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 per radio
- Supported frequency band (country-specific restrictions apply):
  - 2.400 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 and up to 300 Mbps wireless data rate per radio
- 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 wireless 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)
- 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
- 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: APIRN108
- RAP-109: APIRN109

### 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

### RF PERFORMANCE TABLE

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

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**
- **Elevation plane (front view) 2.452 GHz**
- **Elevation plane (side view) 2.452 GHz**
- **Horizontal or azimuth plane (top view) 5.500 GHz**
- **Elevation plane (front view) 5.500 GHz**
- **Elevation plane (side view) 5.500 GHz**
<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAP-108</td>
<td>Aruba Instant RAP-108 wireless access point, 802.11a/b/g/n, 2x2:2, dual radio, antenna connectors</td>
</tr>
<tr>
<td>RAP-108-US</td>
<td>Aruba Instant RAP-108 wireless access point, 802.11a/b/g/n, 2x2:2, dual radio, antenna connectors – Restricted regulatory domain: United States</td>
</tr>
<tr>
<td>RAP-108-IL</td>
<td>Aruba Instant RAP-108 wireless access point, 802.11a/b/g/n, 2x2:2, dual radio, antenna connectors – Restricted regulatory domain: Israel</td>
</tr>
<tr>
<td>RAP-108-JP</td>
<td>Aruba Instant RAP-108 wireless access point, 802.11a/b/g/n, 2x2:2, dual radio, antenna connectors – Restricted regulatory domain: Japan</td>
</tr>
<tr>
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</tr>
<tr>
<td>RAP-109-JP</td>
<td>Aruba Instant RAP-109 wireless access point, 802.11a/b/g/n, 2x2:2, dual radio, integrated antennas – Restricted regulatory domain: Japan</td>
</tr>
<tr>
<td>RAP-100-MNT</td>
<td>Aruba RAP-100 series access point wall and ceiling mount kit</td>
</tr>
<tr>
<td>AP-AC-UN</td>
<td>12V/18W indoor Access Point AC power adapter. Universal, ships with 8 country-specific plug inserts (US, EU, UK, Australia, China, Korea, Argentina, Brazil), covering all Aruba core countries</td>
</tr>
<tr>
<td>AP-AC-12V18</td>
<td>12V/18W indoor Access Point AC power adapter. Does not include country-specific power cord (order separately)</td>
</tr>
<tr>
<td>PD-3501G-AC</td>
<td>15.4W 802.3af POE midspan injector, 10/100/1000Base-T Ethernet</td>
</tr>
<tr>
<td>AP-ANT-20W</td>
<td>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.</td>
</tr>
</tbody>
</table>