### About the Aruba AP-105 Access Points

The Aruba AP-105 wireless access point supports the IEEE 802.11 standard for high-performance WLAN. This access point uses MM0 (Multiplexed, Multiple-out) technology and other high-throughput mode techniques to deliver high performance, 802.11e 2.4 GHz and 5 GHz functionality while simultaneously supporting existing 802.11a/b/g wireless services. The AP-105 access point works only in conjunction with an Aruba Controller.

The Aruba AP-105 access point provides the following capabilities:

- Wireless transmitter
- Protocol-independent networking functionality
- IEEE 802.11a/b/g operation as a wireless access point
- IEEE 802.11a/b/g operation as a wireless air monitor
- Compatibility with IEEE 802.3af PoE
- Central management configuration and upgrades through an Aruba Controller

### Package Contents

- AP-105 access point (1 unit or a pack of 10)
- Installation guide (this document)
- AP Pre-Installation Checklist
- Console Port
- Power Source: One of the following power sources:
  - CAT5 UTP cable of required length
  - DC Power Socket
  - MDX wired-network connectivity port. This port supports IEEE 802.3af Power over Ethernet (PoE) compliance, accepting 48VDC as a standard defined Power Device (PD) from a Power Sourcing Equipment (PSE) such as a PoE midspan injector, or network infrastructure that supports PoE.

### AP-105 Hardware Overview

**AP-105 Hardware Overview**

**AP-105 Rear**

- **(Console)**
  - Use the console port to connect to a terminal for direct local management.

- **Power Connector**
  - The AP-105 is equipped with a single 10/100/1000Base-T (RJ-45) auto-sensing, MDI/MDIX wired-network connectivity port. This port supports IEEE 802.3af Power over Ethernet (PoE) compliance, accepting 48VDC as a standard defined Power Device (PD) from a Power Sourcing Equipment (PSE) such as a PoE midspan injector, or network infrastructure that supports PoE.

- **DC Power Socket**
  - If PoE is not available, an optional Aruba AP AC-DC adapter kit (sold separately) can be used to power the AP-105.

### AP-105 Pre-Installation Checklist

**AP Pre-Installation Checklist**

Before installing your AP-105 access point, be sure that you have the following:

- CAT5 UTP cable of required length
- One of the following power sources:
  - IEEE 802.3af-compliant Power over Ethernet (PoE) source
  - PoE source can be any power source equipment (PSE) from a Power Sourcing Equipment (PSE) such as a PoE midspan injector, or network infrastructure that supports PoE.

### About the AP-105’s LED behavior

- **PWR**
  - Indicates whether or not the AP-105 is powered-on
- **11B/G/N**
  - Indicates the status of the 802.11b/g/n radio
- **ENET**
  - Indicates the status of the AP-105’s Ethernet port
- **11A/N**
  - Indicates the status of the 802.11a/ac radio

### FCC Statement

Improper termination of access points installed in the United States conformed to 2006 model standards will be in violation of the FCC grant of equipment authorization. Any such willful or intentional violation may result in a requirement for the FCC to terminate the operation of and may be subject to forfeiture (47 CFR 1.80).

### EU Statement

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

Pre-Installation Network Requirements

After WLAN planning is complete and the appropriate products and their assignments appropriate to the location in which the access point will be used. 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.

### Identifying Specific Installation Locations

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 13.78 inches (35 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 2.4 to 2.48 GHz frequency range, this device is restricted to indoor use to reduce the potential for harmful interference with co-channel Mobile Satellite Systems.

You can mount the AP-105 access point on a wall or on the ceiling. 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 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 those sources are taken into consideration when you attach an AP to its fixed location.

- **Concrete/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 within the concrete, blocking RF signals.
- **Natural items—Fishes, water fountains, ponds, and trees**
- **Brick**
- **RF reflectors include:**
  - Metal objects—Metal pans between floors, rebar, fire doors, air conditioning/heat ducts, mesh windows, blinds, chain link fence (depending on aperture size), refrigerators, shelves, and filing cabinets

### Summary of the Setup Process

If you complete the initial setup process successfully, you can select a pre-configured solution that will allow you to sign in and start using the AP-105.

Successful setup of an AP-105 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.

### Installing the AP

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

### Using the Integrated Wall-Mounting Slots

You can use the integrated wall-mounting slots on the back of the AP to mount the device to an indoor wall or shelf. When you mount the device to a surface, additional space at the right of the unit for cables.

1. Since the ports are on the back of the device, make sure that you mount the AP such that there is a clear path to the Ethernet port, such as a pre-drilled hole in the mounting surface.
2. At the mounting location, install two screw on the wall or shelf, 1 1/8 inches (4.7 cm) apart. If you are attaching the device to drywall, Aruba recommends using appropriate wall anchors (not included).
3. Align the mounting slots on the rear of the AP over the screws and slide the unit into place (see Figure 4).

### Installing AP-105 Access Point on a Wall

**Figure 3: AP-105 Rear Power Connector**

1. Pull the necessary cables through a prepared hole in the ceiling tile near the AP. Make sure that any cable slack is above the ceiling tile.
2. At the mounting location, install two screw on the wall or shelf, 1 1/8 inches (4.7 cm) apart. Make sure that any cable slack is above the ceiling tile.
3. Pull the cables through the prepared hole in the ceiling tile near the AP. Make sure that any cable slack is above the ceiling tile.

### Using the Integrated Ceiling Tile Rail Slots

The snap-on tile rail slots on the rear of the AP can be used to securely attach the device directly to a 1/2" wide, standard ceiling tile rail.

1. Pull the necessary cables through a prepared hole in the ceiling tile near the AP. Make sure that any cable slack is above the ceiling tile.
2. At the mounting location, install two screw on the wall or shelf, 1 1/8 inches (4.7 cm) apart. Make sure that any cable slack is above the ceiling tile.
Connecting Required Cables

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

Ethernet Ports

The 10/100/1000Base-T (ENET) supports 10/100/1000Base-T auto-sensing MDI/MDIX connections. Use the ports to connect the AP to a terminated pair Ethernet LAN segment or directly to an Aruba Controller. Use a 4- or 8-conductor, Category 5 UTP cable up to 100 m (328 ft) long.

The 10/100/1000 Mbps Ethernet port is on the back of the AP. The port has an RJ-45 female connector with the pins-outs shown in Figure 7.

Figure 6 Gigabit Ethernet Port Pin-outs

Serial Console Port

The serial console port (Console) 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 pins described in Figure 7. Connect this port in one of the following ways:

- Connect it directly to a terminal or terminal server using an Ethernet cable.
- Use a modular adapter to convert the RJ-45 (female) connector on the AP to a DB-9 (male) connector, and connect the adapter to a laptop using an RS-232 cable. See Figure 6 for connector details of the adapter.

Figure 7 Serial Port Pin-Out

Power Connection

The AP-105 has a single 12V DC power jack socket to support powering through an AC-to-DC power adapter.

If both PDC and DC power are available, the AP uses PDC even when there is not enough PDC voltage available to power the AP.

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

Table 1 AP-105 Series LED Meanings

<table>
<thead>
<tr>
<th>LED</th>
<th>Color/State</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWR</td>
<td>Off</td>
<td>No power to AP</td>
</tr>
<tr>
<td>Green flashing</td>
<td>System initializing</td>
<td></td>
</tr>
<tr>
<td>Red steady</td>
<td>System failed to initialize, contact SMC</td>
<td></td>
</tr>
<tr>
<td>Green steady</td>
<td>Power on, device ready</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 AP-105 Series LED Meanings

Table 2 AP-105 Wireless Access Point Installation Guide

AP-105 Wireless Access Point

Installation Guide

Contacting Aruba Networks

Table 1 Web Site Support

<table>
<thead>
<tr>
<th>Service</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support Site</td>
<td><a href="https://support.arubanetworks.com">https://support.arubanetworks.com</a></td>
</tr>
<tr>
<td>Software Licensing Site</td>
<td><a href="https://licensing.arubanetworks.com/liclogin.php">https://licensing.arubanetworks.com/liclogin.php</a></td>
</tr>
<tr>
<td>Aruba</td>
<td><a href="http://www.arubanetworks.com/arpertnet.jsp">http://www.arubanetworks.com/arpertnet.jsp</a></td>
</tr>
<tr>
<td>ArubaMPS Support Site</td>
<td>support/arubanetworks.com</td>
</tr>
<tr>
<td>SMC Support Site</td>
<td><a href="http://www.smc.com/support">www.smc.com/support</a></td>
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</table>

Table 2 Telephone Support

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aruba Corporate</td>
<td>+1 (800) 227-4500</td>
</tr>
<tr>
<td>Fax</td>
<td></td>
</tr>
</tbody>
</table>

Legal Notice

The use of Aruba Networks, Inc. switching platforms and software, by all individuals or corporations, to terminate third-party's VPN client devices constitutes complete acceptance of liability by that individual or corporation for interfering with co-channel Mobile Satellite Systems.

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 locations: www.arubanetworks.com/safety_addendum

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 1.78 inches (45 cm) between the radiator and any body for 2.4 GHz and 5 GHz operations. Themanufacturer must not be co-located or operating in conjunction with any other antennas or transmitter. When operated in the 5.15 to 5.25 GHz frequency range, this device is restricted to use in office and institutional environments. This device is not intended for use in residential environments in the United States. In the United States, the 5.15-5.25 GHz frequency range is reserved for fixed wireless links with no mobile operation. No other transmitting RF devices should be co-located with this device in the same environment. Any changes or modifications to this device that are not expressly approved by Aruba Networks may void the user’s authority to operate the equipment.

Warranty

This product is protected by the standard Aruba warranty of one year on part and labor. For more information, refer to the ARUBACARE SERVICE AND SUPPORT TERMS AND CONDITIONS.

Table 2 Table 1

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Modulation Type</th>
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<tr>
<td>802.11b+</td>
<td>CCK, BPSK, QPSK</td>
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<tr>
<td>802.11a+</td>
<td>OFDM, 32/64 QAM, 256 QAM</td>
</tr>
<tr>
<td>802.11n+</td>
<td>5 GHz, OFDM, 40 MHz (default)</td>
</tr>
<tr>
<td>Antenna Type</td>
<td>Indoor</td>
</tr>
<tr>
<td>2x 2.4 GHz antennas</td>
<td>Internal</td>
</tr>
<tr>
<td>Antenna Gain (Integrated Antennas)</td>
<td>5.180 - 5.235 GHz (2.4 GHz)</td>
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<tr>
<td>Bandwidth Technology</td>
<td>Orthogonal Frequency Division Multiplexing (OFDM)</td>
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AP-105 Wireless Access Point: Installation Guide

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Telephone Support

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| Fax | |

Open Source Code

Aruba supports the open source software development community by providing open source software code developed by third parties, including software code written by Aruba customers. For additional information, visit the Open Source Code page at http://www.arubanetworks.com/open_source

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Direct Sequence Spread Spectrum (DSSS)