QuickSpecs

Overview

Aruba 220 Series Access Points
Setting a higher standard for 802.11ac

Product overview

Multifunctional 220 series wireless APs deliver gigabit Wi-Fi performance to 802.11ac mobile devices. Integrated Aruba ClientMatch technology ensures consistently high performance across the WLAN infrastructure.

With a maximum data rate of 1.3 Gbps in the 5-GHz band and 600 Mbps in the 2.4-GHz band, 220 series APs are three-times faster than 802.11n APs and provide performance similar to a wired connection.

The 220 series APs include ClientMatch technology, which eliminates sticky clients by continuously gathering session performance metrics from mobile devices. This information is then used to steer each mobile device to the best AP and radio on the WLAN.

Proactive and deterministic, ClientMatch dynamically optimizes Wi-Fi client performance as users roam and RF conditions change. If a mobile device moves out of range of an AP or RF interference impedes performance, ClientMatch automatically steers it to a better AP.

With ClientMatch, 220 series APs load web pages faster, deliver video streams with improved quality and support high densities of mobile devices. An 802.11ac network without ClientMatch performs no different than an 802.11n WLAN.

The 220 series APs additionally support priority handling and policy enforcement for individual Microsoft Lync media on the same device, including encrypted videoconferencing, voice, chat and desktop sharing.

Features and Benefits

Unique Benefits

- Allows phased wired infrastructure upgrades
  - Adapts to available 802.3af power-over-Ethernet (PoE) instead of requiring customers to upgrade to 802.3at PoE+.

Hewlett Packard Enterprise

Overview

- Delivers 1.9 Gbps aggregate throughput.
    - EtherChannel link aggregation on two Gigabit Ethernet ports provides 1.9 Gbps throughput.
- 600 Mbps in the 2.4-GHz band.
    - Supports up to 600 Mbps for TurboQAM-enabled mobile devices operating in the 2.4-GHz band – an industry first.
- Best-in-class RF management
    - Integrated Adaptive Radio Management technology manages the 2.4-GHz and 5-GHz radio bands and ensures that APs stay clear of RF interference.
- 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.
- Wireless mesh
    - Wireless mesh connections are convenient where Ethernet drops are not available.
- 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, URL and IPs, providing comprehensive protection against advanced online threats
    - Encrypted IPsec VPN tunnels securely connect remote users to corporate network resources.
    - Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys.
    - SecureJack-capable for secure tunneling of wired Ethernet traffic.

Choose your Operating Mode

The 220 series APs offer a choice of operating modes to meet your unique management and deployment requirements.

- Controller-managed AP or Remote AP (RAP) running ArubaOS. When managed by Aruba Mobility Controllers, 220 series APs offer centralized configuration, data encryption, policy enforcement and network services, as well as distributed and centralized traffic forwarding.
- Aruba Instant AP running InstantOS. 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.
- Spectrum analysis identifies sources of RF interference
- Air monitor provides wireless intrusion protection
- Hybrid AP serves Wi-Fi clients and provides wireless intrusion protection and spectrum analysis
- 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.

If WLAN and network requirements change, a built-in migration path allows 220 series Instant APs to become part of a WLAN that is centrally managed by a Mobility Controller.

AP 220 Series Specifications

- AP AP-225 and IAP-225
    - 2.4-GHz (600 Mbps max) and 5-GHz (1.3 Gbps max) radios, each with 3x3 MIMO and three integrated omni-directional downtilt antennas.
- AP-224 and IAP-224
    - 2.4-GHz (600 Mbps max) and 5-GHz (1.3 Gbps max) radios, each with 3x3 MIMO and three combined, diplexed external antenna connectors.

Overview

Wireless Radio Specifications

- AP type: Indoor, dual radio, 5 GHz 802.11ac and 2.4 GHz 802.11n
    - In addition to 802.11n data rates, the 2.4-GHz radio supports 802.11ac data rates using 256-QAM modulation. This gives TurboQAM-enabled clients a 33% boost above the maximum supported data rate.
- Software-configurable dual radio supports 5 GHz and 2.4 GHz
- 3x3 MIMO with three spatial streams and up to 1.3 Gbps wireless data rate
- Support for up to 255 associated client devices per radio, and up to 16 BSSIDs per radio
- Supported frequency bands (country-specific restrictions apply):
    - 2.4000 GHz to 2.4835 GHz
    - 5.150 GHz to 5.250 GHz
    - 5.250 GHz to 5.350 GHz
    - 5.470 GHz to 5.725 GHz
    - 5.725 GHz to 5.850 GHz
- Available channels: Dependent upon 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)
    - 802.11n/ac: 3x3 MIMO with up to three spatial streams
- Supported modulation types:
    - 802.11b: BPSK, QPSK, CCK
    - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM
    - 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements):
    - 2.4-GHz band: +23 dBm (18 dBm per chain)
    - 5-GHz bands: +23 dBm (18 dBm per chain)
- 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, 40-MHz and 80-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 reliability in signal delivery
- 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 450 (MCS0 to MCS23)
    - 802.11ac: 6.5 to 1,300 (MCS0 to MCS9, NSS = 1 to 3)
- 802.11n high-throughput (HT) support: HT 20/40
- 802.11ac very high throughput (VHT) support: VHT 20/40/80
- 802.11n/ac packet aggregation: A-MPDU, A-MSDU

Power

- Worst-case power consumption from the AP (excluding power drawn by an attached USB device):
    - In restricted mode (PoE): 13.5W
    - In unrestricted mode (PoE): 17W
    - In unrestricted mode (DC): 15.5W
- Power sources sold separately
- Direct DC source: 12 Vdc nominal, +/- 5%
- Power over Ethernet (PoE): 48 Vdc (nominal) 802.3af or 802.3at-compliant source

Overview

- Efficient mode PoE – power save with 802.3af PoE and limited functionality
  - USB port disabled
  - Second Ethernet port disabled
  - 2.4-GHz 802.11n radio in 1x3:1 spatial-stream mode
  - 5-GHz 802.11ac radio operates without restrictions*
- Unrestricted functionality with 802.3at PoE+
  *With ArubaOS software 6.3.0, the 5-GHz 802.11ac radio operates in 2x3:2 spatial stream mode when the AP is powered by 802.3af PoE. This restriction has been removed in 6.3.1.

Antennas

- AP-224: Three RP-SMA connectors for external dual- band antennas. Internal loss between radio interface and external antenna connectors (due to diplexing circuitry): 1.5 dB in 2.4 GHz and 3.0 dB in 5 GHz.
- AP-225: Six integrated downtilt omni-directional antennas for 3x3 MIMO with maximum antenna gain of 3.5 dBi in 2.4 GHz and 4.5 dBi in 5 GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of AP-225. The downtilt angle for maximum gain is approximately 30 degrees.

Other Interfaces

- Two 10/100/1000BASE-T Ethernet network interfaces (RJ-45)
  - Auto-sensing link speed and MDI/MDX
  - Load balancing support to achieve platform throughput greater than 1 Gbps
  - 802.3az Energy Efficient Ethernet (EEE)
  - PoE-PD: 48 Vdc 802.3af PoE or 802.3at PoE+
- DC power interface, accepts 1.7/4.0mm center-positive circular plug with 9.5 mm length
- USB 2.0 port (Type A connector)
- Serial console interface (RJ-45)
- Visual indicators (LEDs):
  - Power/system status
  - Ethernet link status (2x; ENET0, ENET1)
  - Radio status (2x; RAD0, RAD1)
- Kensington security slot
- Reset button

Mounting

- Included with AP:
  - Mounting brackets (2) for attaching to 9/16-inch or 15/16-inch T-bar drop-tile ceiling
- Optional mounting kits:
  - AP-220-MNT-C2: Aruba 220 series AP mount kit contains two ceiling-grid rail adapters for Interlude and Silhouette style rails.
  - AP-220-MNT-W1: Aruba 220 series AP mount kit contains one flat-surface wall/ceiling mount bracket.
  - AP-220-MNT- W3: Aruba 220 series AP mount kit contains one flat-surface wall/ceiling secure mount cradle.

Mechanical

- Dimensions/weight (unit, excluding mount accessories):
  - 203 mm (W) x 203 mm (D) x 54 mm (H), 8.0" (W) x 8.0" (D) x 2.1" (H)
  - 750 g/27 oz
- Dimensions/weight (shipping):
  - 315 mm (W) x 265 mm (D) x 100 mm (H), 12.4" (W) x 10.4" (D) x 3.9" (H)
  - 1,250 g/44 oz

Overview

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

Regulatory Model Numbers

- AP-224 and IAP-224: APIN0224
- AP-225 and IAP-225: APIN0225

Certifications

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

Warranty

- **Aruba Limited lifetime warranty**

Minimum software Versions

- ArubaOS 6.3.0.0
- Aruba InstantOS 4.0.0.0

Configuration

Ordering Guide

Step 1: Select AP Model

Description	Part Number	Configuration Impact
Controller-based Access Points		
Aruba AP-224 802.11n/ac Dual 3x3:3 Radio Antenna Connectors AP	JW172A	Add PoE injector or AC adapter, antennas
Aruba AP-225 802.11n/ac Dual 3x3:3 Radio Integrated Antenna AP	JW174A	Add PoE injector or AC adapter
Aruba AP-224 FIPS/TAA-compliant 802.11n/ac Dual 3x3:3 Radio Antenna Connectors AP	JW173A	Add PoE injector or AC adapter, antennas
Aruba AP-225 FIPS/TAA-compliant 802.11n/ac Dual 3x3:3 Radio Integrated Antenna AP	JW175A	Add PoE injector or AC adapter
Instant Access Points		
Aruba Instant IAP-224 (RW) 802.11n/ac Dual 3x3:3 Radio Antenna Connectors AP	JW234A	Add PoE injector or AC adapter, antennas
Aruba Instant IAP-225 (RW) 802.11n/ac Dual 3x3:3 Radio Integrated Antenna AP	JW240A	Add PoE injector or AC adapter
Aruba Instant IAP-224 (US) 802.11n/ac Dual 3x3:3 Radio Antenna Connectors AP	JW236A	Add PoE injector or AC adapter, antennas
Aruba Instant IAP-225 (US) 802.11n/ac Dual 3x3:3 Radio Integrated Antenna AP	JW242A	Add PoE injector or AC adapter
Aruba Instant IAP-224 (JP) 802.11n/ac Dual 3x3:3 Radio Antenna Connectors AP	JW233A	Add PoE injector or AC adapter, antennas
Aruba Instant IAP-225 (JP) 802.11n/ac Dual 3x3:3 Radio Integrated Antenna AP	JW239A	Add PoE injector or AC adapter
Aruba Instant IAP-224 (JP) FIPS/TAA 802.11n/ac Dual 3x3:3 Radio Ant Connectors AP	JY741A	Add PoE injector or AC adapter, antennas
Aruba Instant IAP-225 (JP) FIPS/TAA 802.11n/ac Dual 3x3:3 Radio Integrated Ant AP	JY742A	Add PoE injector or AC adapter
Aruba Instant IAP-224 (IL) 802.11n/ac Dual 3x3:3 Radio Antenna Connectors AP	JW232A	Add PoE injector or AC adapter, antennas
Aruba Instant IAP-225 (IL) 802.11n/ac Dual 3x3:3 Radio Integrated Antenna AP	JW238A	Add PoE injector or AC adaptor

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-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-12V30A 12V/30W AC/DC Desktop Style 1.7/4.0/9.5mm Circular 90 Deg Plug DoE Level VI Adapter	JX989A	Add AC power cable
AP-DC-CAR 12V/18W Indoor AP Car Power US Only Adapter Kit	JW631A	For US and Japan only
Select three-prong AC power cord for injector or AC adapter (no power cable needed for universal adapter):		
PC-AC-ARG Argentina 220V AC 10A 2-meter AC Power Cord	JW113A	

Configuration

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

Step 4: Select Antennas (AP-224 Only)

Description	Part Number	Qty	Interface(s)	Target Environment	Mounting
AP-224 antenna interface: 3x RP-SMA female, concurrent dual-band.					
AP-ANT-1W 2.4-2.5GHz (4dBi)/4.9-5.875GHz (6dBi) Hi Gain Dual-band Omni-Dir Indoor Antenna	JW009A	3	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 Antnna	JW001A	3	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	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	3	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	3	1x RP-SMA male connector	Indoor	Direct-mount
AP-ANT-35A Dual Band 90x90deg 5dBi +/- 45 and V Pol 3 Element MIMO 3xRPSMA Pigtail Antenna	JW015A	1	3x RP-SMA male pigtail	Indoor/outdoor	Direct, using pigtails
AP-ANT-38 Dual Band 60x60deg 8dBi +/- 45 and V Pol 3 Element MIMO 3xRPSMA Pigtail Antenna	JW016A	1	3x RP-SMA male pigtail	Indoor/outdoor	Direct, using pigtails

Configuration

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

Step 6: Add Cosmetic Snap-on Cover (AP-215 Only, Optional)

Description	Part Number	Comments
225-CVR-20 20-pk for AP-225 with Holes for LED Indicators White Non-glossy Snap-on Covers	JW075A	1 kit per 20 access points

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	-94.0
2 Mbps	18.0	-90.0
5.5 Mbps	18.0	-89.0
11 Mbps	18.0	-88.0
802.11g 2.4 GHz and 802.11a 5 GHz		
6 Mbps	18.0	-91.0
54 Mbps	16.0	-76.0
802.11n HT20 2.4 GHz and 5 GHz		
MCS0/8	18.0	-91.0
MCS7/15	14.5	-73.0
802.11n HT40 2.4 GHz and 5 GHz		
MCS0/8	18.0	-88.0
MCS7/15	14.5	-70.0
802.11ac VHT20 5 GHz		
MCS0	18.0	-91.0
MCS9	12.5	-64.0
802.11ac VHT40 5 GHz		
MCS0	18.0	-88.0
MCS9	12.5	-61.0
802.11ac VHT80 5 GHz		

Technical Specifications
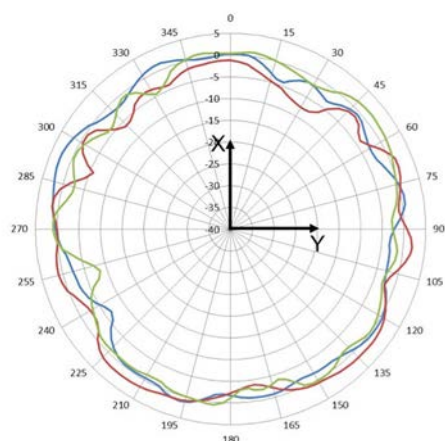
MCS0	18.0	-85.0
MCS9	12.5	-58.0

Maximum capability of the hardware provided. Maximum transmit power is limited by local regulatory settings. RF performance numbers for AP-224 are slightly lower due to additional internal RF circuitry.
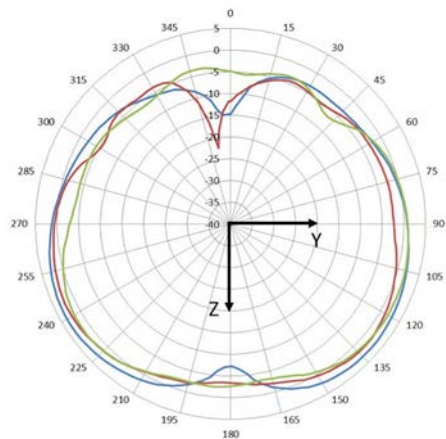
Horizontal or Azimuth plane (top view)
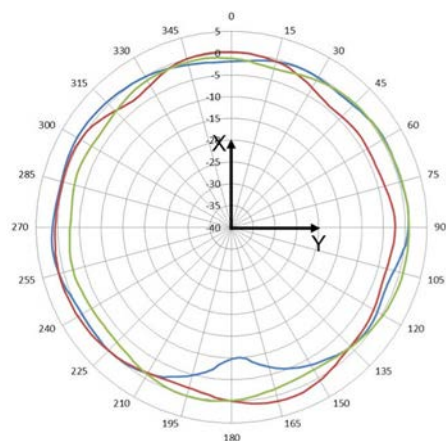
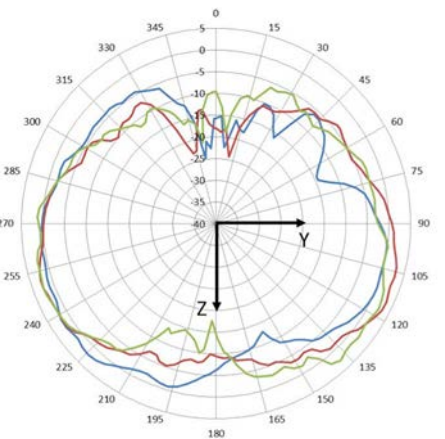2.450 GHz   5.550 GHz

Elevation plane (side view)

2.450 GHz   5.550 GHz

Summary of Changes

Date	Version History	Action	Description of Change
06-Mar-2017	From Version 2 to 3	Changed	Edits made on Overview and Configuration sections
07-Nov-2016	From Version 1 to 2	Added	Models added: JY741A, JY742A
01-Nov-2016	Version 1	Created	Document creation.

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