Aruba AP-205H Wireless Access Point

Installation Guide

The Aruba AP-205H access point is a high-performance dual radio wireless and wired access point for hospitality and branch deployments.

This device combines high-performance wireless mobility with Gigabit wired local access to deliver secure network access to dormitories, hotel rooms, classrooms, medical clinics, and multi-tenant environments. MIMO (Multiple-Input, Multiple-Output) technology enables the AP-205H to provide wireless 2.4 GHz 802.11n and 5 GHz 802.11n/ac functionality, while simultaneously supporting existing 802.11a/b/g wireless services.

The AP-205H can be easily converted into a desk-mounted remote AP for branch office deployments with the AP-205H-MNTR mounting kit (sold separately), or attached to a wall box using the bracket included using the existing structured cable system.

The AP-205H access point works in conjunction with an Aruba controller, while the IAP-205H variant uses a built-in virtual controller.

The Aruba AP-205H access point provides the following capabilities:

- Dual wireless transceivers
- Protocol-independent networking functionality (no idea what this means)
- IEEE 802.11a/b/g/n/ac operation as a wireless access point
- IEEE 802.11a/b/g/n/ac operation as a wireless air monitor, spectrum analyzer
- Compatibility with IEEE 802.3af/at PoE
- Central management configuration and upgrades through an Aruba Controller or Aruba Instant virtual controller

POE power sourcing to an attached POE network device

Support for selected USB peripherals

CAUTION

To meet regulatory restrictions, this access point must be professionally installed.

NOTE

The Aruba AP-205H requires ArubaOS 6.4.3 or later.

Package Contents

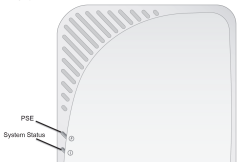
- AP-205H Access Point
- Single Gang Wall-box Mounting bracket
- 2x #6-32 Machine Screw
- Torx Security Screw
- Installation Guide (this document)

NOTE

Inform your supplier if there are any 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.

Hardware Overview

Figure 1 *Front*



LED

The AP-205H is equipped with two LEDs indicating System Status and PSE.

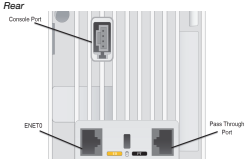
Table 1

LED	Color/State	Meaning
System Status	Off	AP powered off, or LED switched to 'off mode'
	Red	Error condition
	Green - Flashing	AP booting
	Green - Solid	AP ready
PSE	Off	AP powered off, or PoE capability disabled
	Green - Solid	AP supplying PoE power
	Red	PoE sourcing error condition

NOTE

For more information LED modes, refer to the *ArubaOS User Guide*.

Figure 2 *Rear*



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 located at the rear of the AP-205H, is a 4-pin connector with removable dust cover. An optional serial adapter cable (AP-CBL-SER) compatible with the AP-205H, is sold separately.

NOTE

Hot-plug operation is not recommended for the console port.

Figure 3 *Bottom*

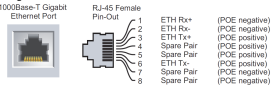
Ethernet Ports

AP-205H is equipped with a total of four active Ethernet ports (E0-E3). E0 is 10/100/1000 Base-T (RJ-45) auto-sensing, MDI/MDX wired-network uplink connectivity port that is primarily used as a passthrough port, but can alternatively serve as E0 if the E0 and PT ports are physically bridged by a jumper cable (sold separately with the AP-205H-MNTR RAP Conversion Kit). This port supports IEEE 802.3af Power over Ethernet (PoE), accepting 48VDC as a standard defined Powered Device (PD) from a Power Sourcing Equipment (PSE) such as a PoE midspan injector or network infrastructure that supports PoE.

Ports E1-E3 are 10/100/1000 Base-T (RJ-45) auto-sensing, MDI/MDX wired-network downlink connectivity ports, used to provide secure network connectivity to wired devices. E0 is located on the rear of the AP, while the E1-E3 are located on the bottom (Figure 3).

Additionally, AP-205H supports a passive pass-through RJ-45 interface to extend a physical connection (typically another Ethernet connection) from the back of the device to a connector on the bottom.

Figure 4 *Gigabit Ethernet Port Pin-Out*



USB Interface

The AP-205H Series is equipped with a USB interface that is compatible with cellular modems and BLE dongles. When active, this USB port can supply up to 5W (1A).

NOTE

The USB interface is disabled when the AP-205H is powered from 802.3af PoE.

Power Supply

Table 2

Power Source	Restrictions	Maximum Power Levels
DC (AP-AC-48V36)	None	150mA, 275mA, 475mA, 600mA
Basic 802.3af	USB, Poe-PSE disabled	8W, 13.5W, N/A, N/A
High-Power PoE	USB, PoE-PSE enabled	8W, 14W, 24W, N/A

The AP-205H has a single 48V DC power connector to support powering through an AC-to-DC power adapter. AP-AC-48V36 sold separately.

NOTE

If both POE and DC power are available, the AP will use PoE.

When the AP-205H is powered by high-power, POE and POE-PSE on E3 is enabled and power to the powered device will be limited to 10W. When attempting to draw additional power, the AP will disable power on port E3. This port will automatically reactivate over time.

Push Button

The push button located on the right side of the AP can be used to reset the AP to factory default settings or turn off/on the LED display.

- To reset the AP to factory default settings:
  1. Power off the AP.
  2. Press and hold the push button using a small, narrow object, such as a paperclip.
  3. Power-on the AP without releasing the push button. The system status LED will flash within 5 seconds.
  4. Release the push button.

  The system status LED will flash again within 15 seconds indicating that the reset is completed. The AP will now continue to boot with the factory default settings.
- To turn off/on the system status LED:

  During the normal operation of the AP, press the push button using a small, narrow object, such as a paperclip. The system status LED will be turned off/on immediately.

Before You Begin

CAUTION

FCC Statement: Improper termination of access points installed in the United States configured to non-US model controllers will be in violation of the FCC grant of equipment authorization. Any such willful or intentional violation may result in a requirement by the FCC for immediate termination of operation and may be subject to forfeiture (47 CFR 1.80).

EU Statement:
Lower power radio LAN product operating in 2.4 GHz and 5 GHz bands. Please refer to the *ArubaOS User Guide* for details on restrictions.

CAUTION

Produit réseau local radio basse puissance operant dans la bande fréquence 2.4 GHz et 5 GHz. Merci de vous referrer au *ArubaOS User Guide* pour les details des restrictions.

Low Power FunkLAN Produkt, das im 2.4 GHz und im 5 GHz Band arbeitet. Weitere Informationen bezüglich Einschränkungen finden Sie im *ArubaOS User Guide*.

Apparati Radio LAN a bassa Potenza, operanti a 2.4 GHz e 5 GHz. Fare riferimento alla *ArubaOS User Guide* per avere informazioni detagliate sulle restrizioni.

Pre-Installation Network Requirements

After WLAN planning is complete and the appropriate products and their placement have been determined, the Aruba controller(s) must be installed and initial setup performed before the Aruba APs are deployed.

AP Pre-Installation Checklist

Before installing your AP-205H access point, be sure that you have the following:

- Pre-installed wall box
- Cat5E UTP cable with network access installed in the wall box
- One of the following power sources:
  - IEEE 802.3af-compliant Power over Ethernet (PoE) source
  - Aruba AP AC-DC adapter kit (sold separately)
- Aruba Controller provisioned on the network:
  - Layer 2/3 network connectivity to your access point

One of the following network services:

- Aruba Discovery Protocol (ADP)
- DNS server with an "A" record
- DHCP Server with vendor-specific options

Summary of the Setup Process

NOTE

It is important that you verify the items listed under AP Pre-Installation Checklist before you attempt to set up and install an AP-205H.

Complete each of tasks below in the order listed to setup your AP-205H access point.

1. Verify pre-installation connectivity.
2. Identify the specific installation location for each AP.
3. Install each AP.
4. Verify post-installation connectivity.
5. Configure each AP.

NOTE

Aruba Networks, Inc., in compliance with governmental requirements, has designed the AP-205H access points so that only authorized network administrators can change the settings. For more information about AP configuration, refer to the *ArubaOS Quick Start Guide and ArubaOS User Guide*.

CAUTION

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

Verifying Pre-Installation Connectivity

Before you install APs in a network environment, make sure that the APs are able to locate and connect to the controller after power on. In order to successfully setup your network the following conditions must be met:

- When connected to the network, each AP is assigned a valid IP address
- APs are able to locate the controller

Refer to the *ArubaOS Quick Start* Guide for instructions on locating and connecting to the controller.

Identifying Specific Installation Locations

You can mount the AP-205H access point to a wall or to a desk mount kit, which can be purchased separately. Use the AP placement map generated by Aruba's RF Plan software application to determine the proper installation location(s). Each location should be as close as possible to the center of the intended coverage area and should be free from obstructions or obvious sources of interference. These RF absorbers/reflectors/interference sources will impact RF propagation and should be accounted for during the planning phase and adjusted for in RF plan.

Identifying Known RF Absorbers/Reflectors/Interference Sources

Identifying known RF absorbers, reflectors, and interference sources while in the field during the installation phase is critical. Make sure that these sources are taken into consideration when you attach an AP to its fixed location.

RF absorbers include:

- Cement/concrete—Old concrete has high levels of water dissipation, which dries out the concrete, allowing for potential RF propagation. New concrete has high levels of water concentration in the concrete, blocking RF signals.
- Natural Items—Fish tanks, water fountains, ponds, and trees
- Brick

RF reflectors include:

- Metal Objects—Metal pans between floors, rebar, fire doors, air conditioning/heating ducts, mesh windows, blinds, chain link fences (depending on aperture size), refrigerators, racks, shelves, and filing cabinets.
- Do not place an AP between two air conditioning/heating ducts. Make sure that APs are placed below ducts to avoid RF disturbances.

RF interference sources include:

- Microwave ovens and other 2.4 or 5 GHz objects (such as cordless phones)
- Cordless headset such as those used in call centers or lunch rooms

Installing the AP

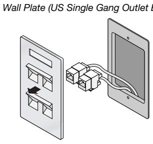
NOTE

Service to all Aruba Networks products should be performed by trained service personnel only.

The AP-205H is designed to mount into a variety of electrical gang boxes.

1. Begin by removing the existing data wall plate (if applicable).

Figure 5 *Removing Wall Plate (US Single Gang Outlet Box Shown)*



2. Remove any existing RJ45 connectors (typically snap-in) or cut/remove the UTP cable.
3. Use a short Ethernet cable (sold separately) to connect the E0 port to an RJ45 connector or crimp an RJ45 plug (not supplied) on the cable and insert in the E0 port. Do the same for the PT port, if used.
4. Align the mounting holes of the AP-205H mounting bracket with mounting holes in you gang box as shown in Figure 6 and Figure 7. For worldwide single gang outlet box, the mounting bracket has two sets of mounting holes to meet the individual installation position requirement. See Figure 7 for details.

   The applicable standards for the wall boxes are:
   - IEC 60670-1, GB17466, BS4662 and DIN49073 for Worldwide
   - ANSI/NEMA OS 1 and OS 2 for US
5. Insert the two included machine screws and tighten them to secure the mounting bracket.

Figure 6 *Bracket to Gang Box (US Single Gang Outlet Box Shown)*

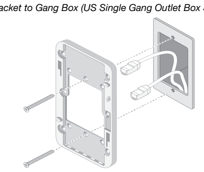
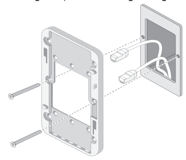
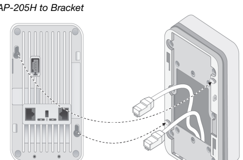


Figure 7 *Bracket to Gang Box (Worldwide Single Gang Outlet Box Shown)*



6. Connect any required cables to the rear of the AP-205H.
7. Align the mounting posts on the back of your AP-205H with the corresponding mounting holes on the mounting bracket as shown in Figure 8.
8. Push the AP against the holes and downward until the posts engage the slots at the top of the mounting holes.

Figure 8 *AP-205H to Bracket*



9. Once the AP is fastened onto the bracket, insert the Torx Security Screw into the hole located in the upper-right edge of the access point and tighten.
10. If not using PoE, connect the AC-DC power adapter (sold separately) to the DC power socket located on the bottom of the AP-205H.

Verifying Post-Installation Connectivity

The integrated LED on the AP can be used to verify that the AP is receiving power and initializing successfully (see Table 1). Refer to the *ArubaOS Quick Start Guide* for further details on verifying post-installation network connectivity.

Configuring the AP-205H

AP Provisioning/Reprovisioning

Provisioning parameters are unique to each AP. These local AP parameters are initially configured on the controller which are then pushed out to the AP and stored on the AP itself. Aruba recommends that provisioning settings be configured via the ArubaOS Web UI only. Refer to the *ArubaOS User Guide* for complete details.

AP Configuration

Configuration parameters are network or controller specific and are configured and stored on the controller. Network configuration settings are pushed out to the AP(s) but remain stored on the controller.

Configuration settings can be configured via the ArubaOS Web UI or ArubaOS CLI. Refer to *ArubaOS User Guide* for details.

Product Specifications

Electrical

- Ethernet:
  - 1 x 10/100/1000Base-T auto-sensing Ethernet RJ-45 Interface (E0-E3)
  - 1 x passive RJ-45 pass-through interface
  - MDI/MDX
  - IEEE 802.3 (10Base-T), IEEE 802.3u (100Base-T). IEEE 802.3ab (1000Base-T)
  - Power over Ethernet (IEEE 802.3af compliant), 48V DC (nominal) and 56V DC (maximum)/350mA (see Figure 4 for pin configuration)
- Power:
  - 48VDC power interface, supports powering through an AC-to-DC power adapter
  - POE support on Ethernet ports: 802.3af-compliant POE sourcing device

NOTE: If a power adapter other than the one provided by Aruba Networks is used in the US or Canada, it should be NRTL Listed, with an output rated 12 VDC, minimum 1.25A, marked "LPS" and "Class 2", and suitable for plugging into a standard power receptacle in the US and Canada.

For additional specifications on this product, please refer to the data sheet. The data sheet can be found at www.arubanetworks.com.

Proper Disposal of Aruba Equipment

Dispose of Aruba products per local regulation. For the most current information about Global Environmental Compliance and Aruba products, see our website at www.arubanetworks.com.

Waste of Electrical and Electronic Equipment

Aruba products at end of life are subject to separate collection and treatment in the EU Member States, Norway, and Switzerland and therefore are marked with the symbol shown at the left (crossed-out wheelie bin). The treatment applied at end of life of these products in these countries shall comply with the applicable national laws of countries implementing Directive 2002/96EC on Waste of Electrical and Electronic Equipment (WEEE).

India RoHS

This product complies with RoHS requirements as prescribed by E-Waste (Management & Handling) Rules, governed by the Ministry of Environment & Forests, Government of India.

European Union RoHS

Aruba products also comply with the EU Restriction of Hazardous Substances Directive 2011/65/EC (RoHS). EU RoHS restricts the use of specific hazardous materials in the manufacture of electrical and electronic equipment. Specifically, restricted materials under the RoHS Directive are Lead (including Solder used in printed circuit assemblies), Cadmium, Mercury, Hexavalent Chromium, and Bromine. Some Aruba products are subject to the exemptions listed in RoHS Directive Annex 7 (Lead in solder used in printed circuit assemblies). Products and packaging will be marked with the "RoHS" label shown at the left indicating conformance to this directive.

China RoHS

Aruba products also comply with China environmental declaration requirements and are labeled with the "EFUP 25" label shown at the left.

有毒有害物质声明
Hazardous Materials Declaration

部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substance)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr^{6+})	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电路板 (PCA Boards)	×	○	○	○	○	○
机械组件 (Mechanical Sub-Assemblies)	×	○	○	○	○	○

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。
Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T11363-2006 standard.

×: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。
Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T11363-2006 standard.

对销售之日的所售产品，本表显示，供应链的电子信息产品可能包含这些物质。
This table shows where these substances may be found in the supply chain of electronic information products, as of the date of sale of the enclosed product.

此标志为针对所涉及产品的环保使用期标志。某些零部件会有一个不同的环保使用期（例如，电池单元模块）贴在其产品上。
此环保使用期限只适用于产品是在产品手册中所规定的条件下工作。
The Environment- Friendly Use Period (EFUP) for all enclosed products and their parts are per the symbol shown here. The Environment- Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.

Safety and Regulatory Compliance

Aruba Networks provides a multi-language document that contains country-specific restrictions and additional safety and regulatory information for all Aruba access points. This document can be viewed or downloaded from the following location: www.arubanetworks.com/safety_addendum

Regulatory Model Name

The regulatory model name of AP-205H is APINH205.

FCC

CAUTION: Aruba access points must be installed by a professional installer. The professional installer is responsible for ensuring that grounding is available and it meets applicable local and national electrical codes.

This equipment generates, uses and can radiate radio frequency energy, and, if not installed and used in accordance with the manufacturer's instructions may cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment causes interference with other devices, which may be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the device receiving the interference.
- Increase the separation between the equipment.
- Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.
- Consult the manufacturer or field service technician for help.

The protection against electric shock is Class II.

Equipment not suitable for use in the presence of flammable mixtures.

CAUTION: **RF Radiation Exposure Statement:** This equipment complies with FCC RF radiation exposure limits. This equipment should be installed and operated with a minimum distance of 7.87 inches (20cm) between the radiator and your body for 2.4 GHz and 5 GHz operations. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Class B Part 15

This device complies with Part 15 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instructions, may cause interference harmful to radio communications.

If this equipment does cause interference, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for help.

Complies with the Class B limits for radio noise emissions as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of Industry Canada.

Cet appareil numerique de la classe B respecte toutes les exigencies du Reglement sur le materiel brouilleur du Canada.

Users are advised that high power Radars are allocated as primary users of the bands 5250-5350 MHz and 5650-5850 MHz and these Radars could cause interference and/or damage to Licensed Exempt WLAN devices.

EU Regulatory Conformance

This product is CE marked according to the provisions of the R & TTE Directive (1999/5/EC) - CE(!). Aruba Networks Inc., hereby declares that the APINH205 device model is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC -CE(!)

The Declaration of Conformity made under Directive 1999/5/EC is available for viewing at the following location: http://support.arubanetworks.com

Users are advised that high power Radars are allocated as primary users of the bands 5250-5350 MHz and 5650-5850 MHz and these Radars could cause interference and/or damage to Licensed Exempt WLAN devices.

Canadian Statement

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Déclaration d'Industrie Canada

1. Conformément aux réglementations d'Industrie Canada, cet émetteur-récepteur radio doit être utilisé uniquement avec une antenne dont le type et le gain maximal doivent être approuvés par Industrie Canada. Pour réduire les interférences radio potentielles, le type d'antenne et son gain

Aruba AP-205H Wireless Access Point

Installation Guide

Contacting Aruba Networks

Web Support	
Main Site	http://www.arubanetworks.com
Support Site	https://support.arubanetworks.com
Airheads Social Forums and Knowledge Base	community.arubanetworks.com
North American Telephone	1-800-943-4526 (Toll Free) 1-408-754-1200
International Telephones	arubanetworks.com/support-services/aruba-support-program/contact-support/
Software Licensing Site	licensing.arubanetworks.com/login.php
Wireless Security Incident Response Team (WSIRT)	arubanetworks.com/support/wsirt.php
Support Email Addresses	
Americas and APAC	support@arubanetworks.com
EMEA	emea.support@arubanetworks.com
Americas and APAC Support Email	support@arubanetworks.com
WSIRT Email Please email details of any security problem found in an Aruba product.	wsirt@arubanetworks.com

Open Source Code

Certain Aruba products include Open Source software code developed by third parties, including software code subject to the GNU General Public License ("GPL"), GNU Lesser General Public License ("LGPL"), or other Open Source Licenses. The Open Source code used can be found at this site:

http://www.arubanetworks.com/open_source

Legal Notice

The use of Aruba Networks, Inc. switching platforms and software, by all individuals or corporations, to terminate other vendors' VPN client devices constitutes complete acceptance of liability by that individual or corporation for this action and indemnifies, in full, Aruba Networks, Inc. from any and all legal actions that might be taken against it with respect to infringement of copyright on behalf of those vendors.

Warranty

This hardware product is protected by an Aruba warranty. For details, see Aruba Networks standard warranty terms and conditions.

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Part Number 0511734-01 | March 2015

0511743-01

doivent être choisis de façon à ce que la puissance isotrope rayonnée équivalente (PIRE) ne dépasse pas les valeurs nécessaires à une communication efficace.

Ce périphérique est conforme aux règlements RSS exempts de licence d'Industrie Canada.

L'utilisation de ce périphérique est soumise aux deux conditions suivantes : (1) ce périphérique ne doit pas provoquer d'interférences, et (2) ce périphérique doit accepter toute interférence, y compris les interférences susceptibles de provoquer un dysfonctionnement.

Medical

1. Equipment not suitable for use in the presence of flammable mixtures.
2. Connect to only IEC 60950-1 or IEC 60601-1 3rd edition certified products and power sources. The end user is responsible for the resulting medical system complies with the requirements of IEC 60601-1 3rd edition.
3. Wipe with a dry cloth, no additional maintenance required.
4. No serviceable parts, the unit must be sent back to the manufacturer for repair.
5. No modifications are allowed without Aruba approval.

第十二條

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。

低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

NOTE

For additional compliance information, pull down on the adhesive accordion sticker located on the back of the access point. This sticker may be folded back and reused once opened.