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# HPE Aruba Networking 510 Series Campus Access Points QuickSpecs

## Very High Wi-Fi 6 (802.11ax) Performance with Dual Radios and Green AP Energy Efficiency

HPE Aruba Networking Wi-Fi 6 access points provide high-performance connectivity for any organization experiencing growing numbers of IoT and mobility requirements. With a maximum aggregate data rate of 3 Gbps (HE80/HE40), they deliver the speed and reliability needed for any enterprise environment.

Overview




**HPE Aruba Networking 510 Series Campus Access Points**

## Key features

- Up to 2.69 Gbps combined peak data rate•
- WPA3 and Enhanced Open security
- Built-in technology that resolves sticky client issues for Wi-Fi 6 and Wi-Fi 5 devices
- OFDMA and MU-MIMO for enhanced multi-user efficiency
- IoT-ready Bluetooth 5 and Zigbee support
- Embedded ranging technology for accurate indoor location measurements

Standard Features

## Incredible Efficiency

The HPE Aruba Networking 510 Series Campus Access Points are also designed to optimize user experience by maximizing Wi-Fi efficiency and dramatically reducing airtime contention between clients.

Features include Orthogonal frequency-division multiple access (OFDMA), multi-user MIMO and cellular optimization. With up to 4 spatial streams (4SS) and 160 MHz channel bandwidth (VHT160), the 510 Series provides groundbreaking wireless capabilities for any enterprise.

### Advantages of OFDMA

This capability allows HPE Aruba Networking access points to handle multiple Wi-Fi 6 capable clients on each channel simultaneously, regardless of device or traffic type. Channel utilization is optimized by handling each transaction via smaller sub-carriers or resource units (RUs), which means that clients are sharing a channel and not competing for airtime and bandwidth.

## Multi-User MIMO (MU-MIMO)

The 510 Series APs support downlink MU-MIMO (5 GHz radio) to maximize the use of its MIMO radio capabilities by simultaneously exchanging data with multiple single or dual stream client devices.

## Wi-Fi Optimization

### Client Optimization

Patented AI-powered HPE Aruba Networking ClientMatch technology eliminates sticky client issues by steering a client to the AP where it receives the best radio signal. ClientMatch steers traffic from the noisy 2.4 GHz band to the preferred 5 GHz or 6 GHz band depending on client capabilities.

ClientMatch also dynamically steers traffic to load balance access points to improve the user experience.

### Automated Wi-Fi radio frequency management

To optimize the user experience and provide greater stability, HPE Aruba Networking AirMatch allows organizations to automate network optimization using machine learning. AirMatch provides dynamic bandwidth adjustments to support changing device density, enhanced roaming using an even distribution of Effective Isotropic Radiated Power (EIRP) to radios, and real-time channel assignments to mitigate co-channel interference.

### HPE Aruba Networking Advanced Cellular Coexistence (ACC)

This feature uses built-in filtering to automatically minimize the impact of interference from cellular networks, distributed antenna systems (DAS), and commercial small cell or femtocell equipment.

### Intelligent Power Monitoring (IPM)

HPE Aruba Networking access points continuously monitor and report hardware energy consumption. They can also be configured to enable or disable capabilities based on available PoE power — ideal when wired switches have exhausted their power budget.

Standard Features

## IoT ready

The 510 series includes an integrated Bluetooth 5 and 802.15.4 radio (for Zigbee support) to simplify deploying and managing IoT-based location services, asset tracking services, security solutions, and IoT sensors. This allows organizations to leverage the 510 series as an IoT platform, which eliminates the need for an overlay infrastructure and additional IT resources.

### Target Wake Time (TWT)

Ideal for IoT devices that communicate infrequently, TWT establishes a schedule for when clients need to communicate with an AP. This helps improve client power savings and reduces airtime contention with other clients.

## Foundation for Accurate Indoor Location

HPE Aruba Networking APs act as a foundation for accurate indoor location so that location-aware services can be deployed at scale. Using embedded GPS receivers, HPE Aruba Networking Wi-Fi 6E access points are able to self-locate and work with Wi-Fi 6 Aaccess points Ps to establish reference points that can be used to accurately determine indoor client location.

Because they use universal latitude and longitude coordinates, there is no need for custom map development or to create separate applications for indoor and outdoor environments.

## HPE Aruba Networking Secure Infrastructure

The 510 series includes components of HPE Aruba Networking Zero Trust and SASE framework to help protect user authentication and wireless traffic. Select capabilities include:

### WPA3 and Enhanced Open

Support for stronger encryption and authentication is provided via the latest version of WPA for enterprise protected networks.
Enhanced Open offers seamless new protection for users connecting to open networks where each session is automatically encrypted to protect user passwords and data on guest networks.

### WPA2-MPSK

MPSK enables simpler passkey management for WPA2 devices — should the Wi-Fi password on one device or device type change, no additional changes are needed for other devices. Requires ClearPass Policy Manager.

### VPN tunnels

In remote access point (RAP) and IAP-VPN deployments, the 510 Series can be used to establish a secure SSL/IPSec VPN tunnel to a mobility controller that is acting as a VPN concentrator.

### Trusted Platform Module (TPM)

For enhanced device assurance, all HPE Aruba Networking access points have an installed TPM for secure storage of credentials and keys, and boot code.

Standard Features

## Simple and Secure Access

To simplify policy enforcement, the 510 seriesuses HPE Aruba Networking's policy enforcement firewall (PEF) feature to encapsulate all traffic from the access point to the mobility controller (or gateway) for end-to-end encryption and inspection. Policies are applied based on user role, device type, applications, and location. This reduces the manual configuration of SSIDs, VLANs, and ACLs. PEF also serves as the underlying technology for HPE Aruba Networking Dynamic Segmentation.

## Flexible Operation and Management

Our unified access points can operate as standalone APs or with a gateway for greater scalability, security, and manageability. Access pointscan be deployed using zero touch provisioning — without on-site technical expertise — for ease of implementation in branch offices and for remote work.

HPE Aruba Networking access points can be managed using cloud-based or on-premises solutions for any campus, branch, or remote work environment. HPE Aruba Networking Central provides a single pane of glass for overseeing every aspect of wired and wireless LANs, WANs, and VPNs. AI-powered analytics, end-to-end orchestration and automation, and advanced security features are built natively into the solution.

## Additional Wi-Fi Features

Each access points also includes the following standards-based technologies:

- **Transmit beamforming (TxBF)** increases signal reliability and range
- **Dynamic Frequency Selection (DFS)** optimizes use of available RF spectrum
- **Maximum Ratio Combining (MRC)** improves receiver performance
- **Cyclic Delay/Shift Diversity (CDD/CSD)** provides greater downlink RF performance
- **Space-Time Block Coding** increases range and improved reception
- **Low-Density Parity Check (LDPC)** provides a high-efficiency error correction for increased throughput

## Specifications

### Hardware variants

- AP-514: External antenna models
- AP-515: Internal antenna models

### Wi-Fi Radio Specifications

- Access point type: Indoor, dual radio, 5 GHz 802.11ax 4x4 MIMO and 2.4 GHz 802.11ax 2x2 MIMO
- 5 GHz radio:
  - Four spatial streams Single User (SU) MIMO for up to 4.8 Gbps wireless data rate to individual 4SS HE160 802.11ax client devices (max)
  - Two spatial streams Single User (SU) MIMO for up to 1.2 Gbps wireless data rate to individual 2SS HE80 802.11ax client devices (typical)
  - Four spatial streams Multi User (MU) MIMO for up to 4.8 Gbps wireless data rate to up to four 1SS or two 2SS HE160 802.11ax DL-MU-MIMO capable client devices simultaneously (max)
  - Four spatial streams Multi User (MU) MIMO for up to 2.4 Gbps wireless data rate to up to four 1SS or two 2SS HE80 802.11ax DL-MU-MIMO capable client devices simultaneously (typical)

## Standard Features

- 2.4 GHz radio:
  - Two spatial streams Single User (SU) MIMO for up to 574 Mbps wireless data rate to 2SS HE40 802.11ax client devices (max)
  - Two spatial streams Single User (SU) MIMO for up to 287 Mbps wireless data rate to 2SS HE20 802.11ax client devices (typical)
- Support for up to 512 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 ISM
  - 5.150 to 5.250 GHz U-NII-1
  - 5.250 to 5.350 GHz U-NII-2A
  - 5.470 to 5.725 GHz U-NII-2C
  - 5.725 to 5.850 GHz U-NII-3/ISM
  - 5.850 to 5.895 GHz U-NII-4
- Available channels: Dependent on configured regulatory domain
- Dynamic Frequency Selection (DFS) optimizes the use of available RF spectrum Including Zero-Wait DFS (ZWDFS) to accelerate channel changes
- Supported radio technologies: 802.11b: Direct-Sequence Spread-Spectrum (DSSS)
  - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)
  - 802.11ax: Orthogonal frequency-division multiple access (OFDMA) with up to 16 resource units (for an 80 MHz channel)
- Supported modulation types:
  - 802.11b: BPSK, QPSK, CCK
  - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM (proprietary extension)
  - 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension)
  - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM802.11n high-throughput (HT) support: HT20/40
- 802.11ac very high throughput (VHT) support: VHT20/40/80/160
- 802.11ax high efficiency (HE) support: HE20/40/80/160
- Supported data rates (Mbps): 802.11b: 1, 2, 5.5, 11
  - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
  - 802.11n (2.4 GHz): 6.5 to 300 (MCS0 to MCS15, HT20 to HT40)
  - 802.11n (5 GHz): 6.5 to 600 (MCS0 to MVC31, HT20 to HT40)
  - 802.11ac: 6.5 to 3,467 (MCS0 to MCS9, NSS = 1 to 4, VHT20 to VHT160)
  - 802.11ax (2.4 GHz): 3.6 to 574 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40)
  - 802.11ax (5 GHz): 3.6 to 4,803 (MCS0 to MCS11, NSS = 1 to 4, HE20 to HE160)
- 802.11n/ac/ax packet aggregation: A-MPDU, A-MSDU
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements): 2.4 GHz band: +21 dBm (18 dBm per chain)
  - 5 GHz band: +24 dBm (18 dBm per chain)

  **Notes:** 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
- Space-Time Block Coding (STBC) for increased range and improved reception
- Low-Density Parity Check (LDPC) for high-efficiency error correction and increased throughput

## Standard Features

- Transmit Beam-Forming (TxBF) for increased signal reliability and range
- 802.11ax Target Wait Time (TWT) to support low-power client devices
- 802.11mc Fine Timing Measurement (FTM) for precision distance ranging

### Wi-Fi Antennas

- AP-514: Four (female) RP-SMA connectors for external dual band antennas (A0 through A3, corresponding with radio chains 0 through 3 for 5 GHz; 2.4 GHz radio uses A0/A1 and chains 0/1 only). Worst-case internal loss between radio interface and external antenna connectors (due to diplexing circuitry): 1.3 dB in 2.4 GHz and 1.7 dB in 5 GHz.
- AP-515: Four integrated dual-band downtilt omni-directional antennas for 4x4 MIMO (2x2 MIMO for 2.4 GHz) with peak antenna gain of 4.2 dBi in 2.4 GHz and 7.5 dBi 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°.
  - Combining the patterns of each of the antennas of the MIMO radios, the peak gain of the effective per-antenna pattern is 3.8 dBi in 2.4 GHz and 4.6 dBi in 5 GHz.

### Additional Interfaces

- E0: HPE Smart rate port (RJ-45, maximum negotiated speed 2.5 Gbps)
  - Auto-sensing link speed (100/1000/2500BASE-T) and MDI/ MDIX
  - 2.5 Gbps speeds comply with NBase-T and 802.3bz specifications
  - PoE-PD: 48 VDC (nominal) 802.3af/at/bt (class 3 or higher)
  - 802.3az Energy Efficient Ethernet (EEE)
- E1: 10/100/1000BASE-T Ethernet network interface (RJ-45)
  - Auto-sensing link speed and MDI/MDIX
  - 802.3az Energy Efficient Ethernet (EEE)
- Link Aggregation (LACP) support between both network ports for redundancy and increased capacity
- DC power interface: 12 VDC (nominal, +/-5%), accepts 2.1 mm/5.5 mm center-positive circular plug with 9.5 mm length
- USB 2.0 host interface (Type A connector)
  - Capable of sourcing up to 1A/5W to an attached device
- Bluetooth 5 and Zigbee (802.15.4) radio (2.4 GHz)
  - Bluetooth 5: up to 8 dBm transmit power (class 1) and -95 dBm receive sensitivity
  - Zigbee: up to 8 dBm transmit power and -97 dBm receive sensitivity
  - Integrated vertically polarized omnidirectional antenna with roughly 30° downtilt and peak gain of 3.5 dBi (AP-515) or 4.9 dBi (AP-514)
- Visual indictors (two multi-color LEDs): for System and Radio status
- Reset button: factory reset, LED mode control (normal/off)
- Serial console interface (proprietary, micro-B USB physical jack)
- Kensington security slot

### Power Sources and Power Consumption

- The AP supports direct DC power and Power over Ethernet (PoE; on port E0)
- When both power sources are available, DC power takes priority over PoE
- Power sources are sold separately; see the ordering Information section below for details
- When powered by DC or 802.3at (class 4)/802.3bt (class 5) PoE, the access point will operate without restrictions.

## Standard Features

- When powered by 802.3af (class 3) PoE and with the IPM feature enabled, the access point 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.
- Operating the access point with an 802.3af (class 3 or lower) PoE source and IPM disabled is not supported (except for AP staging; no radios will be enabled).
- Maximum (worst-case) power consumption:
  - DC powered: 16.0W
  - PoE powered (802.3af, IPM enabled): 13.5W
  - PoE powered (802.3at/bt): 20.8W
  - 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 access point is up to 5.7W (PoE powered) or 5.5W (DC powered).
- Maximum (worst-case) power consumption in idle mode: 12.6W (PoE) or 9.7W (DC)
- Maximum (worst-case) power consumption in deep-sleep mode: 5.9W (PoE) or 1.5W (DC)

### Mounting Details

A mounting bracket has been pre-installed on the back of the access point. This bracket is used to secure the access point to any of the (sold separately) mount kits; see the ordering Information section below for details.

### Mechanical Specifications

- Dimensions/weight (AP-515; unit, excluding mount bracket):
  - 200 mm (W) x 200 mm (D) x 46 mm (H)/7.9″ (W) x 7.9″ (D) x 1.8″ (H)
  - 810g/28.5 oz
- Dimensions/weight (AP-515; shipping):
  - 230 mm (W) x 220 mm (D) x 72 mm (H)/9.1″ (W) x 8.7″ (D) x 2.8″ (H)
  - 1010g/35.5 oz

### Environmental specifications

- Operating conditions
  - Temperature: 0° C to +50°C/+32°F to +122°F
  - Humidity: 5% to 93% non-condensing
  - AP is plenum rated for use in air-handling spaces
  - ETS 300 019 class 3.2 environments
- Storage and transportation conditions
  - Temperature: -40°C to +70°C/-40°F to +158°F
  - Humidity: 5% to 93% non-condensing
  - ETS 300 019 classes 1.2 and 2.3 environments

### Reliability

Mean Time Between Failure (MTBF): 560,000 hrs (64 yrs) at +25°C operating temperature.

### Regulatory Compliance

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

Standard Features

- Low Voltage Directive 2014/35/EU
- UL/IEC/EN 62368-1
- EN 60601-1-1, EN60601-1-2
- Railway Certs (AP-515 Only): EN 50155:2017 — Railway Applications
- EN 50121-1:2017 — Railway EMC
  - EN 50121-3-2 — Railway EMC
  - EN 50121-4:2016 — Railway Immunity
  - IEC 61373 ed2:2008 — Railway Shock and Vibration

For more country-specific regulatory information and approvals, please see your HPE Aruba Networking representative.

### Regulatory Model Numbers

- AP-514: APIN0514
- AP-515: APIN0515

### Certifications

- UL2043 plenum rating
- Wi-Fi Alliance:
  - Wi-Fi CERTIFIED a, b, g, n, ac, ax
  - WPA, WPA2 and WPA3 — Enterprise with CNSA option, Personal (SAE), Enhanced Open (OWE)
  - WMM, WMM-PS, W-Fi Agile Multiband
  - Wi-Fi CERTIFIED Location™
- Bluetooth SIG

## Warranty

HPE Aruba Networking's hardware limited lifetime warranty.

## Minimum Operating System Software Versions

- HPE Aruba Networking Wireless Operating System and HPE Aruba Networking InstantOS 8.4.0.0 (with some restrictions). For unrestricted operation,use 8.6.0.0 or later.
- HPE Aruba Networking Wireless Operating System 10.0.0.0

## Configuration Information

### BTO Models

| Description | SKU |
|---|---|
| **HPE Aruba Networking 515 Internal Antenna Access Points** | |
| **Notes:** Add Mount Kit | |
| HPE Aruba Networking AP-515 (EG) Dual Radio 4x4/2x2 802.11ax Internal Antennas Unified Campus AP | Q9H59A |
| HPE Aruba Networking AP-515 (IL) Dual Radio 4x4/2x2 802.11ax Internal Antennas Unified Campus AP | Q9H60A |
| HPE Aruba Networking AP-515 (JP) Dual Radio 4x4/2x2 802.11ax Internal Antennas Unified Campus AP | Q9H61A |
| HPE Aruba Networking AP-515 (RW) Dual Radio 4x4/2x2 802.11ax Internal Antennas Unified Campus AP | Q9H62A |
| HPE Aruba Networking AP-515 (US) Dual Radio 4x4/2x2 802.11ax Internal Antennas Unified Campus AP | Q9H63A |
| HPE Aruba Networking AP-515 (ID) Dual Radio 4x4/2x2 802.11ax Internal Antennas Campus Access Point | S5D86A |
| **515 Internal Antenna Access Points - 10-Pack Eco-Friendly Bundle** | |
| **Notes:** Add Mount Kit | |
| HPE Aruba Networking AP-515 (RW) Dual Radio 4x4/2x2 Wi-Fi 6 10-pack Campus Access Point | S3J29A |
| HPE Aruba Networking AP-515 (US) Dual Radio 4x4/2x2 Wi-Fi 6 10-pack Campus Access Point | S3J30A |
| **HPE Aruba Networking 514 External Antenna Access Points** | |
| **Notes:** Add Mount Kit, Antennas | |
| HPE Aruba Networking AP-514 (EG) Dual Radio 4x4/2x2 802.11ax External Antennas Unified Campus AP | Q9H54A |
| HPE Aruba Networking AP-514 (IL) Dual Radio 4x4/2x2 802.11ax External Antennas Unified Campus AP | Q9H55A |
| HPE Aruba Networking AP-514 (JP) Dual Radio 4x4/2x2 802.11ax External Antennas Unified Campus AP | Q9H56A |
| HPE Aruba Networking AP-514 (RW) Dual Radio 4x4/2x2 802.11ax External Antennas Unified Campus AP | Q9H57A |
| HPE Aruba Networking AP-514 (US) Dual Radio 4x4/2x2 802.11ax External Antennas Unified Campus AP | Q9H58A |

Configuration Information

### HPE Aruba Networking 515 Internal Antenna Access Points - TAA Models

**Notes:** Add Mount Kit

| | |
|---|---|
| HPE Aruba Networking AP-515 (EG) TAA Dual Radio 4x4/2x2 802.11ax Internal Ants Unified Campus AP | Q9H69A |
| HPE Aruba Networking AP-515 (IL) TAA Dual Radio 4x4/2x2 802.11ax Internal Ants Unified Campus AP | Q9H70A |
| HPE Aruba Networking AP-515 (JP) TAA Dual Radio 4x4/2x2 802.11ax Internal Ants Unified Campus AP | Q9H71A |
| HPE Aruba Networking AP-515 (RW) TAA Dual Radio 4x4/2x2 802.11ax Internal Ants Unified Campus AP | Q9H72A |
| HPE Aruba Networking AP-515 (US) TAA Dual Radio 4x4/2x2 802.11ax Internal Ants Unified Campus AP | Q9H73A |

### HPE Aruba Networking 514 External Antenna Access Points - TAA Models

**Notes:** Add Mount Kit, Antennas

| | |
|---|---|
| HPE Aruba Networking AP-514 (EG) TAA Dual Radio 4x4/2x2 802.11ax Ext Antennas Unified Campus AP | Q9H64A |
| HPE Aruba Networking AP-514 (IL) TAA Dual Radio 4x4/2x2 802.11ax Ext Antennas Unified Campus AP | Q9H65A |
| HPE Aruba Networking AP-514 (JP) TAA Dual Radio 4x4/2x2 802.11ax Ext Antennas Unified Campus AP | Q9H66A |
| HPE Aruba Networking AP-514 (RW) TAA Dual Radio 4x4/2x2 802.11ax Ext Antennas Unified Campus AP | Q9H67A |
| HPE Aruba Networking AP-514 (US) TAA Dual Radio 4x4/2x2 802.11ax Ext Antennas Unified Campus AP | Q9H68A |

## Mount Accessories

| Description | SKU |
|---|---|
| **AP Mount Kits** | |
| HPE Aruba Networking AP-MNT-A Campus AP Type A Suspended Ceiling Rail Flat 9/16 Mount Bracket Kit | R3J15A |
| HPE Aruba Networking AP-MNT-MP10-A Campus AP 10-Pack 9/16 Flat Ceiling Rail Mount Bracket Kit | JZ370A |
| HPE Aruba Networking AP-MNT-B Campus AP Type B Suspended Ceiling Rail Flat 15/16 Mount Bracket Kit | R3J16A |
| HPE Aruba Networking AP-MNT-MP10-B Campus AP 10-Pack 15/16 Flat Ceiling Rail Mount Bracket Kit | Q9G69A |
| HPE Aruba Networking AP-MNT-C Campus AP Type C Suspended Ceiling Rail 9/16 Profile Mnt Bracket Kit | R3J17A |
| HPE Aruba Networking AP-MNT-MP10-C Campus AP 10-Pack Profile 9/16 Ceiling Rail Mount Bracket Kit | Q9G70A |
| HPE Aruba Networking AP-MNT-D Campus AP Type D Solid Surface Mount Bracket Kit | R3J18A |
| HPE Aruba Networking AP-MNT-MP10-D Campus AP 10-Pack Solid Surface Mount Bracket Kit | Q9G71A |
| HPE Aruba Networking AP-MNT-E Campus AP Type E Wall-Box Mount Bracket Kit | R3J19A |

Configuration Information

| | |
|---|---|
| HPE Aruba Networking AP-MNT-MP10-E Campus AP 10-Pack Wall-box Mount Bracket Kit | R1C72A |
| HPE Aruba Networking AP-MNT-U Campus Access Point Type U Universal Mount Bracket Kit | S4K79A |
| HPE Aruba Networking AP-MNT-MP10-U Campus AP Universal 10-pack Mount Bracket Kit | S0J40A |
| HPE Aruba Networking AP-MNT-MP10-X Campus AP 10-Pack Mount Adapter Kit | R3T20A |

- *Kit contains mounts for 10 access points
- For 514, 515, Series Std (Min 0 // max 99) User Selection (min 0 // max 99)

## Antennas

For HPE Aruba Networking 514 Std (Min 0 // max1) User Selection (min 0 // max 1)

### Antennas

| | |
|---|---|
| HPE Aruba Networking AP-ANT-311 Direct-Mount RP-SMA Tri-Band 1x1 Omni Dipole Antenna | S1F79A |
| HPE Aruba Networking AP-ANT-312 Direct-Mount RP-SMA Tri-Band 1x1 Low-Profile Omni Dipole Antenna | S1F80A |
| HPE Aruba Networking AP-ANT-313 Cabled RP-SMA Tri-Band 1x1 Omni Dipole Antenna | S1F81A |
| HPE Aruba Networking AP-ANT-340 Cabled RP-SMA Tri-Band 4x4 Downtilt Omni Ceiling Antenna | S1F82A |
| HPE Aruba Networking AP-ANT-345 Cabled RP-SMA Tri-Band 4x4 Medium Gain Directional Panel Antenna | S1F83A |
| HPE Aruba Networking AP-ANT-348 Cabled RP-SMA Tri-Band 4x4 High Gain Directional Panel Antenna | S1F84A |

Notes:

- *Must select Qty 0 or Qty 4
- AP-ANT-1W, and AP-ANT-20W are usually direct connect to the chassis
- AP-ANT-45,AP-ANT-48 ship with hardware for flush mount to a flat surface
- AP-514 has 4x RPSMA female, concurrent dual-band connections

### Antenna Mount Kits

For HPE Aruba Networking 514 Series Std (Min 0 // max 1) User selection (min 0 // max 1)

| Description | SKU |
|---|---|
| HPE Aruba Networking AP-ANT-MNT-4 AZ/EL Adjustable Antennas Pole/Wall Mount Kit | JW021A |
| HPE Aruba Networking AP-ANT-MNT-U Universal AZ/EL Adjustable Antenna Pole Wall Mount Kit | S1J09A |

## Power Options

For 514, 515 Series Std (Min 0 // max 1) User Selection (min 0 // max 1)

| Description | SKU |
|---|---|

Notes:

- If this Power Supply is selected, bring in (Min 1 // Max 1) Localized power cord based on the Localization Menu
- Most devices are PoE powered from switch so these are optional.

| | |
|---|---|
| HPE Aruba Networking AP-POE-ATSR 1-Port Smart Rate 802.3at 30W Midspan Injector | R6P67A |
| HPE Aruba Networking AP-AC2-12B 12V/48W AC/DC Desktop Style Power Adapter with 2.1/5.5mm Connector | R3K00A |

Configuration Information

## Accessories

For 515 Series Std (Min 0 // max 99) User Selection (min 0 // max 99)

### Snap-on Covers

| | |
|---|---|
| HPE Aruba Networking AP-MNT-MP10-B1 Campus AP 10-Pack 15/16 Adj Flat Ceiling Rail Mount Bracket Kit | R6T34A |
| HPE Aruba Networking AP-515-CVR-20 20pk for AP-515 White Non-glossy Snap-On Covers | Q9H74A |

**Notes:** Kit contains 20 optional Snap-On covers

### Other Accessories

For 514, 515 Series Std (Min 0 // max 99) User Selection (min 0 // max 99)

| | |
|---|---|
| HPE Aruba Networking AP-MOD-SERU Micro-USB TTL3.3V to RJ45 RS232 AP Console Adapter Module | R6Q99A |
| HPE Aruba Networking AP-CBL-SERU Micro-USB TTL3.3V to USB2.0 AP Console Adapter Cable | JY728A |
| HPE Aruba Networking USB LTE Modem for Access Points and Gateways | R8F34A |
| HPE Aruba Networking USB Extender Cable Kit | R8G76A |

## Software

### HPE Aruba Networking Central

### Cloud Services / Access Point Foundation Subscriptions

| | |
|---|---|
| HPE Aruba Networking Central AP Foundation 1-year Subscription E-STU | Q9Y58AAE |
| HPE Aruba Networking Central AP Foundation 3 year Subscription E-STU | Q9Y59AAE |
| HPE Aruba Networking Central AP Foundation 5 year Subscription E-STU | Q9Y60AAE |
| HPE Aruba Networking Central AP Foundation 7 year Subscription E-STU | Q9Y61AAE |
| HPE Aruba Networking Central AP Foundation 10 year Subscription E-STU | Q9Y62AAE |

### Cloud Services / Access Point Advanced Subscriptions

| | |
|---|---|
| HPE Aruba Networking Central AP Advanced 1 year Subscription E-STU | Q9Y63AAE |
| HPE Aruba Networking Central AP Advanced 3 year Subscription E-STU | Q9Y64AAE |
| HPE Aruba Networking Central AP Advanced 5 year Subscription E-STU | Q9Y65AAE |
| HPE Aruba Networking Central AP Advanced 7 year Subscription E-STU | Q9Y66AAE |
| HPE Aruba Networking Central AP Advanced 10 year Subscription E-STU | Q9Y67AAE |

### On-Prem Services / Access Point Foundation Subscriptions

| | |
|---|---|
| HPE Aruba Networking Central on Prem AP Foundation 1 year Subscription E-STU | R6U63AAE |
| HPE Aruba Networking Central on Prem AP Foundation 3 year Subscription E-STU | R6U64AAE |
| HPE Aruba Networking Central on Prem AP Foundation 5 year Subscription E-STU | R6U65AAE |
| HPE Aruba Networking Central on Prem AP Foundation 7 year Subscription E-STU | R6U66AAE |
| HPE Aruba Networking Central on Prem AP Foundation 10 year Subscription E-STU | R6U67AAE |

## Configuration Information

**On-Prem Services / Access Point Advanced Subscriptions**

| | |
|---|---|
| HPE Aruba Networking Central On-Premises AP Advanced 1-year Subscription E-STU | R6U68AAE |
| HPE Aruba Networking Central On-Premises AP Advanced 3-year Subscription E-STU | R6U69AAE |
| HPE Aruba Networking Central On-Premises AP Advanced 5-year Subscription E-STU | R6U70AAE |
| HPE Aruba Networking Central On-Premises AP Advanced 7-year Subscription E-STU | R6U71AAE |
| HPE Aruba Networking Central On-Premises AP Advanced 10 year Subscription E-STU | R6U72AAE |

**On-Prem Services / Access Point Foundation Government Subscriptions**

| | |
|---|---|
| HPE Aruba Networking COP AP Foundation Government 1-year Subscription E-STU | S1P56AAE |
| HPE Aruba Networking COP AP Foundation Government 3-year Subscription E-STU | S1P57AAE |
| HPE Aruba Networking COP AP Foundation Government 5-year Subscription E-STU | S1P58AAE |
| HPE Aruba Networking COP AP Foundation 7-year Government Subscription E-STU | S1P59AAE |
| HPE Aruba Networking COP AP Foundation 10-year Government Subscription E-STU | S1P60AAE |

**On-Prem Services / Access Point Advanced Government Subscriptions**

| | |
|---|---|
| HPE Aruba Networking Central On-Premises Access Point Advanced 3-year Government Subscription E-STU | S1P97AAE |
| HPE Aruba Networking Central On-Premises Access Point Advanced 5-year Government Subscription E-STU | S1P98AAE |

## As-a-Service

**Cloud Services / Access Point Foundation Subscriptions**

| | |
|---|---|
| HPE Aruba Networking Central AP Foundation 1 year Subscription SaaS | Q9Y58AAS |
| HPE Aruba Networking Central AP Foundation 3 year Subscription SaaS | Q9Y59AAS |
| HPE Aruba Networking Central AP Foundation 5 year Subscription SaaS | Q9Y60AAS |
| HPE Aruba Networking Central AP Foundation 7 year Subscription SaaS | Q9Y61AAS |
| HPE Aruba Networking Central AP Foundation 10 year Subscription SaaS | Q9Y62AAS |

**Cloud Services / Access Point Advanced Subscriptions**

| | |
|---|---|
| HPE Aruba Networking Central AP Advanced 1 year Subscription SaaS | Q9Y63AAS |
| HPE Aruba Networking Central AP Advanced 3 year Subscription SaaS | Q9Y64AAS |
| HPE Aruba Networking Central AP Advanced 5 year Subscription SaaS | Q9Y65AAS |
| HPE Aruba Networking Central AP Advanced 7 year Subscription SaaS | Q9Y66AAS |
| HPE Aruba Networking Central AP Advanced 10 year Subscription SaaS | Q9Y67AAS |

Technical Specifications

## RF Performance Table

| Band, Rate | Maximum Transmit Power (Dbm) Per Transmit Chain | Receiver Sensitivity (Dbm) Per Receive Chain |
|---|---|---|
| **2.4GHz, 802.11b** | | |
| 1Mbps | 18 | -96 |
| 11Mbps | 18 | -88 |
| **2.4GHz, 802.11g** | | |
| 6Mbps | 18 | -93 |
| 54Mbps | 17 | -75 |
| **2.4GHz, 802.11n HT20** | | |
| MCS0 | 18 | -93 |
| MCS7 | 16 | -75 |
| **2.4GHz, 802.11ax HE20** | | |
| MCS0 | 18 | -92 |
| MCS11 | 14 | -62 |
| **5GHz, 802.11a** | | |
| 6Mbps | 18 | -93 |
| 54Mbps | 17 | -75 |
| **5GHz, 802.11n HT20** | | |
| MCS0 | 18 | -93 |
| MCS7 | 16 | -73 |
| **5GHz, 802.11n HT40** | | |
| MCS0 | 18 | -90 |
| MCS7 | 16 | -70 |
| **5GHz, 802.11ac VHT20** | | |
| MCS0 | 18 | -93 |
| MCS9 | 16 | -68 |
| **5GHz, 802.11ac VHT40** | | |
| MCS0 | 18 | -90 |
| MCS9 | 16 | -65 |
| **5GHz, 802.11ac VHT80** | | |
| MCS0 | 18 | -87 |
| MCS9 | 16 | -62 |
| **5GHz, 802.11ac VHT160** | | |
| MCS0 | 18 | -84 |
| MCS9 | 16 | -59 |
| **5GHz, 802.11ax HE20** | | |
| MCS0 | 18 | -90 |
| MCS11 | 14 | -60 |
| **5GHz, 802.11ax HE40** | | |
| MCS0 | 18 | -87 |
| MCS11 | 14 | -57 |
| **5GHz, 802.11ax HE80** | | |
| MCS0 | 18 | -84 |
| MCS11 | 14 | -54 |

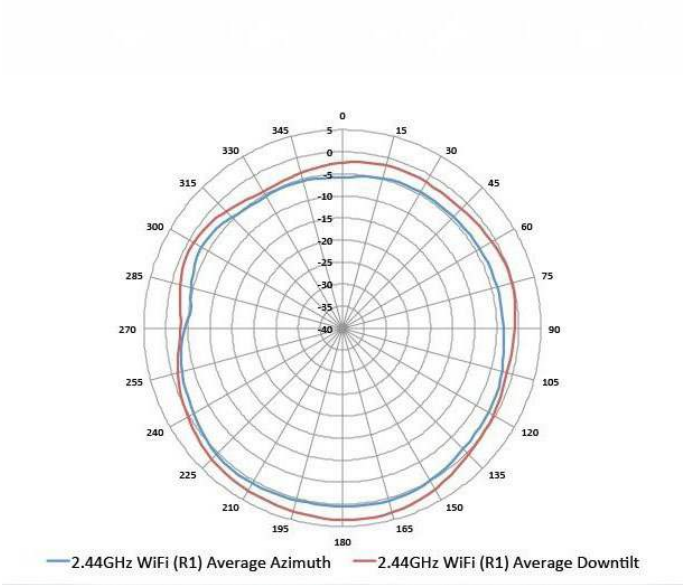
Technical Specifications

| 5GHz, 802.11ax HE160 | | |
|---|---|---|
| MCS0 | 18 | -81 |
| MCS11 | 13 | -51 |

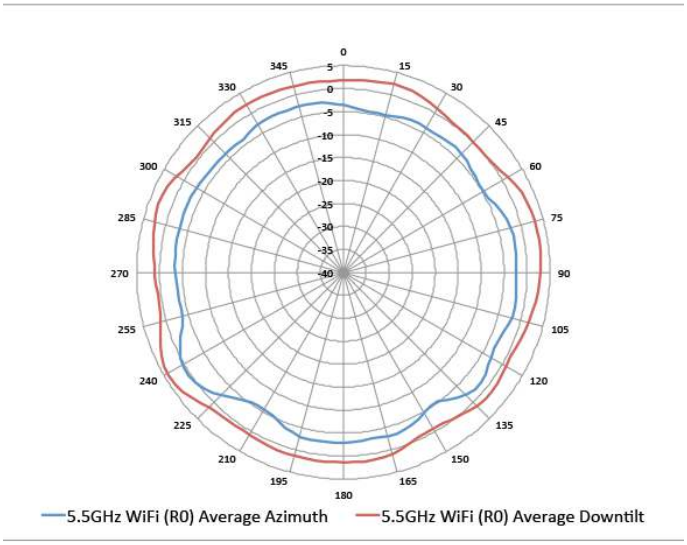
# Antenna Patterns

## Horizontal Planes (Top View)

Showing azimuth (0°) and 30° downtilt patterns (averaged patterns for all applicable antennas)



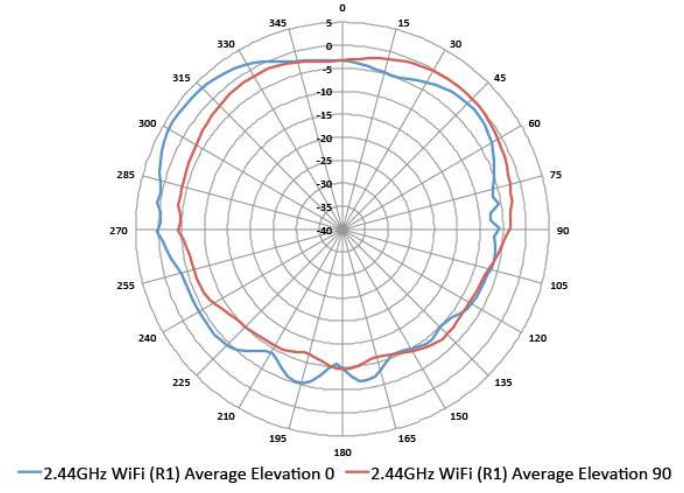

**2.44GHz Wi-Fi (antennas 1, 2)**



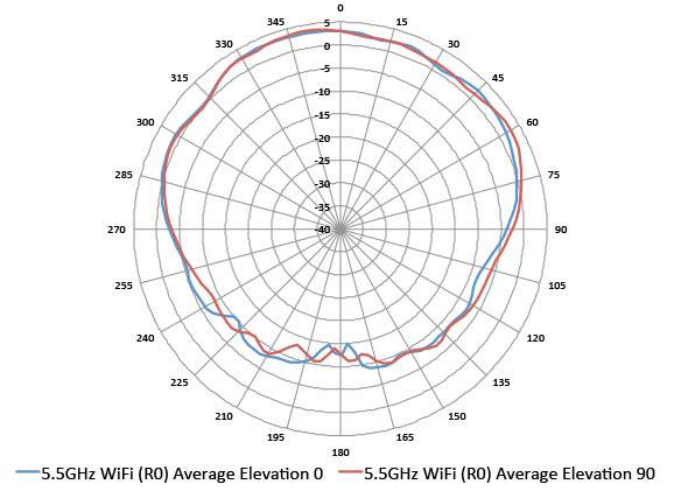

**5.5GHz Wi-Fi (antennas 1, 2, 3, 4)**

### Vertical (elevation) planes (side view, AP facing up)

Showing side view with access point rotated 0° and 90° (averaged patterns for all applicable antennas))




**2.44GHz Wi-Fi (antennas 1, 2)**




**5.5GHz Wi-Fi (antennas 1, 2, 3, 4)**

## Summary of Changes

| Date | Version History | Action | Description of Change |
|---|---|---|---|
| 17-Aug-2026 | Version 20 | Changed | New Central SKUs were added in Configuration Information section: R6U68AAE, R6U69AAE, R6U70AAE, R6U71AAE, R6U72AAE, S1P56AAE, S1P57AAE, S1P58AAE, S1P59AAE, S1P60AAE, S1P97AAE, S1P98AAE. |
| 27-Feb-2026 | Version 19 | Changed | Overview, Standard Features, Configuration Information, and Technical Specification sections were updated. |
| 28-Jul-2025 | Version 18 | Changed | Update survey link. |
| 07-Apr-2025 | Version 17 | Changed | Overview, Standard Features, Configuration Information, and Technical Specification sections were updated. |
| 03-Feb-2025 | Version 16 | Changed | Configuration Information section was updated |
| 21-Jan-2025 | Version 15 | Changed | QuickSpecs was updated. |
| 16-Dec-2024 | Version 14 | Changed | Standard Features and Configuration Information sections were updated. |
| 01-Jul-2024 | Version 13 | Changed | Configuration Information section was updated |
| 04-Dec-2023 | Version 12 | Changed | Series name was updated |
| 05-Sep-2023 | Version 11 | Changed | Configuration Information section was updated |
| 07-Aug-2023 | Version 10 | Changed | Configuration Information section was updated |
| 01-May-2023 | Version 9 | Changed | Configuration Information section was updated, new SKU was added. |
| 05-Jul-2022 | Version 8 | Changed | Configuration Information section was updated. |
| 15-Mar-2021 | Version 7 | Changed | SKUs were added in Configuration Information section. |
| 08-Sep-2020 | Version 6 | Changed | Configuration Information section was updated<br>New SKUS were added |
| 04-Nov-2019 | Version 5 | Changed | Configuration Information section was updated<br>New SKUS were added |
| 07-Oct-2019 | Version 4 | Changed | Overview, Standard Features and Configuration Information sections were updated<br>New SKUS were added |
| 03-Jun-2019 | Version 3 | Changed | Configuration and Accessories sections were updated.<br>New SKUs were added. |
| 18-Feb-2019 | Version 2 | Changed | Minor change made on Technical Specifications |
| 13-Nov-2018 | Version 1 | New | New QuickSpecs |

## Copyright

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