The Aruba IAP-224 and IAP-225 Instant wireless access points support the IEEE 802.11ac standard for high-performance WLAN. This access point uses MIMO (Multiple-input, Multiple-output) technology and other high throughput modes to deliver high-performance, 802.11n in 2.4 GHz and 802.11ac 5 GHz functionality while simultaneously supporting existing legacy wireless services.

The IAP-220 Series access point works only in conjunction with a virtual controller.

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

- Wireless transceiver
- Protocol-independent networking functionality
- IEEE 802.11ah/b/g/n/a operation as a wireless access point
- IEEE 802.11ac/b/g/n/a operation as a wireless air monitor
- Compatibility with IEEE 802.11af PoE+ and 802.3at PoE

**Package Contents**

- IAP-224 or IAP-225 access point
- 10/100/1000 Base-T (RJ-45) auto-sensing, 1000Base-T Gigabit Ethernet Port
- External Antenna Connectors
- 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.

**IAP-220 Series Hardware Overview**

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

**Table 1 IAP-220 Series LED Meanings**

<table>
<thead>
<tr>
<th>LED</th>
<th>Color/State</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>POW</td>
<td>Off</td>
<td>No power to AP</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>Change</td>
<td>AP operating in PoE Power Saving Mode</td>
<td></td>
</tr>
<tr>
<td>ENET0, ENET1</td>
<td>Off</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 activity</td>
<td></td>
</tr>
<tr>
<td>802.11a/b/g/n/a</td>
<td>Off</td>
<td>802.11a/b/g/n/a radio disabled in non-HT WLAN mode</td>
</tr>
<tr>
<td>2.4GHz</td>
<td>Off</td>
<td>2.4GHz radio disabled in non-HT WLAN mode</td>
</tr>
<tr>
<td>5GHz</td>
<td>Off</td>
<td>5GHz radio disabled in non-HT WLAN mode</td>
</tr>
<tr>
<td>Flashing - Green</td>
<td>2.4GHz or 5GHz enabled in HT WLAN mode</td>
<td></td>
</tr>
<tr>
<td>Ethernet Ports</td>
<td>2.4GHz</td>
<td>2.4GHz radio enabled in non-HT WLAN mode</td>
</tr>
<tr>
<td>5GHz</td>
<td>2.4GHz radio enabled in HT WLAN mode</td>
<td></td>
</tr>
<tr>
<td>Flashing - Green</td>
<td>2.4GHz or 5GHz enabled Monitor</td>
<td></td>
</tr>
</tbody>
</table>

**LEDs**

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

**Wireless phones and headsets**

- Metal
- Cement and brick
- Water
- Metal
- Microphone covers
- Wireless phones and headsets

**Identifying Specific Installation Locations**

You can mount the IAP-220 Series access point on a wall or in the ceiling. Use the Aruba AP Placement tool 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 sources of interference.

**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 install an AP to its fixed location. Examples of sources that affect AP performance include:

- Cement and brick
- Objects that contain water
- Metal
- Microwave ovens
- Wireless phones and headsets

**Installing the AP**

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

**Using the Ceiling Rail Adapter**

The IAP-220 Series ships with two ceiling rail adapters for 3/8" and 5/8" ceiling rails. Additional wall mount adapters and ceiling rail adapters for other rail styles are available as accessory kits.

**AP Pre-Installation Checklist**

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

- CAT5e or CAT5 UTP cable of required length
- One of the following power sources:
  - IEEE 802.3at or 802.3af-compliant Power over Ethernet (PoE) source
  - Aruba AP AC-DC adapter kit (sold separately)

**Summary of the Setup Process**

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

1. Identify the specific installation location for each AP.
2. Install each AP.
4. Configure the virtual controller. Refer to the Aruba Instant Quick Start Guide.

**Ethernet Ports**

IAP-220 Series is equipped with two 10/100/1000 Base-T (RJ-45) auto-sensing, 1000Base-T Gigabit Ethernet Port.

**Before You Begin**

- **FCC Statement**: Improper termination of access points installed in the United States (non-US model/Regulatory Domain model) 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 Aruba Instant User Guide for details on restrictions.

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

**Kensington Lock Slot**

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

**Reset Button**

The reset button can be used to reset the AP to factory default settings. To reset the AP:

1. Power off the AP.
2. Press and hold the reset button using a small, narrow object, such as a paperclip.
3. Power on the AP without releasing the reset button. The power LED will flash within 5 seconds.
4. Release the reset button.

The power 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.

**DC Power Socket**

If PoE is not available, an optional Aruba AP AC-DC adapter kit (sold separately) can be used to power the IAP-220 Series.

**Power Modes**

The IAP-220 Series can operate in two power modes. The AP’s mode is not configurable and is determined by the AP based on the amount of power available. The two modes are:

- **Full Power**: The AP is receiving power from an 802.3at PoE source or is powered using the optional AC-DC adapter kit. In this mode, all AP functionality is available.
- **PoE Power Saving**: The AP is receiving power from an 802.3af PoE source. In this mode, the AP has somewhat reduced functionality; the second Ethernet port is disabled, the USB port is disabled, and the AP operates in 2x1 RF chain mode for 2.4 GHz (two transmit chains disabled). The 5 GHz radio operates without restrictions.

**Installing the AP**

1. Place the adapter clockwise until it snaps into place in the tabs (see Figure 6).
2. Install each AP.
4. Configure the virtual controller. Refer to the Aruba Instant Quick Start Guide.

**Ethernet Interface**

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

**USB Interface**

- **USB Interface is disabled when the IAP-220 Series is powered from 802.3af PoE**.

**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 shown in Figure 1.

**Figure 1 Serial Port Pin-Out**

- **Figure 2 External Antenna Connectors (JPA-224 only)**
- **Figure 3 Bottom Panel**
- **Figure 4 Serial Port Pin-Out**
- **Figure 5 Gigabit Ethernet Port Pin-Out**
- **Figure 6 Serial Port Pin-Out**
- **Figure 7 Top Panel**
- **Figure 8 Kensington Lock Slot**
- **Figure 9 Reset Button DC Power Socket**
4. If necessary, connect the console cable to the console port on the back of the AP.

5. Hold the AP next to the ceiling tile rail with the ceiling tile rail mounting slots at approximately a 30-degree angle to the ceiling tile (see Figure 7). Make sure that any cable slack is above the ceiling tile.

6. Pushing toward the ceiling tile, rotate the AP clockwise until the device clicks into place on the ceiling tile.

7. On the IAP-224, install the external antennas according to the manufacturer’s instructions, and connect the antennas to the antenna interfaces on the AP.

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

Power Connection
The IAP-220 Series has a single 12V DC power jack socket to support powering through an AC- to-DC power adapter.

If both POE and DC power are available, the AP draws power from the POE source.

Verifying 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 Aruba Instant Quick Start Guide for further details on verifying post-installation network connectivity.

Product Specifications

Environmental
- Operating
  - Temperature: 0°C to 45°C (32°F to 113°F)
  - Humidity: 0% to 95% non-condensing
- Storage and transportation
  - Temperature: -40°C to 70°C (-40°F to 158°F)
For additional specifications on this product, please refer to the data sheet. The data sheet can be found at www.arubanetworks.com.

Safety and Regulatory Compliance
Aruba Networks provides a multi-language data sheet 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 locations: www.arubanetworks.com/safety/addendum

Regulatory Model Names
The following regulatory model names apply to the IAP-220 Series:
- IAP-220: APIN0220
- IAP-225: APIN0225

FCC
The device is electronically labeled and the FCC ID is displayed on the WAP under theAbsent area.

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 should not be co-located or operating in conjunction with any other antenna or transmitter. When operated in the 5.15 to 5.25 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. 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 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.

Operation is subject to the following two conditions:
- This device is restricted to indoor use to reduce the potential for harmful interference with co-channel Mobile Satellite Systems.
- This device complies with 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 to radio communications.

EMEA Support Email: emea.support@arubanetworks.com
Americas and APAC Support Email: support@arubanetworks.com

Proper Disposal of Aruba Equipment
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

China RoHS
Aruba products also comply with China environmental declarations requirements and are labeled with the “CEP” 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 assembly), Cadmium, Mercury, Hexavalent Chromium, and Bromine. Some Aruba products are subject to the exemption noted in RoHS Directive Annex 7 (Lead solder used in printed circuit assembly). Products and packaging will be marked with the “RoHS” label shown at the left indicating compliance to this directive.

Environmental declaration:

Aruba Networks, Inc. hereby declares that the APIN0220 and APIN0225 device models are in compliance with the essential requirements and other relevant provisions of Directives 2004/108/EC (EMC Directive), 2006/95/EC (Low Voltage Directive), and 2009/125/EC (RoHS Directive). The declaration can be viewed at www.arubanetworks.com.

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