

### Overview

## Aruba 310 Series Access Points

High-performance 802.11ac Wave 2



### Product overview

The Aruba 310 Series access points deliver high performance and superb user experience for mobile devices, Internet of Things (IoT) devices, and applications in dense office environments. Featuring the 4x4:4SS MU-MIMO capability, advanced Aruba ClientMatch radio management, and Aruba Beacon technologies, the 310 Series enables an all-wireless digital work environment in a cost-effective manner.

With a maximum concurrent data rate of 1,733 Mbps in the 5 GHz band and 400 Mbps in the 2.4 GHz band (for an aggregate peak data rate of 2.1 Gbps), the 310 Series

APs can quickly add required capacities to your existing or new wireless networks. The mid-range 310 Series, with its single gigabit Ethernet uplink, is ideal for high device density environments, such as schools, retail branches, hotels and enterprise offices, where the organization is cost sensitive.

The high performance and high density 802.11ac 310 Series supports 160 MHz channel bandwidth (VHT160), multi-user MIMO (MU-MIMO) and 4 spatial streams (4SS). It provides simultaneous multicast data transmission to multiple devices, maximizing data throughput and improving network efficiency.

The 310 Series includes the enhanced ClientMatch technology that extends the client steering technology with MU-MIMO client awareness. It automatically identifies MU-MIMO capable mobile devices and steers those devices to the closest MU-MIMO capable Aruba access point. By grouping MU-MIMO capable mobile devices together, the network starts taking advantage of the simultaneous transmission to these devices, increasing its overall capacity. These dynamic roaming policies that are based on device types, help users achieve the best WLAN performance in a mixed device environment during the technology transition period.

The 310 Series also has an integrated Bluetooth Aruba Beacon that simplifies the remote management of a network of large-scale battery-powered Aruba beacons while also providing advanced location and indoor way finding, and proximity-based push notification capabilities. It enables businesses to leverage mobility context to develop applications that will deliver an enhanced user experience and increase the value of the wireless network for organizations.

### Features and Benefits

### Overview

#### Unique Benefits

- Dual Radio 802.11ac access point with Multi-User MIMO
  - Supports up to 1,733Mbps in the 5GHz band (with 4SS/VHT80 or 2SS/VHT160 clients) and up to 400 Mbps in the 2.4 GHz band (with 2SS/VHT40 clients).
- Built-in Bluetooth Low-Energy (BLE) radio
  - Enables location based services with BLE-enabled mobile devices receiving signals from multiple Aruba Beacons at the same time.
- Advanced Cellular Coexistence (ACC)
  - Minimizes interference from 3G/4G cellular networks, distributed antenna systems, and commercial small cell/femtocell equipment.
- Quality of service for unified communication apps
  - Supports priority handling and policy enforcement for unified communication apps, including Microsoft Skype for Business with encrypted videoconferencing, voice, chat, and desktop sharing
- RF Management
  - Adaptive Radio Management (ARM) technology automatically assigns channel and power settings, provides airtime fairness, and ensures that APs stay clear of all sources of RF interference to deliver reliable, high-performance WLANs.
  - The Aruba 310 series APs can be configured to provide part-time or dedicated air monitoring for spectrum analysis and wireless intrusion protection, VPN tunnels to extend remote locations to corporate resources, and wireless mesh connections where Ethernet drops are not available.
- Support for additional 5 GHz bands
  - Supports software upgrade to enable additional 5 GHz spectrums when governments expand available frequencies.
- Intelligent app visibility and control
  - AppRF technology leverages deep packet inspection to classify and block, prioritize or limit bandwidth for over 1,500 enterprise apps or groups of apps.
- Security
  - Integrated wireless intrusion protection offers threat protection and mitigation, and eliminates the need for separate RF sensors and security appliances.
  - IP reputation and security services identify, classify, and block malicious files, URLs and IPs, providing comprehensive protection against advanced online threats.
  - Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys.
- Intelligent Power Monitoring (IPM):
  - Enables the AP to continuously monitor and report its actual power consumption and optionally make autonomous decisions to disable certain capabilities
  - For the 310 Series Access Points, the IPM power-save feature applies when the unit is powered by an 802.3af PoE source. By default, the USB interface will be the first feature to turn off if AP power consumption will exceed the available power budget. In rare cases it may be necessary to take additional power saving measures, but in most cases, the 310 Series APs will operate in unrestricted mode

#### Choose your Operating Mode

Aruba 310 series APs offer a choice of operating modes to meet your unique management and deployment requirements.

### Overview

- Controller-managed mode - When managed by Aruba Mobility Controllers, Aruba 310 Series APs offer centralized configuration, data encryption, policy enforcement and network services, as well as distributed and centralized traffic forwarding.
- Aruba Instant mode - In Aruba Instant mode, a single AP automatically distributes the network configuration to other Instant APs in the WLAN. Simply power-up one Instant AP, configure it over the air, and plug in the other APs - the entire process takes about five minutes. If WLAN requirements change, a built-in migration path allows 310 Series instant APs to become part of a WLAN that is managed by a Mobility Controller.
- Remote AP (RAP) for branch deployments
- Air monitor (AM) for wireless IDS, rogue detection and containment
- Spectrum analyzer, dedicated or hybrid, for identifying sources of RF interference
- Secure enterprise mesh

For large installations across multiple sites, the Aruba Activate service significantly reduces deployment time by automating device provisioning, firmware upgrades, and inventory management. With Aruba Activate, Instant APs are factory-shipped to any site and configure themselves when powered up.

### AP 310 Series Specifications

- AP-314 (controller-managed) and IAP-314 (Instant):
- 802.11ac - 5 GHz 4x4 MIMO (1,733 Mbps max rate) and 2.4 GHz 2x2 MIMO (400 Mbps max rate) radios, with a total of four dual-band RP-SMA connectors for external antennas
- AP-315 (controller-managed) and IAP-315 (Instant):
  - 802.11ac - 5 GHz 4x4 MIMO (1,733 Mbps max rate) and 2.4 GHz 2x2 MIMO (400 Mbps max rate) radios, with a total of four integrated omni-directional downtilt dual-band antennas

### Wi-Fi Radio Specifications

- AP type: Indoor, dual radio, 5 GHz 802.11ac 4x4 MIMO and 2.4 GHz 802.11n 2x2 MIMO
- Software-configurable dual radio supports 5 GHz (Radio 0) and 2.4 GHz (Radio 1)
- 5 GHz: Four spatial stream Single User (SU) MIMO for up to 1,733 Mbps wireless data rate to individual 4x4 VHT80 or 2x2 VHT160 client devices
- 2.4 GHz: Two spatial stream Single User (SU) MIMO for up to 400 Mbps wireless data rate to individual 2x2 VHT40 client devices (300 Mbps for HT40 802.11n client devices)
- 5 GHz: Four spatial stream Multi User (MU) MIMO for up to 1,733 Mbps wireless data rate to up to three MU-MIMO capable client devices simultaneously
- Support for up to 255 associated client devices per radio, and up to 16 BSSIDs per radio
- Supported frequency bands (country-specific restrictions apply):
  - 2.400 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 5.850 GHz
- Available channels: Dependent on configured regulatory domain.
- Dynamic frequency selection (DFS) optimizes the use of available RF spectrum.
- Supported radio technologies:
  - 802.11b: Direct-sequence spread-spectrum (DSSS)
  - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)
- Supported modulation types:
  - 802.11b: BPSK, QPSK, CCK
  - 802.11a/g/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (conducted) transmit power (limited by local regulatory requirements):
  - 2.4 GHz band: +18 dBm per chain, +21dBm aggregate (2x2)
  - 5 GHz band: +18 dBm per chain, +24dBm aggregate (4x4)

### Overview

- **NOTE:** conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain

- Advanced Cellular Coexistence (ACC) minimizes interference from cellular networks.
- Maximum ratio combining (MRC) for improved receiver performance.
- Cyclic delay/shift diversity (CDD/CSD) for improved downlink RF performance.
- Short guard interval for 20-MHz, 40-MHz, 80-MHz and 160-MHz channels.
- Space-time block coding (STBC) for increased range and improved reception.
- Low-density parity check (LDPC) for high-efficiency error correction and increased throughput.
- Transmit beam-forming (TxBF) for increased signal reliability and range.
- Supported data rates (Mbps):
  - 802.11b: 1, 2, 5.5, 11
  - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
  - 802.11n (5GHz): 6.5 to 600 (MCS0 to MCS31)
  - 802.11n (2.45GHz): 6.5 to 300 (MCS0 to MCS15)
  - 802.11ac: 6.5 to 1,733 (MCS0 to MCS9, NSS = 1 to 4 for VHT20/40/80, NSS = 1 to 2 for VHT160)
- 802.11n high-throughput (HT) support: HT 20/40
- 802.11ac very high throughput (VHT) support: VHT 20/40/80/160
- 802.11n/ac packet aggregation: A-MPDU, A-MSDU

### Wi-Fi Antennas

- AP-314/IAP-314: Four RP-SMA connectors for external dual band antennas. Worst-case internal loss between radio interface and external antenna connectors (due to diplexing circuitry): 0.6dB in 2.4 GHz and 1.2dB in 5 GHz.
- AP-315/IAP-315: Four integrated dual-band downtilt omni-directional antennas for 4x4 MIMO with maximum antenna gain of 3.1dBi in 2.4 GHz and 5.0dBi in 5 GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 degrees.
  - The maximum gain of the combined (summed) antenna patterns for all elements operating in the same band is 3.9dBi in 2.4 GHz and 5.7dBi in 5 GHz.

### Other Interfaces

- One 10/100/1000BASE-T Ethernet network interfaces (RJ-45)
  - Auto-sensing link speed and MDI/MDX
  - 802.3az Energy Efficient Ethernet (EEE)
- USB 2.0 host interface (Type A connector)
- Bluetooth Low Energy (BLE) radio
  - Up to 4dBm transmit power (class 2) and -91dBm receive sensitivity
  - Integrated antenna with roughly 30 degrees downtilt and peak gain of 3.4dBi (AP-314/IAP-314) or 1.5dBi (AP-315/IAP-315)
- Visual indicators (multi-color LEDs): For system and radio status
- Reset button: Factory reset (during device power up)
- Serial console interface (proprietary; optional adapter cable available)
- Kensington security slot

### Power Sources and Consumption

- The AP supports direct DC power and Power over Ethernet (POE)
- When both power sources are available, DC power takes priority over POE
- Power sources are sold separately
- Direct DC source: 12Vdc nominal, +/- 5%
  - Interface accepts 2.1/5.5-mm center-positive circular plug with 9.5-mm length

### Overview

- Power over Ethernet (PoE): 48 Vdc (nominal) 802.3af/802.3at compliant source
  - Unrestricted functionality with 802.3at PoE
  - When using IPM, the AP may enter power-save mode with reduced functionality when powered by an 802.3af PoE source (see details on Intelligent Power Monitoring elsewhere in this datasheet)
  - Without IPM, the USB port is disabled and transmit power of the 2.4 GHz radio chains is reduced by 3dB to 15dBm max when the AP is powered by and 802.3af PoE source
- Maximum (worst-case) power consumption: 14.4W (802.3at PoE), 13.6W (802.3af PoE) or 12.7W (DC)
  - Excludes power consumed by external USB device (and internal overhead); this could add up to 6.3W (PoE) or 5.9W (DC) for a 5W/1A USB device
- Maximum (worst-case) power consumption in idle mode: 6.4W (PoE) or 5.9W (DC)

### Mounting

- The AP ships with two (white) mounting clips to attach to a 9/16-inch or 15/16-inch flat T-bar drop-tile ceiling.
- Several optional mount kits are available to attach the AP to a variety of surfaces; see the Ordering Information section for details.

### Mechanical

- Dimensions/weight (unit, excluding mount accessories):
  - 182mm (W) x 180mm (D) x 48mm (H)
  - 650g/23oz
- Dimensions/weight (shipping):
  - 223mm (W) x 218mm (D) x 55mm (H)
  - 850g/30oz

### Environmental

- Operating:
  - Temperature: 0° C to +50° C (+32° F to +122° 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.

### Reliability

- MTBF: 916,373 hrs (105yrs) at +25C operating temperature

### Regulatory Model Numbers

- AP-314 and IAP-314: APIN0314
- AP-315 and IAP-315: APIN0315

### Overview

#### Certifications

- CB Scheme Safety, cTUVus
- UL2043 plenum rating
- Wi-Fi Alliance (WFA) certified 802.11a/b/g/n/ac

#### Warranty

- **Aruba Limited lifetime warranty**

#### Minimum Operating System Software Versions

- ArubaOS 6.5.0.0
  - Aruba InstantOS 4.3.0.0
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### Configuration

## Ordering Guide

### Step 1: Select AP Model

Description	Part Number	Configuration Impact
<b>Controller-based Access Points</b>		
Aruba AP-314 802.11n/ac 2x2:2/4x4:4 MU-MIMO Dual Radio Antenna Connectors AP	JW795A	Add PoE injector or AC adapter, antennas
Aruba AP-315 802.11n/ac 2x2:2/4x4:4 MU-MIMO Dual Radio Integrated Antenna AP	JW797A	Add PoE injector or AC adapter
Aruba AP-314 FIPS/TAA-compliant 802.11n/ac Dual 2x2:2/4x4:4 MU-MIMO Dual Radio Antenna Connectors AP	JW796A	Add PoE injector or AC adapter, antennas
Aruba AP-315 FIPS/TAA-compliant 802.11n/ac Dual 2x2:2/4x4:4 MU-MIMO Dual Radio Integrated Antenna AP	JW798A	Add PoE injector or AC adapter
<b>Instant Access Points</b>		
Aruba Instant IAP-314 (RW) 802.11n/ac Dual 2x2:2/4x4:4 MU-MIMO Radio Antenna Connectors AP	JW805A	Add POE injector or AC adapter, antennas
Aruba Instant IAP-314 (US) 802.11n/ac Dual 2x2:2/4x4:4 MU-MIMO Radio Antenna Connectors AP	JW807A	Add POE injector or AC adapter, antennas
Aruba Instant IAP-314 (JP) 802.11n/ac Dual 2x2:2/4x4:4 MU-MIMO Radio Antenna Connectors AP	JW804A	Add POE injector or AC adapter, antennas
Aruba Instant IAP-315 (RW) 802.11n/ac Dual 2x2:2/4x4:4 MU-MIMO Radio Integrated Antenna AP	JW811A	Add POE injector or AC adapter
Aruba Instant IAP-315 (US) 802.11n/ac Dual 2x2:2/4x4:4 MU-MIMO Radio Integrated Antenna AP	JW813A	Add POE injector or AC adapter
Aruba Instant IAP-315 (JP) 802.11n/ac Dual 2x2:2/4x4:4 MU-MIMO Radio Integrated Antenna AP	JW801A	Add POE injector or AC adapter

**NOTE:** All models ship with ceiling rail adapters (for flat rails) in the box.

### Step 2: Add Powering Accessories (Optional)

Description	Part Number	Configuration Impact
<b>Select one of the following:</b>		
PD-3510G-AC 15.4W 802.3af PoE 10/100/1000Base-T Ethernet Midspan Injector	JW627A	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-12V30B 12V/30W AC/DC Desktop Style 2.1/5.5/9.5mm Circular 90 Deg Plug DoE Level VI Adapter	JX990A	Add AC power cable
<b>Add 3-prong AC power cord for injector or AC adapter:</b>		
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	



### Configuration

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
PC-AC-ZA South Africa 250V AC 10A 2-meter AC Power Cord	JW128A

### Step 3: Add Mount Accessories (Optional)

Description	Part Number
AP-220-MNT-C2 2x Ceiling Grid Rail Adapter for Interlude and Silhouette Mt Kit	JW045A
AP-MNT-CM1 Industrial Grade Indoor Access Point Metal Suspended Ceiling Rail Mount Kit	JX961A
AP-220-MNT-W1 Flat Surface Wall/Ceiling Black AP Basic Flat Surface Mount Kit	JW046A
AP-220-MNT-W1W Flat Surface Wall/Ceiling White AP Basic Flat Surface Mount Kit	JW047A
AP-220-MNT-W2 AP Box Style Secure Flat Mt Kit w/1 Flat Surface Wall/Ceiling Secure Mount	JW048A
AP-220-MNT-W2W AP Box Style Secure Flat Mt Kit w/1 Flat Surface Wall/Ceiling Secure Mount	JW049A
AP-220-MNT-W3 White Low Profile Box Style Secure Large AP Flat Surface Mount Kit	JY706A
AP-CBL-SER AP Proprietary DB9 Female Serial Adapter Cable for AP-205H	JW071A

### Step 4: Select Antennas (AP-314 Only)

Description	Part Number	Qty	Interface(s)	Target Environment	Mounting
<b>AP-314 antenna interface: 4x RP-SMA female, concurrent dual-band.</b>					
AP-ANT-1W 2.4-2.5GHz (4dBi)/4.9-5.875GHz (6dBi) Hi Gain Dual-band Omni-Dir Indoor Antenna	JW009A	4	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	4	1x RP-SMA male pigtail	Indoor	Direct, using pigtails
AP-ANT-19 2.4/5G Dual Band Omni-Dir 3dBi/6dBi Indr/Otdr RPSMA Cnctr Ant w/36in Intgrtd Cable	JW004A	4	1x RP-SMA male pigtail	Indoor/outdoor	Direct, using pigtails



### Configuration

AP-ANT-20W 2.4-2.5GHz (2dBi)/4.9-5.875GHz (2dBi) Compact Omni-Dir DMt Indr White Antenna	JW011A	4	1x RP-SMA male connector	Indoor	Direct-mount
AP-ANT-40 Dual Band Downtilt Omni 4dBi 4 Elmt MIMO Ceiling Mount 4xRPSMA Pigtail Antenna	JW017A	1	4x RP-SMA male pigtail	Indoor	Direct, using pigtails
AP-ANT-45 Dual Band 90x90deg 5dBi 4 Element MIMO 4xRPSMA Pigtail Antenna	JW018A	1	4x RP-SMA male pigtail	Indoor/outdoor	Direct, using pigtails
AP-ANT-48 Dual Band 60x60deg 8dBi 4 Element MIMO 4xRPSMA Pigtail Antenna	JW019A	1	4x RP-SMA male pigtail	Indoor/outdoor	Direct, using pigtails

### Step 5: Add Antenna Mount Kit (Optional)

Description	Part Number	Comments
AP-ANT-MNT-4 AP-ANT-48 Azimuth and Elevation Adjustable Mount Kit	JW021A	Compatible with antenna AP-ANT-48
AP-ANT-MNT-5 AP-ANT-45 Azimuth and Elevation Adjustable Mount Kit	JW022A	Compatible with antenna AP-ANT-45

### Step 6: Add Cosmetic Snap-on Cover (AP-325 Only, Optional)

Description	Part Number	Comments
Aruba 315-CVR-20 20-pk for AP-315 with Holes for LED Indicators White Non-glossy Snap-on Covers	JW827A	One kit per 20 access points

### Technical Specifications

#### RF Performance Table

	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
<b>802.11b 2.4 GHz</b>		
1 Mbps	18.0	-95.0
11 Mbps	18.0	-88.0
<b>802.11g 2.4 GHz</b>		
6 Mbps	18.0	-91.0
54 Mbps	16.0	-74.0
<b>802.11n HT20 2.4 GHz</b>		
MCS0/8	18.0	-90.0
MCS7/15	14.0	-71.0
<b>802.11n HT40 2.4 GHz</b>		
MCS0/8	18.0	-87.0
MCS7/15	14.0	-68.0
<b>802.11a 5 GHz</b>		
6 Mbps	18.0	-90.0
54 Mbps	16.0	-73.0
<b>802.11n HT20 5 GHz</b>		
MCS0/8/16/24	18.0	-90.0
MCS7/15/23/31	14.0	-71.0
<b>802.11n HT40 5 GHz</b>		
MCS0/8/16/24	18.0	-87.0
MCS7/15/23/31	14.0	-68.0

### Technical Specifications

#### 802.11ac VHT20 5 GHz

MCS0	18.0	-90.0
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MCS9	12.0	-65.0
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#### 802.11ac VHT40 5 GHz

MCS0	18.0	-87.0
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MCS9	12.0	-62.0
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#### 802.11ac VHT80 5 GHz

MCS0	18.0	-83.0
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MCS9	12.0	-59.0
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#### 802.11ac VHT160 5 GHz

MCS0	18.0	-82.0
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MCS9	12.0	-57.0
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Maximum capability of the hardware provided (excluding antenna gain). Maximum transmit power is limited by local regulatory settings.

### Summary of Changes

Date	Version History	Action	Description of Change
01-Nov-2016	Version 1	Created	Document creation.

     
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