DATA SHEET

ARUBA INSTANT 225/ HP 225 INSTANT ACCESS POINT

Setting a higher standard for 802.11ac

Multifunctional Instant 225 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.

Instant 225 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, Instant 225 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 Instant 225 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.

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+.
- 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.
  - 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.
- 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.

SPECIFICATIONS

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.

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
  - 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+

ANTENNAS

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

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

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

- APIN0225

CERTIFICATIONS

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

WARRANTY

- Limited lifetime warranty

MINIMUM OPERATING SYSTEM SOFTWARE VERSIONS

- Aruba Instant 4.0.0.0

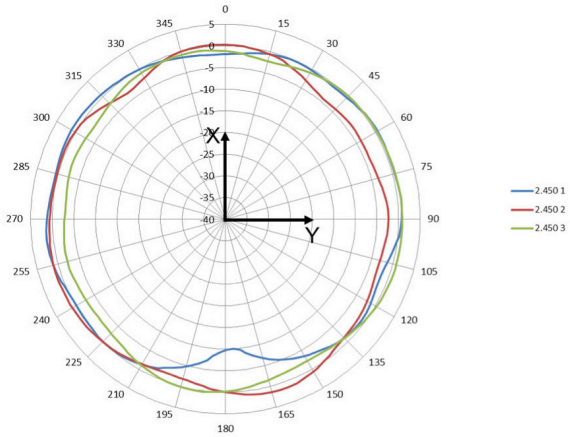
RF PERFORMANCE TABLE

	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		
MCS0	18.0	-85.0
MCS9	12.5	-58.0

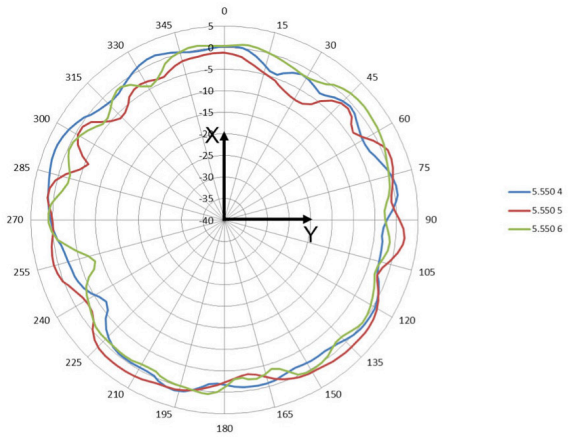
Maximum capability of the hardware provided. Maximum transmit power is limited by local regulatory settings.

ANTENNA PATTERN PLOTS

Horizontal or Azimuth plane (top view)

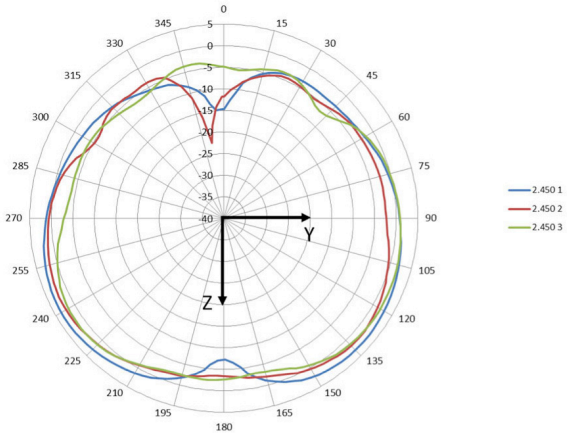


2.450 GHz

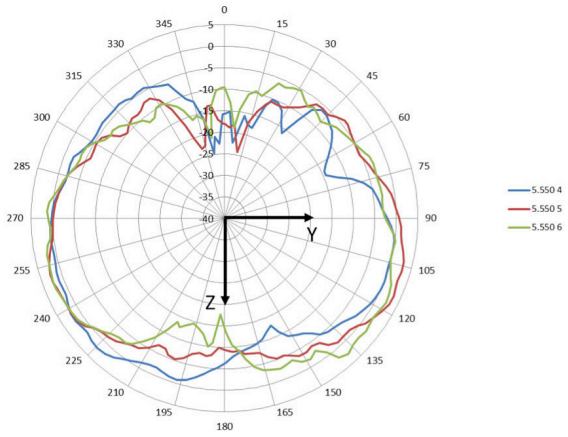


5.550 GHz

Elevation plane (side view)



2.450 GHz



5.550 GHz

ORDERING INFORMATION

Part Number	Description
Access Points	
JL190A	HP 225 Instant Dual Radio 802.11ac (WW) Access Point
JL191A	HP 225 Instant Dual Radio 802.11ac (US) Access Point
Accessories	
JL017A	HP 3xx Cloud-Managed Access Point Universal Power Supply
JL019A	HP 355/365 Cloud-Managed Access Point Wall Mount Kit
J9867A	HP Single-Port 802.3at Gigabit PoE In-Line Power Supply

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