CPE8100 Outdoor CPE

Quick installation guide V1.0

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 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.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with RSS-192 and 197 of the Industry Canada Rules. This equipment also complies with the limits for a class B digital device, pursuant to ETSI EN 301 489-1 and Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

* Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 , Subpart E of the FCC 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

Any unauthorized modification or changes to this device may void the user's authority to operate this device.

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

The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

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 50 cm 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 is a high performance LTE CPE (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 roaming capabilities in the certain area.

■ User Interface Specification

Model	Description & User Interface
CPE8100	- Panel antenna: B42_43 14dBi - 1 RJ45 10/100/1000M LAN Port - PWR, RUN, LAN, SIM, and LTE (1-6) LEDs - 48V/0.5A PoE supply, ODU Power <12 Watts - Dimensions: 203 mm (L) × 203 mm (W) × 76 mm (D) - Weight: 3 Kg

2. Getting Started

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. For CPE with the RUN LED indicator, a slowly flashing light indicates the system has completed the startup procedure.

To connect PC, LAN switch or other type of IP device to the CPE product, the user should use standard CAT5 Ethernet cable and connect to the appropriate LAN port. Once connect the CPE LAN LED indicator should come on.
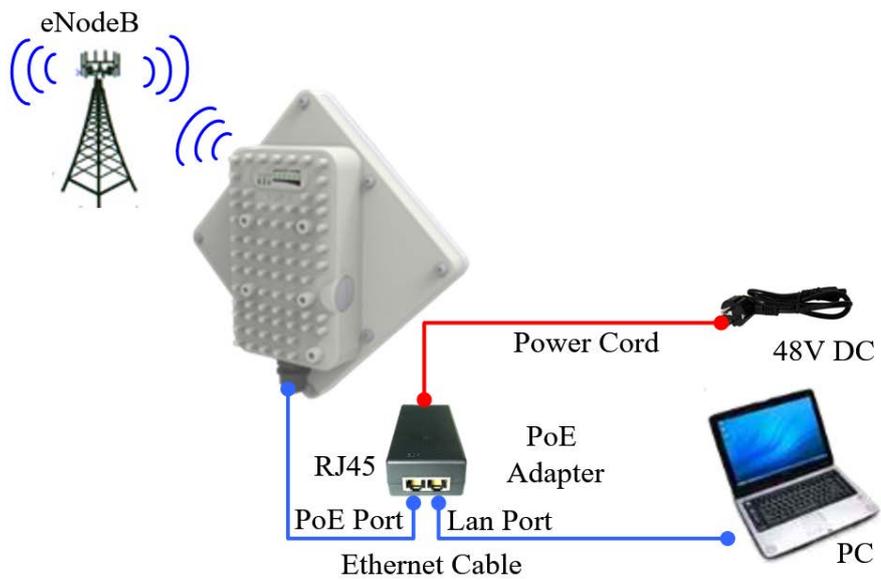
■ **Installing Outdoor Unit (ODU) – Pole Mount**
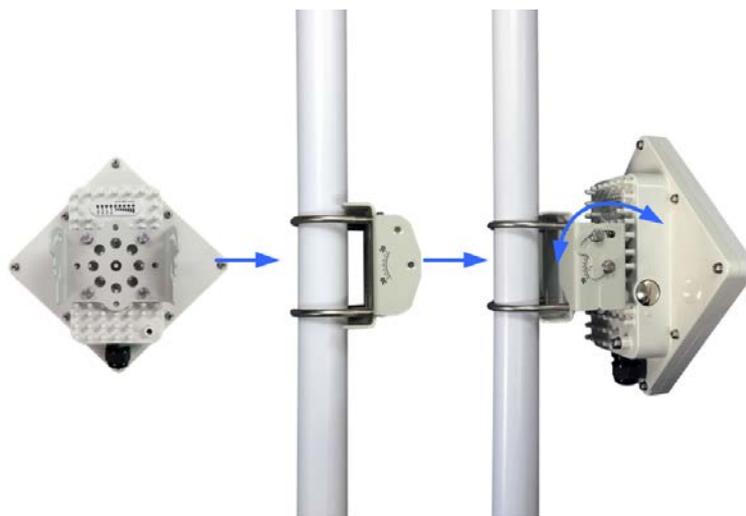
■ **Installing Outdoor Unit (ODU) – Wall Mount**

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

<u>Header Connection:</u>

■ 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.

2 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 Error
RF (5 LEDs)	RF Signal Strength	5 level signal strengths indication by 5 green LEDs

■ **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.

RF signal indicator
Weak ← → Streng
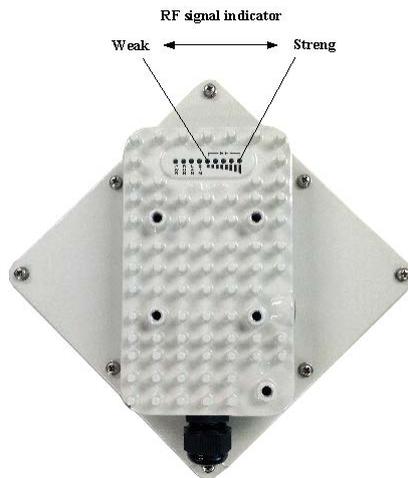
3 Managing CPE Device

CPE8100 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 have 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 login password and then click the "Log in" button. After successful log on, the default home page of the WEB GUI interface will appear. Note that the default user password is "admin".

■ **Device Status**

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

For further configuration instructions, please refer to CPE8100 user manual.

4 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 NIC is up and working properly. Then check the PC NIC configuration and make sure the DHCP is enabled.
- Open the MS-DOS window, enter "ipconfig /release" and "ipconfig /renew" commands and see if PC can obtain IP correctly.
- 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 "admin" 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 contact the operator or distributor and give them the IMEI of the unit. The operator or distributor can issue you a RESET password for you to enter in the WEB login window.
- After the unit is reset to factory default, you can login using the default password.