

# ARUBA RAP-100 SERIES REMOTE ACCESS POINTS

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



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.

## ADVANCED FEATURES

- 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 an **OpenDNS** service subscription, Aruba Instant RAPs delivers integrated web filtering, malware and botnet protection 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 end-point and does not supply the Instant AP with any configuration.

## OPERATING MODES

- Wireless
  - Aruba Instant Access Point (AP)
  - Mobility Controller-managed WLAN Access Point (AP) or Remote AP (RAP)
  - Air monitor (AM)
  - Hybrid WLAN AP and AM
  - Secure enterprise mesh
- Wired
  - 10/100/1000BASE-T Ethernet uplink port, 10/100BASE-T Ethernet local port
  - User authentication: 802.1X, captive portal, MAC authentication or open access
  - Policy-based forwarding for local resource access

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

## ENCRYPTED VPN THROUGHPUT

- Up to 20 Mbps

## 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

## 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): 300 g (.66 lbs)
  - Excluding desk mount: 385 g (13.6 oz)
  - With desk mount: 460 g (16.2 oz)
- 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.

**CERTIFICATIONS**

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

**WARRANTY**

- Limited lifetime warranty

**MINIMUM SOFTWARE VERSIONS**

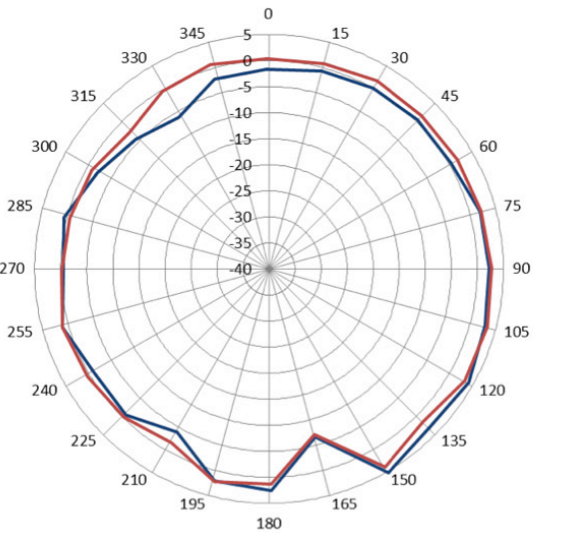
- ArubaOS™ 6.2.0.0
- Aruba Instant 3.2.0.0



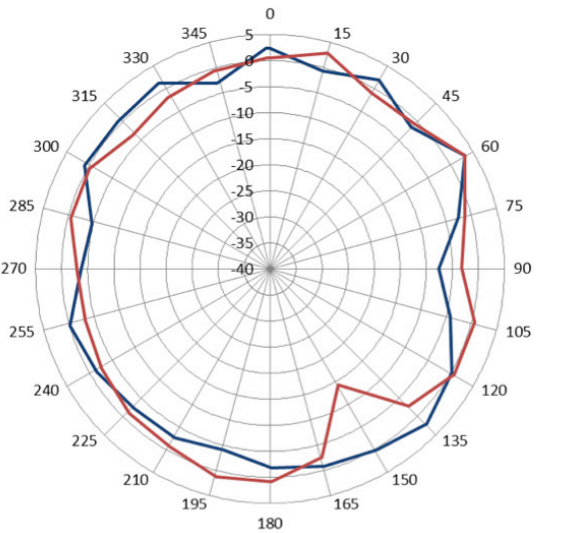
<b>RF PERFORMANCE TABLE</b>		
	<b>Maximum transmit power (dBm) per transmit chain</b>	<b>Receiver sensitivity (dBm) per receive chain</b>
<b>802.11b 2.4 GHz</b>		
1 Mbps	18.0	-92.0
2 Mbps	18.0	-92.0
5.5 Mbps	18.0	-90.0
11 Mbps	18.0	-88.0
<b>802.11g 2.4 GHz and 802.11a 5 GHz</b>		
6 Mbps	18.0	-88.0
54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

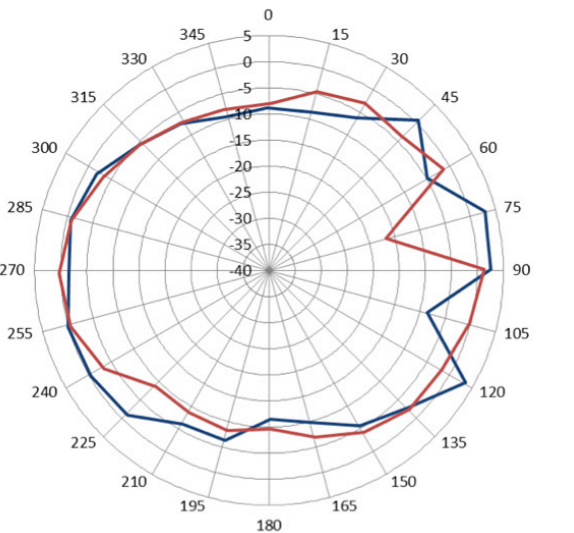
RAP-109 ANTENNA PATTERN PLOTS



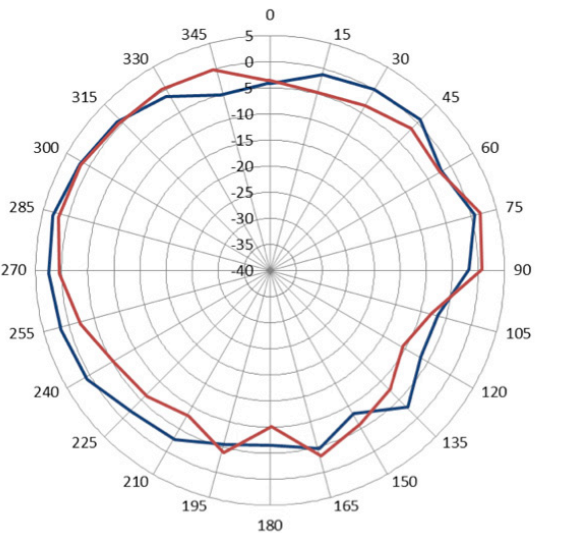
Horizontal or azimuth plane (top view) 2.452 GHz



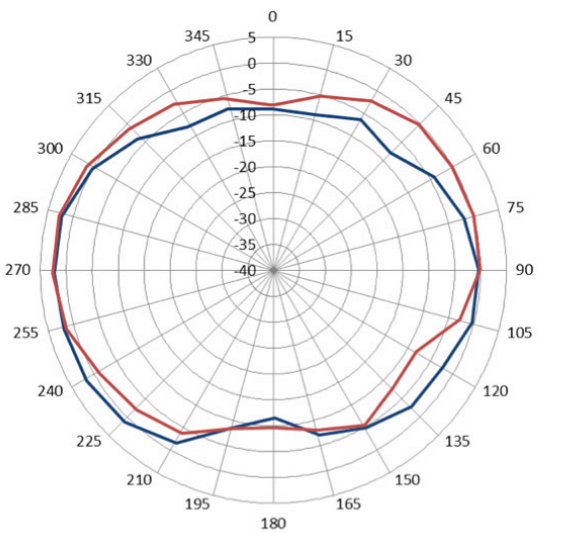
Horizontal or azimuth plane (top view) 5.500 GHz



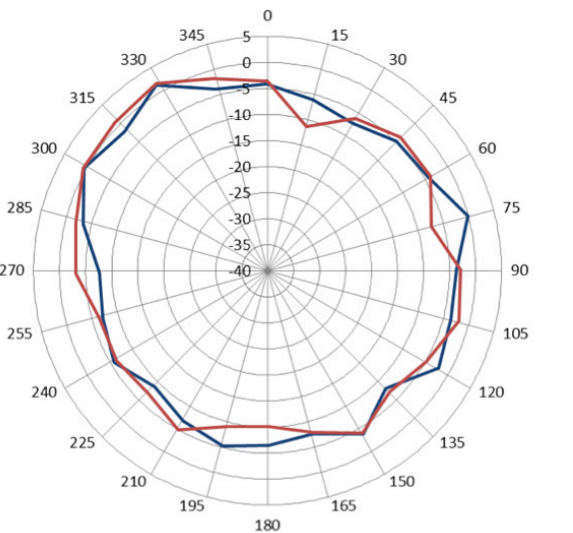
Elevation plane (front view) 2.452 GHz



Elevation plane (front view) 5.500 GHz



Elevation plane (side view) 2.452 GHz



Elevation plane (side view) 5.500 GHz

**ORDERING INFORMATION**

Part Number	Description
<b>RAP-100 Series Remote Access Points</b>	
RAP-108	Aruba Instant RAP-108 wireless access point, 802.11a/b/g/n, 2x2:2, dual radio, antenna connectors
RAP-108-US	Aruba Instant RAP-108 wireless access point, 802.11a/b/g/n, 2x2:2, dual radio, antenna connectors – Restricted regulatory domain: United States
RAP-108-JP	Aruba Instant RAP-108 wireless access point, 802.11a/b/g/n, 2x2:2, dual radio, antenna connectors – Restricted regulatory domain: Japan
RAP-109	Aruba Instant RAP-109 wireless access point, 802.11a/b/g/n, 2x2:2, dual radio, integrated antennas
RAP-109-US	Aruba Instant RAP-109 wireless access point, 802.11a/b/g/n, 2x2:2, dual radio, integrated antennas – Restricted regulatory domain: United States
RAP-109-JP	Aruba Instant RAP-109 wireless access point, 802.11a/b/g/n, 2x2:2, dual radio, integrated antennas – Restricted regulatory domain: Japan
<b>Accessories</b>	
RAP-100-MNT	Aruba RAP-100 series access point wall and ceiling mount kit
AP-AC-UN	12Vdc universal AC power adapter kit (wall plug style) for compatible indoor AP models. Includes plug inserts for all Aruba 0core countries.
AP-AC-12V18	12Vdc AC power adapter (desktop, inline style) for compatible indoor AP models. Does not include country specific power cord.
AP-ANT-20W	2.4-2.5 GHz (2 dBi) / 4.9-5.875 GHz (2 dBi), small size omni-directional direct-mount antenna (white). RP-SMA connector.



[www.arubanetworks.com](http://www.arubanetworks.com)

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