Aruba 300 Series Wireless Access Point

Installation Guide

The Aruba 300 Series wireless access points (APs) support IEEE802.11ac standards for high-performance WLAN, and are equipped with two radios, which provide network access and monitor the network simultaneously. These access points deliver high-performance 802.11n 2.4 GHz and 802.11ac 5 GHz functionality, while also supporting 802.11a/b/g wireless services. Multi-user Multiple-in, Multiple-output (MU-MIMO) is enabled when operating in 5GHz mode for optimal performance.

The AP-304 and AP-305 access points work in conjunction with an Aruba controller, while the IAP-304 and IAP-305 access point can be configured using a built-in virtual controller.

The 300 Series wireless access points provide the following capabilities:

- 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
- IEEE 802.11a/b/g/n/ac spectrum monitor
- Compatible with IEEE 802.3at PoE+ and IEEE 802.3af PoE
- Centralized management configuration and upgrade
- Integrated Bluetooth Low Energy (BLE) Radio

This device must be professionally installed and serviced by a trained ACMP or similar Aruba-certified technician. Aruba access points are classified as radio transmission devices, and are subject to government regulations of the host country. The network administrator(s) is/are responsible for ensuring that configuration and operation of this equipment is in compliance with their country's regulations. For complete list of approved channels in your country of the AP-304 and AP-305 access points, refer to the *Aruba Downloadable Regulatory Table* at support.arubanetworks.com.

Package Contents

- (I)AP-304 or (I)AP-305 access point
- Ceiling Rail Adapter (spare: AP-220-MNT-C1)

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.

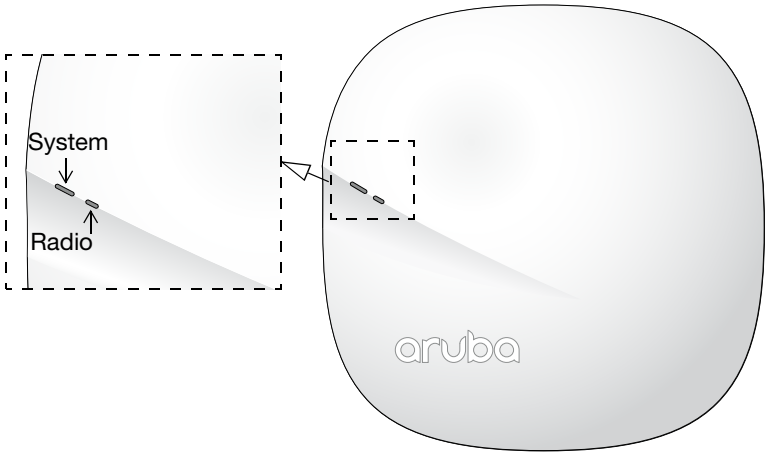
Software

The AP-304 and AP-305 access points require ArubaOS 6.5.1.0 or higher. For additional information, refer to the *ArubaOS User Guide* and *ArubaOS Quick Start Guide*.

The IAP-304 and IAP-305 access points require Aruba Instant 4.3.1.0 or higher. For additional information, refer to the *Aruba Instant User Guide* and *Aruba Instant Quick Start Guide*.

300 Series Hardware Overview

Figure 1 *Status LEDs on AP Front (305 shown)*



LEDs

The 300 Series access points have two LEDs that indicate the system and radio status of the device. These two LEDs can be configured via ArubaOS (for AP-304 and AP-305) or Aruba Instant (for IAP-304 and IAP-305) software into three separate modes:

- Normal mode (by default): See Table 1
- Both LEDs off
- Blink mode: Both LEDs blink green (synchronized)

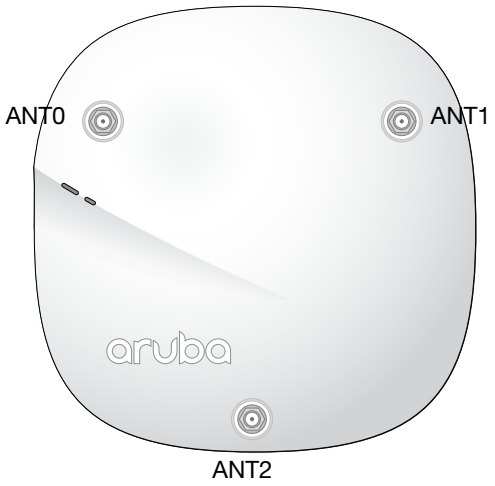
Table 1 *300 Series LEDs Status in Normal Mode*

LED	Color/State	Meaning
System Status (Left)	Off	Device powered off
	Green- Blinking	Device booting, not ready for use
	Green- Solid	Device ready for use, no restrictions
	Green- Flashing	Device ready for use, uplink negotiated in sub optimal speed (<1Gbps)
	Amber- Solid	Device ready for use; power-save mode (802.3af PoE)
	Amber- Flashing	Device ready for use; power-save mode (802.3af PoE), uplink negotiated in sub optimal speed (<1Gbps)
	Red- Solid	System error condition
Radio Status (Right)	Off	Device powered off, or both radios disabled
	Green- Solid	Both radios enabled in access mode
	Green- Blinking	One radio enabled in access mode
	Amber- Solid	Both radios enabled in monitor mode
	Amber- Blinking	One radio enabled in monitor mode
	Alternating	One radio enabled in access mode, other in monitor mode

External Antenna Connectors

The AP-304 and IAP-304 access points are equipped with three external antenna connectors on the front corners of the access point.

Figure 2 *External Antenna Connector*



CAUTION

External antennas for this device must be installed by an Aruba Certified Mobility Professional (ACMP) or other Aruba-certified technician, using manufacturer-approved antennas only.
The Equivalent Isotropically Radiated Power (EIRP) levels for all external antenna devices must not exceed the regulatory limit set by the host country/domain.
Installers are required to record the antenna gain for this device in the system management software.

USB Interface

The 300 Series is equipped with a USB port for connectivity with cellular modems and other USB client devices. When powered by an 802.3at or DC power source, the USB port can supply power up to 5W/1A. The USB interface is disabled when the access point is powered by an 802.3af PoE source (power-save mode).

Console Port

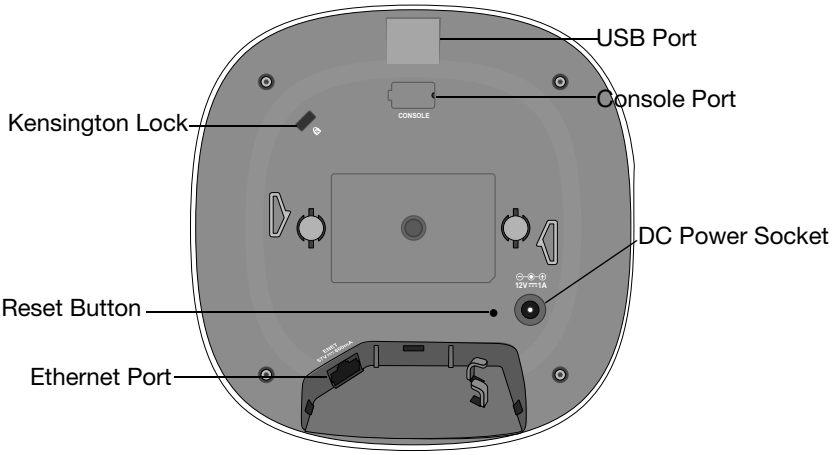
The serial console port is located at the back of the device and is a 4-pin connector covered by a dust cover. An optional serial adapter cable (AP-CBL-SER) is sold separately to connect the device to a serial terminal or a laptop for direct local management.

Ethernet Port

The 300 Series access points are equipped with one 10/100/1000Base-T auto-sensing MDI/MDX Ethernet port. This port supports wired-network connectivity, in addition to Power over Ethernet (PoE) from IEEE 802.3af and 802.3at compliant power sources.

This device accepts 56V DC (802.3at), or 48V DC (802.3af) nominal as a standard powered device (PD) from power sourcing equipment, including PoE midspan injector or a PoE-sourcing network infrastructure.

Figure 3 *Back Panel*



Kensington Lock Slot

The 300 Series access points are equipped with a Kensington lock slot for additional security.

Reset Button

To reset the 300 Series access points to factory default settings, press and hold down the reset button using a small, narrow object such as a paper clip while the (I)AP is powered on.

DC Power Socket

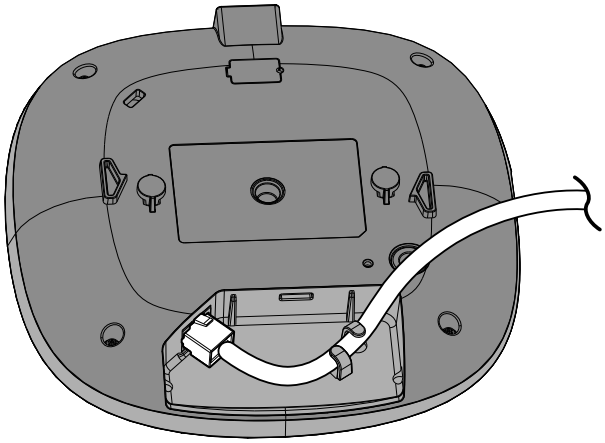
If PoE is not available, an optional Aruba AP-AC-12V30B power adapter kit (sold separately) can be used to power the 300 Series access points.
Additionally, a locally-sourced AC-to-DC adapter (or any DC source) can be used to power this device, as long as it complies with all applicable local regulatory requirements and the DC interface meets the following specifications:

- 12 Vdc (+/- 5%) and at least 18W
- Center-positive 2.1/5.5 mm circular plug, 9.5 mm length

Cable Clips

The cable clips on the rear of the access point is used to organize Ethernet cables, as shown in Figure 4. The use of the cable clips is optional and does not support all types of cables and plugs.

Figure 4 *Cable Clips*



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/Aruba Instant 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/Aruba Instant User Guide* pour les details des restrictions.

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

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

Pre-Installation Network Requirements

NOTE

The instructions for this section are applicable to the AP-304 and AP-305 only.

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 access points are deployed.
For initial setup of the controller, refer to the *ArubaOS Quick Start Guide* for the software version installed on your controller.

Pre-Installation Checklist

Before installing your 300 Series access points, ensure that you have the following:

- Cat5E or better UTP cable of required length
- One of the following power sources:
  - IEEE 802.3af-compliant Power over Ethernet (PoE) source.
  - Aruba AP-AC-12V30B power adapter kit (sold separately)

For AP-304 and AP-305 only:

- 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

NOTE

Aruba Networks, Inc., in compliance with governmental requirements, has designed the 300 Series access points so that only authorized network administrators can change the settings. For more information about access point configuration, refer to the *ArubaOS Quick Start Guide /Aruba Instant Quick Start Guide* and *ArubaOS User Guide/Aruba Instant User Guide*.

Verifying Pre-Installation Connectivity

NOTE

The instructions for this section are applicable to the AP-304 and AP-305 only.

Before installing access points in a network environment, make sure that they are able to locate and connect to the controller after power on.
Specifically, you must verify the following conditions:

- When connected to the network, each access point is assigned a valid IP address
- Access points 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 300 Series access point on the ceiling or a wall. Use the access point 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 have been accounted for during the planning phase and adjusted for in RF plan.

Identifying Known RF Absorbers, Reflectors and 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 access point to its fixed location. Examples of sources that degrade RF performance include:

- Cement and brick
- Objects that contain water
- Metal

- Microwave ovens
- Wireless phones and headsets

Installing the Access Point

NOTE

Service to all Aruba Networks products should be performed by an AMCP certified technician or similar.

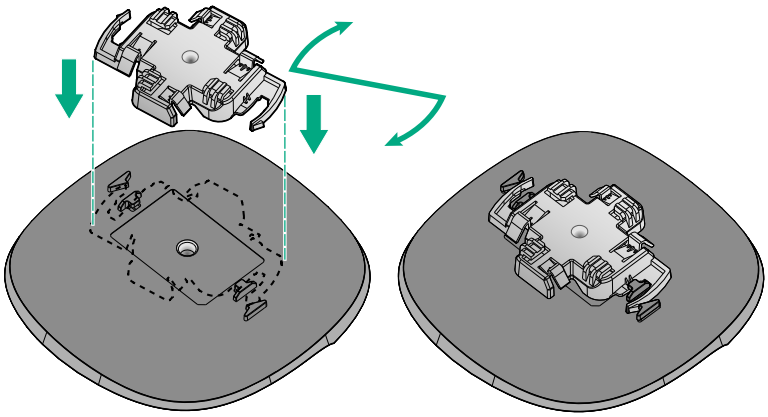
The 300 Series access points ship with a ceiling rail adapter to attach to a 9/16” or 15/16” ceiling rail. Additional ceiling or wall mount kits are sold separately as accessories.

CAUTION

The installer is responsible for securing the access point onto the ceiling tile rail in accordance with the steps below. Failure to properly install this product may result in physical injury and/or damage to property.

1. Pull the necessary cables through a prepared hole in the ceiling tile near where the access point will be placed.
2. Place the adapter against the back of the access point with the adapter at an angle of approximately 30 degrees to the tabs (see Figure 5).
3. Twist the adapter clockwise until it snaps into place in the tabs (see Figure 5).

Figure 5 *Attaching the Ceiling Rail Adapter to the AP*



4. Hold the access point next to the ceiling tile rail with the mounting slots at approximately a 30-degree angle to the ceiling tile rail (see Figure 6 and Figure 7). Make sure that any cable slack is above the ceiling tile.
5. Pushing toward the ceiling tile, rotate the access point clockwise until the device clicks into place on the ceiling tile rail.

Figure 6 *Mounting the Access Point to a 15/16” ceiling rail*

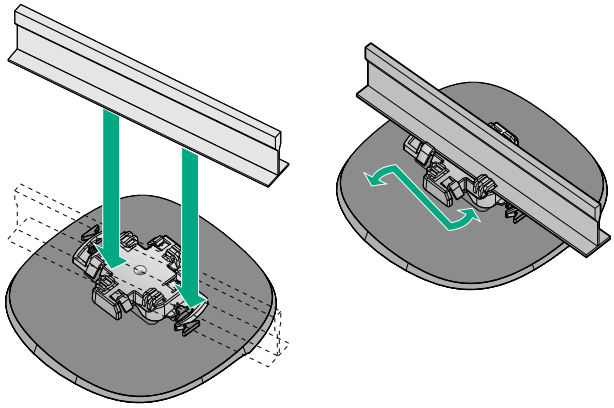
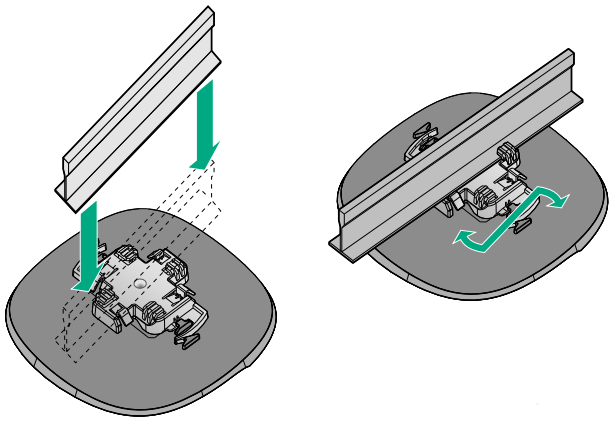


Figure 7 *Mounting the Access Point to a 9/16” ceiling rail*



Connecting Required Cables

Install cables in accordance with all applicable local and national regulations and practices.

Verifying Post-Installation Connectivity

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

Configuring the 300 Series Access Points

NOTE

The instructions for this section are applicable to the AP-304 and AP-305 only.

Access Point Provisioning/Reprovisioning

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

Access Point Configuration

Configuration parameters are network or controller specific and are configured and stored on the controller. Network configuration settings are pushed out to the access point but remain stored on the controller.
Configuration settings can be configured via the ArubaOS Web UI or ArubaOS CLI. Refer to the *ArubaOS User Guide* for complete details.

Electrical and Environmental Specifications

For additional specifications on this product, please refer to the product data sheet at www.arubanetworks.com/safety_addendum.

CAUTION

All Aruba access points should be professionally installed by an Aruba Certified Mobility Professional (ACMP). The installer is responsible for ensuring that grounding is available and meets applicable national and electrical codes.

CAUTION

Tous les points d'accès Aruba doivent impérativement être installés par un professionnel agréé. Ce dernier doit s'assurer que l'appareil est mis à la terre et que le circuit de mise à la terre est conforme aux codes électriques nationaux en vigueur.

Electrical

- Ethernet:
  - One 100/1000 Base-T auto-sensing Ethernet RJ45 interface
  - Power over Ethernet IEEE 802.3at 56VDC (nominal) and 802.3af 48VDC (nominal).
- Power:
  - Maximum (worst-case) power consumption: 13.5W (802.3af PoE) or 12W (DC)
    - Excludes power consumed by external USB device (and internal overhead); this could add up to 6W (PoE) or 5.5W (DC) for 5W/1A USB device
  - Direct DC source: 12Vdc nominal, +/- 5%
  - Power over Ethernet (PoE): 802.3at and 802.3af complaint source
  - Connect only to IEC 60950-1 or IEC 60601-1 3rd edition products and power sources.

NOTE

If a power adapter other than the Aruba-approved adapter is used in the US or Canada, it should be NRTL listed, with an output rated 12Vdc, minimum 2A, marked “LPS” and “Class 2”, and suitable for plugging into a standard power receptacle in the US and Canada.

Environmental

- Operating:
  - Temperature: 0°C to +50°C (+32°F to +122°F)
  - Humidity: 5% to 93% non-condensing
- Storage and transport:
  - Temperature: -40°C to +70°C (-40°F to +158°F)

Regulatory Information

The following regulatory model names apply to the 300 Series access points:

- AP-304/IAP-304: APIN0304
- AP-305/IAP-305: APIN0305

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 at www.arubanetworks.com.

FCC

This device is electronically labeled.

To view the FCC ID for controller-managed access points:

1. Log into the controller WebUI
2. Navigate to **Maintenance > Controller > About**

To view the FCC ID for Instant access points:

1. Log into the virtual controller WebUI

2. Navigate to Maintenance > About

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.

CAUTION

Déclaration sur les limites d'exposition aux radiofréquences : cet équipement est conforme aux limites d'exposition aux rayonnements radioélectriques spécifiées par la FCC. Il doit être installé et utilisé à une distance minimale de 20 cm par rapport à votre corps pour les fréquences de 2,4 et 5 GHz. Cet émetteur-récepteur ne doit pas être utilisé ou situé à proximité d'autres antennes ou émetteurs-récepteurs.

CAUTION

The device could automatically discontinue transmission in case of absence of information to transmit, or operational failure. Note that this is not intended to prohibit transmission of control or signaling information or the use of repetitive codes where required by the technology.

FCC Class B Part 15

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.
Operation is subject to the following conditions:

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

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.

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.

CAUTION

Toute modification effectuée sur cet équipement sans l'autorisation expresse de la partie responsable de la conformité est susceptible d'annuler son droit d'utilisation.

Canada

Complies with the Class B limits for radio noise emissions as set out in the interference-causing equipment standard entitled "Digital Apparatus," CAN ICES-3(B)/NMB-3(B).
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.) does not exceed the limit necessary for successful communication.
This device complies with Industry Canada license-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

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

CAUTION

This equipment complies with IC RSS-102 RF exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.

CAUTION

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

CAUTION

Under Industry Canada regulations, when operated in 5150 to 5250 MHz frequency range, this device is restricted to indoor use to reduce the potential for harmful interference with co-channel Mobile Satellite Systems. Users are advised that high power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850MHz and that these radars could cause interference and/or damage to LE-LAN devices.

CAUTION

Conformément aux réglementations d'Industrie Canada, en cas d'utilisation dans la plage de fréquences de 5150 à 5250 MHz, cet appareil doit uniquement être utilisé en intérieur afin de réduire les risques d'interférence avec les systèmes satellites mobiles partageant le même canal. Les utilisateurs êtes avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5250-5350 MHz et 5650-5850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL

CE

EU Regulatory Conformance

Aruba Networks Inc., hereby declares that this product is in compliance with the directives listed below:

- EMC Directive 2014
- Low Voltage Directive 2014
- R&TTE Directive 1999
- REACH Regulation (EC) No.: 1907/2006
- RoHS Directive 2011
- WEEE Directive 2012

A Declaration of Conformity for these directives is available for viewing at www.arubanetworks.com.

EMC Class B Warning

이 기기는 가정용 (B 급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며 , 모든 지역에서 사용할 수 있습니다 .

RF Warning

해당무선설비는 전파혼신의 가능성이 있으므로 인명안전과 관련된 서비스는 할 수 없습니다

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.

Taiwan

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。

Contacting Support

Table 2 *Contact Information*

Main Site	arubanetworks.com
Support Site	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/contact-support/
Software Licensing Site	hpe.com/networking/support
End of Support information	arubanetworks.com/support-services/end-of-life-products/end-of-life-policy/
Security Incident Response Team (SIRT)	Site: arubanetworks.com/support-services/security-bulletins/ Email: sirt@arubanetworks.com

Copyright

Open Source Code

This product includes code licensed under the GNU General Public License, the GNU Lesser General Public License, and/or certain other open source licenses. A complete machine-readable copy of the source code corresponding to such code is available upon request. This offer is valid to anyone in receipt of this information and shall expire three years following the date of the final distribution of this product version by Hewlett Packard Enterprise Company. To obtain such source code, send a check or money order in the amount of US $10.00 to:

Hewlett Packard Enterprise Company
Attn: General Counsel
3000 Hanover Street
Palo Alto, CA 94304
USA

Warranty

This hardware product is protected by an Aruba warranty. For more details visit www.hpe.com/us/en/support.html