Altai AX500-S Outdoor 2x2 802.11ac Wave 2 AP

Quick Setup Guide

Version 1.0

Introduction

Thank you for purchasing the Altai AX500 Series product. This guide provides instructions to install the product and set it up as AP with minimal effort.

Package Contents

AX500-S Main Unit

Cable Gland x 3

PoE Injector
(Optional Item)

Quick Setup Guide

(a)

(b)

(c)

(d)

Pole Mounting Kit

(a) Downtilt Bracket Set	x 1
M8 Screw	x 2
M8 Lock Nut	x 2
M8 Flat Washer	x 4
M8 Spring Washer	x 2
M4 x 10 Screw with Washers (Shared with Wall Mounting Kit)	x 4
(b) Mounting Back Plate	x 1
M8 x 110 Mounting Screw	x 4
Flat Washer and Spring Washer	x 4

Wall Mounting Kit

(c) Mounting Bracket	x 1
M4 x 10 Screw with Washers (Shared with Pole Mounting Kit)	x 4
(d) Drywall Mounting Screw	x 4
Hex Head Screw	x 4
Anchor with Flat Washer and Nut	x 4
Flat Washer and Spring Washer	x 4

Hardware Overview

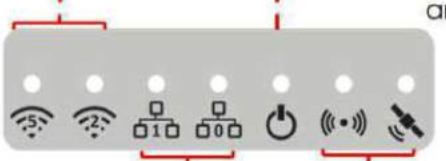
LED Panel

2.4G/5G WiFi Radios
(AP/Repeater/Bridge Modes)

- ● Solid Green
  1. AP Mode on but with no Clients Associated
  2. Repeater Mode on but not connected to Remote AP
  3. Bridge Mode on but not connected to Remote Peer
- ☼ Flashing Green: Data Transmitting/Receiving
- ○ Off: Radio Disabled

Power

- ○ Off: No Power
- ☼ (1) Flashing Yellow: AP Booting Up
  (2) Flashing Green: AP Discovering/ Connecting to AltaiCare/AltaiGate/ Access Controller
- ● (1) Solid Yellow: AP Boot Up Finished and Running in Standalone Mode
  (2) Solid Green: AP Boot Up Finished and Running in Thin AP Mode

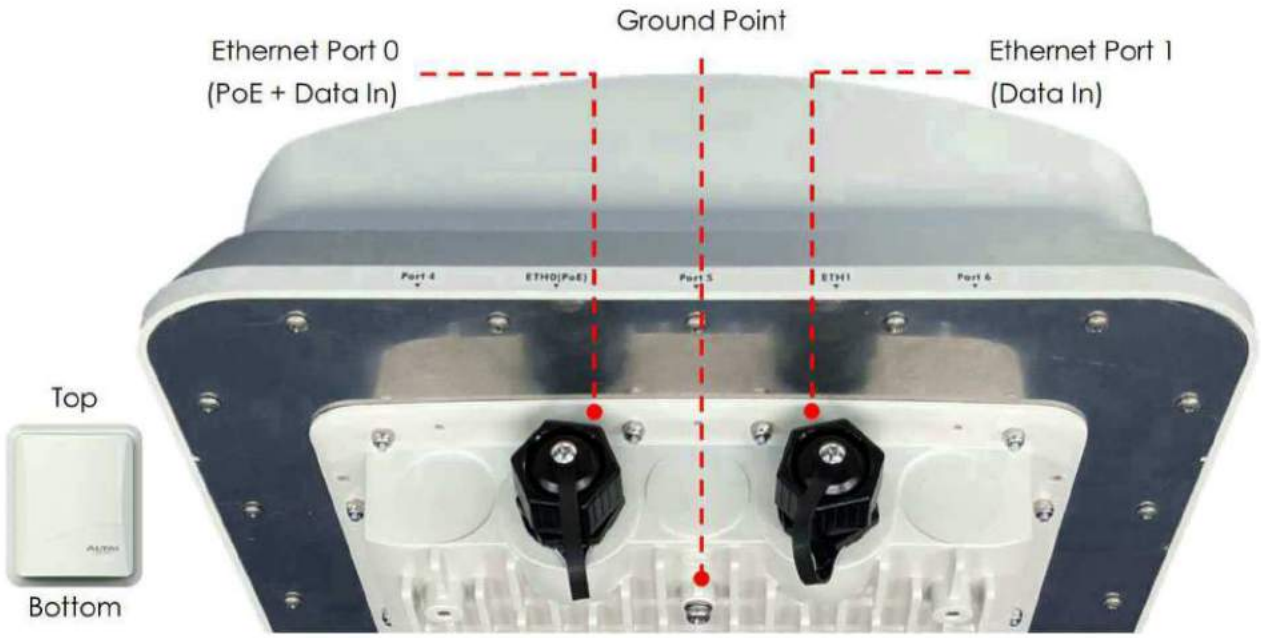


Not Applicable for this AP Model

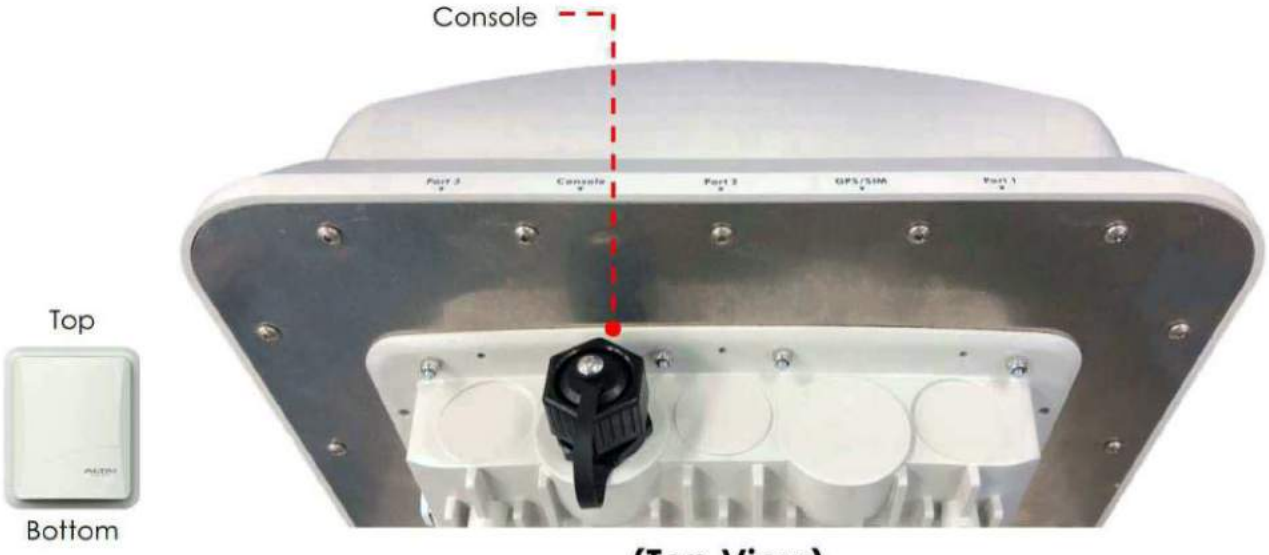
LAN (Ethernet 0/1)

- ● Solid Blue/Green: LAN Connected with 1Gbps/100Mbps of Ethernet Speed
- ☼ Flashing Blue/Green: Data Transmitting/Receiving
- ○ Off: LAN Disconnected

Ethernet Ports, Console Port and Ground Point



(Bottom View)



(Top View)

ETH0 (PoE):
It is used to connect to power source (see the Power Options in the later section) and provides 10/100/1000 Mbps network interface for LAN connection.

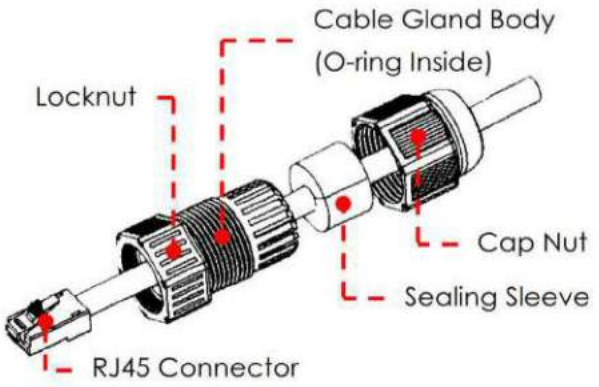
ETH1:
It provides 10/100/1000 Mbps network interface for LAN connection with peripherals.

Console:
It is used to connect to the computer for local Command Line Interface (CLI) access using a standard DB9 to RJ45 console cable.

Ethernet/Console Cable Feed-Through
Seal the RJ45 cable Connector with the provided cable gland.

1. Feed the end of the cable through the cap nut, sealing sleeve and cable gland body as shown in the picture below.

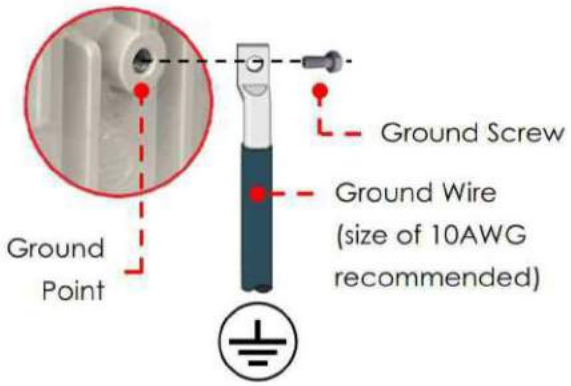
2. Connect the cable to the Ethernet/Console Port.



3. Tighten the locknut to fix the cable gland body to the AP chassis.

4. Tighten the cap nut.

Ground Point:
It is for AP chassis grounding. Use size 10 AWG ground wire (not included) and attach it to the chassis using the provided ground screw. Connect the other end of ground wire to a reliable earth ground point at site.

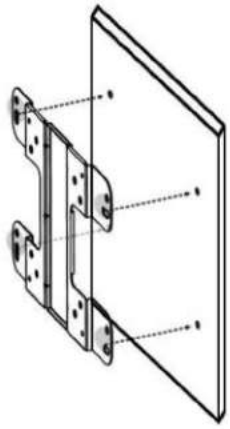


Mounting Options

Note: AX500-S is an integrated-antenna AP model which is designed to provide WiFi coverage over a sector area. When mounting AP on site, make sure the front antenna panel points to the target area. For details of antenna information and installation, refer to AX500 installation guide.

Option 1: Wall Mount Installation angle: 90°

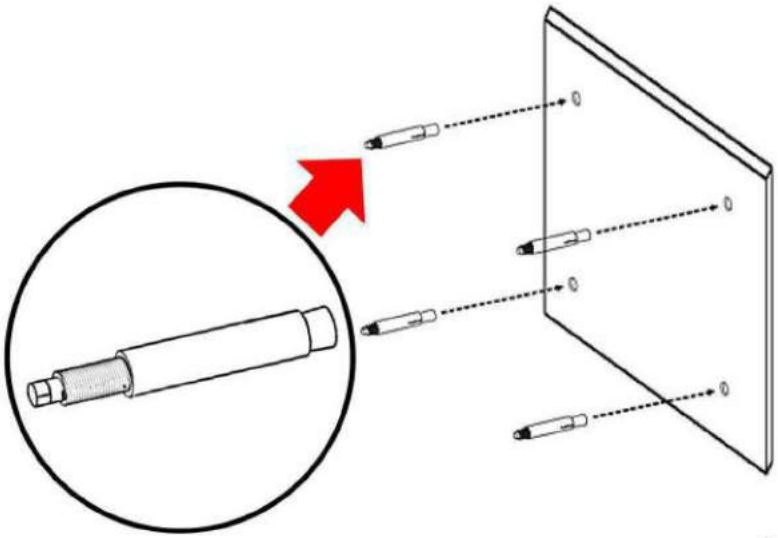
1

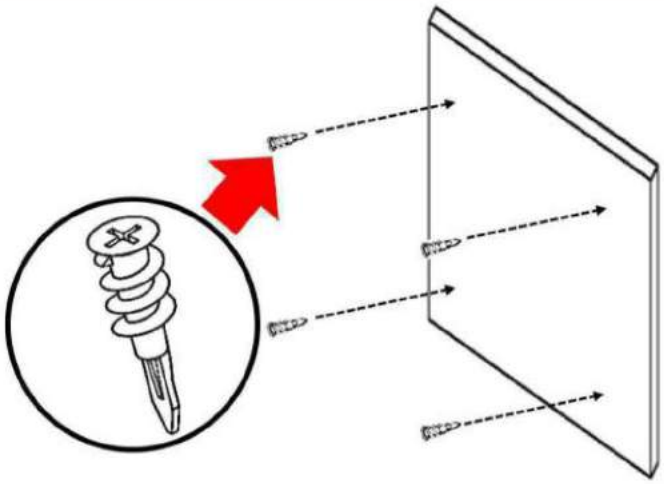


Determine where the AP is to be placed and mark location on the wall surface for the four mounting holes.

2 Concrete Wall Mount:

Use the appropriate drill bit to drill four holes of 8mm diameter and 37mm depth on the markings and hammer the bolts into the openings.

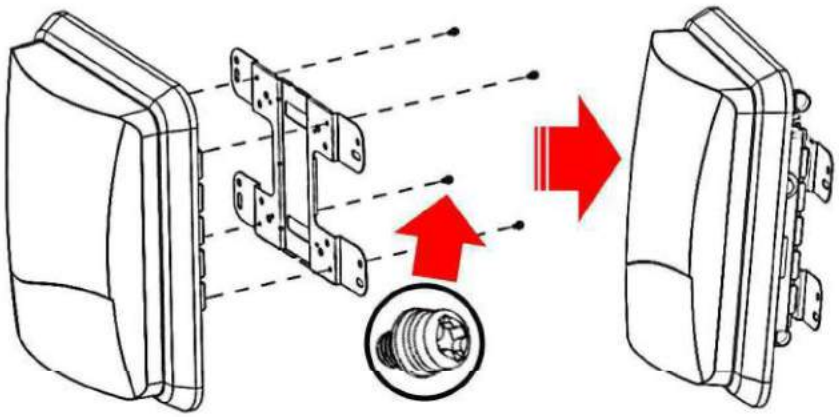




Drywall Mount:

Drive the mounting screws into the wall on the markings.

3 Place the spring and flat washers on the M4 round head screws and drive the screws to attach the mounting plate to the back of the Access Point.



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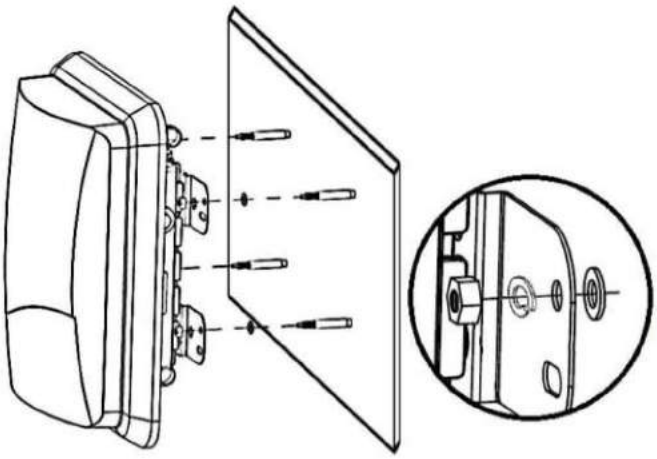
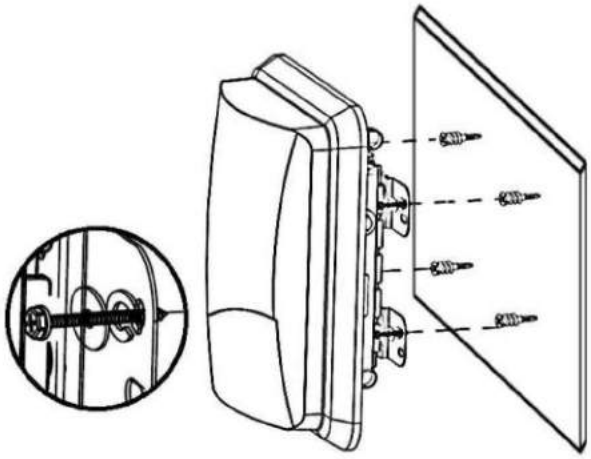


Concrete Wall Mount:

Attach the device onto the wall by tightening the bolt's nuts with flat and spring washers to secure the mounting plate to the mounting surface.

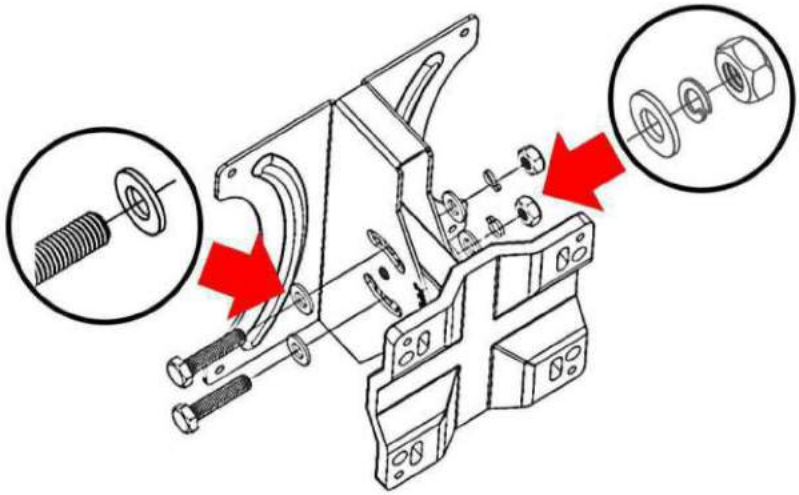
Drywall Mount:

Insert the screws through the flat and spring washers. Then attach the device onto the wall by tightening the screws to secure the mounting plate to the mounting surface.



Option 2: Pole Mount (For 1 inch to 3 inches of pole diameter) Installation angle: 180°

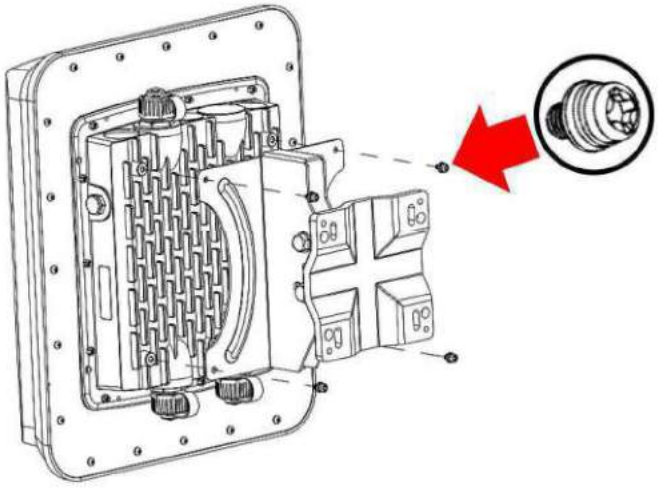
1



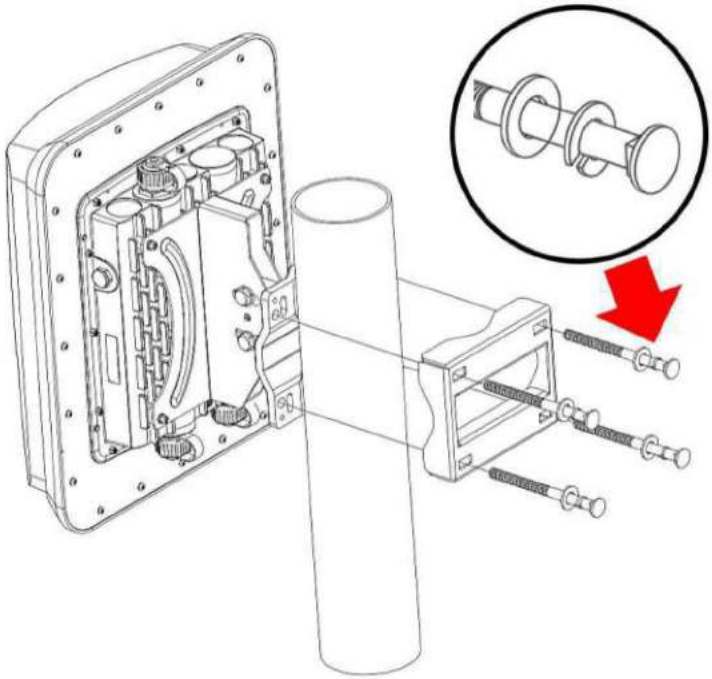
Assemble the downtilt bracket components with M8 screws, flat washers, spring washers and lock nuts as shown in the drawing.

2

Place the spring and flat washers on the M4 round head screws and drive the screws to attach the downtilt bracket to the back of the Access Point.

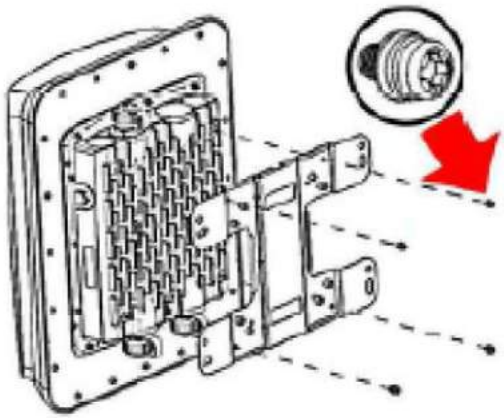


3



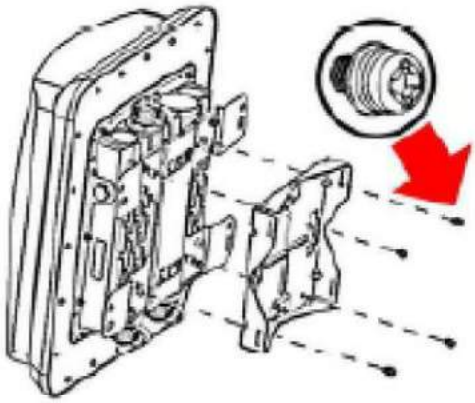
Align the mounting back plate and the Access Point on the pole. Insert the long screws through the mounting Back Plate and the downtilt bracket and tighten it with the screw hex heads and washers.

1



Place the spring and flat washers on the M4 round head screws and drive the screws to attach the mounting plate to the back of the Access Point.

2 Place the spring and flat washers on the M4 round head screws and drive the screws to attach the pole mount bracket to the mounting plate.



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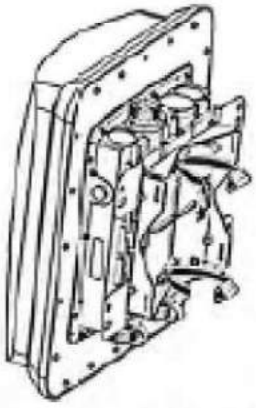
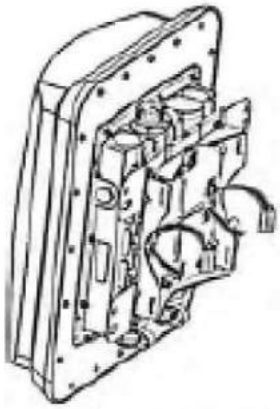


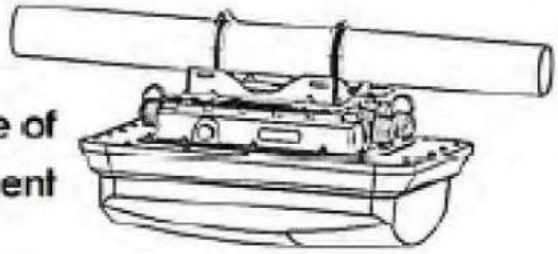
For the Pole of Vertical Alignment



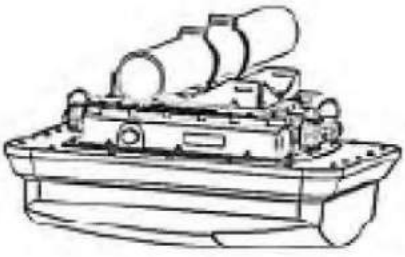
For the Pole of Horizontal Alignment

Thread the open end of the hose clamp through the two slots on the pole mount bracket.

4 Determine where the AP is to be placed. Lock and tighten hose clamp to secure pole mount bracket to the pole.



For the Pole of Vertical Alignment



For the Pole of Horizontal Alignment

Setup Requirements and Preparation

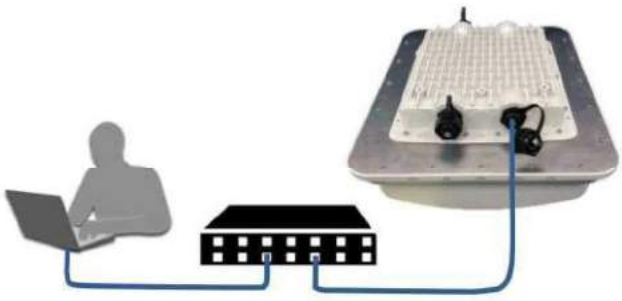
- A computer with Web Browser: Google Chrome, Mozilla Firefox, or Microsoft Internet Explorer 8 (or above)
- Two Cat 5e/6 Ethernet cables
- AltaiCare account (Optional) for cloud AP management and user service

Power Options and Cable Connection Instructions

You can follow one of the options below for AX500-S configuration as described in the following sections.

Option 1: 802.3at-Compliant PoE switch

1. Connect AX500-S Eth0 (PoE) port to an 802.3at PoE Switch with an Ethernet Cable.
2. Connect a computer to the switch.
3. Make sure the Power LED light is yellow and the LAN LED light is blue.



802.3at – Compliant PoE Switch

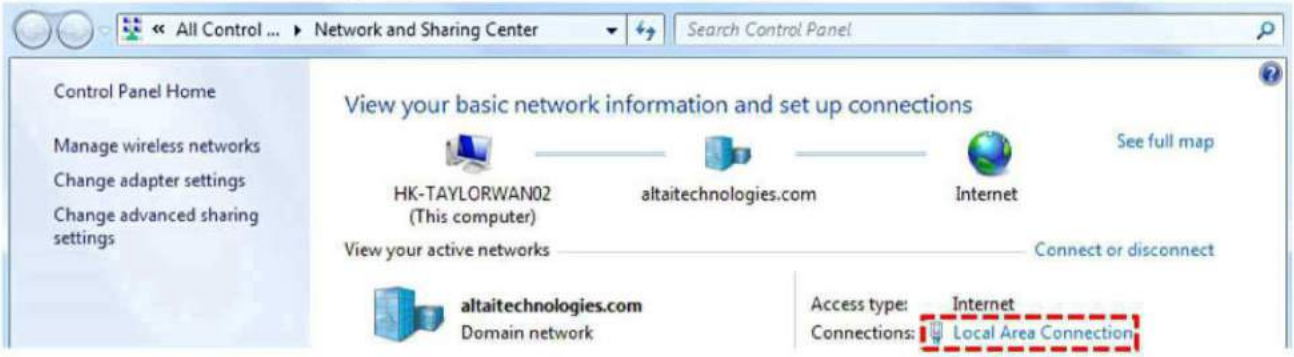
Option 2: PoE Injector (Ordered separately)

1. Connect AX500-S Ethernet port to a PoE Injector's "PoE" port with an Ethernet Cable.
2. Connect a computer to the PoE Injector's "LAN" port with another Ethernet Cable.
3. Connect the PoE Injector to AC power socket using a power cord (Not provided in the package).
4. Make sure the Power LED light is yellow and the LAN LED light is blue.

1. Change TCP/IP Setting on Your Computer

For Windows 7 users,

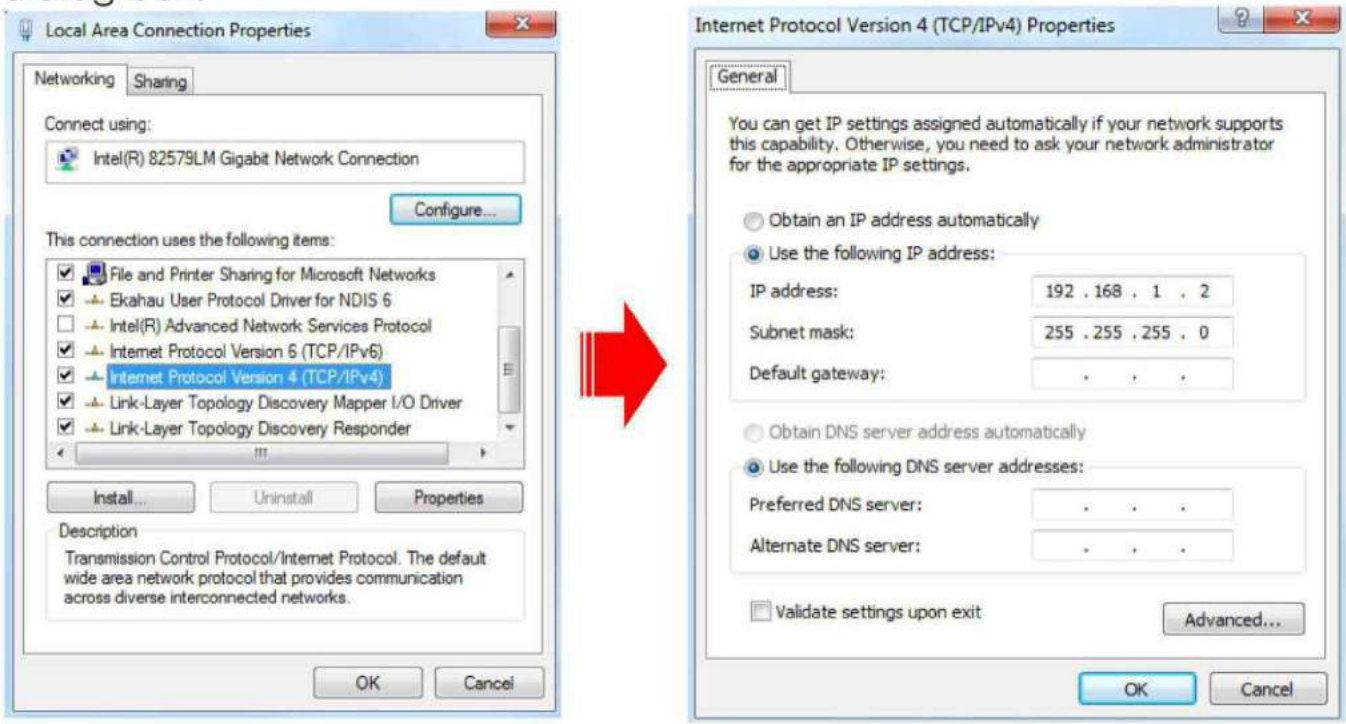
1. Go to **Control Panel**, click **Network and Sharing Center** and then choose the adapter that you want to connect to AX500-S unit. In this example, adapter "**Local Area Connection**" is in connection with AX500-S. Click it and then click **Properties**.



2. Under the **Networking** tab, click **Internet Protocol Version 4 (TCP/IPv4)** in the list box "**This connection uses the following items**", and then click **Properties**.

3. Type in the following IP address and Subnet mask:
   - IP address: 192.168.1.2
   - Subnet mask: 255.255.255.0

4. Click **OK** to close the **Internet Protocol Version 4 (TCP/IP) Properties** dialog box and click **OK** again to close the **Local Area Connection Properties** dialog box.

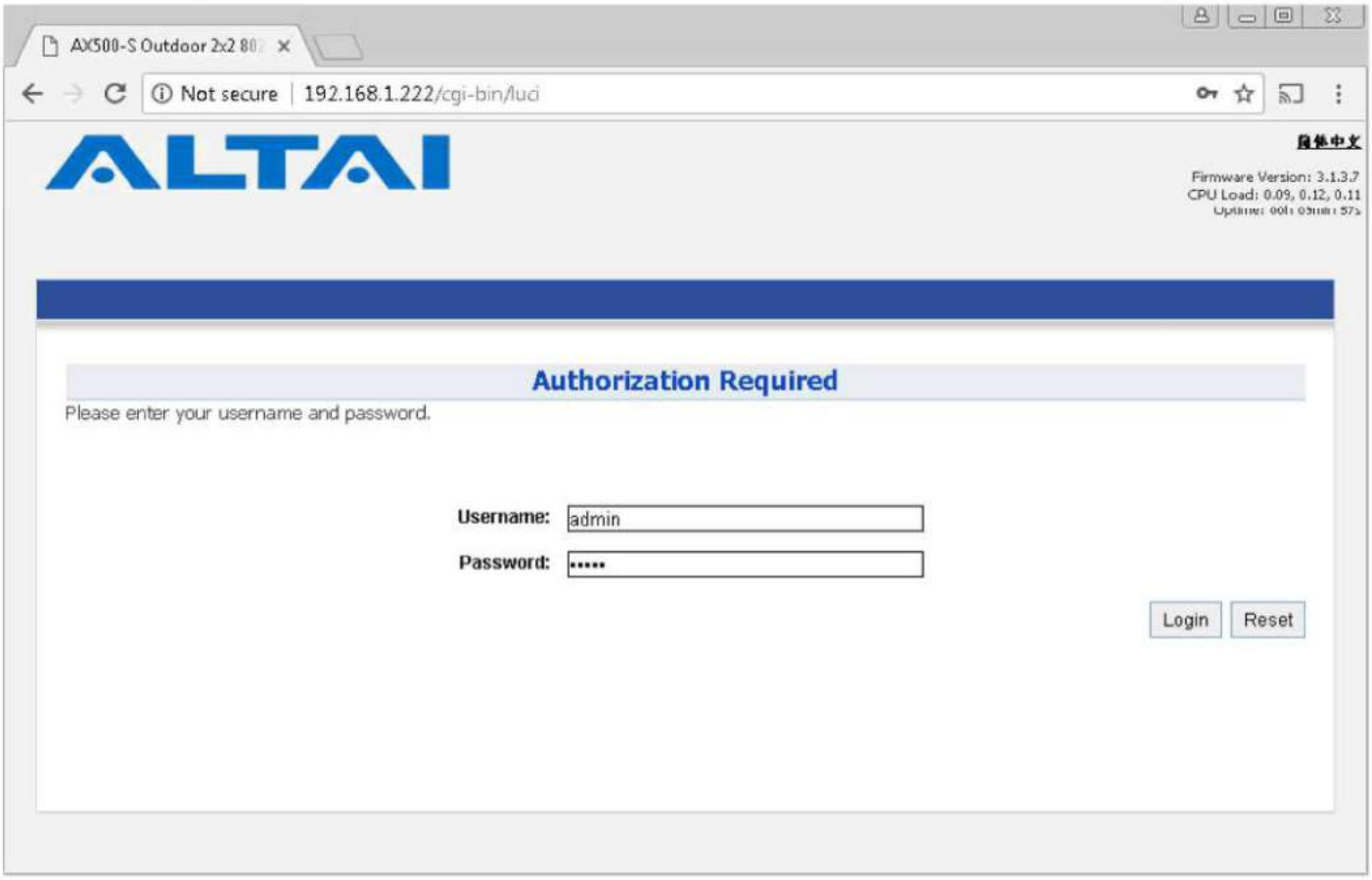


2. Access to Web Interface

1. Open a web browser. Type **192.168.1.222** in the address bar and then hit **Enter**.

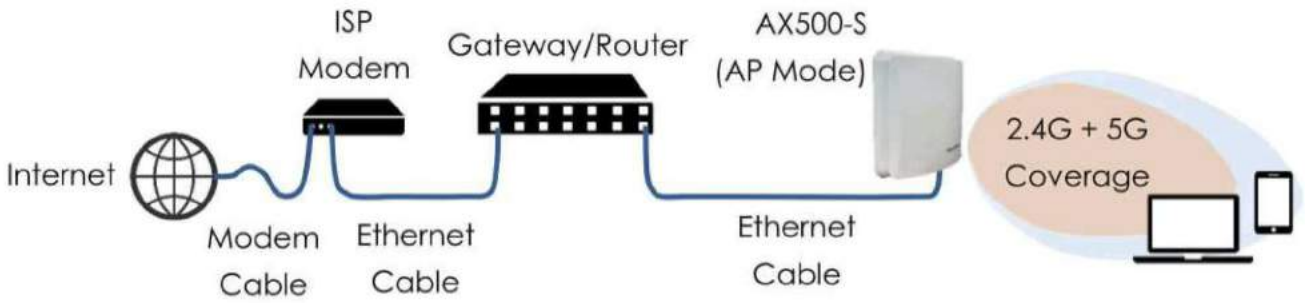
2. Login page will come up and you are required to enter username and password. By default, the credentials are:
   - **Username**: admin
   - **Password**: admin

3. Click Login.



3. Configure AP Mode (2.4G/5G)

Network Scenario

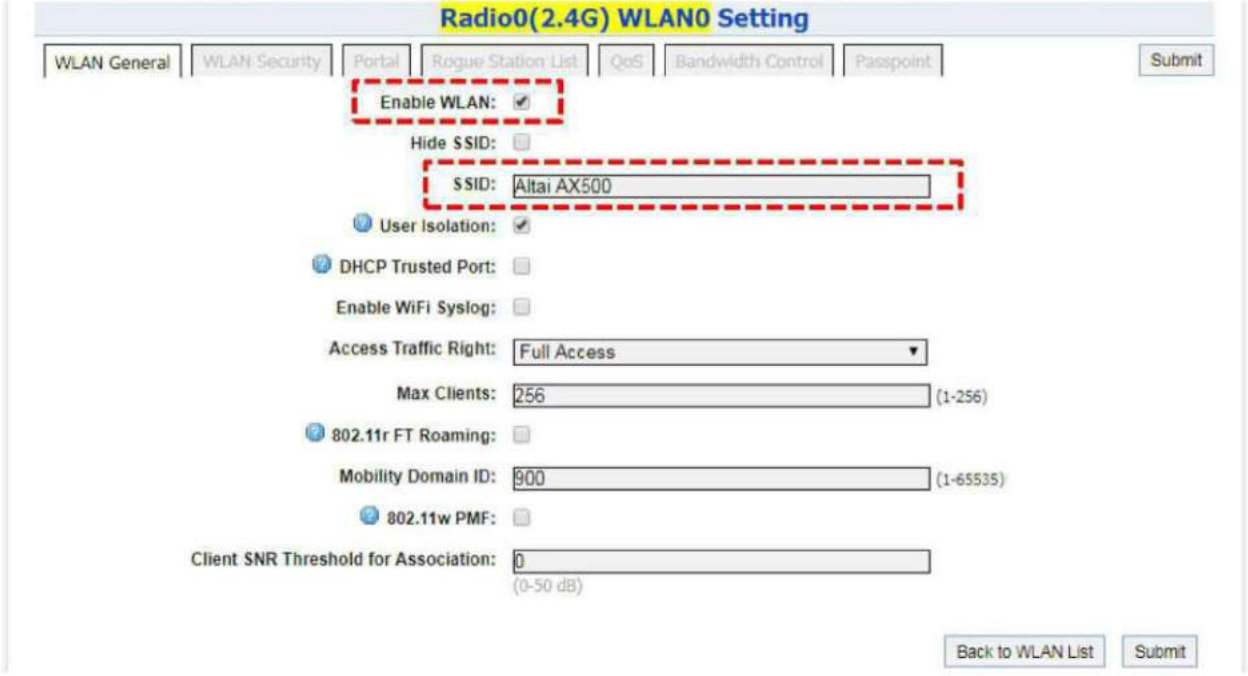


Go to **Configuration** > **Wireless** > **Radio0(2.4G)/Radio1(5G)** > **General**. Below screenshots show an example for 2.4G radio configuration only. Same procedures can be applied to 5G radio configuration.

1. Make sure the box of **Enable Radio** is checked. Select **AP mode** for the field of **Radio Mode**. Then click **Submit**.

2. Click **WLAN** and click **More...** in **Detail** of WLAN 0 to go to another page for SSID and security configuration.

3. Make sure **WLAN** is enabled by checking the box. Type in **SSID** to name the wireless network you want to broadcast and then click **Submit**.



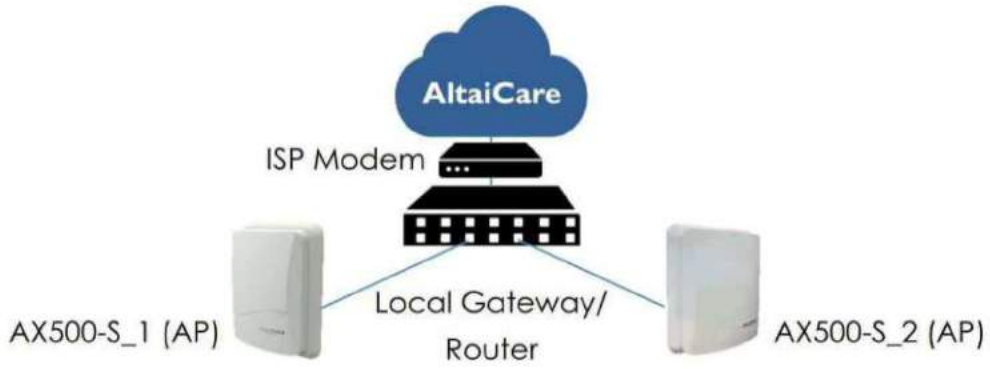
4. Click the tab **WLAN Security**. Select **WPA2-PSK** from the drop down menu of **Authentication Mode** and select **AES** for **Cipher Mode**. Type in a password within 8~64 characters or numbers in **Pass Phrase** and click **Submit**.

5. Click **Save & Apply** at the top right corner to have all changes take effect.

6. Hook up the AX500-S as shown in Network Scenario. The SSID should now be broadcast from AX500-S and can be seen in the computer for wireless connection.

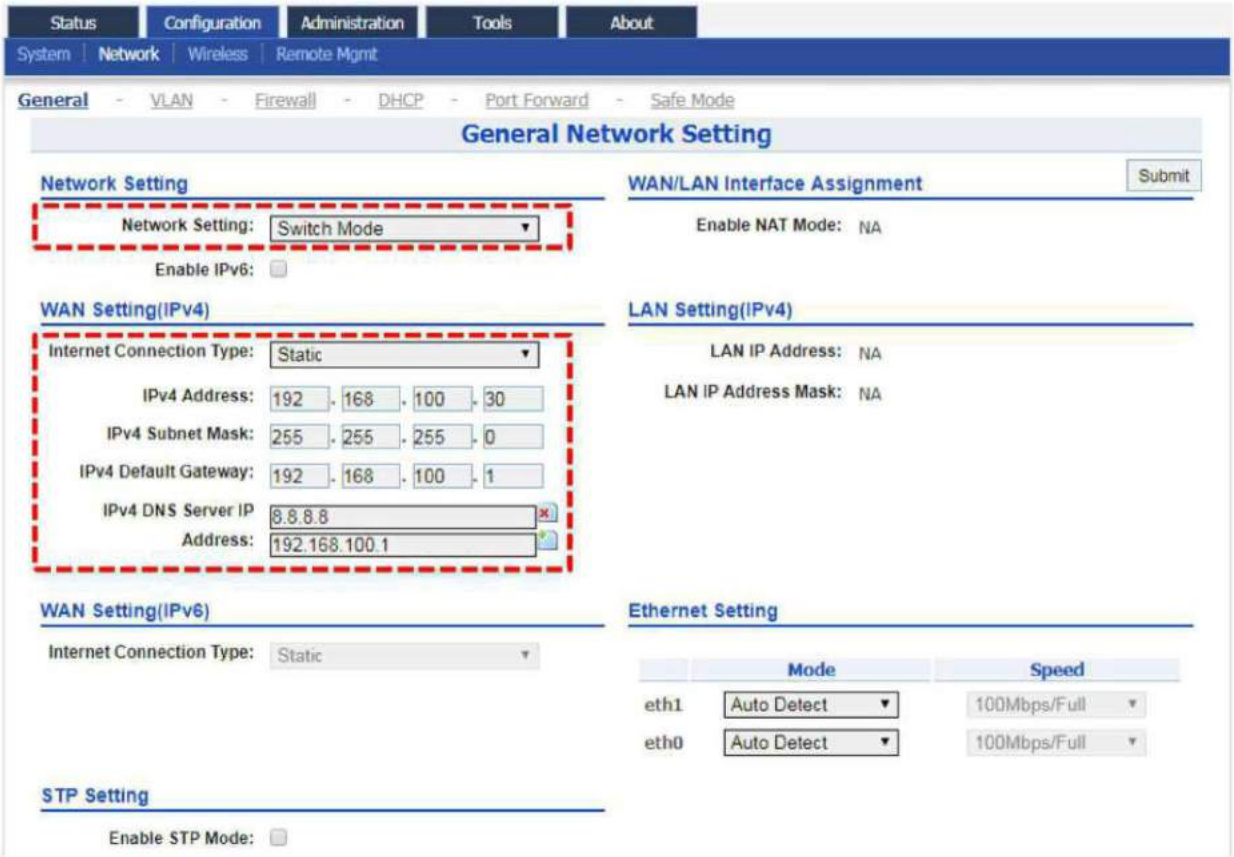
4. Connect with Cloud-Based Controller – AltaiCare

Network Scenario:

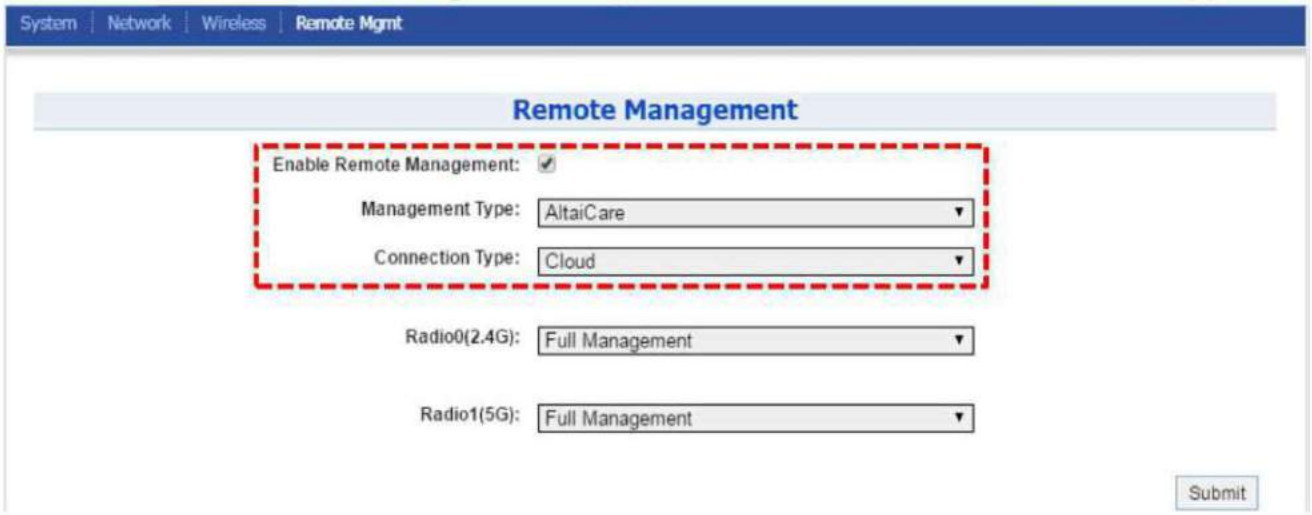


1. You can manage your AX500-S and set up hotspot service for the subscribers with AltaiCare, which is a cloud-based system.

2. Go to **Configuration** > **Network** > **General**. Select **Switch Mode** for **Network Setting** and make sure the AX500-S can reach Internet and communicate with AltaiCare by inputting **valid** IP settings either via DHCP or with Static IP configuration. Google Public DNS Server can be considered, e.g. 8.8.8.8 or 8.8.4.4 if you are not sure about the ISP DNS's Server IP.



3. Click **Remote Mgmt** and check the box of **Enable Remote Management**. Select AltaiCare as **Management Type** and Cloud as **Connection Type**.

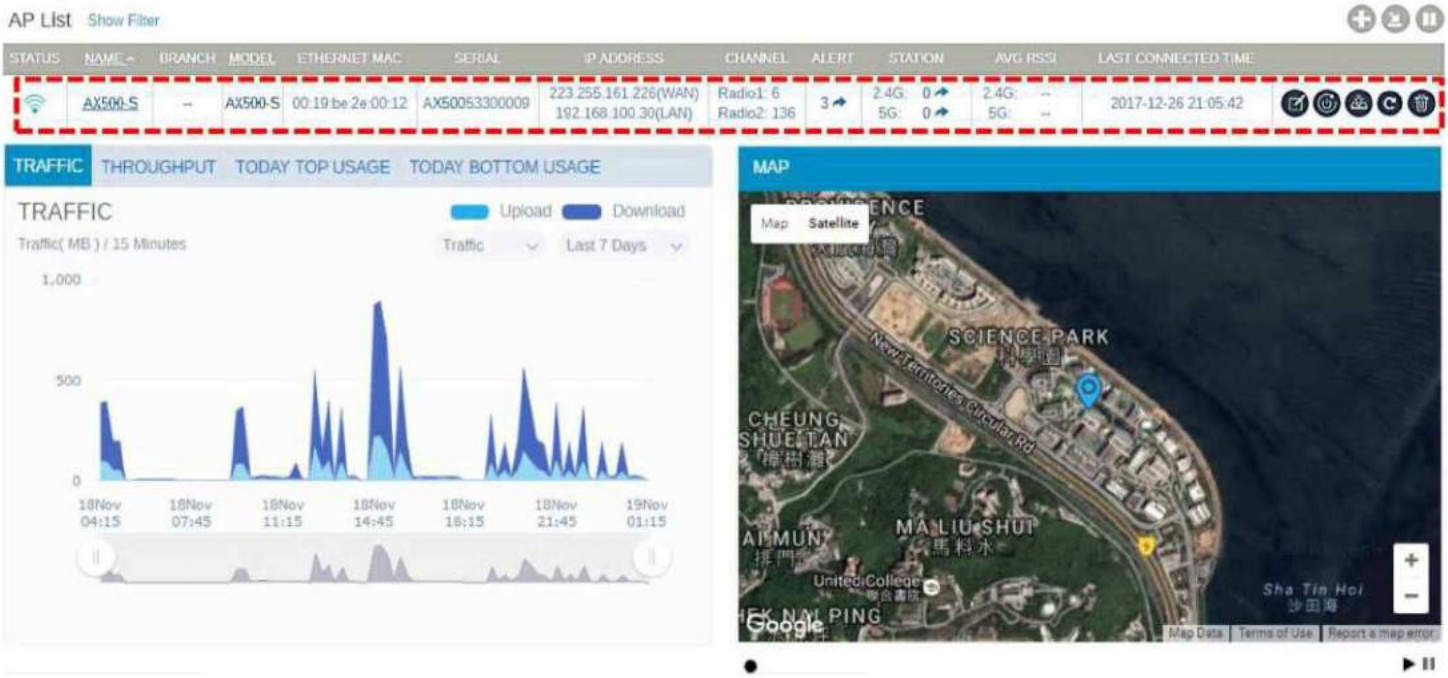


4. Select **Full Management** if the device is running in **AP Mode**. For **Station Mode**, **Bridge Mode** and **Repeater Mode**, select **Monitor Mode** instead.

5. Click **Submit** and then **Save & Apply** at the top right corner to make all the changes take effect.

6. Follow AltaiCare Quick Start Guide and register the AX500-S in the system for AP management and user service and admission control.

7. AX500-S will appear as online in AltaiCare AP list if the connection is successful.



Federal Communication Commission Interference Statement (FCC) – USA

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.

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

Please install a lightning arrestor to protect the base station from lightning dissipation during rainstorms. Lightning arrestors are mounted outside the structure and must be grounded using a ground wire to the nearest ground rod or item that is grounded.

IMPORTANT NOTE:

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 36cm between the radiator & your body.

The antenna gain, antenna type, and output power that can be used for the device, that the info listed below are correct and represent the product in consideration under this filing.

Model	Type	Gain (dBi)		Connector	Limit of MAX. Output Power(mW)		
		2.4GHz Band	5GHz Band		2.4GHz	5GHz U-NII-1	5GHz U-NII-3
AX500-S	Internal Sector Smart ANT	8.8	14.1	NA	523.051	4.871	150.431

AX500 transmit power setting

Product	2.4 GHz	5.150 – 5.250 GHz	5.725 – 5.850 GHz
AX500-S	**11b** Ch 1: 26dBm Ch6: 27dBm Ch11: 26dBm **11g** Ch1: 23dBm Ch6: 26dBm Ch11: 23dBm **11n(HT20)** Ch1: 22dBm Ch6: 26dBm Ch11: 23dBm **11n(HT40)** Ch3: 21dBm Ch6: 23dBm Ch9: 23dBm	**11a** Ch36: 6dBm Ch40: 6dBm Ch48: 6dBm **11n(HT20)** Ch36: 6dBm Ch40: 6dBm Ch48: 6dBm 11n(HT40) Ch38: 6dBm Ch46: 6dBm **11ac(VHT80)** Ch42: 6dBm	**11a** Ch149: 21dBm Ch157: 21dBm Ch165: 21dBm **11n(HT20)** Ch149: 21dBm Ch157: 21dBm Ch165: 21dBm **11n(HT40)** Ch151: 21dBm Ch159: 21dBm **11ac(VHT80)** Ch155: 21dBm

European Conformity (CE) – EU

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

CE

Warning

AX500-S may require professional installation depending on the deployment scenario.

Only use the power adaptor supplied with AX500-S. Using a different power adaptor might damage the device.

Disclaimer

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