The Aruba AP-224 and AP-225 wireless access points support the IEEE 802.11ac standard for high-performance WLAN. This access point uses MIMO (Multiple-in, Multiple-out) technology and other high-throughput mode techniques to deliver high-performance, 802.11ac 2.4 GHz and 802.11ac 5 GHz functionality while simultaneously supporting existing legacy wireless services. The AP-220 Series access point works only in conjunction with an Aruba Controller.

The Aruba AP-220 Series access point provides the following capabilities:

- Wireless transceiver
- Protocol-independent networking functionality
- IEEE 802.11ac operation as a wireless access point
- IEEE 802.11ac operation as a wireless air monitor
- IEEE 802.11a/b/g/n/ac operation as a wireless access point
- Central management configuration and upgrades with an Aruba Controller

The AP-220 Series requires ArubaOS 5.0.0.0 or later.

### Package Contents

- AP-220 or AP-225 access point
- 5/16” and 15/16” Ceiling Rail Adapters
- Installation guide (this document)

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.

### AP-220 Series Hardware Overview

The AP-220 Series is equipped with five LEDs that indicate the status of the various components of the AP.

<table>
<thead>
<tr>
<th>LED</th>
<th>Color/State</th>
<th>Meaning</th>
</tr>
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<tbody>
<tr>
<td>PWR</td>
<td>Off</td>
<td>No power to AP</td>
</tr>
<tr>
<td>Red</td>
<td></td>
<td>Initial power-up</td>
</tr>
<tr>
<td>Green - Flashing</td>
<td>AP booting</td>
<td></td>
</tr>
<tr>
<td>Green - Steady</td>
<td>AP ready</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>AP operating in Power Saving Mode</td>
<td></td>
</tr>
<tr>
<td>ENET</td>
<td></td>
<td>Ethernet link unavailable</td>
</tr>
<tr>
<td>Amber - Steady</td>
<td>10/100Mbps Ethernet link established</td>
<td></td>
</tr>
<tr>
<td>Green - Steady</td>
<td>1000Mbps Ethernet link established</td>
<td></td>
</tr>
<tr>
<td>Flashing</td>
<td>Ethernet link activity</td>
<td></td>
</tr>
<tr>
<td>5GHz</td>
<td>Off</td>
<td>5GHz radio disabled</td>
</tr>
<tr>
<td>Amber - Steady</td>
<td>5GHz radio enabled in non-HT WLAN mode</td>
<td></td>
</tr>
<tr>
<td>Green - Steady</td>
<td>5GHz radio enabled in HT WLAN mode</td>
<td></td>
</tr>
<tr>
<td>Flashing - Green</td>
<td>5GHz Air or Spectrum Monitor</td>
<td></td>
</tr>
<tr>
<td>2.4GHz</td>
<td>Off</td>
<td>2.4GHz radio disabled</td>
</tr>
<tr>
<td>Amber - Steady</td>
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### USB Interface

The AP-220 Series is equipped with a USB interface for connectivity with cellular modems.

### 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 pin-outs described in Figure 4. Connect it directly to a terminal or terminal server using an Ethernet cable.

### Ethernet Ports

The AP-220 Series is equipped with two 1000/100/10Base-T (RJ-45) auto-sensing, MDI/MDIX wired-network connection ports. These ports support IEEE 802.3af and 802.3at Power over Ethernet (PoE) compliance, accepting 48 VDC (nominal) as a standard defined Powered Device (PD) from a Power-Sourcing Equipment (PSE) such as a PoE switch, injector, or network infrastructure that supports PoE.

### DC Power Socket

When operating on 802.3af, only the port connected to power is functional. If PoE is not available, an optional Aruba AP AC-DC adapter kit (sold separately) can be used to power the AP-220 Series.

### Kensington Lock Slot

The AP-220 Series is equipped with a Kensington security slot for additional security.

### 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 configured in advance of the APs. Before you install APs in a network environment, make sure that the APs are able to locate the controller after power on.

Specifically, you must verify the following conditions:

- 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.

### Installing 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. Examples of sources that degrade RF performance include:

- Cement and brick
- Microwave ovens
- Wireless phones and headsets
- Metal
- Objects that contain water
- Objects that absorb or reflect signals

### AP Pre-Installation Checklist

Before installing your AP-220 Series AP, ensure that you have the following:

- CAT5e or CAT6 UTP cable of required length
- DHCP Server with vendor-specific options
- DNS server with an "A" record
- IEEE 802.3at or 802.3af-compliant Power over Ethernet (PoE) source. The PoE source can be any power source equipment (PSE) controller or midspan PSE device
- 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
  - DRB/PServer with vendor-specific options

### Summary of the Setup Process

Successful setup of an AP-220 Series access point consists of five tasks, which must be performed in this order:

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

Before installing your APs within an environment, make sure that all APs are able to locate and connect to the controller after power on.

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

### AP-220 Series Installation Guide

#### Package Contents

- AP-220 or AP-225 access point
- 5/16” and 15/16” Ceiling Rail Adapters
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### Kensington Lock Slot

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### 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 initialized before the Aruba APs are deployed.

For initial setup of the controller, refer to the ArubaOS Quick Start Guide for the software version installed on your controller.
Installing the AP

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

Using the Ceiling Rail Adapter

The AP-220 Series ships with two ceiling rail adapters for 9/16” and 5/8” ceiling rails. Additional wall mount adapters and ceiling rail adapters for other rail styles are available as accessory kits.

Refer to the ArubaOS Quick Start Guide for further details on verifying post-installation network connectivity.

Configuring the AP-220 Series

AP Provisioning/Regeneration

Provisioning parameters are unique to each AP. These local AP parameters are initially configured on the controller and 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 their respective guides for further details on configuring the ArubaOS User Guide.

Product Specifications

Electrical

- Voltage: 2 x 10/100/1000Base-T auto-sensing Ethernet RJ-45 Interfaces
- Power requirements: 100-240VAC
- Ethernet: 100Base-Tx (IEEE 802.3ab); 1000Base-T (IEEE 802.3ab); 100Base-FX (IEEE 802.3v); 100Base-T2 (IEEE 802.3z)
- Power mode: Ethernet (IEEE 802.3at compliant, 48V DC (nominal) and 56V DC (maximum)/PoE+), 12V DC power adapter

Environmental

- Operating: Temperature: 0°C to +40°C (32°F to +104°F), Humidity: 5% to 95% non-condensing
- Storage: Temperature: -40°C to +70°C (-40°F to +158°F), Humidity: 5% to 95% non-condensing
- Transportation: Temperature: -40°C to +70°C (-40°F to +158°F)

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

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/regulation.

Regulatory Model Names

The following regulatory model names apply to the AP-220 Series:

- AP-220: APIN0220
- AP-221: APIN0221
- AP-224: APIN0224
- AP-225: APIN0225

FCC

The device is electrically labeled to show the FCC ID.

1. Log into the controller Web UI.
2. Navigate to Maintenance > Controller > About
3. 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 7.9 inches (20 cm) 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. When operated in the 5.15 to 5.35 GHz frequency range, this device is restricted to indoor use to reduce the potential for harmful interference with co-channel Mobile Satellite Systems.

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:

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

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. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer’s instructions, may cause interference harmful to radio communications.

Verifyng Post-Installation Connectivity

The integrated LEDs 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.

EU Regulatory Conformance


Proper Disposal of Aruba Equipment

Aruba products are subject to separate collection and treatment in the EU States, States, and Switzerland and therefore are marked with the symbol shown at the left. This product and/or transmitter. When operated in the 5.15 to 5.35 GHz frequency range, this device is restricted to indoor use to reduce the potential for harmful interference with co-channel Mobile Satellite Systems.

Vietnam

This equipment and/or transmitter. When operated in the 5.15 to 5.35 GHz frequency range, this device is restricted to indoor use to reduce the potential for harmful interference with co-channel Mobile Satellite Systems.

China RoHS

Aruba products also comply with China environmental declaration requirements and are labeled with the "CEPPE-10" label shown at the left.

European Union RoHS

Aruba products also comply with the EU Restriction of Hazardous Substances Directive 2002/95/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 Brominated flame retardants on Waste of Electrical and Electronic Equipment (WEEE).