



AirSpot 5410 LTE ODU CPE Quick Start Guide



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Introduction

AirSpot 5410 is an advanced, LTE, CAT12, outdoor, multi-service product specifically designed to meet data needs for residential, business and enterprise users. Supporting Gigabit networking functionality and multiple TDD band operations, it enables wide-coverage and high-data throughput. Multiple operator network support can allow deployment across the country with different operators. The AirSpot 5410 provides a Gigabit PoE connection to connect user terminal devices, such as a router or WiFi AP products.

It is CAT-B CBSD FCC and SAS compliant.

Figure 1: Front View and Rear View of ODU



How Does It Work

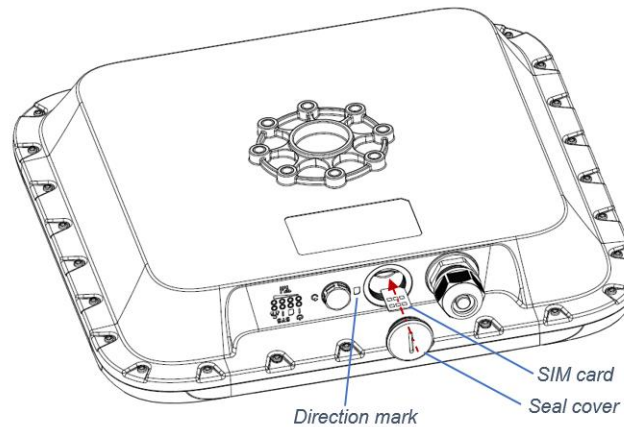
1. Connect the power adapter to the PoE (Power Over Ethernet) injector (PoE port)
2. The PoE injector provides power to the ODU via Ethernet cable.
3. Connect the PC to the power injector (Lan port) to get internet access.

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.

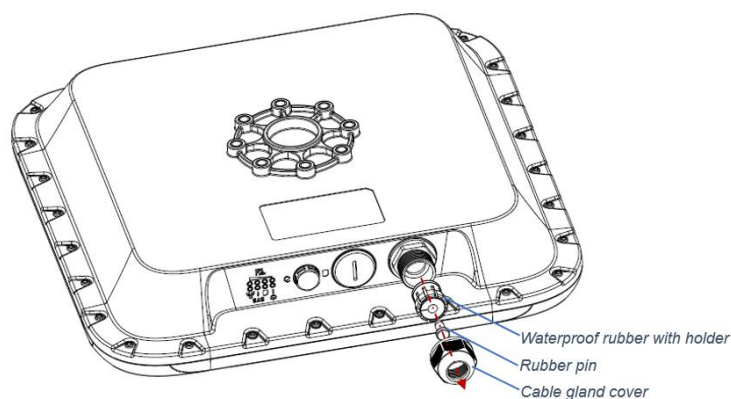
Figure 2: Installing SIM card



Installing Ethernet Cable

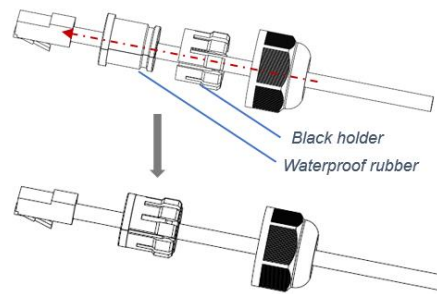
1. Remove the cable gland cover from the device by loosening the thread.
2. Take out the waterproof rubber (with black holder) from the device, and then remove the rubber pin.

Figure 3: Remove Cable Gland Cover



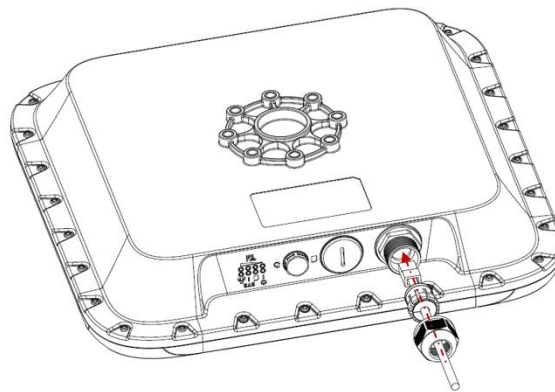
3. Insert the Ethernet cable with plug through the cable gland cover.
4. Separate the waterproof rubber along the split and then clamp it to the Ethernet cable, and then replace the black holder.

Figure 4: 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.

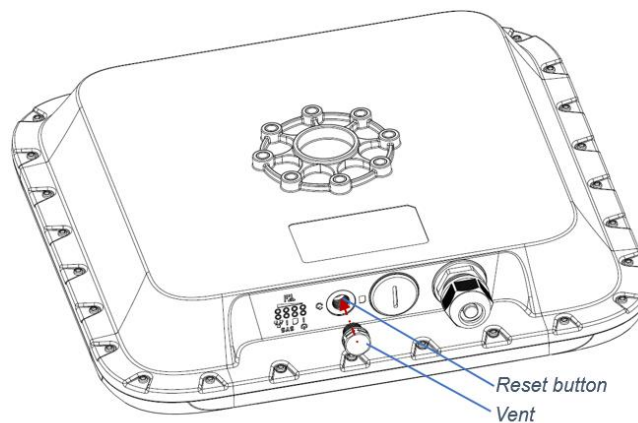
Figure 5: Replace Cable Gland Cover



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 6: Pressing Reset Button



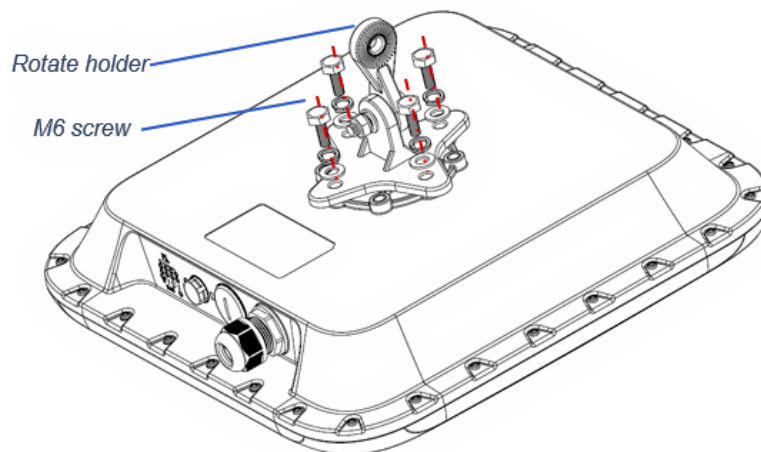
Note: Please make sure that the seal cover / RJ45 cable gland cover / vent are properly and securely closed by fastening the thread.

Installing ODU to the Mounting Kit

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

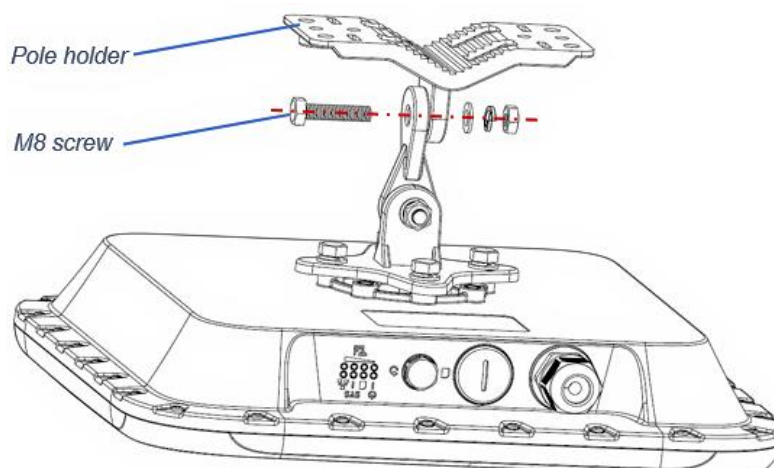
1. Assemble the device and rotate holder with four sets of M6 screws with spring washer/flat washer.

Figure 7: Assemble ODU and Rotate Holder



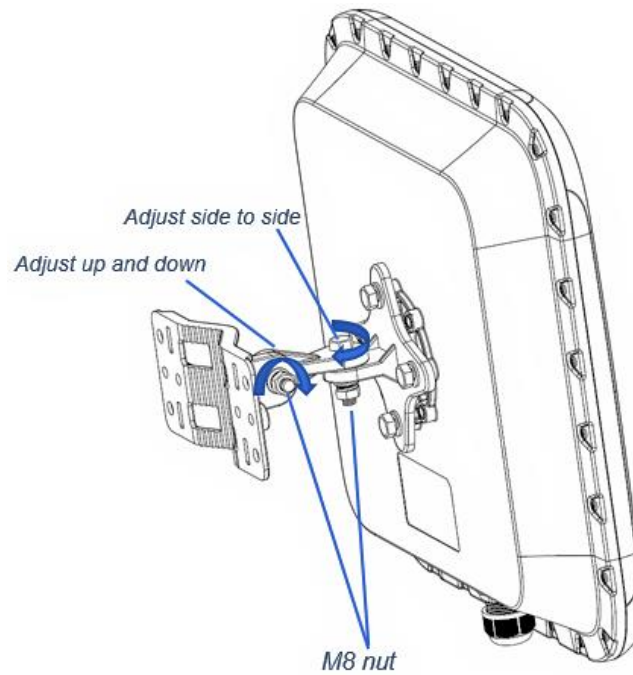
2. Remove M8 screw /flat washer/spring washer/nut from pole holder, and then assemble with rotate holder.

Figure 8: 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 9: Adjust ODU to Desired Position

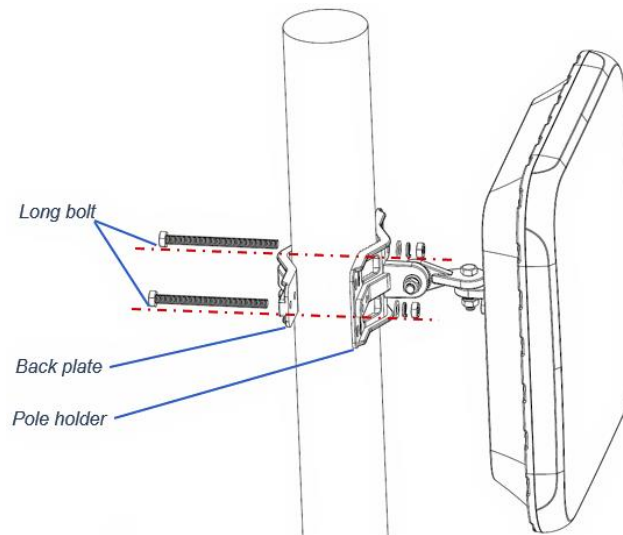


Installing Pole mount using the backplate

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

1. Loosen M8 long blot /flat washer/spring washer/nut, through the blot from mating holes of back plate, and then fasten it with pole holder. Keep balance of two side mounting parts.
2. Replace the washers, fasten the nuts.

Figure 10: Installing Pole mount with Back Plate

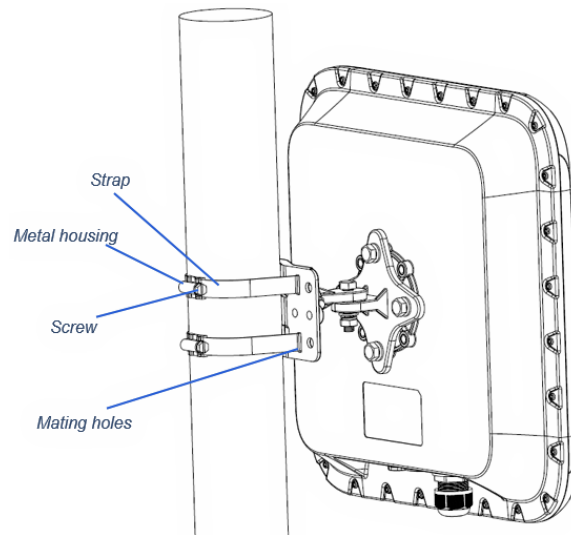


Installing Pole mount using metal straps

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.
-

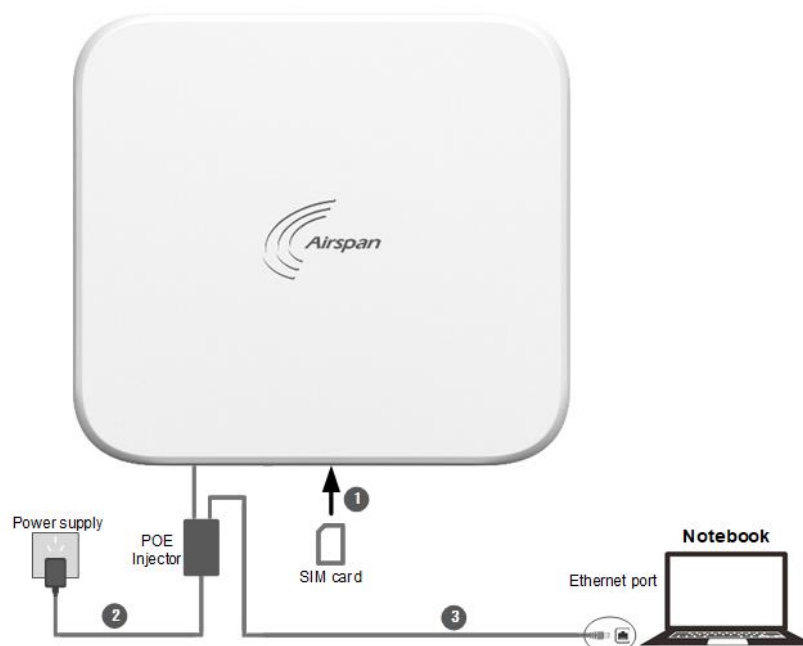
Figure 11: Installing Pole Mount



Hardware Connection

Connecting ODU to your devices as following figure shows.

Figure 12: Hardware Connection



LED Definition

Figure 13: LED Panel

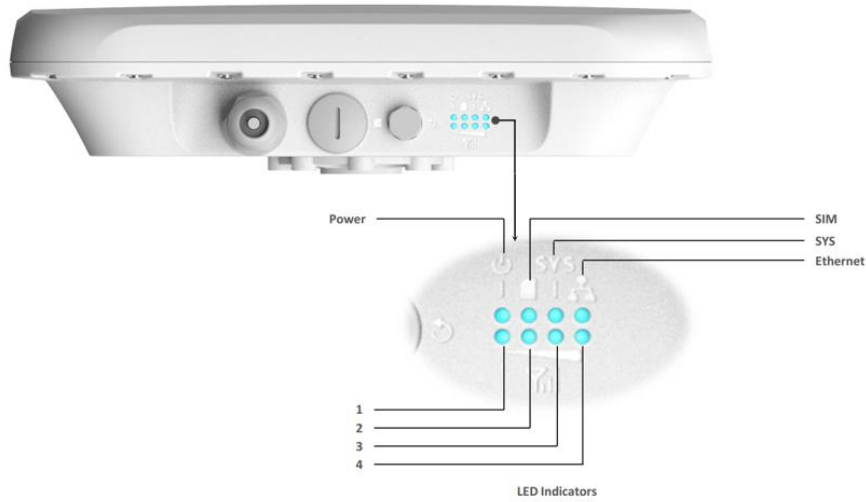


Table 1: LED Definition

LED	LED Status	Device Status
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

Access ODU

ODU offer two kinds of user account with different authorization. For more details refer to AirSpot 5410 LTE ODU CPE User Guide V0.8. To log in to ODU:

- a. Launch a supported web browser.

Table 2: Supported Browsers

Note: ODU is optimized for the following browser:

- **Google Chrome**
- **Mozilla Firefox**
- **Microsoft Edge**

- 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 a user name and password (username is “admin”, password is “admin”).
- d. Click Login to access ODU.

Figure 14: Login to ODU



The screenshot shows the login interface for the ODU. It features the Airspan logo at the top. Below the logo, there are two white input fields: one for 'Username :' and one for 'Password :'. At the bottom center, there is a white button labeled 'Login'.

LTE

Overview Page

In Overview page, there are properties, which would refresh automatically and allow you to determine the running status of the ODU (as table “[Overview page details](#)” lists).

Figure 15: Properties on Overview Page

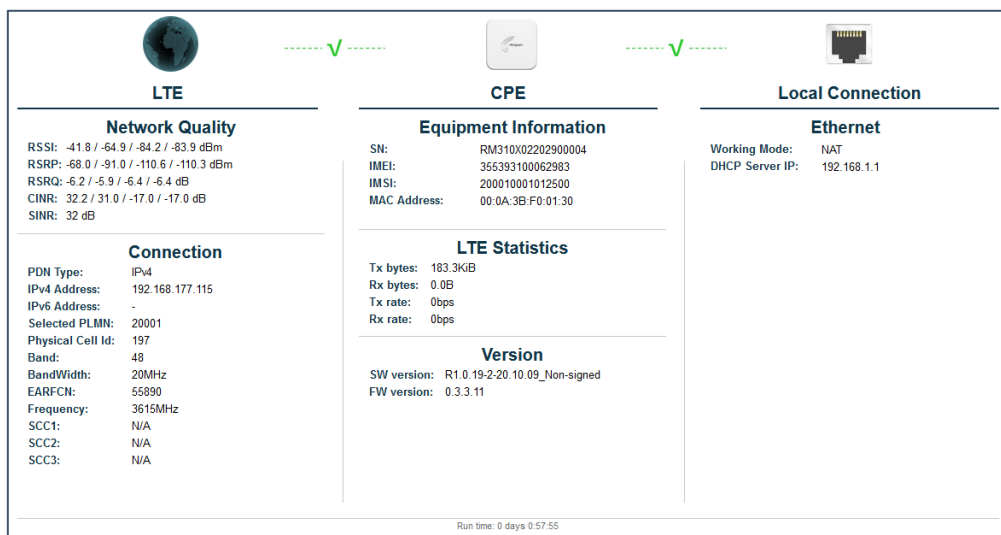


Table 3: Overview Page Details

Property	Description
Network Quality	<ul style="list-style-type: none"> • RSSI – Received Signal Strength Indication per antennas. • RSRP – Reference Signal Receiving Power per antennas. • RSRQ – Reference Signal Receiving Quality per antennas. • CINR – Carrier to Interference plus Noise Ratio per antennas. • SINR – Signal to Interference plus Noise Ratio.
Connection	<ul style="list-style-type: none"> • PDN Type – PDN connection type (IPv4 / IPv6 / IPv4&IPv6) which assigned for Internet allocation. • IPv4 Address – IPv4 address of PDN connection which assigned for Internet allocation. • IPv6 Address – IPv6 address of PDN connection which assigned for Internet allocation. • Selected PLMN – PLMN Id of the eNB which ODU attached. • Physical Cell Id – Physical cell Id of the eNB. • Band – Operating band of the Enb (e.g. 42/43/48). • BandWidth – Channel bandwidth (e.g. 20MHz). • EARFCN – E-UTRA Absolute Radio Frequency Channel Number which eNB using for Tx/Rx. • Frequency – Radio Frequency which eNB using for Tx/Rx. • SCC1 – Secondary component carrier #1 under CA scenario.

Property	Description
	<ul style="list-style-type: none"> • SCC2 – Secondary component carrier #2 under CA scenario. • SCC3 – Secondary component carrier #3 under CA scenario.
Equipment Information	<ul style="list-style-type: none"> • SN – Serial number. • IMEI – International Mobile Equipment Identity. • IMSI – International Mobile Subscriber Identity. • MAC Address – MAC address.
LTE Statistics	<ul style="list-style-type: none"> • Tx bytes – Total Tx bytes(Uplink) on LTE radio interface. • Rx bytes – Total Rx bytes(Downlink) on LTE radio interface. • Tx rate – Tx rate(Uplink) on LTE radio interface. • Rx rate – Rx rate(Downlink) on LTE radio interface.
Version	<ul style="list-style-type: none"> • SW version – Software version. • FW version – Modem FW version.
Ethernet	<ul style="list-style-type: none"> • Working Mode – Working mode of ODU applied to network packets transfer(NAT/Bridge). • DHCP Server IP – DHCP Server IP(Gateway IP) of ODU.

Statistics

In Statistics page you can observe performance statistics about system, radio network visually, and PDN connection status of all APNs.

- CPU usage and memory usage:

Figure 16: CPU Usage and Memory Usage



- APN List:

Figure 17: APN List

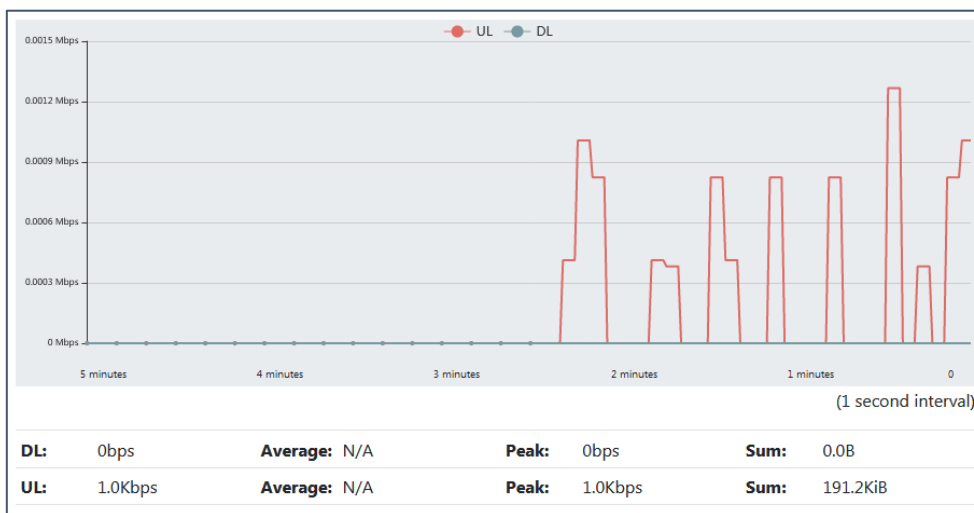
APN Index	PDN Status	PDN Type	Address
APN1	Active	IPv4	192.168.177.115
APN2	Active	IPv4	192.168.177.114
APN3	--	--	--
APN4	--	--	--

- Bandwidth Statistics:

To view the CPU usage, perform the following steps:

1. Choose Statistics
1. In the **CPU Usage** section, view the CPU usage information, such as Current CPU usage, Max CPU usage, Min CPU usage. As shown in figure below:

Figure 18: Bandwidth Statistics



➤ Throughput Statistics:

Figure 19: Throughput Statistics

Port	Received		Sent	
	Total Traffic	Packets	Total Traffic	Packets
LAN	2.9MiB	15385	4.6MiB	11745
APN1	0.0B	0	197.1KiB	3398
APN2	0.0B	0	0.0B	0
APN3	0.0B	0	0.0B	0
APN4	0.0B	0	0.0B	0

APN Settings

ODU provides up to 4 APNs. Each APN is assigned for specific purpose.

Table 4: APN Assignment

APN Index	Bridge Mode	NAT Mode
1	Management (SAS and Web access)	Internet (SAS and LAN traffic)
2	Internet (For LAN port access)	Open
3	TR069 service	Open
4	Open	Open

➤ To enable or disable the 4th APN, or edit the APN configurations:

- Launch a web browser from a computer that is connected to ODU and access to web management system.
- Go to **Settings >LTE->APN settings** page.

Figure 20: APN Settings

- Select specified APN index and change APN parameters.

Table 5: APN Parameters

Parameter	Description
Index	APN index (range: 1~4).
Enable	To enable or disable the selected APN.
APN Name	Access point name.
PDN Type	PDN connection type (IPv4 / IPv6 / IPv4&IPv6).
IP Allocation	IP Allocation method: <ul style="list-style-type: none"> - NAS, allocated via NAS protocol by EPC. - DHCP, allocated via DHCP protocol by DHCP server.
AUTH Type	Authentication type: <ul style="list-style-type: none"> - PAP - CHAP
User Name	User name for selected authentication type.
Password	Password for selected authentication type.

- Click the “Apply” button for modification take effect.

The APN List panel shows status of APN1 ~ APN4.

Table 6: APN Properties

Property	Description
PDN Status	- Active, connection granted with IP allocation.
PDN Type	- IPv4 - IPv6 - IPv4&IPv6
Address	Assigned IP address.

CBSD-CPE

According to WINNF-TS-0016 (Reference [1]), ODU which operating in the CBRS band (3550-3700 MHz) need connect to SAS (A system that authorizes and manages use of spectrum for the Citizens Broadband Radio Service in accordance with subpart F of Reference [3]) and obtain Grants from the SAS via the SAS-CBSD interface.

To ensure ODU can obtain Grants from the SAS, please configure correct registration parameters and upload valid certificates and private key.

- To configure registration parameters:
 - Launch a web browser from a computer that is connected to ODU and access to web management system.
 - Go to **Settings > Firewall > CBSD** page, input relevant parameter value.

Figure 21: Setting CBSD Registration Parameters

User ID	UserID
FCC ID	PIDASPOT5410
Grant Renew Threshold	50 % (0%~99%)
SAS URL	20.20.20.20:5000
Serial Number	RM310X02202900004
Apply	

Table 7: CBSD Registration Parameters

Parameter	Description
User ID	User Registration ID. The system-wide unique identifier for Registered Users of the CBRS; these may be CBSD Users or PAL Holders. Refer to Reference [2].
FCC ID	The FCC certification identifier of the CBSD.
Grant Renew Threshold	Valid range: 0% ~ 99%. E.g. 50% = renewing the Grant when 50% of GrantExpiryTime has passed. 0% = NO GrantRenew
SAS URL	URL address of SAS.
Serial Number	Serial number of ODU.