

AP231 and AP231e Installation Guide

24010003 Rev. 0

This document describes the packaging, AP layout, general process of installation as well as warnings and notices that need to be addressed prior to installation. It's recommended that the entire document be read prior to installation. All new AP installations are typically performed in the following sequence:

- Unpack the AP and check all items in the box.
- WLAN Planning. Usually, a comprehensive site survey is required before installation. There are many factors to consider such as coverage area, power supply to the AP, location of AP brackets, etc.
- Install the AP bracket on wall or ceiling.
- Install communications outlet (if new outlet is installed) label and test.
- Install each AP to bracket.
- Connect patch cord to port on AP.
- Connect patch cord to outlet.
- Verify post-installation connectivity.
- Configure each AP.

Access points are radio transmission devices and are subject to governmental regulation. Network administrators who are responsible for the configuration and operation of access points must comply with local broadcast regulations. Specifically, access point must use channel assignments appropriate to the location where the access point will be deployed.

Package Contents

Item	Name	Qty	Unit
1	Access Point	1	Pcs
2	Quick Start Guide	1	Pcs
	Installation Guide	1	Pcs
	Regulatory Compliance and Safety Information	1	Pcs
	User Guide Info Card	1	Pcs
3	Mounting Bracket (15/16")	1	Pcs
4	Mounting Bracket (9/16")	1	Pcs

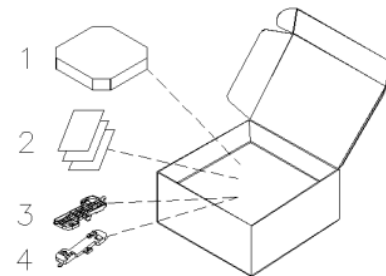


Figure 1: Product Packing

Inform your HAN sales representative of incorrect, missing, or damaged parts. If possible, retain the carton, including the original packing materials. Use these materials to repack and return the unit to the supplier if needed. Additional mounting kits for use with the AP231 access points are sold separately. Contact your HAN sales representative for details.

Unboxed AP231:

- Net Weight: 1.54lbs / 0.7kg
- Dimensions (HxWxD): 7.1 inches x 7.1 inches x 1.42 inches (18 cm x 18cm x 3.6cm)

Device view

The AP access point is equipped with one hidden LED light that indicates different status with different color.

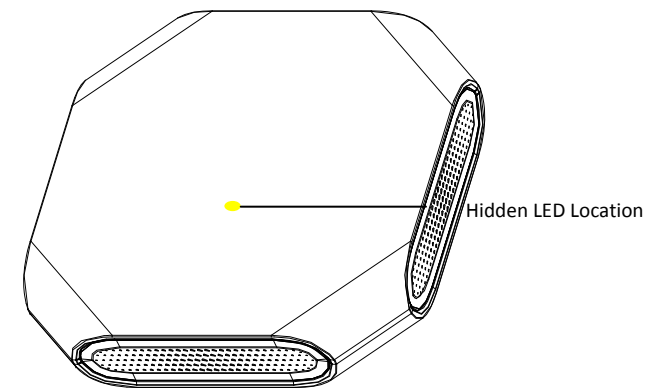


Figure 2: AP Access Point (Front View)

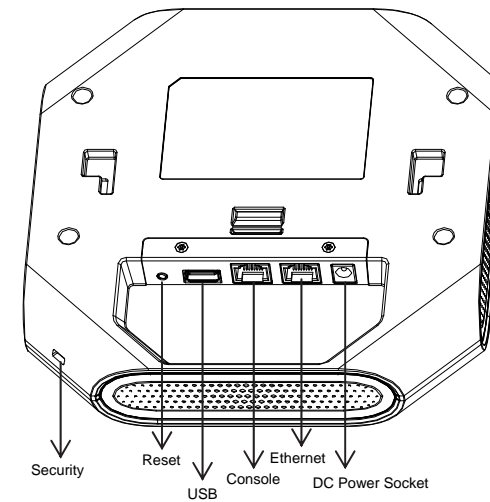


Figure 3: AP Access Point (Back View)

Item Name	Specifications
USB Port	USB 2.0 host interface (Type A connector)
Ethernet Port	The AP is equipped with one 10/100/1000Base-T (RJ-45) auto-sensing, MDI/MDX wired-network connectivity port.
Console Port	The console port is an RJ-45 female connector and can be used to connect to a terminal for direct local management. Note: Currently for use by Service & Support only.
DC Power Socket	The AP has a single 48V DC power jack socket to support powering through an AC-to-DC power adapter, If PoE is not available, an optional AC-DC adapter kit (sold separately) can be used to power the AP.
Security Lock Slot	The AP is equipped with a security lock slot for additional security.

Table 1: AP Connections

Pre-installation

Pre-Installation Checklist

Before installing your AP access point, be sure that you have the following items:

- 4- or 8-conductor, CAT5 or better UTP cable of required length.
- One of the following power sources:
 - IEEE 802.3at-compliant Power over Ethernet (PoE) source (The POE source can be any power source equipment (PSE) controller or mid-span PSE device.

- 48 V/0.6A DC AP AC-DC adapter kit (sold separately)
- A terminal or a notebook

Identifying Specific Installation Locations

You can mount the AP on a ceiling rail (using the included bracket) or on a wall (using the wall mount adapter, sold separately). You should first determine the location of the installation. The installation position is located at the center of the required coverage area and should be free from obstructions or obvious sources of interference.

- Minimize the number of obstructions (such as walls) between the AP and user terminals.
- Electronic equipment or devices (such as microwave ovens) which may produce radio frequency noise should be away from the installation position of the AP.

It is strictly prohibited to install around stagnant water, water seepage, leakage or condensation. Avoid cable condensation or water seepage along the cables connecting to the AP.

Temperature and Humidity requirement

- Operating temperature: 32°F to 113°F (0°C to 45°C)
- Storage temperature: -40°F to 158°F (-40°C to 70°C)
- Relative Humidity: 5% to 90% non-condensing

AP Installation

Using Ceiling Mounting Bracket

Make sure the AP fits securely on the ceiling tile rail when hanging the device from the ceiling, poor installation could cause it to fall onto people or equipment.

The AP has been shipped with two mounting brackets for 9/16" and 15/16" ceiling rails. Following is the general sequence to install the AP with the mounting bracket.

- Pull the cables through a prepared hole in the ceiling tile near where the AP will be placed.
- Place the bracket against the back of the AP, insert by aligning the slot on the backside with the hanging feet on both sides of the bracket (see Figure 4).
- Push the bracket along the direction of the arrow until it locks in the slot (see Figure 4).
- Connect the cable to the port on the AP.
- Hold the AP next to the ceiling tile rail with the ceiling tile rail mounting slots at approximately a 20-degree angle to the ceiling tile rail (see Figure 5). Make sure that any cable slack is above the ceiling tile.
- Pushing toward the ceiling tile, rotate the AP clockwise until the device clicks into place on the ceiling tile rail (see Figure 5).

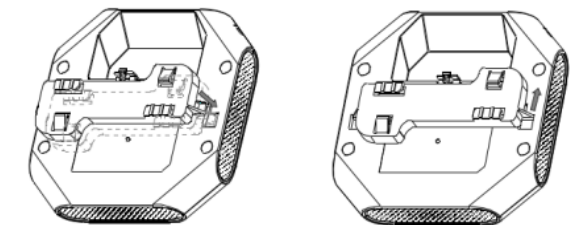


Figure 4: Attaching Ceiling Mounting Bracket



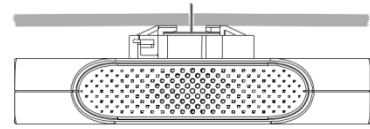
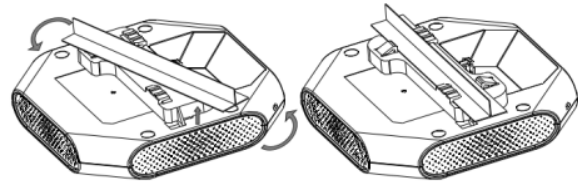


Figure 5: Mounting AP

Red	Blue	Green	Time Line	Status
ON			Power on	
ON			Bootloader-OS loading	System start up
Flash			System running	Network abnormal (Interface down)
		Flash	System running	Network normal, without SSID created
		ON	System running	Network normal, single band working, either 2.4Ghz or 5Ghz
	ON		System running	Network normal, dual bands working, 2.4Ghz and 5Ghz are both working
Flash	Flash		System running	Red and Blue LEDs alternate flashing in specific frequency; OS upgrading
Flash	Flash	Flash	System running	3 LEDs alternate flashing in specific frequency; Used for locating an AP

Table 3: AP LED Meaning

It is installed in the same way as AP231. After the installation is complete, install the external antenna on AP231e (see figure7). Install the antenna as the figure8:

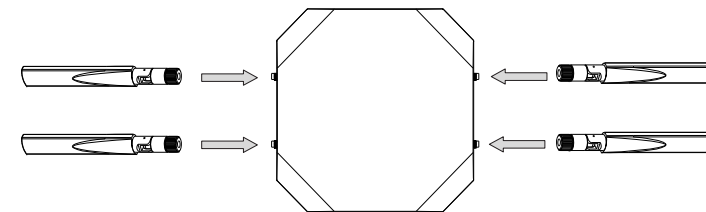


Figure7

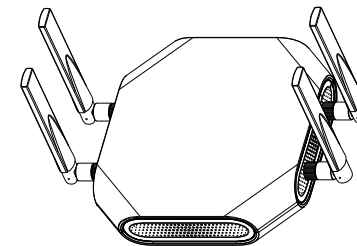


Figure 8

The external antenna is sold separately.

Connect Ethernet

Use the Ethernet port to connect the AP with a twisted pair Ethernet LAN segment. Use a 4- or 8-conductor, Category 5 UTP cable. The port is an RJ-45 female connector with the pinouts shown in Table2.

Connector	Pin	Signal Name	GE	FE	PoE
	1	RJ45_DA+	BI_DA+	RX+	PoE-
	2	RJ45_DA-	BI_DA-	RX-	PoE-
	3	RJ45_DB+	BI_DB+	TX+	PoE+
	4	RJ45_DC+	BI_DC+	Spare	PoE+
	5	RJ45_DC-	BI_DC-	Spare	PoE+
	6	RJ45_DB-	BI_DA-	BI_DA-	PoE+
	7	RJ45_DD+	BI_DD+	Spare	PoE-
	8	RJ45_DD-	BI_DD-	Spare	PoE-

Table 2: Ethernet Port Pinout

Console Port

The serial console port allows you to connect the AP to a serial terminal or a laptop for direct local management. This port is an RJ-45 female connector with the pinouts described in Table 4.
Note: Currently for use by Service & Support only.

Connector	Pin	Signal Name	Function
	3	TXD	Transmit
	4	GND	Ground
	5	GND	Ground
	6	RXD	Receive
	Pins not listed are not connected.		

Table 4: Console Port Pinout

[REMAINING SECTIONS INTENTIONALLY LEFT BLANK]

Configuring the AP

Refer to the Quick Start Guide and Configuration Guide for complete details.

AP231e (external antenna)

- Net Weight: 1.59lbs / 0.72kg
- Dimensions (HxWxD): 7.1 inches x 7.1 inches x 1.42 inches (18 cm x 18cm x 3.6cm)

Device view

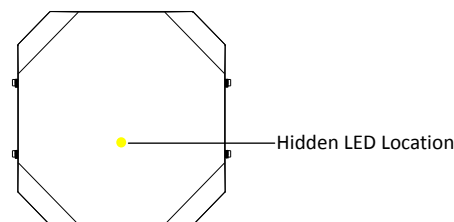


Figure 6

Connect Power Sources

Confirm that you have an IEEE 802.3at-compliant Power over Ethernet (PoE) source on the Ethernet cable, if not, connect by using the HAN 48V DC AP AC-DC adapter kit (sold separately) to the DC Power Socket and AC power jack.

If both POE and DC power are available, the use of DC is preferred. AP supports the power adapter provided by HAN ONLY.

Verifying Post-Installation Connectivity

The LED on the AP can be used at this point to verify that the AP is receiving power and initializing successfully (see Table 3).