Aruba RAP-155 / RAP-155P Remote Access Point

Installation Guide

The Aruba RAP-155 and RAP-155P are dual-radio, dual-band wireless access points (AP) that offer wired and wireless network access, zero-touch provisioning, identity-based access control, policy based forwarding, air monitoring, and wireless intrusion protection across the 2.4 GHz and 5 GHz (802.11a/b/g and 802.11n) bands.

The Aruba RAP-155 and RAP-155P ship with the Aruba Instant software. Therefore, out of the box, the Aruba RAP-155 and RAP-155P operate as a Virtual Controller (VC) or an Instant AP. However, the Aruba RAP-155 and RAP-155P can be converted to operate as a Remote AP (RAP). For information about the IAP to RAP conversion, see RAP Conversion.

> **NOTE:** The Aruba RAP-155 and RAP-155P require Aruba Instant 3.3 or higher version when deployed as an Instant AP and ArubaOS 6.3 or higher version when deployed in conjunction with a Mobility Controller.

The Aruba RAP-155 and RAP-155P provide the following capabilities:

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

Package Contents

- 1x Aruba RAP-155 or RAP-155P Access Point
- 1x Stand
- 1x Installation Guide (this document)
- 1x Aruba Instant Quick Start Guide
- 1x RJ-45 Ethernet Cable
- 1x 12V Power Adapter, power cord included (RAP-155 only)
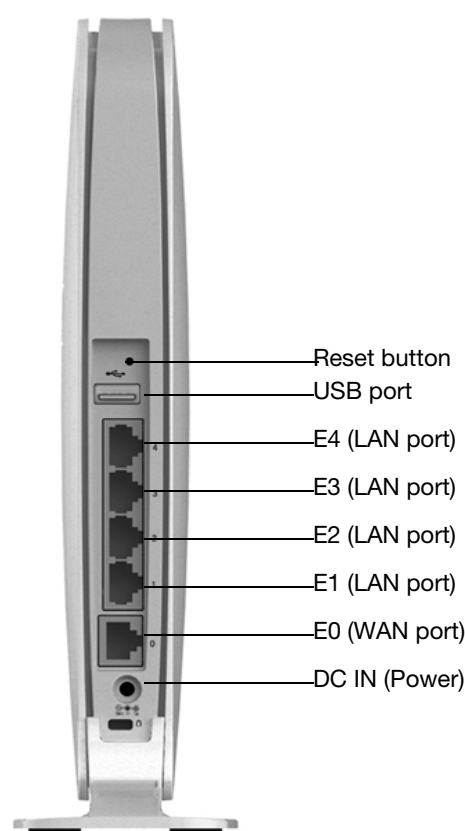- 1x 54V Power Adapter (RAP-155P only)

> **NOTE:** The 54V power adapter that ships with the RAP-155P does not come with a country specific power cord. This cord must be ordered separately.

> **NOTE:** Inform your supplier if there are any incorrect, missing, or damaged parts. If possible, retain the carton, including the original packing materials. Use them to repack the product in case there is a need to return it.

RAP-155 and RAP-155P Overview

Figure 1 *Rear View*

- Reset button
- USB port
- E4 (LAN port)
- E3 (LAN port)
- E2 (LAN port)
- E1 (LAN port)
- E0 (WAN port)
- DC IN (Power)

10/100/1000 Base-T Ethernet Ports

The RAP-155 or RAP-155P has five 10/100/1000Base-T (RJ-45) Ethernet ports for wired network connectivity. E0 is an uplink port and E1-E4 are downlink ports.

- E0: WAN port
- E1: LAN port
- E2: LAN port
- E3: LAN port
- E4: LAN port

On the RAP-155P, port E1 and E2 have PoE power sourcing capability (PSE) to supply power to two 802.3af powered device (class 0-4) on E1 and E2 port or one 802.3at powered device on either E1 or E2 port.

DC IN (Power Socket)

The RAP-155 or RAP-155P power adapter (included) connects to the DC IN port. The RAP-155 or RAP-155P does not have an On/Off switch. The device turns on when the power adapter is attached and plugged into a power outlet. The device turns off when you disconnect the power adapter from the power source (outlet).

> **NOTE:** The RAP-155 ships with a 12V power supply and the RAP-155P ships with a 54V power supply. These power supplies are not interchangeable.

USB Port

The RAP-155 or RAP-155P is equipped with a USB port to support cellular modems.

Figure 2 *Front View of RAP-155*

Figure 3 *Front View of RAP-155P*

Serial Console Port

The serial console port is located at the bottom of RAP-155 or RAP-155P and closed by a rubber insert when not in use. To use this port for troubleshooting, remove the rubber insert and connect the serial adapter cable to the port.

> **NOTE:** The RAP-155 or RAP-155P does not ship with a serial adapter cable. This cable is available as accessory with the part number AP-CBL-SER and should be ordered separately.

LEDs

LED	Mode	Status
PWR	On-Green	Device Ready
	Flashing-Green	Device booting - not ready
	Red	Initial power-up condition
	Off	No power
Ports (E0, E1, E2, E3, E4)	On-Green	1000 Mbps link established
	Off	No Ethernet link
	On-Amber	10/100 Mbps link established
	Flashing	Ethernet activity
RF0 (Radio 0, 5GHz, 802.11a/n)	On-Green	5GHz radio enabled in HT WLAN mode
	Flashing	5GHz Air monitor
	On-Amber	5GHz radio enabled in non-HT WLAN mode
	Off	5GHz radio disabled
RF1 (Radio 1, 2.4GHz, 802.11b/g/n)	On-Green	2.4GHz radio enabled in HT WLAN mode
	Flashing	2.4GHz Air monitor
	On-Amber	2.4GHz radio enabled in non-HT WLAN mode
	Off	2.4GHz radio disabled
PSE1 (RAP-155P only)	On-Green	Port1 sourcing POE power to an 802.3at powered device.
	Flashing	Port1 PoE sourcing error condition
	On-Green	Port1 sourcing POE power to an 802.3af powered device.
	Off	No PoE power sourcing on port1.
PSE2 (RAP-155P only)	On-Green	Port2 sourcing POE power to an 802.3at powered device.
	Flashing	Port2 PoE sourcing error condition
	On-Amber	Port2 sourcing POE power to an 802.3af powered device.
	Off	No PoE power sourcing on port2.

Reset Button

The RAP-155 and RAP-155P are equipped with a reset button, that when pushed, resets the device to factory default settings. The reset button is located on the rear of the device and is recessed in a small, round hole.

To reset the RAP-155 and RAP-155P, insert a small, narrow object, such as a pin or paperclip, into the hole and press and hold the button for 5-10 seconds while powering on the RAP-155 and RAP-155P. This will return the device to factory default settings.

RAP-155 and RAP-155P Installation

Tabletop Mounting

The RAP-155 and RAP-155P ship with a stand to use on flat (i.e. table top) surfaces. Place the RAP-155 and RAP-155P in the stand (see Figure 4) and place the stand on a flat, level surface.

Figure 4 *Stand Installation*
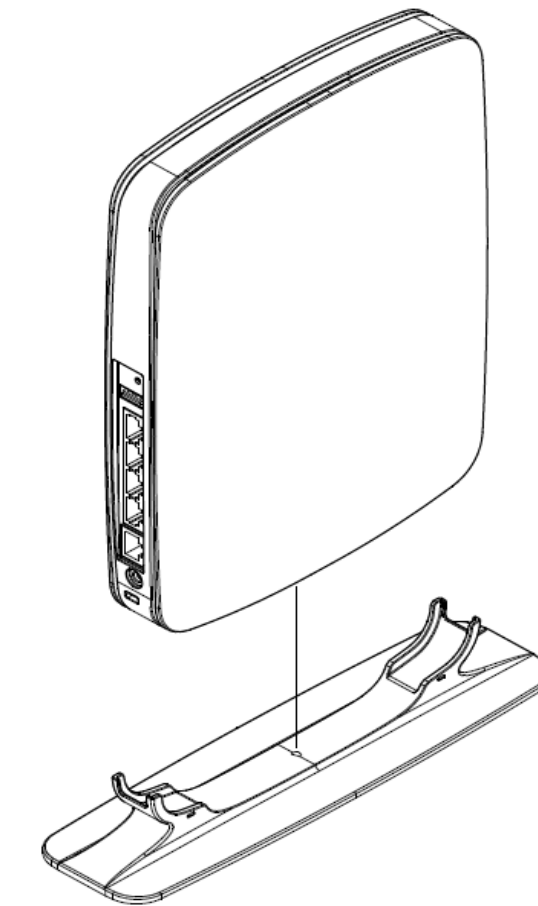
Connecting the Required Cables

The RAP-155 or RAP-155P must be connected to a network device that has access to the Internet, such as a router or modem. To complete the installation of the RAP-155 or RAP-155P:

1. Connect one end of the provided RJ-45 cable to port E0 on the RAP-155 or RAP-155P.
2. Connect the other end of the RJ-45 cable to a free RJ-45 port on your modem or router.
3. Attach the provided power adapter to the DC IN port on the RAP-155 or RAP-155P.
4. Connect the other end of the power adapter to a power outlet.

The RAP-155 or RAP-155P is now powered on. To verify this, ensure that the PWR LED is solid green.

Verifying Successful Installation

Once the RAP-155/RAP-155P's PWR LED has come up, the device will take 2 to 3 minutes to complete the boot cycle. Once the boot cycle is complete, you can connect to your company or corporate network.

RAP Conversion

If your network administrator has instructed you to convert the RAP-155 or RAP-155P to work in RAP mode, follow the process below to complete the RAP conversion.

1. Power up the RAP-155 or RAP-155P.
2. Connect to **Instant** SSID.
3. Login to the RAP-155 or RAP-155P by navigating to http://instant.arubanetworks.com and login to the Instant UI. The default username is **admin** and the default password is **admin**. See the included *Aruba Instant Quick Start Guide* for more information.
4. Navigate to the **Maintenance** tab in the top right.
5. Click on the **Convert** tab.
6. Select **Remote APs managed by a Mobility Controller** from the drop down menu.
7. Enter the IP address of the controller. This is provided by your network administrator.
8. Click **Convert Now** to complete the conversion (see Figure 5).
9. The RAP-155 or RAP-155P will reboot and begin operating in RAP mode.

Figure 5 *IAP-RAP Conversion over the Internet*
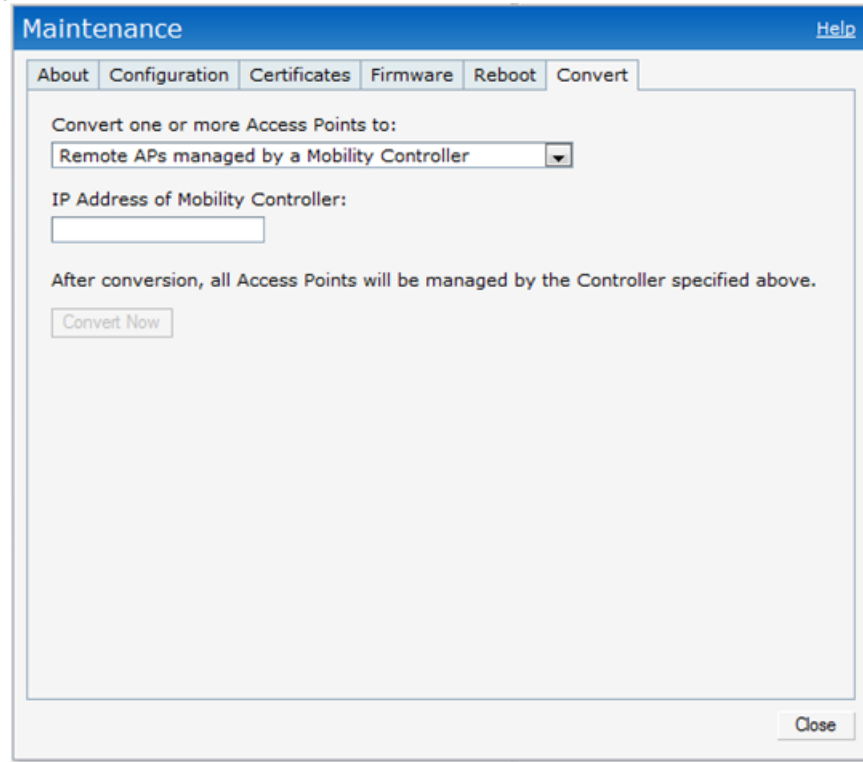

Wall Mounting Instructions

The two mount holes (the center-to-center distance is 26mm) are covered by the plastic plate with Aruba logo on the back of the RAP-155 and RAP-155P as shown in Figure 6. The mount holes can be used to attach the device upright to an indoor wall as shown in Figure 7. To install RAP-155 and RAP-155P on a wall:

1. At the mounting location, install two screw on the wall, 26mm apart

2. Remove the plastic plate, align the mount holes over the screws and slide the unit into place.

Figure 6 *Mount Holes on the Back of RAP-155/RAP-155P*

Two mount holes located under this plastic plate

Figure 7 *Mounting RAP-155/RAP-155P on a Wall*
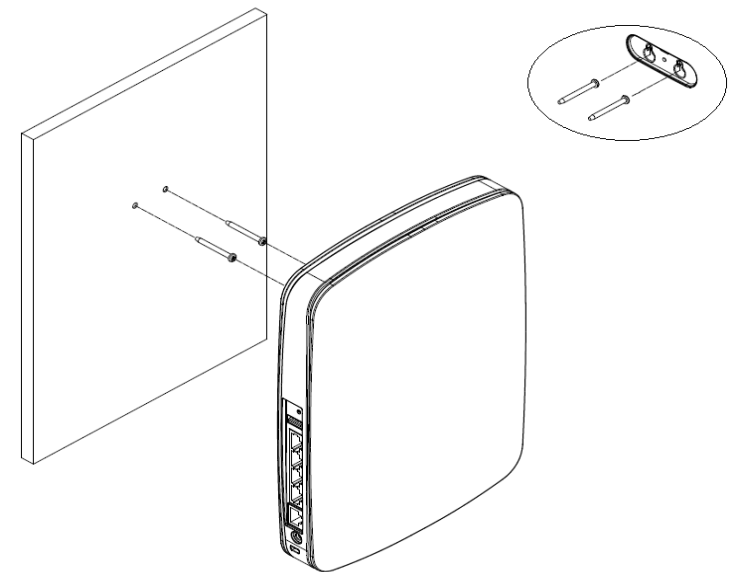
Product Specifications

Electrical

- Ethernet:
  - 5 x 10/100/1000BASE-T auto-sensing Ethernet RJ-45 Interfaces
  - MDI/MDX
  - 10/100/1000BASE-T are IEEE 802.3 and EEE 802.3u compliant.
- Power - RAP-155:
  - 12 VDC power interface, supports powering through an AC-to-DC power adapter
- Power - RAP-155P:
  - 54 VDC power interface, supports powering through an AC-to-DC power adapter
- PoE feature support (RAP-155P only)
  - Supply PoE power to up to two IEEE 802.3af powered device (class 0-4) on E1 and E2 port (the output power is 13 watts at each port)
 - Supply PoE power to one IEEE 802.3at powered device on either E1 or E2 port (the output power is 25.5 watts)

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

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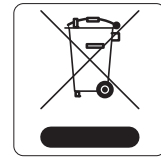
Aruba products at end of life are subject to separate collection and treatment in the EU Member States, Norway, and Switzerland and therefore are marked with the symbol shown at the left (crossed-out wheelie bin). The treatment applied at end of life of these products in these countries shall comply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

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 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 10" 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 (Cr⁶⁺)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电路板 (PCA Boards)	×	O	O	O	O	O
机械组件 (Mechanical Sub-Assemblies)	×	O	O	O	O	O

O：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 Names

The following regulatory model names apply to the RAP-155 and RAP-155P:

- RAP-155: APINR155
- RAP-155P: APINR15P

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.

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 35cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

EMC Compliance and Warning Statement

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.

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.

The device has been found to be compliant to the requirements set forth in CFR 47 Sections 2.1091 for an uncontrolled environment. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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

L ' utilisation de ce dispositif est autorisée seulement aux conditions suivantes : (1) il ne doit pas produire de brouillage et (2) l' utilisateur du dispositif doit étre prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

Le présent appareil est conforme aux normes CNR d'industrie Canada applicables aux appareils radio exempts licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit produire de brouillage, et

2. L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

EU Regulatory Conformance

This product is CE marked according to the provisions of the R & TTE Directive (99/5/EC) - CE(!). Aruba Networks Inc., hereby declares that the APINR155 / APINR15P device models are 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

Aruba RAP-155 / RAP-155P Remote 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