

Overview

Aruba RAP-100 Series Remote Access Points

High-performance wireless and wired networking for SMBs, branch offices and teleworkers



Product overview

The multifunctional Aruba RAP-100 series delivers secure 802.11n wireless and wired networking to SMBs and access to corporate resources from branch and home offices.

With unmatched deployment flexibility, the RAP-100 series can operate in Aruba Instant mode controlled by the AirWave management platform or in controller-managed mode where all network services are centralized by Aruba Mobility Controllers.

In Aruba Instant mode, traffic is locally bridged but it still provides the flexibility of secure tunneling to Mobility Controllers.

To eliminate client stickiness, the RAP-100 series includes integrated ClientMatch technology, which continuously gathers session performance metrics and uses this data to every device to the best AP and radio on the WLAN, even while users roam and RF conditions change.

The RAP-100 series also offers a wide range of enterprise- class features, including role-based network access, policy-based forwarding, and Adaptive Radio Management (ARM), which optimizes Wi-Fi client performance and ensures that Aruba APs stay clear of interference.

At locations that require greater coverage, the RAP-100 can join an Aruba Instant WLAN cluster. Simply install additional RAP-100s or any Aruba Instant AP and the entire cluster is managed as one. If one Aruba Instant AP fails, another AP automatically takes over with no disruption.

With a wireless data rate up to 300 Mbps in the 2.4-GHz and 5-GHz radio bands, the RAP-100 series has one 10/100/1000BASE-T Ethernet uplink, one 10/100BASE-T local Ethernet port and one USB port to connect to 3G and 4G networks.

When operating in Aruba Instant mode, the cloud-based Aruba Activate service dramatically reduces RAP-100 series deployment time by performing zero-touch provisioning, firmware upgrades and inventory management. With Aruba Activate, RAP-100s are factory-shipped to remote deployment sites and obtain their configurations automatically when powered up.

Features and Benefits

Advanced Features

Overview

- ClientMatch technology eliminates sticky clients by continuously gathering session performance metrics and using this information to steer them to the best AP and radio.
- ARM technology delivers best-in-class RF management, including automatic transmit power and channel control with auto coverage-hole correction.
- Zero-touch provisioning as well as automated firmware upgrades and inventory management with the cloud-based Aruba Activate service.
- Spectrum analyzer remotely scans the 2.4-GHz and 5-GHz radio bands to identify sources of RF interference.
- Security:
 - With a WebCC subscription, Aruba Instant RAPs deliver integrated web filtering to every device connected to the WLAN
 - Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys
 - SecureJack-capable for secure tunneling of wired Ethernet traffic
 - VPN configuration functionality enables the Instant AP to create a single VPN tunnel to an Aruba Mobility Controller in the data center. The Mobility Controller acts solely as a VPN endpoint and does not supply the Instant AP with any configuration.

Wireless Radio Specifications

- AP type: Dual-radio, dual-band 802.11n indoor
- Software-configurable dual radio supports 2.4 GHz and 5 GHz
- 2x2 MIMO with two spatial streams and up to 300 Mbps wireless data rate per radio
- Supported frequency band (country-specific restrictions apply):
 - 2.4000 GHz to 2.4835 GHz
 - 5.150 to 5.250 GHz
 - 5.250 to 5.350 GHz
 - 5.470 to 5.725 GHz
 - 5.725 to 5.875 GHz
- Available channels: Managed by Aruba Instant or Mobility Controller, depending upon the configured regulatory domain
- Supported radio technologies:
 - 802.11b: Direct-sequence spread-spectrum (DSSS)
 - 802.11a/g/n: Orthogonal frequency-division multiplexing (OFDM)
 - 802.11n: 2x2 MIMO with two spatial streams
- Supported modulation types:
 - 802.11b: BPSK, QPSK, CCK
 - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (aggregate) transmit power (limited by local regulatory requirements):
 - 2.4-GHz band: +21 dBm
 - 5-GHz bands: +21 dBm
- Advanced Cellular Coexistence (ACC) feature to effectively deal with interference from cellular systems
- Maximum ratio combining (MRC) for improved receiver performance
- Cyclic delay diversity (CDD) for improved downlink RF performance
- Short guard interval for 20-MHz and 40-MHz channels
- Space-Time Block Coding (STBC) for increased range and improved reception
- Supported data rates (Mbps):
 - 802.11b: 1, 2, 5.5, 11
 - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
 - 802.11n: MCS0 to MCS15 (6.5 Mbps to 300 Mbps)

Overview

- 802.11n high-throughput (HT) support: HT 20/40
- 802.11n packet aggregation: A-MPDU, A-MSDU

Power

- Supported power sources:
 - 802.3af (PoE) or 802.3at (PoE+) on uplink Ethernet port **NOTE:** When using PoE, the USB port will be enabled only when an 802.3at-compliant source is used
 - 12 volts from external power adapter (sold separately)
- Maximum power consumption:
 - Without USB device connected: 12.5 watts
 - With USB device: 15 watts

Encrypted Throughput

- Max IPsec encrypted wired throughput = 20 Mbps

Antennas

- RAP-108: Two RP-SMA connectors for external dual-band antennas
- RAP-109: Four integrated omni-directional antennas for 2x2 MIMO with maximum antenna gain of 5.0 dBi in both 2.4 GHz and 5 GHz. Built-in antennas are optimized for vertical orientation

Interfaces

- Network:
 - ENET0 (uplink): One 10/100/1000BASE-T Ethernet (RJ-45), auto-sensing link speed and MDI/MDX
 - ENET1 (local): One 10/100BASE-T Ethernet (RJ-45), auto-sensing link speed and MDI/MDX
- One port for DC power connector
- One USB 2.0 port (Type A connector)
- One serial console interface (RJ-45)
- Visual indicators (LEDs):
 - Power/system status
 - Ethernet link status (2x)
 - Radio status (2x)
- Kensington security slot
- Reset button

Mounting

- Desktop (vertical): Using stand supplied with product
- Wall (vertical): Using optional wall mount accessory
- Ceiling (horizontal, not recommended for RAP-109): Using optional ceiling mount accessories

Mechanical

- Dimensions (unit):
 - Excluding desk mount:
 - 160 mm (W) x 43 mm (D) x 160 mm (H)
 - 6.30" (W) x 1.69" (D) x 6.30" (H)
 - With desk mount:
 - 181 mm (W) x 72 mm (D) x 160 mm (H)
 - 7.13" (W) x 2.83" (D) x 6.30" (H)
- Weight (unit):
 - Excluding desk mount: 385 g (13.6 oz)
 - With desk mount: 460 g (16.2 oz)

Overview

- Dimensions (shipping)
 - 230 mm (W) x 220 mm (D) x 90 mm (H)
 - 9.06" (W) x 8.66" (D) x 3.5" (H)
- Weight (shipping): 750 g (1.65 lbs)

Environmental

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

Regulatory

- FCC/Industry of Canada
- CE Marked
- R&TTE Directive 1995/5/EC
- Low Voltage Directive 72/23/EEC
- EN 300 328
- EN 301 489
- EN 301 893
- UL/IEC/EN 60950
- EN 60601-1-1, EN60601-1-2

For more country-specific regulatory information and approvals, please see your Aruba representative.

Regulatory Model Numbers

- RAP-108: APINR108
- RAP-109: APINR109

Certifications

- CB Scheme Safety, cTUVus
- Wi-Fi certified 802.11a/b/g/n

Warranty

- **Limited lifetime warranty**

Minimum software Versions

- ArubaOS 6.2.0.0
 - Aruba Instant 3.2.0.0
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Configuration

Ordering Guide

Step 1: Select AP Model

Description	Part Number	Configuration Impact
Instant Access Points		
Aruba RAP-108 (RW) 802.11a/b/g/n Dual 2x2:2 Radio Antenna Connectors Remote AP	JW264A	Add PoE injector or AC adapter, antennas
Aruba RAP-108 (US) 802.11a/b/g/n Dual 2x2:2 Radio Antenna Connectors Remote AP	JW267A	Add PoE injector or AC adapter, antennas
Aruba RAP-108 (JP) 802.11a/b/g/n Dual 2x2:2 Radio Antenna Connectors Remote AP	JW266A	Add PoE injector or AC adapter, antennas
Aruba RAP-108 (IL) 802.11a/b/g/n Dual 2x2:2 Radio Antenna Connectors Remote AP	JW265A	Add PoE injector or AC adapter, antennas
Aruba RAP-108 (RW) FIPS/TAA-compliant 802.11a/b/g/n Dual 2x2:2 Radio Ant Cnctr Remote AP	JW268A	Add PoE injector or AC adapter, antennas
Aruba RAP-108 (US) FIPS/TAA-compliant 802.11a/b/g/n Dual 2x2:2 Radio Ant Cnctr Remote AP	JW269A	Add PoE injector or AC adapter, antennas
Aruba RAP-109 (RW) 802.11a/b/g/n Dual 2x2:2 Radio Integrated Antenna Remote AP	JW270A	Add PoE injector or AC adapter
Aruba RAP-109 (US) 802.11a/b/g/n Dual 2x2:2 Radio Integrated Ant Remote AP	JW273A	Add PoE injector or AC adapter
Aruba RAP-109 (JP) 802.11a/b/g/n Dual 2x2:2 Radio Integrated Antenna Remote AP	JW272A	Add PoE injector or AC adapter
Aruba RAP-108 (JP) FIPS/TAA-compliant 802.11a/b/g/n Dual 2x2:2 Radio Ant Cnctr Remote AP	JY749A	Add PoE injector or AC adapter, antennas
Aruba RAP-109 (JP) FIPS/TAA-compliant 802.11a/b/g/n Dual 2x2:2 Radio Intrtd Ant Remote AP	JY750A	Add PoE injector or AC adapter
Aruba RAP-109 (IL) 802.11a/b/g/n Dual 2x2:2 Radio Integrated Antenna Remote AP	JW271A	Add PoE injector or AC adapter
Aruba RAP-109 (RW) FIPS/TAA-compliant 802.11a/b/g/n Dual 2x2:2 Radio Integrated Ant Remote AP	JW274A	Add PoE injector or AC adapter
Aruba RAP-109 (US) FIPS/TAA-compliant 802.11a/b/g/n Dual 2x2:2 Radio Intrtd Ant Remote AP	JW275A	Add PoE injector or AC adapter
Aruba RAP-108 (RW) 802.11a/b/g/n Dual 2x2:2 Radio Antenna Connectors Remote AP	JW264A	Add PoE injector or AC adapter, antennas
Aruba RAP-108 (US) 802.11a/b/g/n Dual 2x2:2 Radio Antenna Connectors Remote AP	JW267A	Add PoE injector or AC adapter, antennas
Aruba RAP-108 (JP) 802.11a/b/g/n Dual 2x2:2 Radio Antenna Connectors Remote AP	JW266A	Add PoE injector or AC adapter, antennas
Aruba RAP-108 (IL) 802.11a/b/g/n Dual 2x2:2 Radio Antenna Connectors Remote AP	JW265A	Add PoE injector or AC adapter, antennas
Aruba RAP-108 (RW) FIPS/TAA-compliant 802.11a/b/g/n Dual 2x2:2 Radio Ant Cnctr Remote AP	JW268A	Add PoE injector or AC adapter, antennas

Configuration

Aruba RAP-108 (US) FIPS/TAA-compliant 802.11a/b/g/n Dual 2x2:2 Radio Ant Cnctr Remote AP	JW269A	Add PoE injector or AC adapter, antennas
Aruba RAP-109 (RW) 802.11a/b/g/n Dual 2x2:2 Radio Integrated Antenna Remote AP	JW270A	Add PoE injector or AC adapter
Aruba RAP-109 (US) 802.11a/b/g/n Dual 2x2:2 Radio Integrated Ant Remote AP	JW273A	Add PoE injector or AC adapter
Aruba RAP-109 (JP) 802.11a/b/g/n Dual 2x2:2 Radio Integrated Antenna Remote AP	JW272A	Add PoE injector or AC adapter

Step 2: Add Powering Accessories (Optional)

Description	Part Number	Configuration Impact
PD-3510G-AC 15.4W 802.3af PoE 10/100/1000Base-T Ethernet Midspan Injector	JW627A	USB interface will be disabled Add AC power cable
PD-9001GR-AC 30W 802.3at PoE+ 10/100/1000 Ethernet Indoor Rated Midspan Injector	JW629A	Add AC power cable
AP-AC-12V18 12V/18W Indoor AP AC Power Adapter without Power Cord	JW622A	Add AC power cable
AP-AC-12V18HT 12Vdc/18W High Temp AC Power Adapter	JW623A	Add AC power cable
AP-AC-UN 12V/18W Indoor AP AC Universal Power Adapter	JW621A	
AP-DC-CAR 12V/18W Indoor AP Car Power US Only Adapter Kit	JW631A	For US and Japan only

Add three-prong AC power cord for injector or AC adapter (no power cable needed for universal adapter):

Description	Part Number
PC-AC-ARG Argentina 220V AC 10A 2-meter AC Power Cord	JW113A
PC-AC-AUS Australian AC Power Cord	JW114A
PC-AC-BR Brazil AC Power Cord	JW115A
PC-AC-CHN China AC Power Cord	JW116A
PC-AC-DEN Denmark 220V AC 10A 2-meter AC Power Cord	JW117A
PC-AC-EC Continental European/Schuko AC Power Cord	JW118A
PC-AC-IN India AC Power Cord	JW119A
PC-AC-IL Israel 250V AC 10A 2-meter AC Power Cord	JW120A
PC-AC-IT Italian AC Power Cord	JW121A
PC-AC-JP Japanese AC Power Cord	JW122A
PC-AC-KOR Korea AC Power Cord	JW123A
PC-AC-NA North America AC Power Cord	JW124A
PC-AC-SWI Switzerland 220V AC 10A 2-meter AC Power Cord	JW125A
PC-AC-TW Taiwan AC Power Cord	JW126A
PC-AC-UK UK AC Power Cord	JW127A

Configuration

PC-AC-ZA South Africa 250V AC 10A 2-meter AC Power Cord	JW128A
PC-AC-ARG Argentina 220V AC 10A 2-meter AC Power Cord	JW113A
PC-AC-AUS Australian AC Power Cord	JW114A
PC-AC-BR Brazil AC Power Cord	JW115A
PC-AC-CHN China AC Power Cord	JW116A
PC-AC-DEN Denmark 220V AC 10A 2-meter AC Power Cord	JW117A
PC-AC-EC Continental European/Schuko AC Power Cord	JW118A
PC-AC-IN India AC Power Cord	JW119A
PC-AC-IL Israel 250V AC 10A 2-meter AC Power Cord	JW120A
PC-AC-IT Italian AC Power Cord	JW121A
PC-AC-JP Japanese AC Power Cord	JW122A
PC-AC-KOR Korea AC Power Cord	JW123A
PC-AC-NA North America AC Power Cord	JW124A
PC-AC-SWI Switzerland 220V AC 10A 2-meter AC Power Cord	JW125A

Step 3: Add Basic Accessories (Optional)

Description	Part Number
RAP-100-MNT RAP-100 Series AP Wall and Ceiling Mount Kit	JW057A

Step 4: Select Antennas (AP-108 Only)

Descriptions	Part Number	Qty	Interface(s)	Target Environment	Mounting
AP-ANT-1W 2.4-2.5GHz (4dBi)/4.9-5.875GHz (6dBi) Hi Gain Dual-band Omni-Dir Indoor Antenna	JW009A	2	1x RP-SMA male connector	Indoor	Direct-mount
AP-ANT-13B 2.4-2.5GHz (4.4dBi)/4.9-5.9GHz (3.3dBi) Downtilt Smallest Omni-Dir Single Antenna	JW001A	2	1x RP-SMA male pigtail	Indoor	Direct, using pigtails
AP-ANT-16 2.4-2.5Ghz (3.9dBi)/4.9-5.9GHz (4.7dBi) 3 Elmt MIMO Ant w/Downtilt Omni-Dir Antenna	JW003A	1	3x RP-SMA male pigtail (connect only 2)	Indoor	Direct, using pigtails
AP-ANT-19 2.4/5G Dual Band Omni-Dir 3dBi/6dBi Indr/Otrd RPSMA Cnctr Ant w/36in Intgrtd Cable	JW004A	2	1x RP-SMA male pigtail	Indoor/outdoor	Direct, using pigtails
AP-ANT-20W 2.4-2.5GHz (2dBi)/4.9-5.875GHz (2dBi) Compact Omni-Dir DMt Indr White Antenna	JW011A	2	1x RP-SMA male connector	Indoor	Direct-mount

Configuration

AP-ANT-25A Dual Band 90x90deg 5dBi +/- 45 Pol 2 Element MIMO 2xRPSMA Pigtail Antenna	JW012A	1	2x RP-SMA male pigtail	Indoor/outdoor	Direct, using pigtaills
AP-ANT-28 Dual Band 60x60deg 8dBi +/- 45 Pol 2 Element MIMO 2xRPSMA Pigtail Antenna	JW013A	1	2x RP-SMA male pigtail	Indoor/outdoor	Direct, using pigtaills

Step 5. Add Antenna Mount Kit (Optional)

Description	Part Number	Comments
AP-ANT-MNT-3 AP-ANT-25A/28/35A/38 Azimuth and Elevation Adjustable Mount Kit	JW020A	Compatible with AP-ANT-25A, AP- ANT-28, AP-ANT-35A and AP-ANT- 38

Technical Specifications

Rf Performance Table

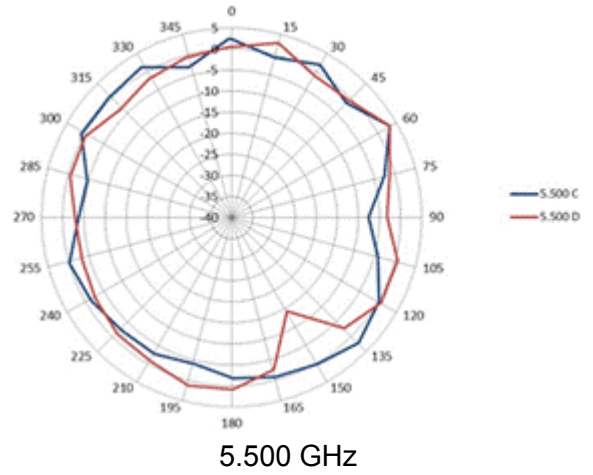
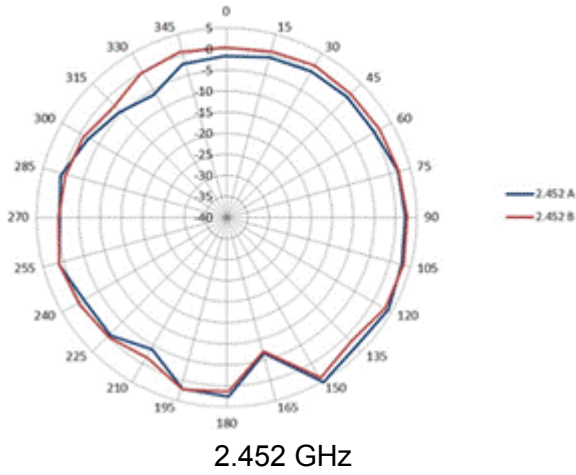
	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
802.11b 2.4 GHz		
1 Mbps	18.0	-92.0
2 Mbps	18.0	-92.0
5.5 Mbps	18.0	-90.0
11 Mbps	18.0	-88.0
802.11g 2.4 GHz and 802.11a 5 GHz		
6 Mbps	18.0	-88.0
54 Mbps	16.0	-75.0
802.11n HT20 2.4 GHz and 5 GHz		
MCS0/8	18.0	-88.0
MCS7/15	14.0	-71.0
802.11n HT40 2.4 GHz and 5 GHz		
MCS0/8	18.0	-85.0
MCS7/15	14.0	-68.0

Maximum capability of the hardware provided. Maximum transmit power will be limited by local regulatory settings

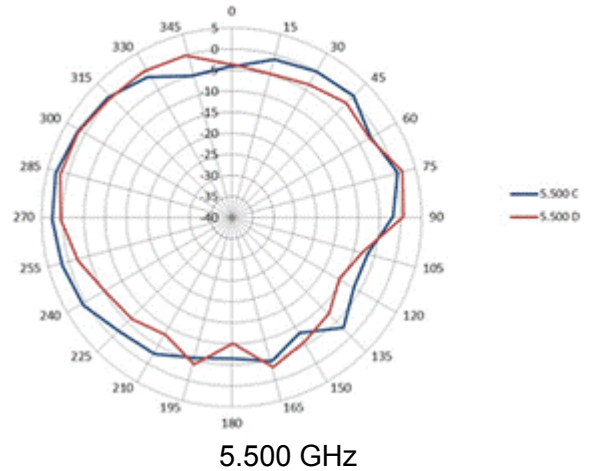
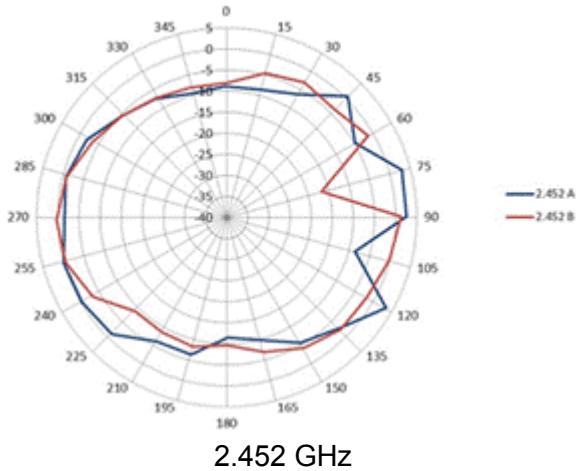
Technical Specifications

RAP-109 Antenna Pattern Plots

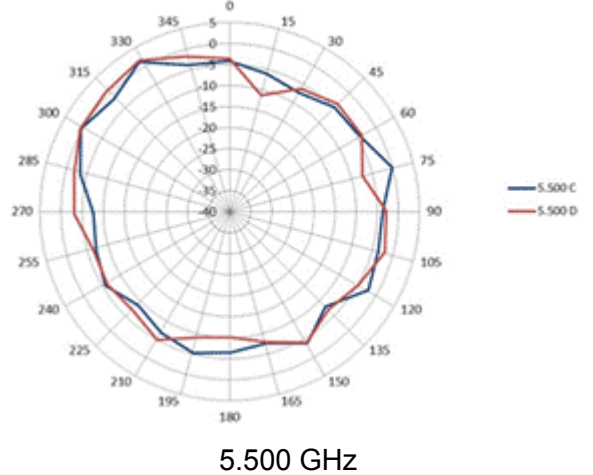
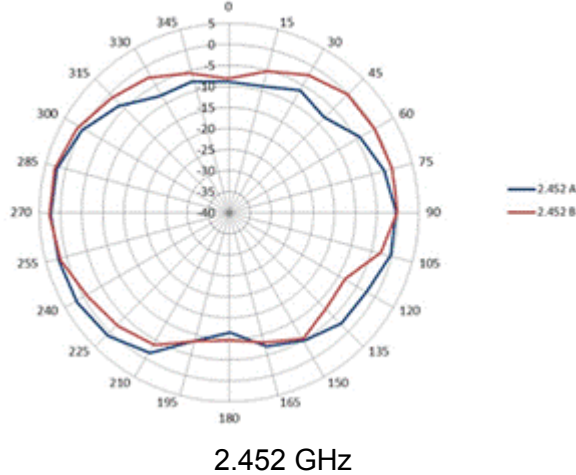
Horizontal or azimuth plane (top view)



Elevation plane (front view)



Elevation plane (side view)



Summary of Changes

Date	Version History	Action	Description of Change
07-Nov-2016	From Version 1 to 2	Added	Models added: JY749A, JY750A.
01-Nov-2016	Version 1	Created	Document creation.

   
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