defense

☐ ICMP Flood

Threshold: 100 PPS

☐ UDP Flood

Threshold: 1000 PPS

☐ SYN Flood

Threshold: 100 PPS

☐ Land Attack

☐ WinNuke

Dubious Packet Protect

☐ Large ICMP Packet(>1024 bytes)

☐ TCP Packet Without Any Flag

☐ TCP Packet With SYN And FIN Flag

☐ TCP Packet With FIN No ACK Flag

IP Options Protect

☐ IP Timestamp Option

☐ IP Record Route Option

☐ IP Loose Source Route Option

☐ IP Strict Source Route Option

☐ Invalid IP Options

Save & Apply

Cancel

Regional settings, you can select LAN or WAN area, while LAN area is selected, the targeted packets are from the LAN port, while WAN area is selected, the targeted packets are from the WAN port.

■ 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

Help

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 12 ▼ : 00 ▼ AM ▼

Blocked Services

Catch all P2P Protocols

☐

P2P Protocol1

None ▼ ~

P2P Protocol2

None ▼ ~

P2P Protocol3

None ▼ ~

P2P Protocol4

None ▼ ~

Add/Edit Service

Website Blocking by URL Address

Save & Apply

Cancel

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.

The screenshot shows the 'Port Range Forwarding' configuration page. The top navigation bar includes tabs for LTE, Network, Security, Applications, Management, Maintenance, and Status. Below this, a sub-navigation bar contains 'Port Range Forwarding', 'Port Forwarding', 'DMZ', 'UPnP', and 'Port Triggering'. The main content area is titled 'Port Range Forwarding' and features a 'Help' button. A table with columns 'Application', 'Start', 'End', 'Protocol', 'IP Address', and 'Enable' is shown, with a single entry '- None -'. Below the table are 'Add' and 'Remove' buttons. At the bottom of the main area are 'Save & Apply' and 'Cancel' buttons. A help text box on the right explains that certain applications may require open specific ports and provides examples like servers and online games. It also advises limiting port forwarding to only those ports being used and unchecking the 'Enable' checkbox after completion.

■ Port Forwarding

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

The screenshot shows the 'Port Forwarding' configuration page. The top navigation bar includes tabs for LTE, Network, Security, Applications, Management, Maintenance, and Status. Below this, a sub-navigation bar contains 'Port Range Forwarding', 'Port Forwarding', 'DMZ', 'UPnP', and 'Port Triggering'. The main content area is titled 'Port Forwarding' and features a 'Help' button. A table with columns 'Application', 'Port from', 'Protocol', 'IP Address', 'Port to', and 'Enable' is shown, with a single entry '- None -'. Below the table are 'Add' and 'Remove' buttons. At the bottom of the main area are 'Save & Apply' and 'Cancel' buttons. A help text box on the right explains that certain applications may require open specific ports and provides examples like servers and online games. It also advises limiting port forwarding to only those ports being used and unchecking the 'Enable' checkbox after completion.

■ 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.

The screenshot shows the 'Demilitarized Zone (DMZ)' configuration page. The top navigation bar includes tabs for LTE, Network, Security, Applications, Management, Maintenance, and Status. Below this, a sub-navigation bar has options for Port Range Forwarding, Port Forwarding, DMZ, UPnP, and Port Triggering. The 'DMZ' tab is selected. The main content area is titled 'Demilitarized Zone (DMZ)' and contains a 'DMZ' section with the following settings:

- DMZ Enable Status: ☐ Enable
- DMZ Host IP Address: 192.168.254.
- Exclude Web Server Port: ☒ Enable
- Exclude Telnet/SSH Port: ☒ Enable
- Exclude Ping Service: ☒ Enable

At the bottom of the configuration area are 'Save & Apply' and 'Cancel' buttons. A 'Help' section on the right provides additional information:

DMZ:
Enabling this option will expose the specified host to the Internet. All ports will be accessible from the 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.

The screenshot shows the 'Universal Plug and Play (UPnP)' configuration page. The top navigation bar and sub-navigation bar are identical to the DMZ page. The 'UPnP' tab is selected. The main content area is titled 'Universal Plug and Play (UPnP)' and contains two sections:

Forwards

Description	From (WAN)	To (LAN)	IP Address	Protocol	Delete
- None -					

Below the table are 'Delete All' and 'Auto-Refresh is On' buttons.

UPnP Configuration

- UPnP Service: ☐ Enable
- UPnP Notification Interval: (30~600s)

At the bottom of the configuration area are 'Save & Apply' and 'Cancel' buttons. A 'Help' section on the right provides additional information:

Forwards:
Configure Port forwarding for UPnP. Click the delete to delete individual entry.

UPnP Service:
Allows applications to automatically setup port forwardings.

■ Port Triggering

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

LTE

Network

Security

Applications

Management

Maintenance

Status

Exit

Port Range Forwarding

Port Forwarding

DMZ

UPnP

Port Triggering

admin

Port Triggering

Help

Forwards

Application	Triggered Port Range		Protocol	Forwarded Port Range		Enable
	Start	End		Start	End	
- None -						

Add

Remove

Save & Apply

Cancel

Application:

Enter the application name of the trigger.

Triggered Port Range:

For each application, list the triggered port number range. Check with the Internet application documentation for the port number(s) needed.

Forwarded Port Range:

For each application, list the forwarded port number range. Check with the Internet application documentation for the port number(s) needed.

Start:

Enter the starting port number of the Triggered and Forwarded Range.

End:

Enter the ending port number of the Triggered and Forwarded Range.

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.



LTE	Network	Security	Applications	Management	Maintenance	Status
-----	---------	----------	--------------	------------	-------------	--------

Device Management | TR069 Configuration

Device Management Setting

Remote Management

TR069 Management Enable ▼

Device Management Options

Telnet Service	☐ Enable
SSH Service	☐ Enable
Access Control	Remote Management ▼
HTTPs From WAN	☒ Enable HTTPs Port 8080
Remote IP Address Pool:	0. 0. 0. 0. 0
Auto-Logout Timeout	Enable ▼ 10 (minutes:1 ~ 25)

Save & Apply Cancel

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.

LTE

Network

Security

Applications

Management

Maintenance

Status

Exit

Device Management

TR069 Configuration

admin

TR069 Management Setting

Help

TR069 Configuration

ACS URL

http://cpe.tr69.management.server

ACS Username

tr069

ACS Password

Re-enter Password

Periodic Inform Enable

☒

Periodic Inform Interval

86400 seconds(90~604800)

Periodic Inform Time

2001 - 01 - 01 T 00 : 00 : 00

CPE Username

ftacs

CPE Password

Re-enter Password

TR069 Configuration

This part contains TR069 ACS server and ACS STUN server configuration.

ACS STUN Configuration

STUN Enable Status

☐ Enable

Server Address

Server Port

3478 (0~65535)

Username

Password

Re-enter Password

Minimum Keep Alive Period

10 seconds(10~90)

Maximum Keep Alive Period

90 seconds(10~90)

Save & Apply

Cancel

Connect ACS

8 Maintenance

■ General

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

LTE	Network	Security	Applications	Management	Maintenance	Status
General	Firmware Upgrade	Config Management	Ping	Iperf	System Reset	admin
Change Password						Help
Change Password Username: admin Old Password: New Password: Re-enter to Confirm:						Old Password: The password currently in use. New Password: The new password length is 4 to 20 characters, the characters of 0~9 or a~Z.. Enter the new password a second time to confirm it.
Time Settings						
Time Settings NTP Enable Status: ☒ Enable Time Zone / Summer Time (DST): UTC / none NTP Server: 0.pool.ntp.org (e.g. time.nist.gov) Use Local Host Time: Thu 22 Jun 2017 07:37:14 Sync Refresh Interval: 5 (minutes:5 ~ 1440)						Time Settings: Choose the time zone you are in and Summer Time (DST) period. The device can use local time or UTC time.
Language Management						
Language Selection Language: English						Language Management: The language selection allows user to select the preferred language for Web GUI interface.
Auto-Refresh						
Auto-Refresh Auto-Refresh: ☒ Enable						Auto-Refresh: This option controls whether the Web page contains dynamica data will be automatically refreshed when the page is open.
Save & Apply Cancel						

■ 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.

LTE	Network	Security	Applications	Management	Maintenance	Status
General	Firmware Upgrade	Config Management	Ping	Iperf	System Reset	admin
Firmware Management						Help
Local Firmware Upgrade Reset to defaults after upgrade: ☒ No Reset ☐ Reset to Factory Defaults Please select a file to upgrade: Choose File No file chosen Upgrade						Local Firmware Upgrade: Click on the <i>Browse...</i> button to select the firmware file to be uploaded to the device. Click the <i>Upgrade</i> button to begin the upgrade process which must not be interrupted.
Firmware Rollback Current Firmware Version: V1.2.0 PACK 0 (Ver.645) Build on: Jun 6 2017 Rollback Firmware Version: V1.2.0 PACK 0 (Ver.645) Build on: Jun 6 2017 Rollback						Remote Firmware Upgrade: You need to fill in the connection configs of HTTP,FTP or TFTP server. Click the <i>Upgrade</i> button to begin the upgrade process which must not be interrupted.
Remote Firmware Upgrade Update Method: None Save & Apply Cancel						Upgrade: Link with eNB is reached in less than 5 minutes since reboot after firmware flashing, and the link is stable during 1 minute, then after 1 minute of link CPE will set the running version as Main automatically

■ Config Management

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

The screenshot displays the 'Config Management' section of a web interface. At the top, there is a navigation bar with tabs for 'LTE', 'Network', 'Security', 'Applications', 'Management', 'Maintenance', and 'Status'. Below this, a sub-navigation bar includes 'General', 'Firmware Upgrade', 'Config Management', 'Ping', 'Iperf', and 'System Reset'. The 'Config Management' sub-section is active, showing 'Backup Configuration' and 'Restore Configuration' options. The 'Backup Configuration' section has a 'Backup Settings' area with a 'Backup' button and a 'Help' section explaining the backup process. The 'Restore Configuration' section has a 'Restore Settings' area with a 'Choose File' button, a 'Restore' button, and a 'Help' section explaining the restore process. A red-bordered 'WARNING' box is present, stating: 'Only upload files backed up using this firmware and from the same model of device. Do not upload any files that were not created by this interface!'.

■ Ping

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

The screenshot displays the 'Ping Test' section of a web interface. At the top, there is a navigation bar with tabs for 'LTE', 'Network', 'Security', 'Applications', 'Management', 'Maintenance', and 'Status'. Below this, a sub-navigation bar includes 'General', 'Firmware Upgrade', 'Config Management', 'Ping', 'Iperf', and 'System Reset'. The 'Ping' sub-section is active, showing a 'Ping Test' area with a 'Start' button and a 'Help' section explaining the ping test process. The 'Ping Test' area includes a radio button for 'IP Protocol' with 'IPv4' selected and 'IPv6' as an option, and a text input field for the destination address.

■ 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.

The screenshot shows the 'Iperf' configuration page. The top navigation bar includes tabs for LTE, Network, Security, Applications, Management, Maintenance, and Status. Below this, a sub-navigation bar has options for General, Firmware Upgrade, Config Management, Ping, Iperf (selected), and System Reset. The main content area is titled 'Iperf' and contains a 'Help' button. The 'Iperf Settings' section includes fields for Status (Enable/Disable), Server Address, Server Port (5001), Management Port (5001), Measurement Time (60 seconds), Protocol Type (TCP), Window size (256 KB), and TCP Client Number (1). A 'Result' section shows Uplink and Downlink speeds in Mbps. A 'Help' sidebar on the right provides 'Iperf Configuration' instructions, a 'Note' about disabling the firewall, and 'Measurement Time' details.

■ 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.

The screenshot shows the 'System Reset' page. The top navigation bar is the same as the previous page. The sub-navigation bar now highlights 'System Reset'. The main content area is titled 'System Reset' and contains a 'Help' button. The 'System Reboot' section has a 'Reboot' button. The 'Reset Device Settings' section has a 'Restore' button. A 'Help' sidebar on the right provides instructions for 'System Reboot' and 'Restore 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.

LTE

Network

Security

Applications

Management

Maintenance

Status

Exit

System

Network

LAN

admin

Internet

Connection Info

Login Type	LTE PDN
IP Address	10.11.102.35
Subnet Mask	255.255.255.255
Default Gateway	
DNS	202.96.128.86 202.96.134.33
IPv6 Address	
IPv6 DNS	

Device Info

System

Manufacturer	Teirad Networks
Product Type	
Board Name	SQN3220SC-ODU-4100D-B42_43
Hardware Version	
Firmware Version	
BootRom Version	
MAC Address	
Host Name	
Domain Name	
Current Time	Thu 22 Jun 2017 07:40:39
Up Time	51 min
Load Average	0.02, 0.11, 0.13 9%

CPU

CPU Model	SQNASIC rev 0
CPU Clock	400 MHz

Memory

Total Available	37972 kB / 65536 kB	58%
Free	5108 kB / 37972 kB	13%
Used	32864 kB / 37972 kB	87%
Buffers	4048 kB / 32864 kB	12%
Cached	12344 kB / 32864 kB	38%
Active	9980 kB / 32864 kB	30%
Inactive	11556 kB / 32864 kB	35%

Help

Connection Info:

This shows the information required by your ISP for connection to the Internet.

Device Info:

This is the specific name for the device, which you set on the Setup tab.

MAC Address:

This is the device's MAC Address, as seen by your ISP.

Firmware Version:

This is the device's current firmware.

Current Time:

This is the time, as you set on the Setup Tab.

Up Time:

This is a measure of the time the device has been "up" and running.

Load Average:

This is given as three numbers that represent the system load during the last one, five, and fifteen minute periods.

■ Network

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

LTE

Network

Security

Applications

Management

Maintenance

Status

Exit

System

Network

LAN

admin

Network Status

PDN Info

APN

internet

IP Address

10.11.102.35

DNS

202.96.128.86 202.96.134.33

IPv6 Address

IPv6 DNS

Route

Destination	Default Gateway	Genmask	Flags	Metric	Ref	Use	Iface
default	*	0.0.0.0	U	0	0	0	icc0.1121
10.1.1.0	*	255.255.255.0	U	0	0	0	br0
127.0.0.0	*	255.0.0.0	U	0	0	0	lo
192.168.254.0	*	255.255.255.0	U	0	0	0	br0

ARP

IP Address	HW type	Flags	HW Address	Mask	Device
192.168.254.71	0x1	0x2	ac:a2:13:6a:12:09	*	br0

Help

PDN Info:

When the wanprotol is PDN show PDN IP Map.

Route:

The routing table information.

ARP:

The ARP table information.

■ LAN

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

LTE

Network

Security

Applications

Management

Maintenance

Status

Exit

System

Network

LAN

admin

Local Network

LAN Status

MAC Address

6C:AD:EF:FE:2A:9F

IP Address

192.168.254.251

Subnet Mask

255.255.255.0

Local DNS

Port Status

Up

Speed / Duplex

100Mbps / Full

Sent(Errors/Dropped)

0 packets / 0 packets

Received(Errors/Dropped)

0 packets / 0 packets

RX CRC Errors

0 packets

Collisions

0 packets

Sent

284,287 bytes / 422 packets

Received

28,803 bytes / 303 packets

Dynamic Host Configuration Protocol

DHCP Status

DHCP Server

Enabled

Start IP Address

192.168.254.2

End IP Address

192.168.254.201

Client Lease Time

1440 minutes

DHCP Clients

Host Name	IP Address	MAC Address	Expires
- None -			

Help

MAC Address:

This is the device's MAC Address, as seen on your local, Ethernet network.

IP Address:

This shows the device's IP Address, as it appears on your local, Ethernet network.

Subnet Mask:

When the device is using a Subnet Mask, it is shown here.

DHCP Server:

If you are using the device as a DHCP server, that will be displayed here.

DHCP Clients:

It displays all the LAN devices that currently connected to the unit.

Page 46

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.