AP Series Indoor Wireless LAN Access Points

Quick Start Guide

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Preface

This document describes the hardware configuration, installation preparation, installation method, installation procedure, cable connection, and procedure for logging in to the indoor APs.

The preface is organized as follows:

- Intended Audience
- Symbol Conventions
- Documentation Obtaining
- Technical Support

Intended Audience

This document is intended for:

- Hardware installation engineers
- Onsite maintenance engineers
- Network administrators configuring and maintaining the network

Symbol Conventions

The symbols that may be found in this document are defined as follows:

Symbol	Description
⚠ CAUTION	**CAUTION** indicates a potentially hazardous situation that, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results.
📖 NOTE	Provides additional information to emphasize or supplement important points of the main text.
⚠ WARNING	**WARNING** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
⚠ DANGER	**DANGER** indicates a hazard with a high level or medium level of risk which, if not avoided, could result in death or serious injury.

Documentation Obtaining

You can visit http://enterprise.huawei.com to obtain the latest product documentations. Choose **Support > Product > Enterprise Networking > Datacom Network > WLAN > Product Documentation**, and then select the document of a specified version.

> 📖 **NOTE**
>
> You can select the document as required. For example, if you want to obtain AP7110DN-AGN documents, select **AP7110DN-AGN**.

Technical Support

If you have trouble in locating or rectifying faults during maintenance or troubleshooting by following instructions in this document, contact the Huawei customer service center (CSC) for help.

- Tel: 4008229999

You can also visit http://enterprise.huawei.com, click **Contact Us** in the lower area of the page, and select the country to obtain contact information about Huawei local office.

Change History

Changes between document issues are cumulative. Therefore, the latest document issue contains all the changes in previous issues.

Change in Issue 01 (2012-10-31)

Initial commercial release.

Device Introduction

The Huawei AP series indoor wireless LAN access point provides eight models: AP3010DN-AGN, AP5010DN-AGN, AP5010SN-GN, AP6010DN-AGN, AP6010SN-GN, AP6310SN-GN, AP7110DN-AGN, and AP7110SN-GN. The indoor AP features high reliability, high security, simple network deployment, automatic AC discovery and configuration, and real-time management and maintenance.

The APs are recommended in scenarios where the building structure is simple and the building area is small, have a high density of users, and have high capacity demands, for example, small-scale meeting rooms, bars, and entertainment places. The APs can be flexibly deployed.

Table 1 lists the dimensions and weights of indoor APs.

Table 1 Dimensions and weight

| Model	Dimensions	Weight
AP3010DN-AGN AP5010DN-AGN AP5010SN-GN AP6010DN-AGN AP6010SN-GN	180mm×180mm×50mm（W×D×H）	0.4kg
AP6310SN-GN	130mm×150mm×35mm（W×D×H）	0.6kg
AP7110DN-AGN	200mm×200mm×45mm（W×D×H）	0.95kg
AP7110SN-GN	200mm×200mm×45mm（W×D×H）	0.92kg

Table 2 Interfaces on indoor APs

AP3010DN-AGN AP5010DN-AGN AP5010SN-GN AP6010DN-AGN AP6010SN-GN	
AP6310SN-GN	

Device Introduction

Table 2 Interfaces on indoor APs

AP7110DN-AGN	
AP7110SN-GN	
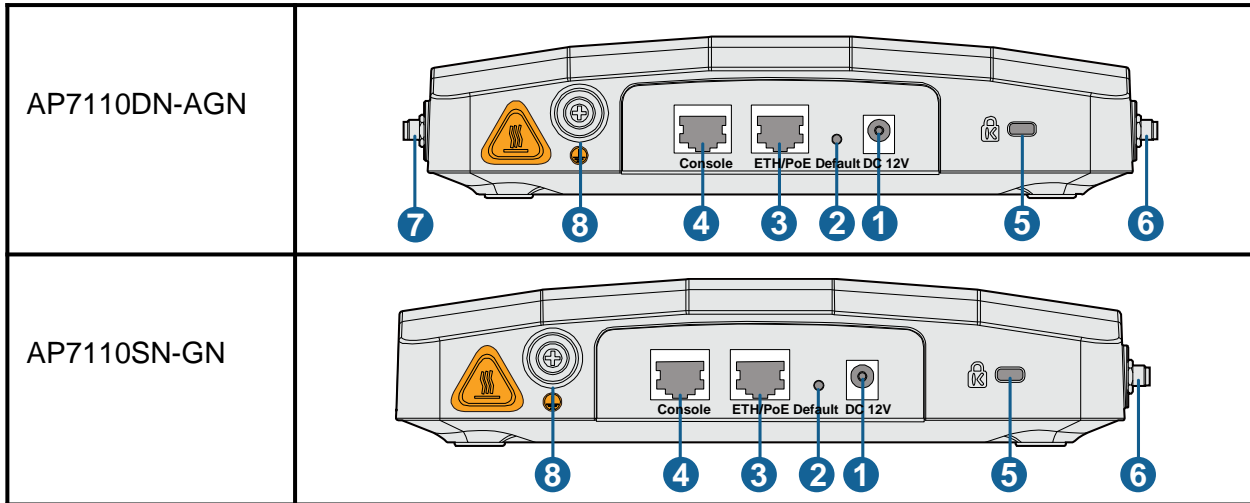
Table 3 Interfaces on indoor APs

No.	Name	Description
1	DC 12V	Connected to the power adapter.
2	Default	Press and hold down the Reset button for 3 seconds to restore the factory settings and restart the AP.
3	ETH/PoE	10/100/1000M port, which connects to the wired Ethernet. The port can connect to a PoE switch or a PoE power supply to provide power for APs.
4	Console	Connected to the maintenance terminal for device configuration and management.
5	Security slot	Connected to the security lock.
6	2.4 GHz antenna port	A port connected to the 2.4 GHz antenna.
7	5 GHz antenna port	A port connected to the 5 GHz antenna.
8	Ground screw	Connect the ground cable to the AP with a ground screw.

Installation Preparations

1. Safety Precautions

⚠️ **WARNING**

Only the qualified personnel are permitted to install and remove the device and its accessories.
Before installation and operation, read the safety precautions carefully.

- Take proper measures to prevent injuries and device damage.
- Place the device in a dry and flat position away from any liquid and prevent the device from slipping.
- Keep the device clean.
- Do not put the device and tools in the aisles.

2. Installation Environment Check

Before installation, verify that the device runs in a favorable environment.
The table lists requirements on the environment that a device works in, including the temperature, humidity, altitude, and pressure.

Table 4 Requirements on the environment

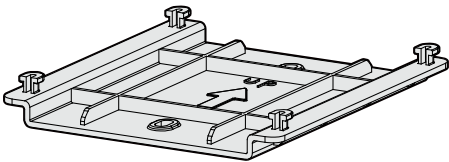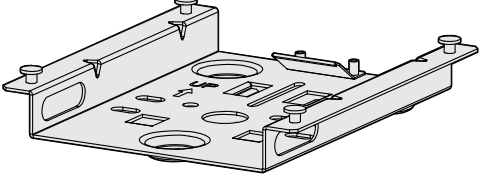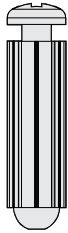| Item	Range
Temperature	AP3010DN: -5℃～+45℃
	AP5010DN&SN: -5℃～+45℃
	AP6010DN&SN: -5℃～+45℃
	AP6310SN: -5℃～+45℃
	AP7110DN&SN: -5℃～+55℃
Relative humidity	5% to 95%
Altitude	-60 m to +4000 m
Pressure	70 kPa to 106 kPa

Installation Preparations

3. Device Accessories

The following accessories are delivered together with indoor APs:

AP3010DN, AP5010DN&SN: plastic wall-mounting bracket	AP6010DN&SN, AP6310SN, AP7110DN&SN: sheet metal wall-mounting bracket	Expansion screws

4. Installation Tools

To install indoor APs, prepare the following tools:

Maker	Phillips screwdriver	Flat-head screwdriver
Hammer drill	Utility knife	COAX crimping tool
Diagonal pliers	RJ45 crimping tool	Wire stripper
Network cable tester	Multimeter	Measuring tape
Ladder	Adjustable wrench	Hammer
ESD gloves	Level	6mm drill bit

Installing the AP

1. Installation Flowchart

Figure 1   Flowchart for installing an AP
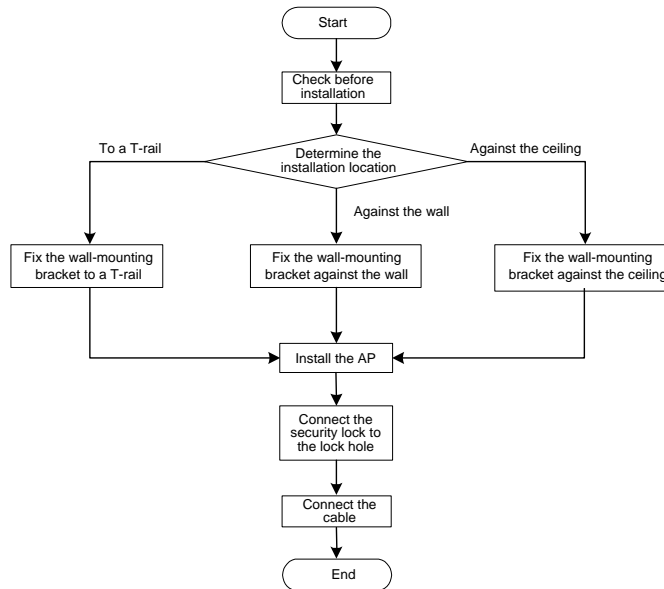
2. Checking Before Installation

Unpack the package. Ensure that all the items listed in the packing list are included in the carton. If any item is missing, contact the supplier.

Table 5 Packing list

No.	Item	Quantity	Unit
1	AP device	1	PCS
2	Power adapter (optional)	1	PCS
3	Sheet metal wall-mounting bracket	1	PCS
4	Plastic wall-mounting bracket	1	PCS
5	2.4 GHz antenna	3	PCS
6	5 GHz antenna	3	PCS
7	Expansion screws	3	PCS
8	OT terminals	2	PCS
9	Quick Start	1	PCS

☐ NOTE

- The AP6010, AP6310, and AP7110 series have sheet metal wall-mounting bracket delivered with them, while the AP3010 and AP5010 series have plastic wall-mounting bracket delivered with them.
- Three 2.4 GHz antennas and three 5 GHz antennas are contained in the AP7110DN-AGN carton, and three 2.4 GHz antennas are contained in the AP7110SN-GN carton. Cartons of other models do not contain antennas.
- Only the AP6310 series and AP7110 series have OT terminals delivered.
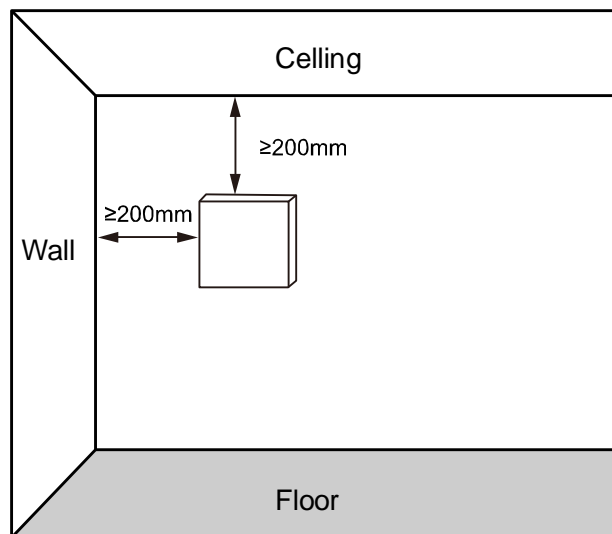
Installing the AP

3. Determining the Installation Position

When determining the AP installation position, comply with the following rules:

- Try to reduce the number of obstacles, such as walls, between the AP and user terminals.
- Install the AP away from electronic devices that can interfere the radio signal or make noises, such as the microwave oven.
- Install the AP in a hidden position that does not affect working and living of residents.
- Install the AP away from water, drippings, and dews, and prevent water on cables from flowing into the device along the cable.

Indoor APs can be mounted against the wall, the ceiling, or to a T-rail. The APs are generally mounted against the wall or ceiling using sheet metal wall-mounting bracket; therefore, the installation position is determined by the site survey. The cabling end of the device must be at least 200 mm away from the wall. Figure 2 shows the space requirements.

Figure 2 Installation against the wall

Figure 3 Installation against the ceiling
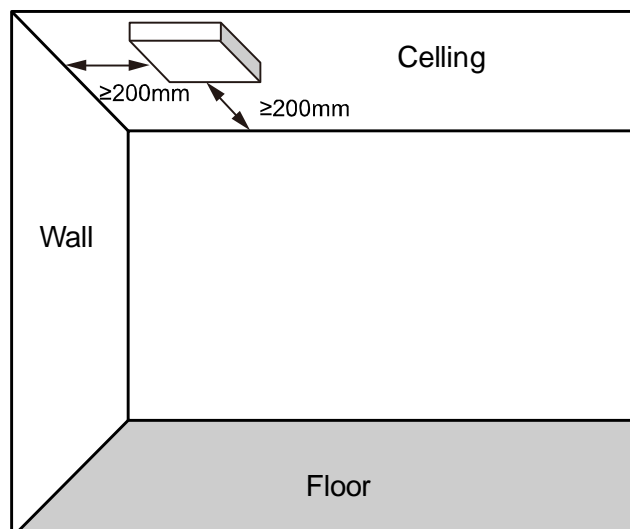
Installing the AP

4. Installing the AP

📖 **NOTE**

● The AP3010DN-AGN, AP5010DN-AGN, and AP5010SN-GN have plastic wall-mounting bracket delivered with them, so they can only be wall mounted. The AP6010DN-AGN, AP6010SN-GN, AP6310SN-GN, AP7110DN-AGN, and AP7110SN-GN have sheet metal wall-mounting bracket delivered with them, so they can be wall mounted, ceiling mounted, or T-rail mounted indoors.
● The procedures for installing all models of indoor APs are the same unless otherwise stated. The following figures use the AP7110DN-AGN as an example.

● **Against the Wall**

You need the sheet metal wall-mounting bracket and expansion screws to install the indoor AP against the wall. The procedures are as follows:

1. Fix the wall-mounting bracket to the wall, adjust the installation position, and use the marker to mark the drilling positions where expansion bolts are installed.
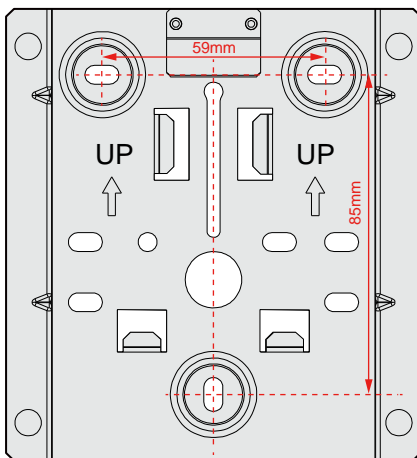
3. Fix the wall-mounting bracket to the wall, use the Phillips screwdriver to fasten three self-tapping screws into the expansion tube.
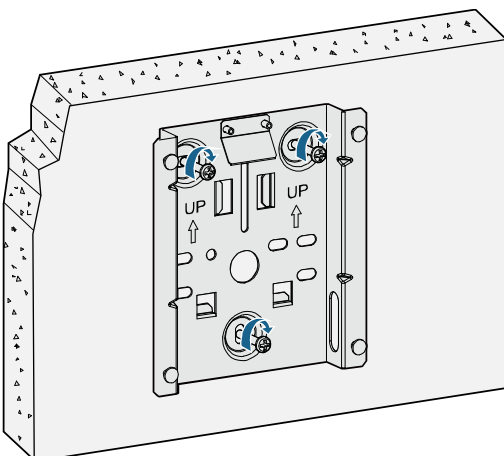
2. Use 6 mm drill bit to drill 25mm to 30 mm deep holes in the drilling positions. Hammer the expansion tubes into the holes until the expansion tubes are embedded into the wall.
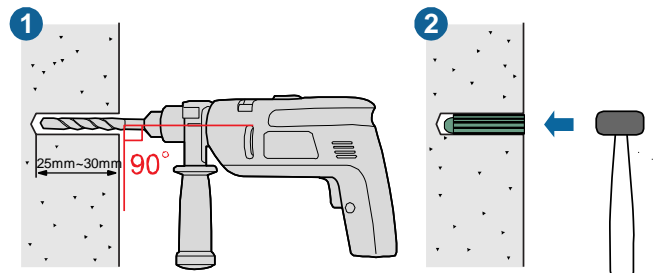
4. Align the holes at the rear side of the AP with the hooks on the bracket and hang the AP on the bracket. Hold the AP with one hand and press the AP downwards with another hand to secure the AP on the wall.
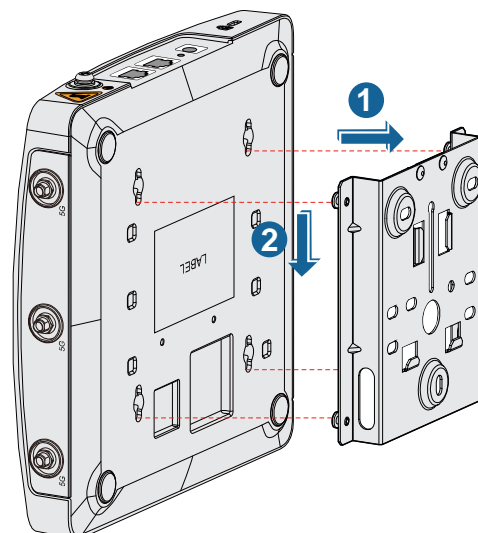
Installing the AP

● **Against the Ceiling**

1. Fix a clip holder at the rear side of the AP with two M3*6 screws. The wall-mounting bracket is fixed at the ceiling, and the AP is hung on the bracket. The clip holder prevents the AP from dropping.
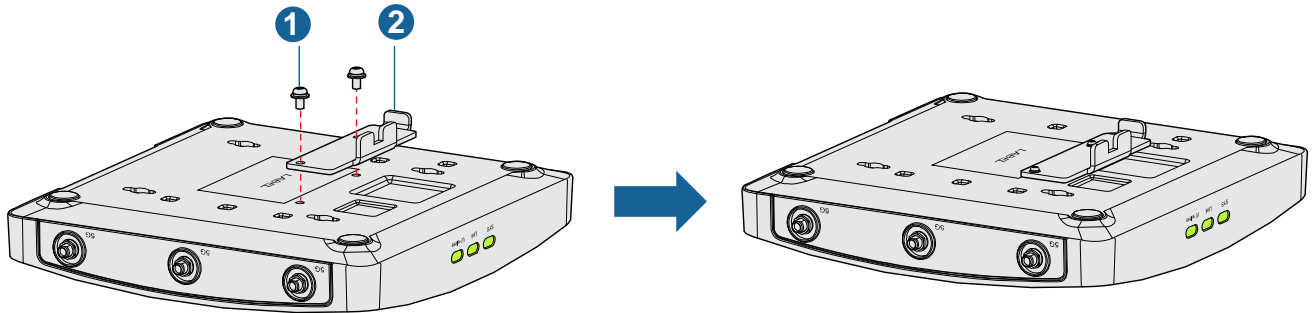
1. M3*6 screw	2. Clip holder

2. Remove the ceiling, determine locations of mounting holes based on the distance between two installation holes, use the hammer drill to drill holes, and fix the wall-mounting bracket to the ceiling.
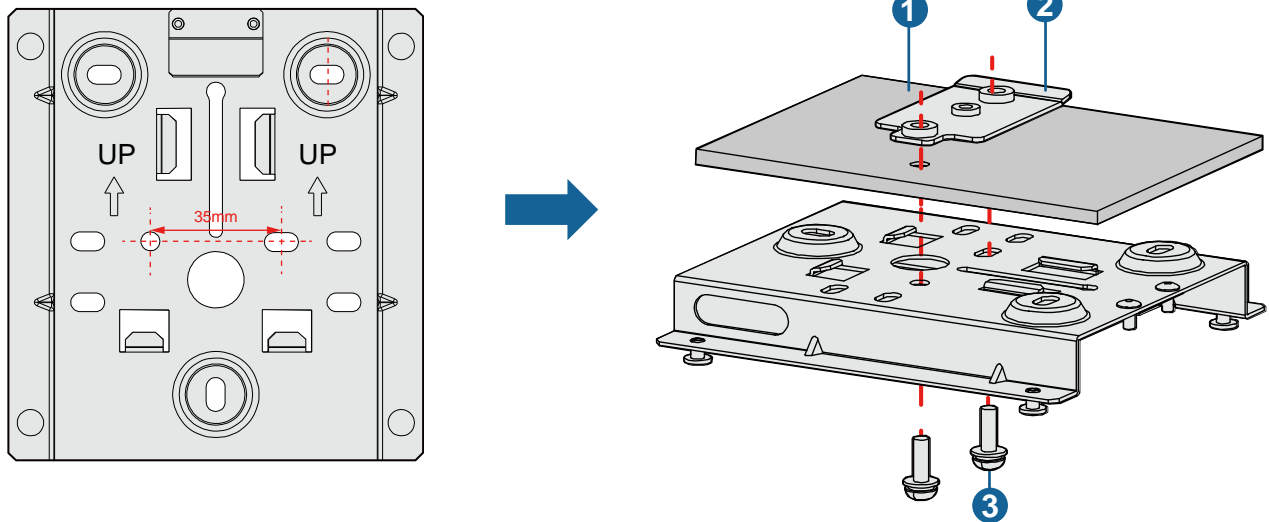
1. Ceiling	2. Adjustable buckle	3. M4*30 screw

⚠ **CAUTION**

The screws provided for ceiling-mounting of APs are 30 mm long and can be used to fix an AP on a ceiling not thicker than 15 mm. To install APs on thicker ceilings, customers need to purchase longer screws.

Installing the AP

3. Align the cucurbit holes at the rear side of the AP with four screws on the wall-mounting bracket and secure the AP.
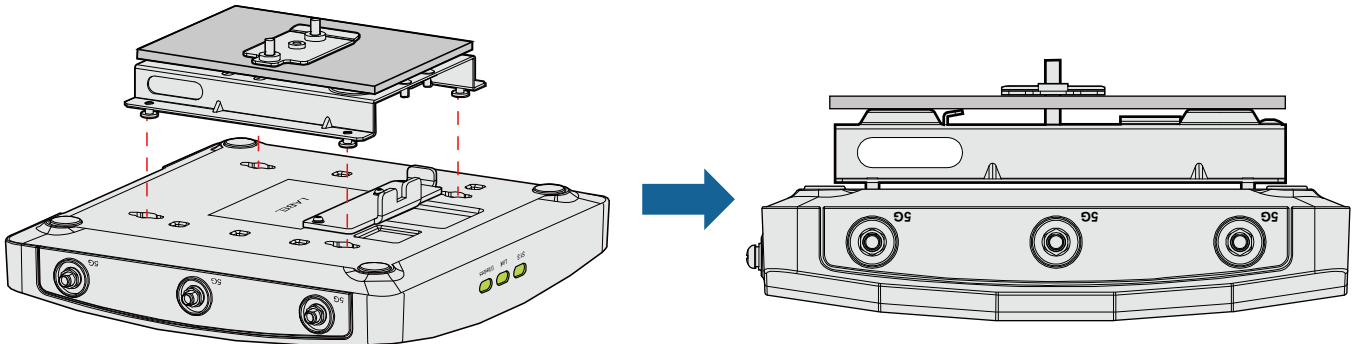
- **To a T-rail**

1. Fix a clip holder at the rear side of the AP with two M3*6 screws. For details, see step 1 in *Against the Ceiling*.
2. Remove the two ceilings around the T-rail. Use screws to fix the adjustable buckle to the sheet metal wall-mounting bracket, hook the adjustable buckle to the T-rail, and secure the screw on the adjustable hook to fasten the wall-mounting bracket and T-rail.
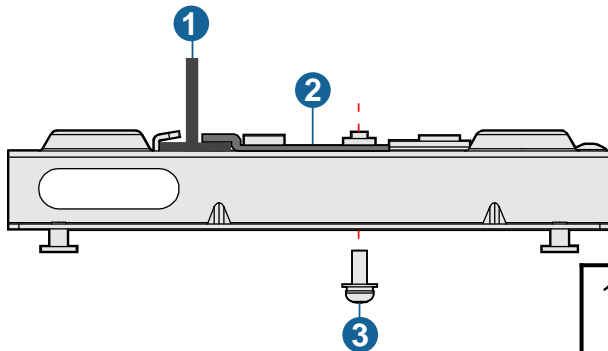
1. T-rail	2. Adjustable buckle	3. M3*6 screws

3. Align the cucurbit holes at the rear side of the AP with the four hooks on the bracket. Ensure that the AP is installed in the correct direction; otherwise, the clip holder cannot fix the AP.
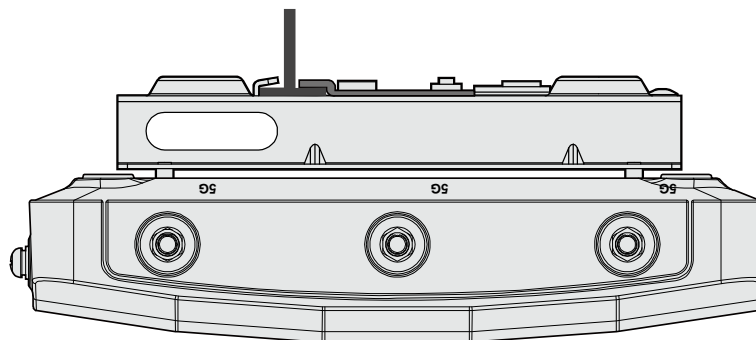
⚠ CAUTION

Ensure that the AP is correctly installed on the wall-mounting bracket and there must be 20 cm space above and around the AP for maintenance.

Installing the AP

5. Installing the Security Lock

📖 NOTE

You need to purchase the security lock.

The device provides a lock hole. You can lock the device to an immovable object to ensure security. The detailed procedures are as follows:

1) Fix the cable of the security lock to a fixed object around.
2) Plug the locking piece into the security keyhole on the device and lock it.
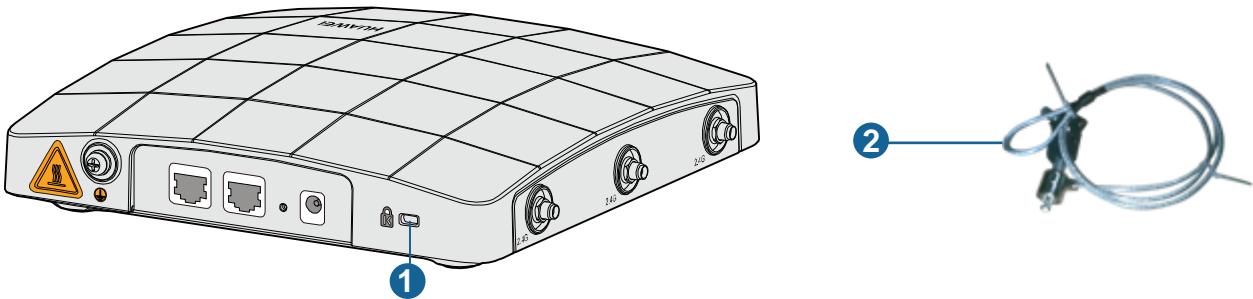
1. Lock hole	2. Security lock

6. Connecting Cables

Table 6 Appearance of indoor APs (front view)

AP3010DN-AGN AP5010DN-AGN AP5010SN-GN AP6010DN-AGN AP6010SN-GN	
AP6310SN-GN	

Installing the AP

Table 6 Appearance of indoor APs (front view)

AP7110DN-AGN	
AP7110SN-GN	
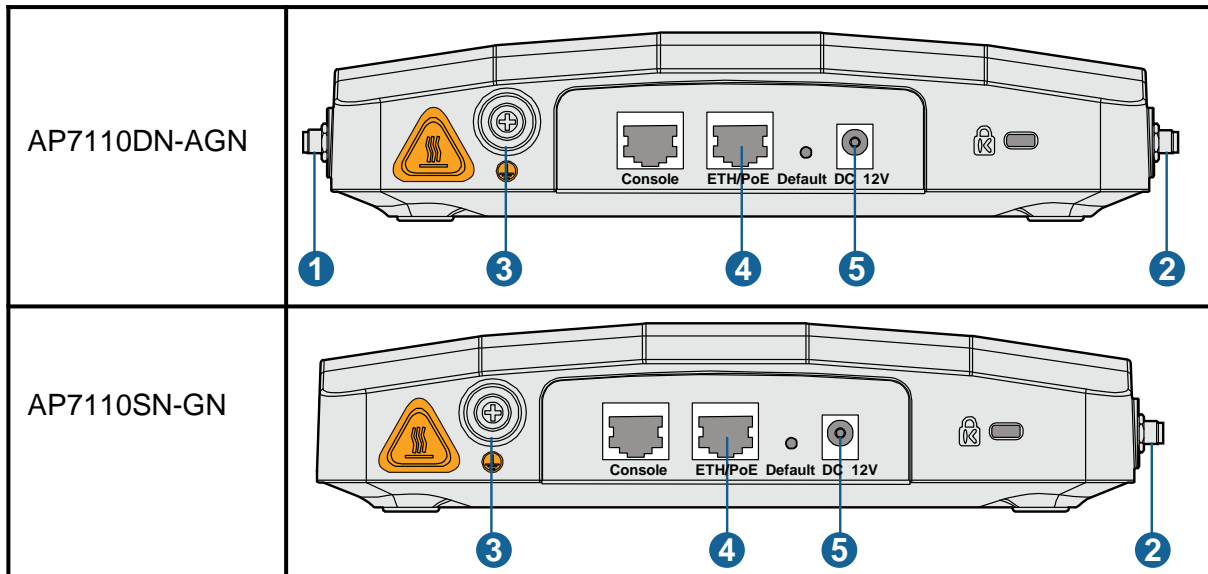
Table 7 Cables of indoor APs

No.	Cable	Description
1	5 GHz antenna cable	Connects to the 5 GHz antenna for transmitting and receiving signals.
2	2.4 GHz antenna cable	Connects to the 2.4 GHz antenna for transmitting and receiving signals.
3	Ground cable	Connects to the ground cable, with the M4 end connected to the ground cable and M6 end connected to the protection ground.
4	Network cable	• The network cables used are category-5 twisted pairs. • If the AP needs to connect to the Ethernet, ensure that the Ethernet cable is working properly. If the Ethernet cable is not working properly, for example, RJ45 connectors are short-circuited, the AP may fail to be powered on or fail to work. Before connecting an Ethernet cable to the AP, use the cable test tool to check whether the cable is qualified. If the cable is unqualified, replace it.
5	Power adapter 12 V DC	• The AP supports PoE power supply and DC power supply. • Use the power adapter attached with the AP; otherwise, the AP maybe damaged.

Requirements for making a network cable:

● Cut the cable of proper length based on the distance between the AP and the PSE device, peel the insulation on both ends of the network cable, and crimp the wires to RJ45 connectors.

● Connect RT45 connectors to the network cable tester to test cable connectivity. The following shows the pin assignment.

Installing the AP

Table 8 Pin assignment

X1 Pin	Wire Color	X2 Pin
1	White and orange	1
2	Orange	2
3	White and green	3
4	Blue	4
5	White and blue	5
6	Green	6
7	White and brown	7
8	Brown	8

📖 NOTE

● The antennas of AP6310SN-GN, AP7110DN-AGN and AP7110SN-GN used must comply with local laws.

● In North America or other regions that Require FCC certification, AP6310SN-GN must use W5030H antennas from Pulse. AP7110DN-AGN and AP7110SN-GN must use SL15870A or TT-2403-6W1 antennas.

● When using AP6310SN-GN Aps to replace WA633SNs, you need to prepare adapters, such as SMA-to-N type adapters (figure a and b). Alternatively, make new feeder lines matching the connectors of AP6310SN-GN Aps (figure c).

⚠ CAUTION

● The service network cable cannot be connected to the console port. Otherwise, the AP may be damaged when using PoE power supply.
● Standard RJ45 connectors are used on network cables for the AP5010 series.
● Bending the antenna may hurt your hands, so exercise caution when you install the antenna on the AP7110 series.
● See the following figure to connect network cables to the AP6010 series APs.
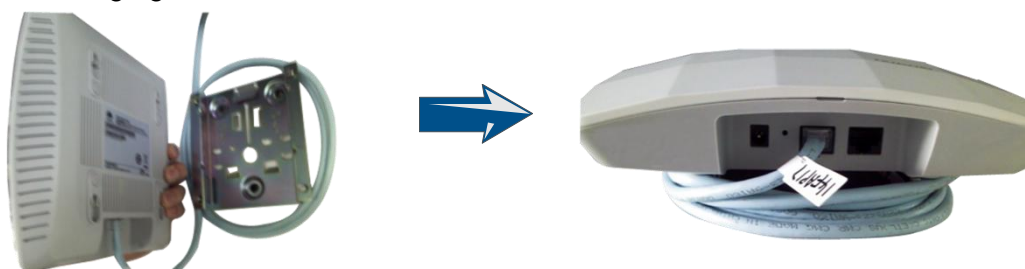
Power-on

The indoor AP supports the DC power supply and PoE power supply. You can select the power supply mode as required.

1. Checking Before Power-on

After the AP installation is complete, you should check the following items before power-on:

- When the DC power supply is used, ensure that the DC power supply is properly grounded.
- When the PoE power supply is used, ensure that the PoE power supply is properly grounded.

⚠ **CAUTION**

- Indoor APs can be either powered on by the PoE or DC power supply.
- Do not frequently power on and off an AP.

2. Indicator Status

Table 9 Indicator status of the AP3010DN-AGN, AP5010SN-GN, AP5010DN-AGN, AP6010DN-AGN and AP6010SN-GN

Indicator	Color	Status	Type	Description
	Green	Steady on	Default status	• When the system is being powered on, the indicator is steady green. • When the system software is running, the indicator status depends on the software running result.
	Green	0.5Hz	Running	The system is running properly, and the Ethernet connection is correct, and STAs are associated with the AP.
		0.2Hz		The system is running properly, and the Ethernet connection is correct. However, no user connects to the AP.
	Green	4Hz	Alarm	The CAPWAP link is disconnected during an upgrade.
	Red	Steady on	Error	A fault that affects services has occurred and cannot be rectified automatically. For example, the system fails to load the DRAM or system software. The fault needs to be rectified manually.

Power-on

Table 10   Indicator status of the AP6310SN-GN

Indicator	Information Type	SYS	Link	Wireless	Description
SYS Link Wireless ○ ○ ○	Startup status	Steady green	NA	NA	The device is being started.
		Blinking green	NA	NA	The system is working properly.
		Steady red	NA	NA	The system fails to load the DRAM or system software.
	Running and connection	0.5Hz	Off	Off	The system is working properly. However, the Ethernet is not connected. Radios are disabled and no user is connected to the AP.
				Blinking green	The system is working properly, but the Ethernet is not connected. The AP has wireless users connected and is transmitting data. The indicator blinks more quickly when more packets are being transmitted.
		0.5Hz	Steady or Blinking green	Off	The system is working properly, the Ethernet is connected, and radios are disabled. The indicator blinks more quickly when more data is being transmitted.
				Blinking green	The system is working properly, and the Ethernet is connected. The AP has wireless users connected and is transmitting data. The indicator blinks more quickly when more packets are being transmitted.

Power-on

Table 11　Indicator status of the AP7110SN-GN and AP7110DN-AGN

Information Type	SYS	Link	Wireless	Description
Startup status	Steady green	NA	NA	The device is being started.
	Blinking green	NA	NA	The system is working properly.
	Steady red	NA	NA	The system fails to load the DRAM or system software.
Running and connection	0.5Hz	Off	Off	The system is working properly. However, the Ethernet is not connected. Radios are disabled and no user is connected to the AP.
			Blinking green	The system is working properly, but the Ethernet is not connected. The AP has wireless users connected to the 2.4 GHz band and is transmitting data. The indicator blinks more quickly when more packets are being transmitted.
			Blinking yellow	The system is working properly, but the Ethernet is not connected. The AP has wireless users connected to the 5 GHz band and is transmitting data. The indicator blinks more quickly when more packets are being transmitted.
			Blinking green and yellow alternately	The system is working properly, but the Ethernet is not connected. The AP has wireless users connected to the 2.4 GHz and 5 GHz bands and is transmitting data.
	0.5Hz	Steady or Blinking green	Off	The system is working properly, the Ethernet is connected, and radios are disabled. The indicator blinks more quickly when more data is being transmitted.
			Blinking green	The system is working properly, and the Ethernet is connected. The AP has wireless users connected to the 2.4 GHz band and is transmitting data. The indicator blinks more quickly when more packets are being transmitted.
			Blinking yellow	The system is working properly, and the Ethernet is connected. The AP has wireless users connected to the 5 GHz band and is transmitting data. The indicator blinks more quickly when more packets are being transmitted.
			Blinking green and yellow alternately	The AP has wireless users connected to the 2.4 GHz and 5 GHz bands and is transmitting data. The indicator blinks more quickly when more packets are being transmitted.

Logging In to the AP

After an AP is powered on, you can log in to the AP using the following methods.
1. Logging In to the AP Through the Console Port
2. Logging In to the AP Using Telnet

1. Logging In to the AP Through the Console Port

This section describes how to log in to the AP through the console port. After logging in to the AP, you can configure the AP using commands.

Procedure

Step 1 Connect a PC to the AP with a console cable. Connect the RJ45 connector to the console port of the AP and connect the DB9 connector to the serial port of the PC.

Step 2 Run the terminal emulation program on the PC. For example, to open the HyperTerminal of Windows XP on the PC, choose **Start** > **Programs** > **Accessories** > **Communications** > **HyperTerminal.** Enter the name of the new connection in the **Name** text box and click **OK**, as shown in Figure 1-1.

Figure 1-1   Setting up a connection

Step 3   Select the serial port used on the PC and click **OK**, as shown in Figure 1-2.

Figure 1-2   Selecting the connected port
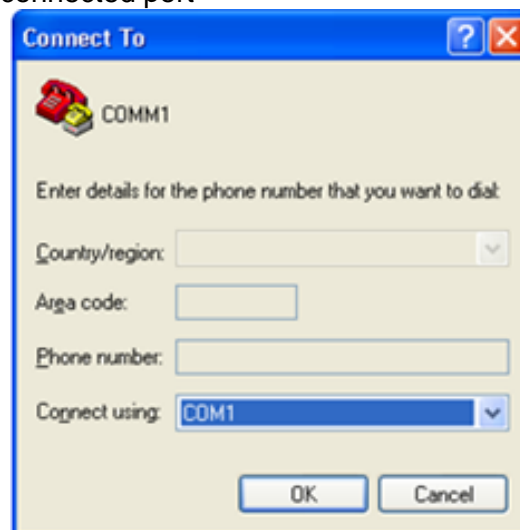
Logging In to the AP

Step 4 Click **Restore Defaults**, select 9600 bit/s from the Bits per second drop-down list box, and click **OK**, as shown in Figure 1-3.

Figure 1-3   Setting communication parameters

Step 5   Press **Enter** on the subsequent dialog boxes until the command line prompt of the user view, such as <Enterprise AP>, is displayed.

You can run commands to configure the AP. Enter a question mark (?) whenever you need help.

----**End**

2. Logging In to the AP Using Telnet

This section describes how to log in to the AP using Telnet. After logging in to the AP, you can configure the AP using commands.
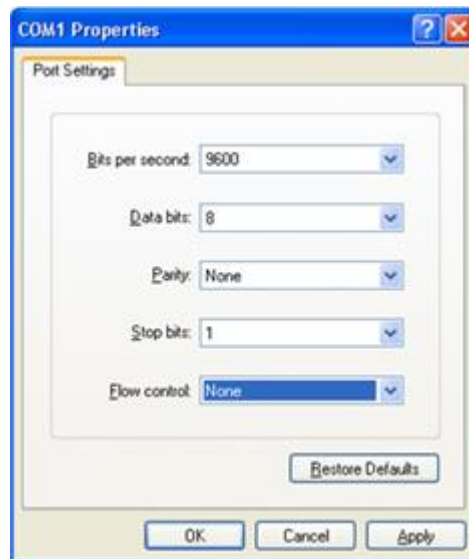
Procedure

Step 1   Connect a PC to the uplink port of the AP with a network cable.

Step 2   Configure a static IP address for the PC. The IP address must be on the network segment 192.168.0.1/24 (The IP address should not be same as the AP's default IP address 192.168.0.1.) and the subnet mask is 255.255.255.0.
After the configuration is complete, run the **ping 192.168.0.1** command on the PC to check whether the PC can be pinged. If the ping operation succeeds, the connection is set up successfully. If the ping operation fails, the connection fails to be set up. Check whether the network cable works properly.

Step 3   Access the command line window on the PC. For example, if the PC runs Windows XP, choose **Start > Run** and enter **cmd** in the displayed dialog box.

Step 4   Run the **telnet 192.168.0.1** command to log in to the AP.

Step 5   Enter the default user name and password **admin.** If the user view is displayed, you have logged in successfully.

Logging In to the AP

📖 NOTE

Run the exit command to exit from the Telnet window. When the system fails to exit from the Telnet window:

● If you logged in to the AP from an AC or a switch, press **Ctrl+T** to return to the AC or switch view. This operation does not affect the AP operation.

● If you logged in to the AP from a PC, directly close the Telnet window. This operation does not affect the AP operation.
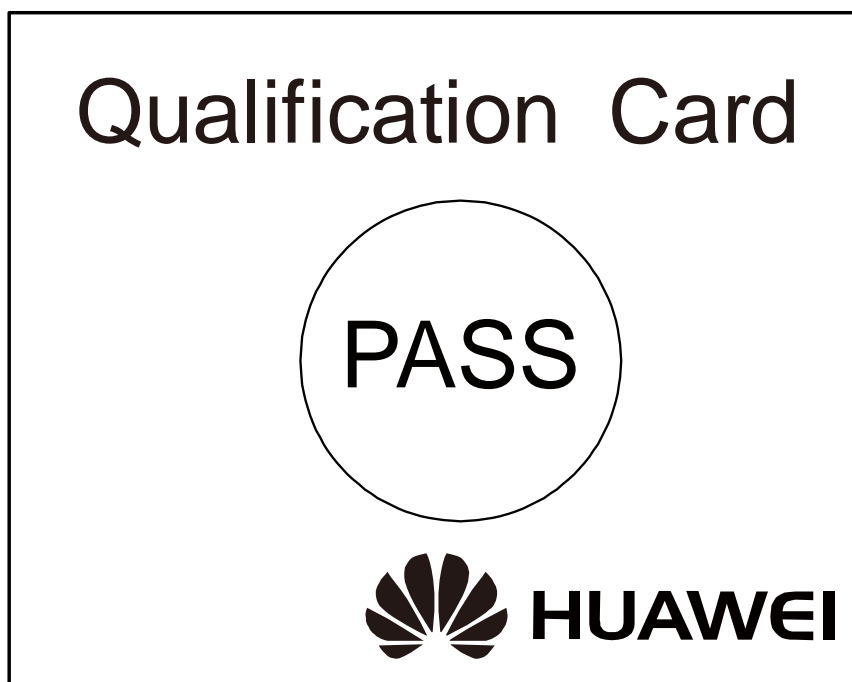

Appendix

1. **Declaration on Hazardous Substances in Electronic Information Products**

Parts	Hazardous Substances					
	Pb	Hg	Cd	Cr6+	PBB	PBDE
Mechanical part	O	O	O	O	O	O
Board/circuit module	O	O	O	O	O	O
Signal cable	O	O	O	O	O	O
Cable connector	O	O	O	O	O	O
Power adapter	O	O	O	O	O	O
Auxiliary equipment	O	O	O	O	O	O

O: Indicates that the concentration of the hazardous substance contained in all the homogeneous materials of this part is below the limit requirement of the SJ/T 11363-2006 standard.
X: Indicates that the Concentration of the hazardous substance contained in all the homogeneous materials of this part is above the limit requirement.

2. **Qualification Card**

Qualification Card

PASS

HUAWEI

Appendix

3. Warranty Card

Warranty Card

Thank you for choosing HUAWEI Technologies Co., Ltd-a leading telecom solution provider. To get better services, please read this warranty card carefully, fill in the required information and preserve this card in good condition.

Your Name	
Address/Postal Code	
Telephone	
Product Type	
Product Serial Number.	
Purchase Date.	
Invoice Number.	
Dealer's Name	
Dealer's Address/Telephone	

Preserve well. No reissue

Dealer's Seal:

Limited Warranty

Subject to the exclusions contained below, Huawei Technologies Co., Ltd. (hereinafter referred to as Huawei) warrants its access terminals ("Products") to be free from defects in materials and workmanship under normal consumer usage for one year from the date of purchase of the product ("Warranty period"). During the warranty period, a Huawei authorized service partner shall remedy defects in materials and workmanship free of charge.

Special Notice:
1. The warranty card shall be applicable only after being stamped by the dealer.
2. The warranty card must be preserved in good condition and free of any scratch or alteration.
3. To claim such service for defects that are not included in the following exclusion terms, the warranty card and the invoice that records the product serial number shall be presented to a Huawei authorized service partner.

Exclusions:
In any of the following cases, the warranty card becomes unenforceable or inapplicable without prior notice:
1. The defects are caused by improper handling in transportation and assembly.
2. The defects are caused by the fact that the product is dismantled or altered by anyone that is not from a Huawei authorized service partner.
3. The defects are caused by the fact that the product is used in a harsh environment that is not suitable for the operation of the product.
4. The defects are caused by any force majeure including but not limited to fire, earthquake, lightning and tsunami.
5. The defects are caused by the fact that the product is used or handled improperly, roughly or not as instructed in the applicable User Guide.
6. The normal wear and tear, including but not limited to the normal wear and tear of the shell and the power module, shall not be covered by the limited warranty.
7. The warranty card is altered or illegible, or the product serial number recorded on the warranty card is inconsistent with the actual one imprinted or labeled on the product.

In any case that is not covered by this limited warranty or should the warranty expire, Huawei shall charge for the service(s) claimed for the products if the product is still remediable.

Huawei preserves the right for interpretation of this limited warranty.

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