

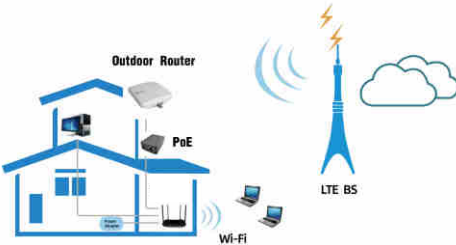


# Horizon 2100 Series CBRS Outdoor Routers

Quick Start Guide ▶

## Introduction

Our Horizon 2100 product series are a highly advanced LTE outdoor multi-service solution designed to meet integrated data needs of residential, business and enterprise users. The product supports advanced Gigabit networking functionalities, it enables wide service coverage and provides high data throughput and networking features to customers who needs easy broadband access.



## Panel of device



· I/O panel of Outdoor Router ·

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## Packing List

Make sure you have everything you need to properly configure the device.

|                       |              |                 |                |
|-----------------------|--------------|-----------------|----------------|
|                       |              |                 |                |
| Outdoor Router        | PoE          | Power supply    | Ethernet cable |
|                       |              |                 |                |
| Stainless steel clamp | Cable glands | Slotted end cap |                |

## How does it work

1. Connect Power Adapter to PoE injector.
2. PoE injector provide the power to Outdoor Router via LAN cable.
3. Connect LAN cable from PoE to your PC our Indoor router to surf the Internet when the Outdoor Router access the LTE network.

This quick installation guide shows you how to configure your Outdoor Router in order to access the Internet.

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## Configure hardware



**CAUTION**  
Please make sure that you are familiar with all accident prevention and safety procedures necessary for working at height and with electricity before start to intall the device.  
DO NOT install the Outdoor Router during a lightning storm.

### Insert a SIM Card to the Slot



**CAUTION**  
Make sure the Outdoor Router is turned off before you insert your SIM card. It is recommended to NOT connect the PoE cable when you do this step. Otherwise, the SIM card may be damaged.



### Mount the Outdoor Router

To connect the CAT5e Ethernet cable:

See the installation instructions to mount the Outdoor Router correctly.

**Step 1** CAT5e cable to thread through the cable glands.

**Step 2** Connect the end of the CAT5e Ethernet cable to the PoE port of the Outdoor Router.

**Step 3** Wring the cable glands into Outdoor Router and seal tightly.

**NOTE:** Make sure you have inserted the SIM card into the Outdoor Router.

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### Header Connection



### Mounting Bracket



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### Choose Location

The Outdoor Router can be mounted on an antenna pole or mast or on a wall using the supplied mounting bracket.

- Choose a mounting point that is sturdy enough to hold the Outdoor Router, even during high winds.
- When choosing a location to install the Outdoor Router, please be noted that the Outdoor Router's front panel should point towards your service provider's nearest base station. You do not need to be able to see the base station from the Outdoor Router's position. However, if you experience difficulties with signal reception, a Line of Sight (LoS) connection may produce better results.
- It is suggested that you transport the Outdoor Router to its intended installation location in its original protective package.

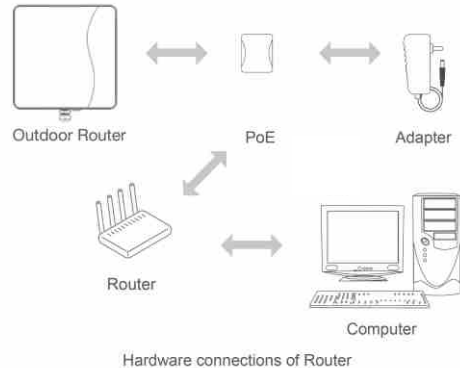
To obtain the best radio signal level and connection quality, the Outdoor Router antenna should be aimed towards the best eNB or BS directly. To search for the best eNB direction, the user can rotate the Outdoor Router slowly and tilte Outdoor Router slightly to find the best signal direction. The Outdoor Router radio signal strength level can be observed from the RF LEDs mounted on the lower panel as shown below. The more LEDs on, the better the signal strength.

### Connect the PoE

Place a CAT5e Ethernet cable (not included) from the location of your intended Router to the desired PC location.

If you intend to use cable clamps or other methods to secure the cable, do not tighten them until you finish installing the Router and Outdoor Router.

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**Step 1** Connect the CAT5e Ethernet cable to PoE.



**CAUTION**  
Do not connect a computer or switch directly to the PoE port due to high PoE power.

**Step 2** Connect the power adapter to the PoE injector. The POWER LED turns on a solid green-yellow once connected.

**Step 3** Connect the included Ethernet cable from the computer or indoor router to one of the Outdoor Router's Ethernet ports.

### LED Behavior

When set up the Outdoor Unit, the LED will have the following behavior.

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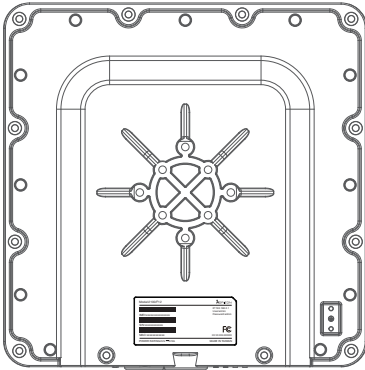
| Outdoor Router |                           |                          |
|----------------|---------------------------|--------------------------|
| POWER          | Steady on                 | Power On                 |
|                | Off                       | No Power Supply          |
| INTERNET       | Steady on                 | Internet Available       |
|                | Off                       | Internet Unavailable     |
|                | Blinking (500ms interval) | Data Transmission        |
| SIM            | Steady on                 | SIM ready                |
|                | Off                       | No SIM detected          |
|                | Blinking (1sec interval)  | SIM LOCK or PIN/PUK LOCK |
| SIGNAL         | Green                     | Signal strong            |
|                | Yellow                    | Signal good              |
|                | Red                       | Signal weak              |

## Configure the Outdoor Router

### Login to the website

Use a browser to access the management web page to configure and manage the Outdoor Router.  
The following procedure describes how to use a computer running Windows 7 or above version and Internet Explorer to connect to the Outdoor Router webpage.

- Step 1** Connect the Outdoor Router correctly.  
**step 2** Start Internet Explorer, go to <http://192.168.0.1> in the address bar, and press Enter.



- Step 3** Enter the user name and password, and click Log In.  
You can connect to the management web page after the password is verified.

### Configuration of LTE

- Step 1** Connect the Outdoor Router correctly.  
**Step 2** Enter the management website.  
**Step 3** Choose Settings → Network → LTE Settings.  
**Step 4** Set the connection mode and scan mode.

| LTE Settings   |            |
|----------------|------------|
| Settings       |            |
| Status         | Connected  |
| Connect Method | Auto       |
| Status         |            |
| DL MCS         | 0          |
| UL MCS         | 0          |
| DL Frequency   | 2679.0 MHz |
| UL Frequency   | 2559.0 MHz |
| Bandwidth      | 20 MHz     |
| RSSI           | -53 dBm    |
| RSRP0          | -79 dBm    |
| RSRP1          | -77 dBm    |
| RSRQ           | -5 dB      |
| SINR           | 32 dB      |
| TX Power       | -55 dBm    |

- The default setting is automatically connection and full band scanning, if you want to connect the LTE network according to your needs, you can set the connection mode as manual, and simply scan a specified band.

## Frequently Asked Questions

### The POWER indicator does not turn on.

- Make sure that the power cable is connected to the PoE, and the Outdoor Router is connected to the right port of the PoE.
- Make sure that the power adapter and PoE are compatible with the Outdoor Router.

### Fails to Log in to the web management page.

- Make sure that the Outdoor Router is started.
  - Verify that the Outdoor Router is correctly connected to the computer through a network cable.
- If the problem persists, contact authorized local service suppliers.

### The Outdoor Router fails to search for the LTE network.

- Check that the power adapter and PoE have have connected to the Outdoor Router properly.
- Check that the Outdoor Router is placed in an open area that is far away from obstructions, such as concrete or wooden walls.
- Check that the Outdoor Router is placed far away from household electrical appliances that generate strong electromagnetic field, such as microwave ovens, refrigerators, and satellite dishes.

If the problem persists, contact authorized local service suppliers.

### The Outdoor Router power adapter has overheated

- The Outdoor Router is reheated after being used for long time. Therefore, you must turn off the Outdoor Router when not you are using.
- Check that the Outdoor Router is properly ventilated and protected from direct sunlight.

### The parameters are restored to default values.

- If the Outdoor Router powers off unexpectedly while being configured, the parameters may be restored to the default settings.
- After configuring the parameters, download the configuration file to quickly restore the Outdoor Router to the desired settings.



### Notice

Some features of the product and its accessories described herein rely on the software installed, capacities and settings of local network, and may not be activated or may be limited by local network operators or network service providers, thus the descriptions herein may not exactly match the product or its accessories you purchase.  
We reserves the right to change or modify any information or specifications contained in this manual without prior notice or obligation.

## FCC Regulations:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to 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 or more 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.
- Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

## FCC RF Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. To comply with FCC RF Exposure compliance requirements, this grant is applicable to only Mobile Configurations. The antennas used for the transmitter must be installed to provide a separation distance of at least 25cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitte.