

CBRS ODU

User manual v0.2

4G Data Transmit Unit

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1 Introduction

1.1 Purpose

This document provides guidance on how to use and manage Airspan's ODU.

1.2 Scope

1.3 References

- [1] WINNF-TS-0016 Version V1.2.4, "Spectrum Access System (SAS) - Citizens Broadband Radio Service Device (CBSD) Interface Technical Specification".
- [2] TR069 V1.4, "CPE WAN Management Protocol".

2 Product overview

2.1 Panel layout



Figure 1: Front view and rear view of ODU

2.2 LED definition

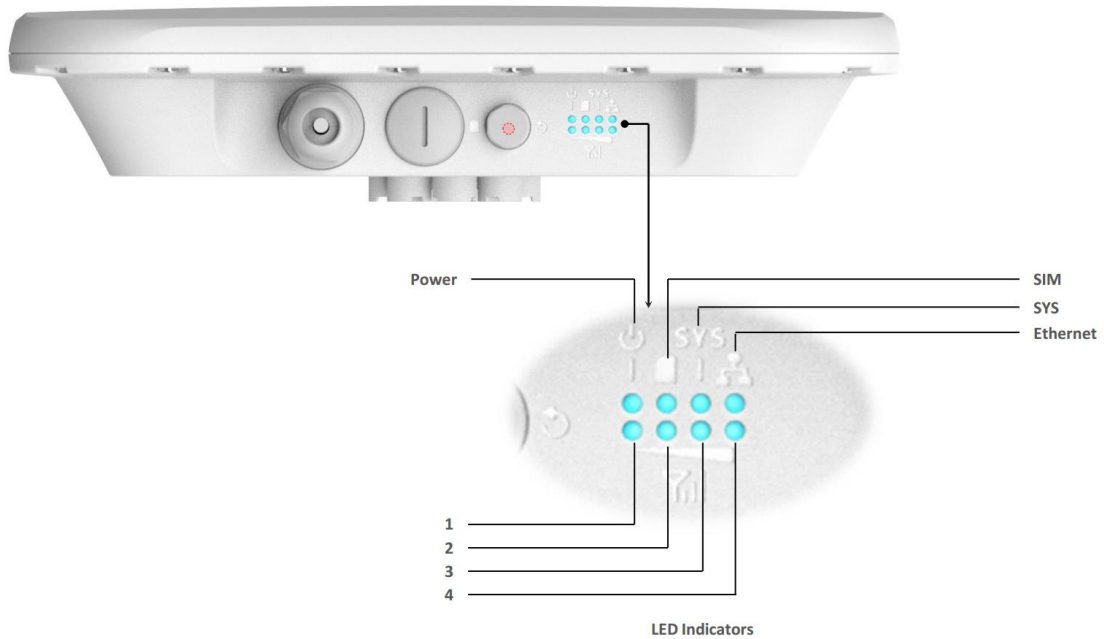


Figure 2: LED panel

Table 1: LED definition

LED	LED status	Device status
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Power	Blue	Power on
	Off	Power off
SIM	Blue	SIM card initialized
	Off	No SIM card
SYS	Blue	System on
	Off	System off
Ethernet	Blue	Ethernet connected
	Blinking	Ethernet data transmit
	Off	Ethernet disconnected
Wireless signal strength (LED 1/2/3/4)	1/2/3/4 off	No service or No connection
	1 on	Low signal strength
	1/2 on	Mid signal strength
	1/2/3 on	Mid-high signal strength
	1/2/3/4 on	High signal strength

2.3 Hardware specifications

2.4 Software specifications

3 Quick installation

3.1 Hardware installation

Installing SIM card

1. Remove the seal cover from the device by loosening the thread.
2. Insert the SIM card into the slot (attention to the card direction).
3. Replace the seal cover to the device by fastening the thread.

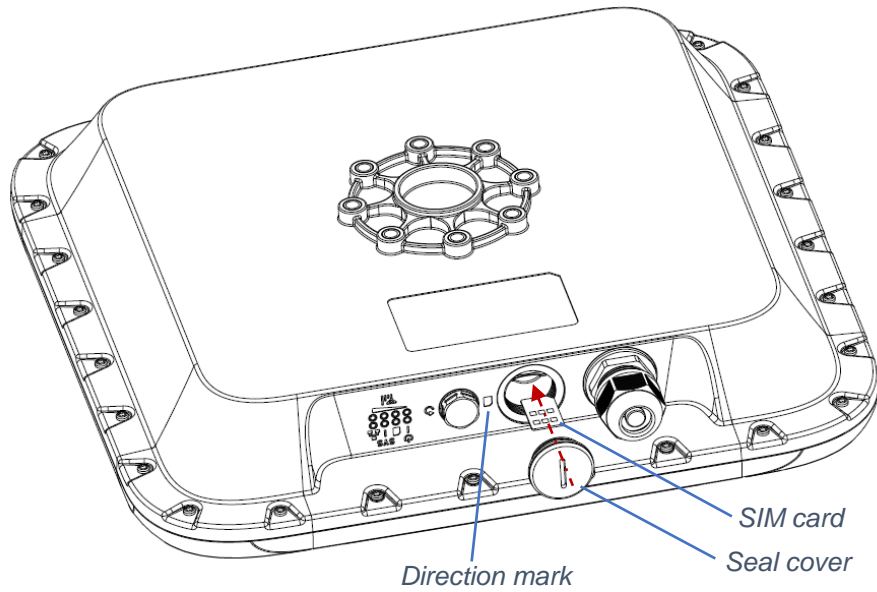


Figure 3: Installing SIM card

Installing Ethernet Cable

1. Remove the cable gland cover from the device by loosening the thread.
2. Take out the waterproof rubber (with black holder) from the device, and then remove the rubber pin.

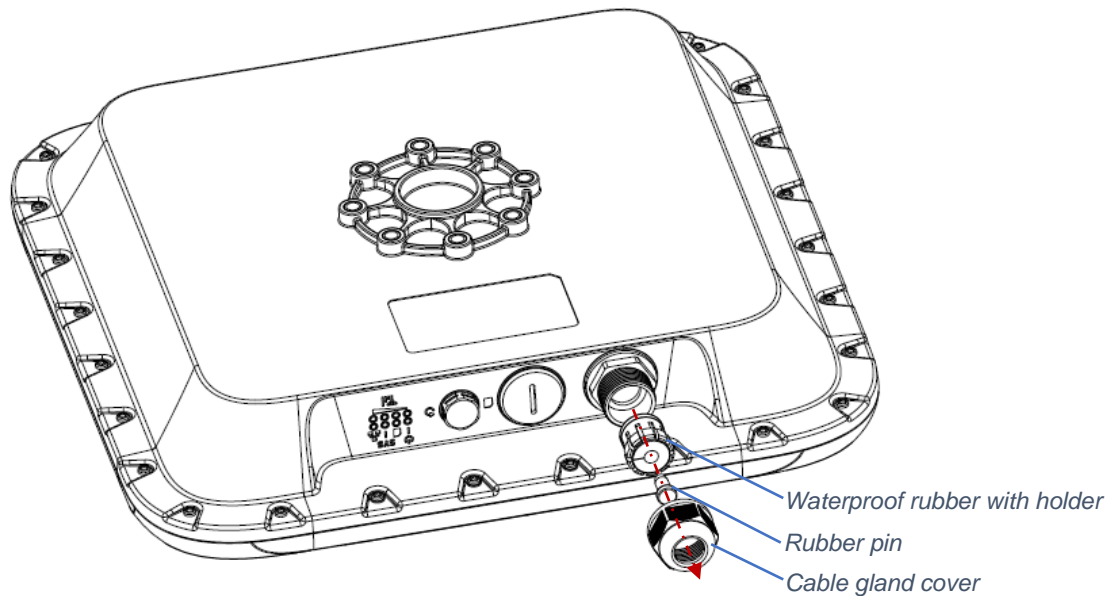


Figure 4: Remove cable gland cover

3. Insert the Ethernet cable with plug through the cable gland cover.
4. Separate the waterproof rubber along the split and then clamp it to the Ethernet cable, and then replace the black holder.

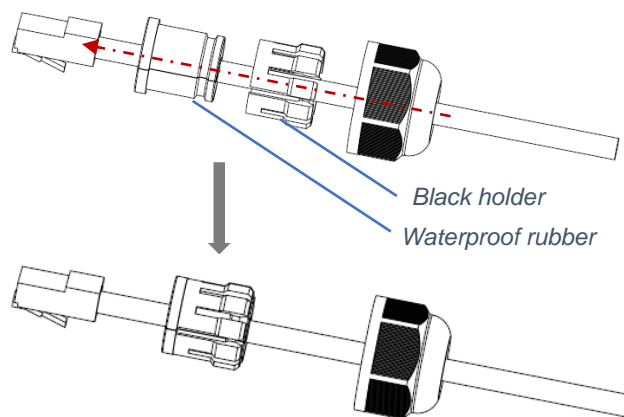


Figure 5: Insert Ethernet cable

5. Insert the Ethernet plug into the RJ45 connector until a click is heard.
6. Replace the waterproof rubber (with black holder) to the device by pushing it along the Ethernet cable.
7. Replace the cable gland cover to the device by fastening the thread.

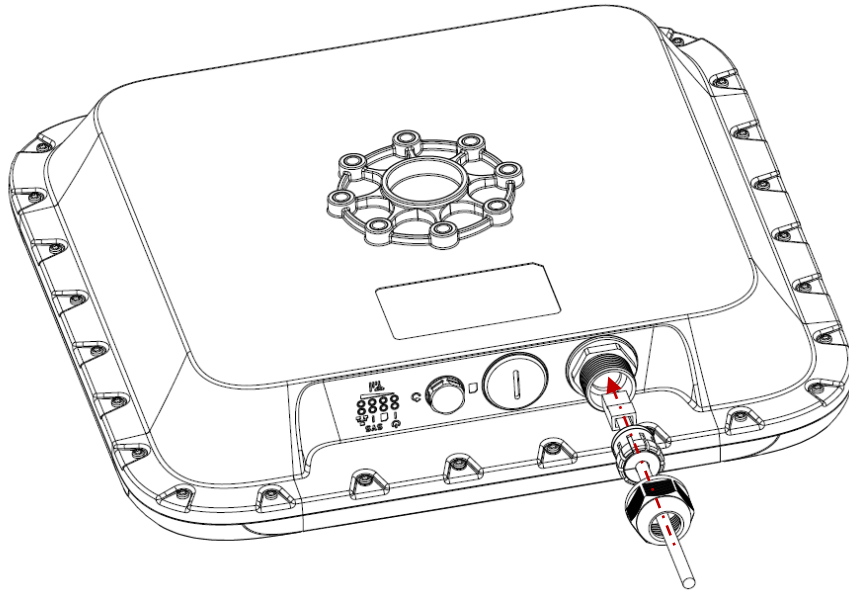


Figure 6: Replace cable gland cover

Pressing reset button

1. Remove the vent from the device by loosening the thread.
2. Use a slight tool to press the reset button.
3. Replace the vent to the device by fastening the thread.

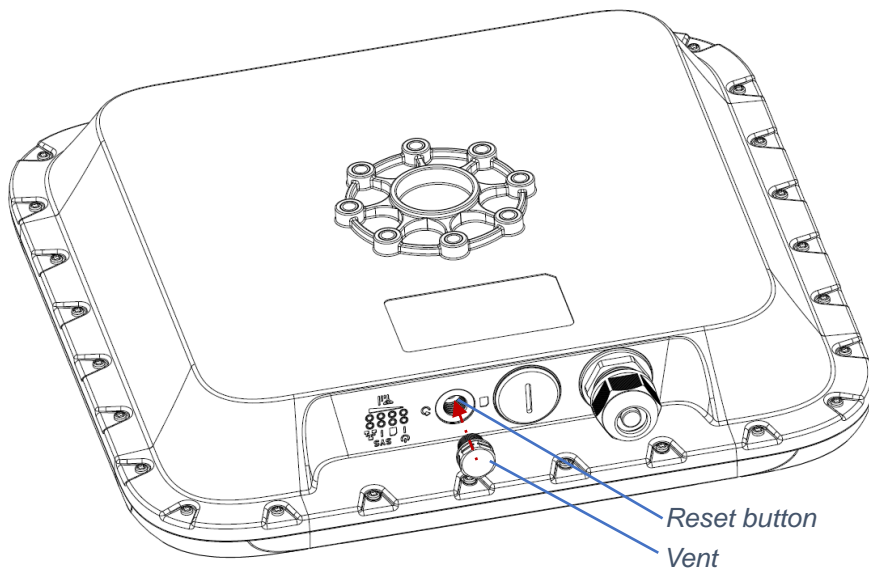


Figure 7: Pressing reset button

Note:

The device is designed featuring waterproof. Please make sure that the seal cover / RJ45 cable gland cover / vent are properly and securely closed by fastening the thread.

Installing ODU to the Mounting Kit

Note: Recommend to consult with a qualified technician to install the mounting kit.

1. Assemble the device and rotate holder with four sets of M6 screws with spring washer/flat washer.

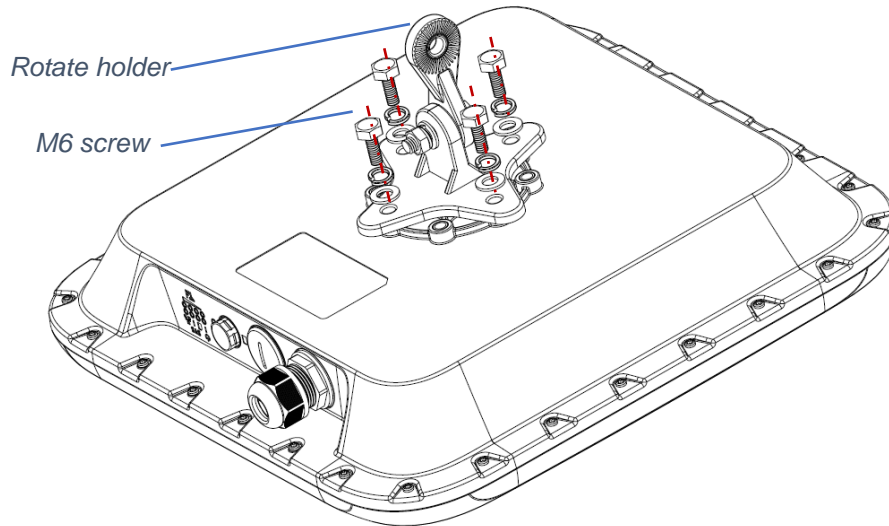


Figure 8: Assemble ODU and rotate holder

2. Remove M8 screw /flat washer/spring washer/nut from pole holder, and then assemble with rotate holder.

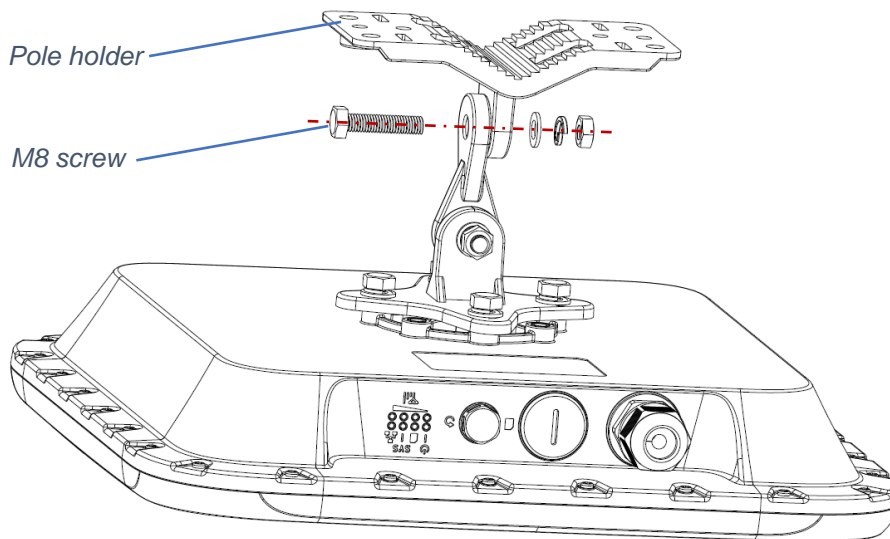


Figure 9: Assemble pole holder and rotate holder

3. Loosen two M8 nut of mounting kit.

4. Adjust ODU side to side/up and down to desired position, and then fasten 2pcs M8 nuts.

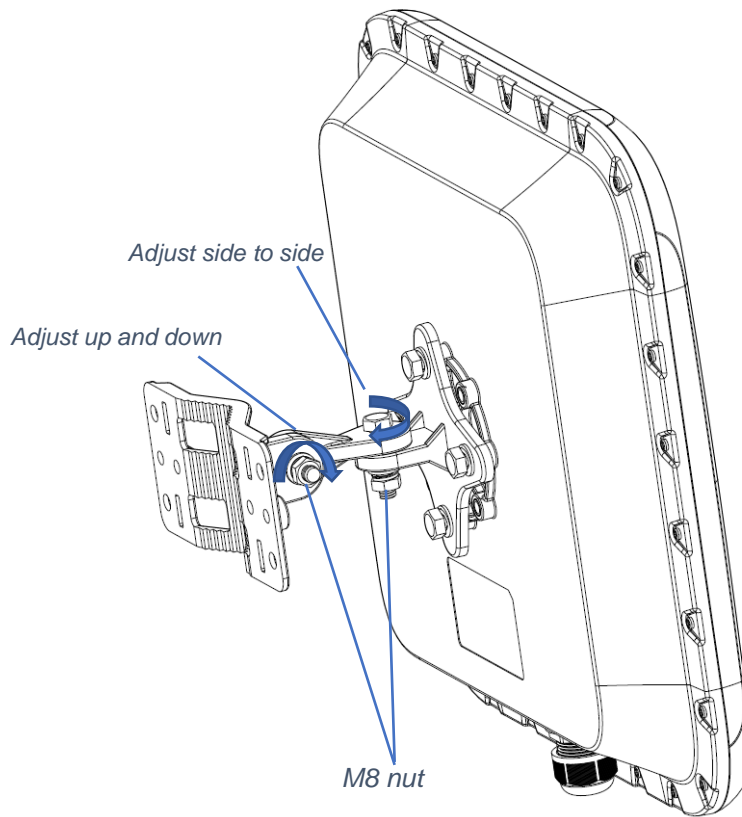


Figure 10: Adjust ODU to desired position

Installing Pole Mount

Note: Recommend to consult with a qualified technician to install the pole mount.

1. Loosen the screw of metal strap, open the strap and then through the mating holes of pole holder.
2. Replace the strap into the metal housing, fasten the screw.

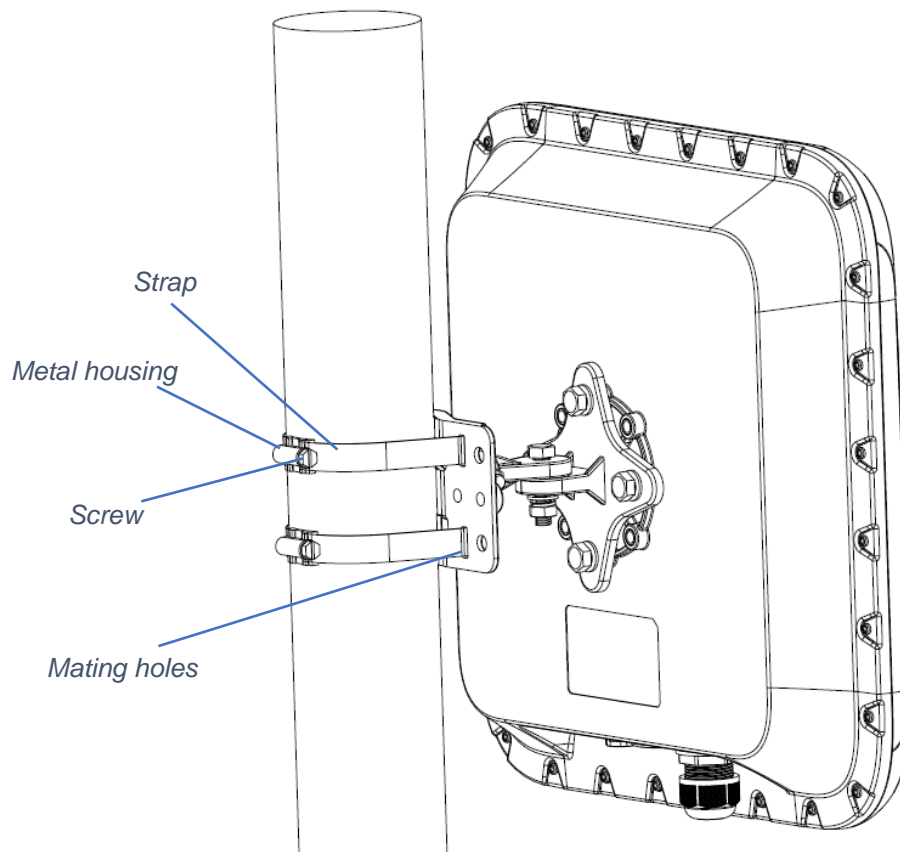


Figure 11: Installing pole mount

3.2 Hardware connection

Connecting ODU to your devices as “Figure 11:” shows.

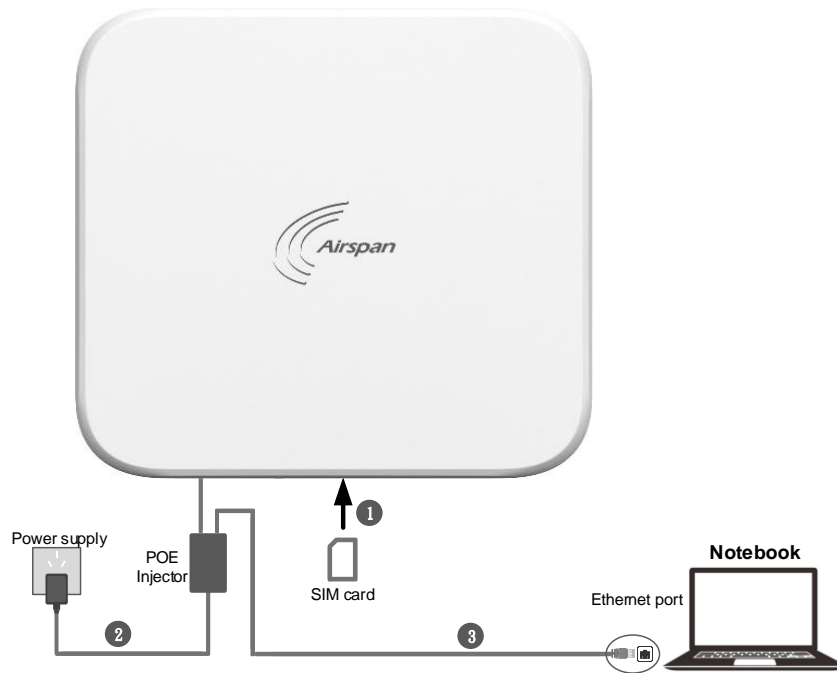


Figure 3: Hardware connection

3.3 Access ODU

ODU offer two kinds of user account with different authorization. For more details refer to clause “User management”. To log on to ODU:

- a) Launch a supported web browser.

Note: ODU is optimized for the following browser:

- Google Chrome (Version: **)
- Mozilla Firefox (Version: **)
- Microsoft Edge (Version: **)

- b) In the web browser address bar, specify the gateway IP address (Default value should be 192.168.1.1) which automatically distributed via DHCP server.
- c) Enter an user name and password (Refer to clause “User management”).
- d) Click Login to access ODU.



Figure 4: Login to ODU

4 User management

4.1 User authorization

To limit and control access to different features, ODU provides two kinds of user account (Normal user and Administrator) with different authorization. Following table shows corresponding authorization for each user.

Table 2: Authorization for each user

Features	Normal user	Administrator
Overview	√	√

4.2 Default user account

Table 3: Default user account

Role	Username	Password
Normal user	user	password
Administrator	admin	admin

5 Equipment status

6 Functional Configurations

6.1 LAN Network

6.1.1 Connection mode

ODU is preconfigured to work in **NAT mode** and act as a DHCP server on the LAN side. Therefore, all the clients get IP addresses allocated from ODU with specific address range. The default LAN IP configuration is as follows:

- LAN IP address/Gateway: 192.168.1.1
- Subnet mask: 255.255.255.0

To sets the LAN configuration parameters such as gateway IP, subnet mask and the enable DHCP flag, along with DHCP parameters, please refer to clause “6.1.2 DHCP”.

For **Bridge mode**, the Ethernet client device can get the WWAN interface IP directly via DHCP protocol.

➤ To change the connection mode:

- Launch a web browser from a computer that is connected to ODU and access to web management system.
- Select **System Setting > Lan setup > Mode Setting**.

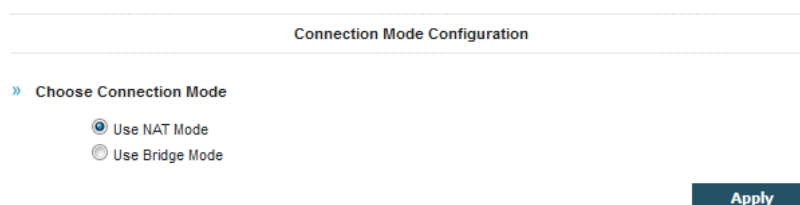


Figure 5: Mode Setting

6.1.2 DHCP

➤ To change the LAN DHCP settings:

- Launch a web browser from a computer that is connected to ODU and access to web management system.
- Select **System Setting > Lan setup > DHCP**.

DHCP Configuration

» DHCP

DHCP Server	On
Gateway	192 . 168 . 1 . 1
Subnet Mask	255 . 255 . 255 . 0
DHCP Address Allocation	192 . 168 . 1 . 10 ~ 192 . 168 . 1 . 100

Apply

Figure 6: DHCP settings

6.2 LTE

6.2.1 APN

ODU provides up to 4 APNs.

6.2.2 PLMN search

6.2.3 EARFCN white list

6.3 Firewall

6.4 CBRS

6.5 TR069

6.6 Application Service

6.7 Preference

6.7.1 Time Setting

By default, the ODU uses the default NTP server (Automatically find best one from us.ntp.org.cn, 0.pool.ntp.org and 1.pool.ntp.org) to sync the network time. You can change the NTP server to your preferred NTP server.

- To change the NTP server to your preferred NTP server:
 - Launch a web browser from a computer that is connected to ODU and access to web management system.
 - Select **System Setting > Preference > Time Setting**.
 - Select NTP Sync option “Manual”.
 - Type your preferred NTP server.
 - Click the Apply button.

Time Setting	
Current Time	Thu Jun 20 16:25:14 2013
NTP Sync	Manual <input type="button" value="Auto: Use default NTP server"/>
NTP Server	<input type="text" value="IP address of NTP Server"/>
Time Zone	(GMT+08:00) <input type="button" value="Apply"/>

Figure 7: Time Setting

6.7.2 Password Setting

You can change the default password that is used to log in to the ODU with the user name “user” (Currently user account “admin” is not allowed to be changed).

- To change the password of “user”:
 - Launch a web browser from a computer that is connected to ODU and access to web management system.
 - Select **System Setting > Preference > Password Setting**.
 - Type the old password in the Old Password field.
 - Type the new password in the New Password and Confirm Password fields.
 - Click the Apply button.

Password Setting

Old Password :

New Password :

Confirm Password :

Figure 8: Password Setting

6.8 Security

6.8.1 Firmware Update

- To upload a specific firmware version:
 - Launch a web browser from a computer that is connected to ODU and access to web management system.
 - Select **System Setting > Security > Firmware Update**.
 - Click the Browse button. Find and select the target firmware.
 - Click the Update button.

Note: Do not interrupt the update process, which will not bring the target firmware into effect. The ODU reboots after the firmware is updated successfully.

6.8.2 System Reboot

- To reboot the ODU:
 - Launch a web browser from a computer that is connected to ODU and access to web management system.
 - Select **System Setting > Security > System Reboot**.
 - Click the Reboot button.

Note: It would take about 45 seconds to reboot the system.

7 Diagnosis

Revision History

Table 1: Revision history of this document

Version	Author	Date	Description
v0.1			

Federal Communication Commission Interference Statement

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 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

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 100cm between the radiator & your body.

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

Country Code selection feature to be disabled for products marketed to the US/CANADA