Overview

Aruba 340 Series Access Points

Extreme performance 802.11ac Wave 2 APs with dual-5 GHz and multi-gig Ethernet support

Product overview

The Aruba 340 series access points provide the fastest 802.11ac gigabit data speeds and superb user experience for mobile devices and applications in a digital workplace. Designed with an integrated, 802.3bz Compliant, HPE SmartRate multi-gig Ethernet port to eliminate wired bottlenecks, these APs offer unmatched wireless performance and capacity. The unique and flexible dual-5 GHz architecture of the 340 series offers a way to double 5 GHz capacity where needed, without compromise or restrictions.

Thanks to Aruba's advanced ClientMatch technology, the 340 series can automatically detect and classify 802.11ac Wave 2 capable mobile devices. This allows ClientMatch to automatically group Wave 2 capable devices onto a single Wave 2 radio so that performance benefits of multi-user MIMO can be realized - without the adverse effects of slower 802.11ac and traditional 802.11n capable mobile devices. This means increased network capacity and a boost in network efficiency.

With maximum data rates of 2,166 Mbps in the 5 GHz band[1] and 800 Mbps in the 2.4 GHz band (for an aggregate peak data rate of 3.0 Gbps in dual-band mode and 4.3 Gbps in dual-5 GHz mode), the 340 series APs deliver a best-in-class, next-generation 802.11ac Wi-Fi infrastructure that is ideal for lecture halls, auditoriums, public venues, and high-density office environments.

These high performance and high density 340 Series 802.11ac access points support up to 160 MHz channel bandwidth (VHT160), and 4 spatial streams (4SS) for both SU- and MU-MIMO communications.

The 340 series APs have an integrated Bluetooth Low-Energy (BLE) radio, which can be used as an Aruba beacon for advanced location, indoor wayfinding, and to enable proximity-based push notification services. The integrated beacon radio also enables the remote management of battery-powered and other standalone beacons in a largescale network of Aruba beacons. It enables businesses to leverage mobility context to develop applications that can deliver an enhanced user experience and increase the value of the wireless network for organizations.

[1] Initially, the 5 GHz radio will be limited to 1,733 Mbps. The proprietary extension (1024-QAM support) to enable MCS10 and MCS11 and rates up to 2,166 Mbps will be introduced in a later SW release. Please check SW release notes for this upgrade. With 1,733 Mbps, the aggregate peak numbers drop to 2.5 Gbps (dual-radio) and 3.5 Gbps (dual-5 GHz).

Features and Benefits

Unique Benefits

- Unified AP - deploy with or without controller
  - The 340 Series APs can be deployed in either controllerbased (ArubaOS) or controllerless (InstantOS) deployment mode
- Dual Radio 4x4 802.11ac access point with Multi-User MIMO (wave 2)
  - Supports up to 2,166 Mbps per radio in the 5 GHz band (with 4SS/VHT80 or 2SS/VHT160 clients) and up to 800 Mbps in the 2.4 GHz band (with 4SS/VHT40 clients)
  - Antenna polarization diversity (fixed) for optimized RF performance
- Optional dual-5 GHz mode supported, where the 2.4 GHz radio is converted to a second 5 GHz radio
  - Both 5 GHz radios providing full coverage, doubling the performance and capacity
  - Unlike competitive solutions, the 340 Series is designed to isolate the two 5 GHz transmitters for higher performance

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- Conversion can be manual/fixed, or automatic and dynamic (software controlled, under-the hood), based on system-wide capacity and load in both bands

- HPE SmartRate uplink Ethernet port (E0)
  - Supports up to 2.5 Gbps with NBase-T and IEEE 802.3bz Ethernet compatibility
  - Backwards compatible with 100/1000Base-T
- Hitless PoE failover between both Ethernet ports
- 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
  - Enables asset tracking when used with Aruba Asset Tags
- 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 communications applications
- --Supports priority handling and policy enforcement for unified communication apps, including Skype for Business with encrypted videoconferencing, voice, chat and desktop sharing
- Aruba AppRF technology leverages deep packet inspection to classify and block, prioritize, or limit bandwidth for thousands of applications in a range of categories
- Best-in-class RF Management
  - Integrated AirMatch technology manages the 2.4-GHz and 5-GHz radio bands and actively optimizes the RF environment including channel width, channel selection and transmit power
  - Adaptive Radio Management (ARM) technology provides airtime fairness and ensures that APs stay clear of all sources of RF interference to deliver reliable, highperformance WLANs
- Spectrum analysis
  - Capable of part-time or dedicated air monitoring, the spectrum analyzer remotely scans the 2.4 GHz and 5 GHz radio bands to identify sources of RF interference from HT20 through VHT160 operation
- Aruba Secure Core
  - Device assurance: Use of Trusted Platform Module (TPM) for secure storage of credentials and keys as well as secure boot
  - Integrated wireless intrusion protection[2] 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
  - SecureJack-capable for secure tunneling of wired Ethernet traffic
- 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 based on the amount of power available to the unit
  - Software configurable to disable capabilities in certain orders. For the 340 Series Access Points, by default, the USB interface will be the first feature to turn off if the AP power consumption exceeds the available

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power budget

[2] Not supported in dual-5 GHz mode

Choose your operating mode
The Aruba 340 Series APs offer a choice of deployment and operating modes to meet your unique management and deployment requirements:.

- The 340 Series AP is a unified AP that supports both controller-based and controller-less deployment modes, providing maximum flexibility.
- Controller-based mode - When deployed in conjunction with an Aruba Mobility Controller, Aruba 340 Series APs offer centralized configuration, data encryption, policy enforcement and network services, as well as distributed and centralized traffic forwarding.
- Controller-less (Instant) mode - The controller function is virtualized in a cluster of APs in Instant mode. As the network grows and/or requirements change, Instant deployments can easily migrate to controller-based mode.
- Remote AP (RAP) mode for branch deployments
- Air monitor (AM)2 for wireless IDS, rogue detection and containment
- Spectrum analyzer (SA)2, dedicated or hybrid, for identifying sources of RF interference
- Secure enterprise mesh portal or point

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, the Instant APs are factory-shipped to any site and configure themselves when powered up.

Specifications

Hardware Variants

- AP-344: External antenna models
- AP-345: Internal antenna models

WI-FI Radio Specifications

- AP type: Indoor, dual radio, 5 GHz 802.11ac 4x4 MIMO and 2.4 GHz 802.11n 4x4 MIMO

  - The 2.4 GHz radio supports all 802.11ac rates as well (proprietary extension)

- Software-configurable dual radio supports:

  - Dual-radio mode: 5 GHz (Radio 0) and 2.4 GHz (Radio 1)

- --Dual-5 GHz mode: upper 5 GHz (Radio 0) and lower 5 GHz (Radio 1)
- 5 GHz:

  - Four spatial stream Single User (SU) MIMO for up to 1,733 Mbps wireless data rate to individual 4SS VHT80 or 2SS VHT160 client devices

  - Four spatial stream Multi User (MU) MIMO for up to 1,733 Mbps wireless data rate to up to four 1SS or two 2SS MU-MIMO capable client devices simultaneously

  - Peak datarate increases to 2,166 Mbps when using 1024-QAM modulation (proprietary extension)

- 2.4 GHz:

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- Four spatial stream Single User (SU) MIMO for up to 600 Mbps wireless data rate to individual 4SS HT40 client devices, and up to 800 Mbps to individual 4SS VHT40 devices (proprietary extension)

- Support for up to 256 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[3]
  - 5.250 to 5.350 GHz[3]
  - 5.470 to 5.725 GHz[4]
  - 5.725 to 5.850 GHz[4]
- 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, 1024-QAM (proprietary extension)
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements):
  - 2.4 GHz band: +24 dBm (18dBm per chain) [5]
  - 5 GHz band: +24 dBm (18 dBm per chain) [5]
  - **NOTE:** Conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain.
- Advanced Cellular Coexistence (ACC) minimizes the impact of 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: 6.5 to 600 (MCS0 to MCS31)
  - 802.11ac: 6.5 to 1,733 (MCS0 to MCS9, NSS = 1 to 4 for VHT20/40/80, NSS = 1 to 2 for VHT160)
  - 802.11ac: 1,950 and 2,166 (MCS10 and MCS11, NSS = 1 to 4 for VHT20/40/80, NSS = 1 to 2 for VHT160) [6]
  - 802.11n high-throughput (HT) support: HT20/40

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- 802.11ac very high throughput (VHT) support: VHT20/40/80/160

- 802.11n/ac packet aggregation: A-MPDU, A-MSDU

[3] Not supported on radio 0 in dual-5 GHz mode
[4] Not supported on radio 1 in dual-5 GHz mode
[5] Reduced by 2 dB in dual-5 GHz mode
[6] Proprietary extension; shown rates shown are for the highest NSS only; additional rates for lower NSS values are supported as well.

Wi-Fi Antennas

- AP-344: External antenna models. Two sets of four RP-SMA antenna connectors:

  - Primary: A0 - A3, connected to chains 0 through 3 respectively on each associated radio

    - With AP in dual-radio mode: dual-band interfaces, diplexing signals to/from radio 0 (full 5 GHz) and radio 1 (2.4 GHz)

    - With AP in dual-5 GHz mode: 5 GHz interfaces from radio 0 (upper 5 GHz)

  - Secondary: B0 - B3, connected to chains 0 through 3 respectively

    - With AP in dual-radio mode: not used

    - With AP in dual-5 GHz mode: 5 GHz interfaces from radio 1 (lower 5 GHz)

  - Total internal losses between radio and external connectors:

    - With AP in dual-radio mode: 2.0 dB for 5 GHz, 2.0 dB for 2.4 GHz

    - With AP in dual-5 GHz mode: 2.0 dB for upper 5 GHz, 1.7 dB for lower 5 GHz

- AP-345: Internal antenna models. A total of eight internal omni-directional downtilt antennas

  - Radio 1: four cross-polarized dual-band downtilt omni-directional antennas for 4x4 MIMO with peak antenna gain of 5.8 dBi (2.4 GHz) and 5.6 dBi (5 GHz) per antenna.

    - With AP in dual-radio mode: used for 2.4 GHz only

    - With AP in dual-5 GHz mode: used for lower 5 GHz only

  - Radio 0: four cross-polarized 5 GHz downtilt omnidirectional antennas for 4x4 MIMO with peak antenna gain of 5.5 dBi per antenna

    - With AP in dual-radio mode: used for full 5 GHz only

    - With AP in dual-5 GHz mode: used for upper 5 GHz only

  - All internal antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 degrees.

  - Combining the patterns of all antennas per radio, the peak gain of the average (effective) pattern is:

    - Radio 1: 3.1 dBi in 2.4 GHz and 2.7 dBi in 5 GHz

    - Radio 0: 2.2 dBi in 5 GHz

Other Interfaces

- One HPE SmartRate port (RJ-45, maximum negotiated speed 2.5 Gbps)

Overview

- Auto-sensing link speed (100/1000/2500BASE-T) and MDI/MDX
- 2.5 Gbps speed complies with NBase-T and 802.3bz specifications
- PoE-PD: 48Vdc (nominal) 802.3at PoE

- One 10/100/1000BASE-T Ethernet network interface (RJ-45)
  - Auto-sensing link speed and MDI/MDX
  - PoE-PD: 48Vdc (nominal) 802.3at PoE
- Link aggregation (LACP) support between both network ports for redundancy and increased capacity
- DC power interface, accepts 1.35/3.5-mm center-positive circular plug with 9.5-mm length
- USB 2.0 host interface (Type A connector)
- Bluetooth Low Energy (BLE) radio
  - Up to 4 dBm transmit power (class 2) and -91 dBm receive sensitivity
  - Integrated vertically polarized omnidirectional antenna with roughly 30 degrees downtilt and peak gain of 4.9 dBi (AP-345) or 3.1 dBi (AP-344)
- Visual indicators (tri-color LEDs): for System and Radio status
- Reset button: factory reset, LED mode control (normal/off)
- Serial console interface (proprietary, USB physical jack)
- 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: 48Vdc nominal, +/- 5%
- Power over Ethernet (PoE): 48Vdc (nominal) 802.3af/802.3at compliant source
- When powered by a direct DC power source, the AP will operate without restrictions
- When powered by PoE and with the IPM feature enabled, the AP will start up in unrestricted mode, but it may apply restrictions depending on the PoE budget and actual power. What IPM restrictions to apply, and in what order, is programmable.
- When powered by PoE with the IPM feature disabled, the AP will apply some fixed restrictions:
  - The USB interface is disabled when using an 802.3at PoE power source
  - The USB interface and second Ethernet port (E1 if E0 is used, otherwise E0) are disabled, and both radios are restricted to 2x2 operation (AP in dual-radio mode) or 1x1 operation (AP in dual-5 GHz mode) when using an 802.3af PoE power source
- Maximum (worst-case) power consumption:
  - DC powered: 20.0W (AP in dual-radio mode), 22.8W (AP in dual-5 GHz mode)
  - PoE powered (802.3at): 21.9W (AP in dual-radio mode), 25.1W (AP in dual-5 GHz mode)
  - PoE powered (802.3af): 13.5W
  - All numbers above are without an external USB device connected. When sourcing the full 5W power budget to such a device, the incremental (worst-case) power consumption for the AP is up to 6W (DC) or 6.6W (PoE)
- Maximum (worst-case) power consumption in idle mode: 11W (DC or PoE)

Mounting

Overview

- The AP ships with two (black) 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 below for details

Mechanical

- Dimensions and weight (unit, excluding mount accessories):

  - 22.5 cm (W) x 22.4 cm (D) x 5.2 cm (H)
    8.9" (W) x 8.9" (D) x 2.0" (H)

  - 1.05 kg or 2.31 lbs

- Dimensions and weight (shipping):

  - 33.9 cm (W) x 29 cm (D) x 8.8 cm (H)
    13.3" (W) x 11.4" (D) x 3.5" (H)

  - 1.65 kg or 3.63 lbs

Environmental

- Operating:

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

  - Humidity: 5% to 93% non-condensing

- Storage and transportation:

  - Temperature: -40° C to +70° C (-40° F to +158° F)

Reliability

- MTBF: 640khrs (73yrs) at +25C operating temperature

Regulatory

- FCC/ISED
- CE Marked
- RED Directive 2014/53/EU
- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- 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

- AP-344: APIN0344
- AP-345: APIN0345

Certifications

- CB Scheme Safety, cTUVus
- UL2043 plenum rating
- Wi-Fi Alliance certified 802.11a/b/g/n
- Wi-Fi CERTIFIED™ ac (with wave 2 features)

Overview

Warranty

- **Limited lifetime warranty**

Minimum Operating System Software

- ArubaOS & Aruba InstantOS 8.3.0.0

Ordering Information

Step 1: Select AP Model

Description	Part Number	Configuration Impact
External Antenna Access Points		
Aruba AP-344 (RW) Dual 4x4:4 MU-MIMO Radio Antenna Connectors SmartRate Unified Campus AP	JZ021A	Add PoE injector or AC adapter, antennas
Aruba AP-344 (RW) FIPS/TAA Dual 4x4:4 MU-MIMO Radio Antenna Connectors SmartRate Unified Campus AP	JZ022A	Add PoE injector or AC adapter, antennas
Aruba AP-344 (US) Dual 4x4:4 MU-MIMO Radio Antenna Connectors SmartRate Unified Campus AP	JZ023A	Add PoE injector or AC adapter, antennas
Aruba AP-344 (US) FIPS/TAA Dual 4x4:4 MU-MIMO Radio Antenna Connectors SmartRate Unified Campus AP	JZ024A	Add PoE injector or AC adapter, antennas
Aruba AP-344 (JP) Dual 4x4:4 MU-MIMO Radio Antenna Connectors SmartRate Unified Campus AP	JZ025A	Add PoE injector or AC adapter, antennas
Aruba AP-344 (JP) FIPS/TAA Dual 4x4:4 MU-MIMO Radio Antenna Connectors SmartRate Unified Campus AP	JZ026A	Add PoE injector or AC adapter, antennas
Aruba AP-344 (IL) Dual 4x4:4 MU-MIMO Radio Antenna Connectors SmartRate Unified Campus AP	JZ027A	Add PoE injector or AC adapter, antennas
Aruba AP-344 (IL) FIPS/TAA Dual 4x4:4 MU-MIMO Radio Antenna Connectors Smart Rate Unified Campus AP	JZ028A	Add PoE injector or AC adapter, antennas
Aruba AP-344 (EG) Dual 4x4:4 MU-MIMO Radio Antenna Connectors SmartRate Unified Campus AP	JZ029A	Add PoE injector or AC adapter, antennas
Aruba AP-344 (EG) FIPS/TAA Dual 4x4:4 MU-MIMO Radio Antenna Connectors SmartRate Unified Campus AP	JZ030A	Add PoE injector or AC adapter, antennas
Integrated Antenna Access Points		
Aruba AP-345 (RW) Dual 4x4:4 MU-MIMO Radio Internal Antennas SmartRate Unified Campus AP	JZ031A	Add PoE injector or AC adapter
Aruba AP-345 (RW) FIPS/TAA Dual 4x4:4 MU-MIMO Radio Internal Antenna SmartRate Unified Campus AP	JZ032A	Add PoE injector or AC adapter
Aruba AP-345 (US) Dual 4x4:4 MU-MIMO Radio Internal Antennas SmartRate Unified Campus AP	JZ033A	Add PoE injector or AC adapter
Aruba AP-345 (US) FIPS/TAA Dual 4x4:4 MU-MIMO Radio Internal Antenna SmartRate Unified Campus AP	JZ034A	Add PoE injector or AC adapter
Aruba AP-345 (JP) Dual 4x4:4 MU-MIMO Radio Internal Antennas SmartRate Unified Campus AP	JZ035A	Add PoE injector or AC adapter
Aruba AP-345 (JP) FIPS/TAA Dual 4x4:4 MU-MIMO Radio Internal Antenna SmartRate Unified Campus AP	JZ036A	Add PoE injector or AC adapter
Aruba AP-345 (IL) Dual 4x4:4 MU-MIMO Radio Internal Antennas SmartRate Unified Campus AP	JZ037A	Add PoE injector or AC adapter

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Aruba AP-345 (IL) FIPS/TAA Dual 4x4:4 MU-MIMO Radio Internal Antenna SmartRate Unified Campus AP	JZ038A	Add PoE injector or AC adapter
Aruba AP-345 (EG) Dual 4x4:4 MU-MIMO Radio Internal Antennas SmartRate Unified Campus AP	JZ039A	Add PoE injector or AC adapter
Aruba AP-345 (EG) FIPS/TAA Dual 4x4:4 MU-MIMO Radio Internal Antenna SmartRate Unified Campus AP	JZ040A	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
Select one of the following:		
PD-9001GR-AC 30W 802.3at PoE+ 10/100/1000 Ethernet Indoor Rated Midspan Injector	JW629A	Add AC power cable
AP-AC-48V36C 48V/36W AC/DC Desktop Style 1.35/3.5/9.5mm Circular 90 Deg Plug DoE Level VI Adapter	JX991A	Add AC power cord

Description	Part Number
Select three-prong AC power cord for injector or AC adapter	
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
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

Configuration

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-W3 White Low Profile Box Style Secure Large AP Flat Surface Mount Kit	JY706A

Step 4: Select primary dual-band antennas (AP-344 only)

Description	Part Number	Qty	Mounting
AP-ANT-1W 2.4-2.5GHz (4dBi)/4.9-5.875GHz (6dBi) Hi-gain dual-band omni-directional Indoor Antenna	JW009A	4	Direct-mount
AP-ANT-13B 2.4-2.5GHz (4.4dBi)/4.9-5.9GHz (3.3dBi) downtilt smallest omni-directional Single Antnna	JW001A	4	Direct, using pigtails
AP-ANT-19 2.4/5G dual-band omni-directional 3dBi/6dBi Indr/Otdr RPSMA Cnctr Ant w/36in Intgrtd Cable	JW004A	4	Direct, using pigtails
AP-ANT-20W 2.4-2.5GHz (2dBi)/4.9-5.875GHz (2dBi) compact omni-directional DMt Indr White Antenna	JW011A	4	
AP-ANT-40 dual-band downtilt omni-directional 4dBi 4 element MIMO Ceiling Mount 4xRPSMA Pigtail Antenna	JW017A	1	Direct, using pigtails
AP-ANT-45 dual-band 90x90deg 5dBi 4 element MIMO 4xRPSMA Pigtail Antenna	JW018A	1	Direct, using pigtails
AP-ANT-48 dual-band 60x60deg 8dBi 4 element MIMO 4xRPSMA Pigtail Antenna	JW019A	1	Direct, using pigtails

Step 5: Select secondary 5GHZ antennas (AP-344 only)

Description	Part Number	Qty	Mounting
AP-344 antenna interface: 4x RP-SMA female, 5GHz band, top.			
AP-ANT-13B 2.4-2.5GHz (2.3dBi)/4.9-5.9GHz (4.0dBi), down-tilt, smallest form factor omni-directional antenna, w/ ceiling mount hardware	JW001A	4	Direct, using pigtails
AP-ANT-19 dual-band, omni-directional 3dBi/6dBi, indoor/outdoor, 36 in pigtail cable. Pole mount, I-beam, and ceiling tile mount hardware included	JW004A	4	Direct, using pigtails
AP-ANT-40 dual-band, 4/5dBi, 4 element MIMO downtilt omni antenna, ceiling mount	JW017A	1	Direct, using pigtails
AP-ANT-45 dual-band, 5dBi, 4 element MIMO 90 x 90 degrees sector antenna, wall mount	JW018A	1	Direct, using pigtails
AP-ANT-48 dual-band, 8dBi, 4 element MIMO 60 x 60 degrees sector antenna, wall mount	JW019A	1	Direct, using pigtails

Step 6: Add antenna mount kit (optional)

Description	Part Number	Comments

Configuration

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 7: Add cosmetic Snap-on cover (AP-345 only,optional)

Description	Part Number	Comments
AP-335-CVR-20 Kit of 20 snap-on covers for AP-335 & AP-345. Plain white, non-glossy, with holes for LED indicators	JW828A	1 kit per 20 access points

Step 8: Add other accessories (optional)

Description	Part Number	Comments
AP-CBL-SERU Micro-USB TTL3.3V to USB2.0 AP console adapter cable	JY728A	Adapter cable for custom micro-USB AP console interface. Software driver is available on the HPE Aruba Support website
AP-220-MNT-C1 Two suspended ceiling grid rail adapters (for 9/16” and 15/16” basic flat rails)	JW044A	Same two ceiling rail adapters as the ones that ship with the AP

RF Performance Table		
	Maximum transmit power (dBm) per transmit chain[6]	Receiver sensitivity (dBm) per receive chain[6]
802.11b 2.4 GHz		
1 Mbps	18	-97
11 Mbps	18	-88
802.11g 2.4 GHz		
6 Mbps	18	-94
54 Mbps	16	-76
802.11n HT20 2.4 GHz		
MCS0/8/16/24	18	-94
MCS7/15/23/31	14	-74
802.11n HT40 2.4 GHz		
MCS0/8/16/24	18	-91
MCS7/15/23/31	14	-71
802.11a 5GHz		
6 Mbps	18	-92
54 Mbps	16	-74
802.11n HT20 5 GHz		
MCS0/8/16/24	18	-92
MCS7/15/23/31	14	-71
802.11n HT40 5 GHz		
MCS0/8/16/24	18	-89
MCS7/15/23/31	14	-68
802.11ac VHT20 5 GHz		
MCS0	18	-92
MCS9	12	-66
MCS11[7]	10	-60
802.11ac VHT40 5 GHz		

MCS0	18	-89
MCS9	12	-63
MCS11[7]	10	-57
802.11ac VHT80 5 GHz		
MCS0	18	-86
MCS9	12	-60
MCS11[7]	10	-54
802.11ac VHT160 5 GHz		
MCS0	18	-81
MCS9	12	-55
MCS11[7]	10	-49

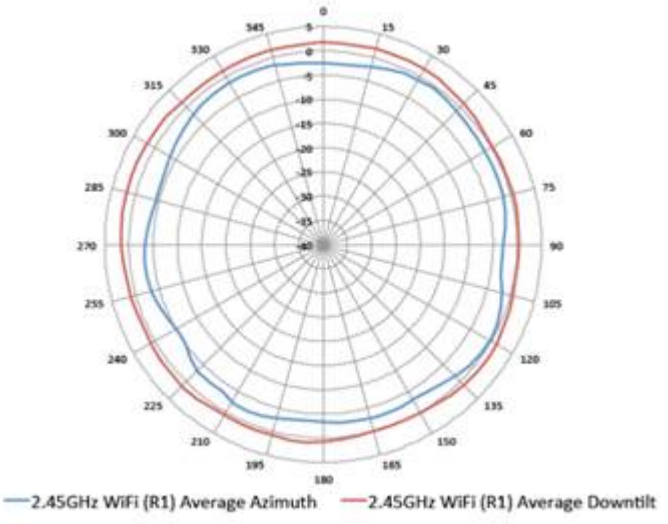
NOTE: Table shows the maximum hardware capability of the AP (excluding antenna and MIMO/MRC gain). Actual maximum transmit power may be limited below these numbers to ensure compliance with local regulatory requirements..

[6] In dual-5GHz mode, all 5GHz numbers are degraded by 2dB
[7] Proprietary extension

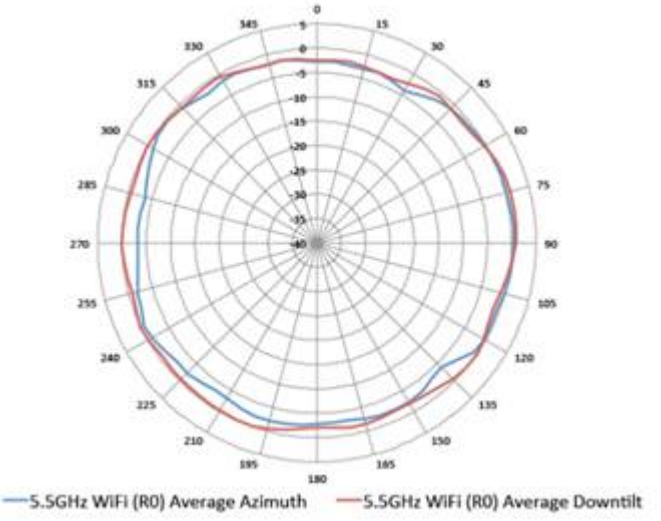
Antenna Pattern Plots

Horizontal planes (top view, AP facing forward)
Showing both azimuth (0 degrees) and 30 degrees downtilt patterns

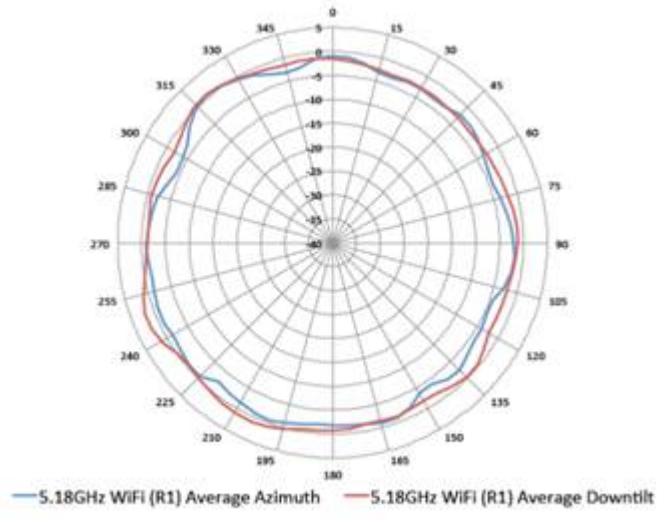
Technical Specifications



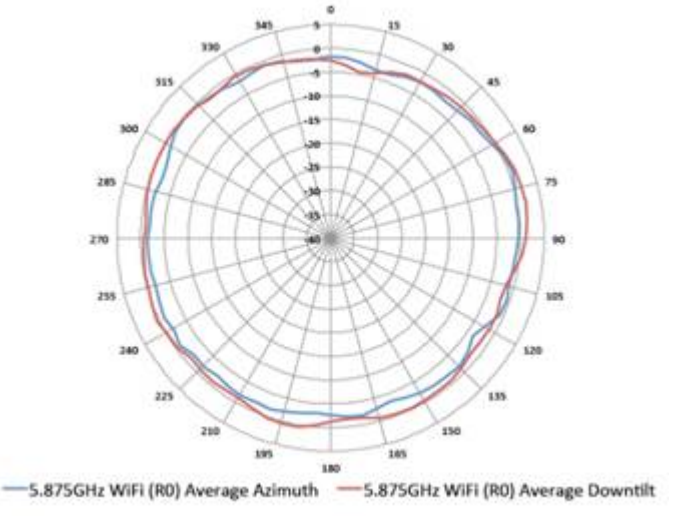
2.45GHz Wi-Fi (dual-radio mode, radio 1)



5.5GHz Wi-Fi (dual-radio mode, radio 0)



5.18GHz Wi-Fi (dual-5GHz mode, radio 1)

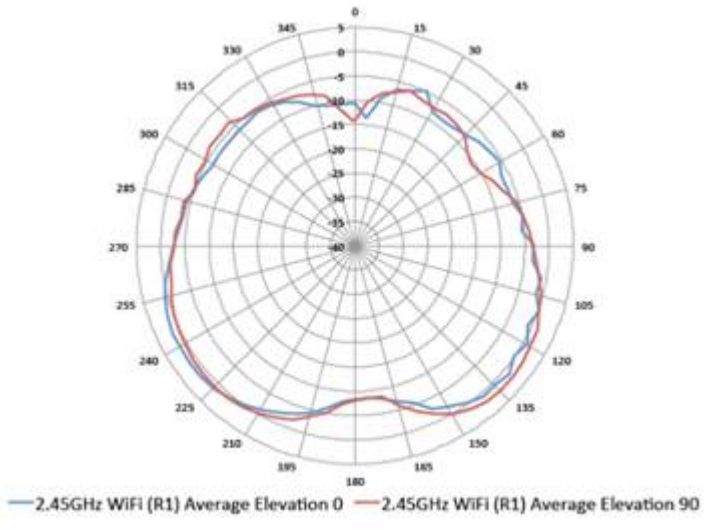


5.875GHz Wi-Fi (dual-5GHz mode, radio 0)

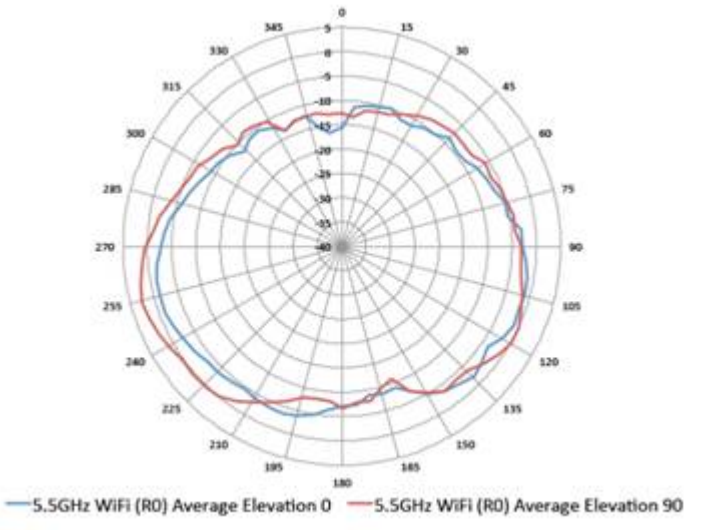
Technical Specifications

Elevation planes (side view, AP facing down)

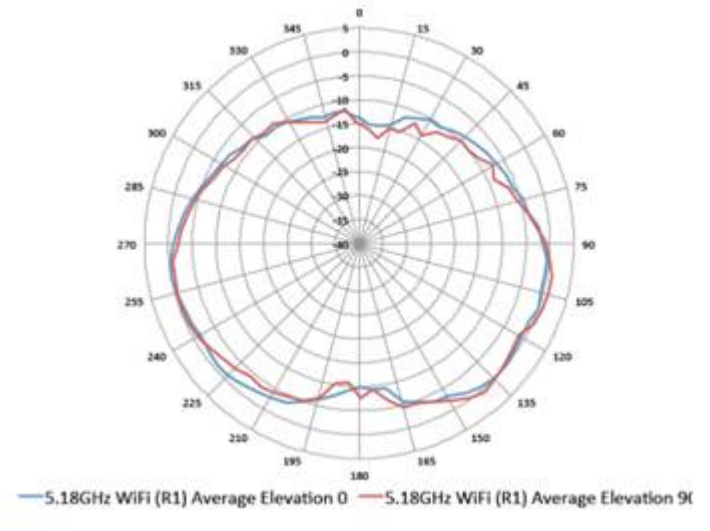
Showing side view with AP rotated both 0 and 90 degrees



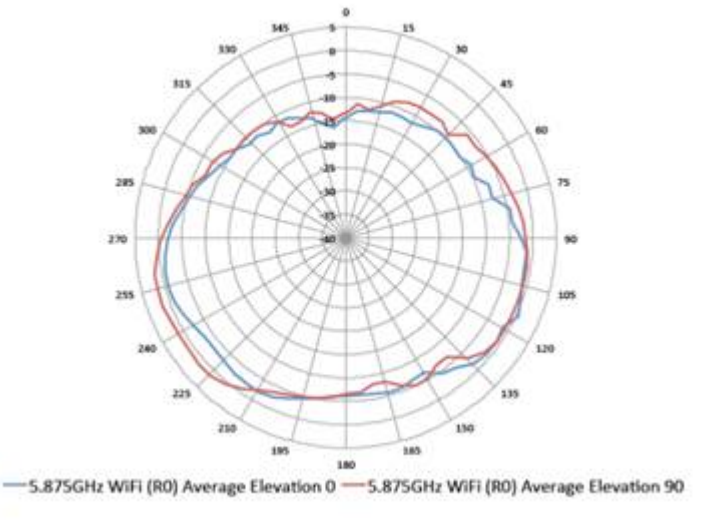
2.45GHz Wi-Fi (dual-radio mode, radio 1)



5.5GHz Wi-Fi (dual-radio mode, radio 0)



5.18GHz Wi-Fi (dual-5GHz mode, radio 1)



5.875GHz Wi-Fi (dual-5GHz mode, radio 0)

Summary of Changes

Date	Version History	Action	Description of Change
18-Dec-2017	From Version 1 to 2	Changed	Minor changes made on Features and Benefits
06-Nov-2017	Version 1	Created	Document creation.

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