HPE Aruba Networking 560 Series Outdoor Access Points

Entry-level Wi-Fi 6 (802.11ax) for outdoor and warehouse environments

Weatherproof and temperature hardened, HPE Aruba Networking 560 series access points deliver cost-effective Wi-Fi 6 wireless connectivity in outdoor and environmentally challenging locations.

Purpose-built to survive in the harshest outdoor environments, 560 series APs can withstand exposure to extreme high and low temperatures, persistent moisture and precipitation, and are fully sealed to keep out airborne contaminants. All electrical interfaces include industrial strength surge protection.

HPE Aruba Networking Wi-Fi 6 access points provide high-performance connectivity for any organization experiencing growing numbers of IoT and mobility requirements. With maximum aggregate on air data rate of 1.49 Gbps (HE80/HE20), they deliver the speed and reliability needed for most environments.

HPE Aruba Networking's advanced ClientMatch technology and an integrated Bluetooth beacon can help enable HPE Aruba Networking location services.

Incredible efficiency

The HPE Aruba Networking 560 Series access points (APs) are 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 2 spatial streams, the 560 Series provides reliable connectivity for most any application.

Read the Multi-User 802.11ax white paper for further information.

Advantages of OFDMA
OFDMA capability allows APs to handle multiple Wi-Fi 6 capable clients on each channel simultaneously, regardless of device or traffic type. Channel utilization

HPE GreenLake

is optimized by handling each transaction via smaller sub-carriers or resource units (RUs), which means that clients are sharing a channel yet not competing for airtime and bandwidth.

HPE Aruba Networking Air Slice™ for extended OFDMA assurance

Initially, APs in controller-less mode (Instant) can provide SLA-grade performance by allocating radio resources, such as time, frequency, and spatial streams, to specific traffic types.

By combining HPE Aruba Networking's Policy Enforcement Firewall (PEF) and Layer 7 Deep Packet Inspection (DPI) to identify user roles and applications, the APs will dynamically allocate the bandwidth needed. Non-Wi-Fi 6 clients can also benefit. For APs, Air Slice uses HPE Aruba Networking Central for management. Controller-based APs will be supported in a future software release.

Multi-user MIMO (MU-MIMO)

560 Series APs support downlink MU-MIMO just like Wi-Fi 5 (802.11ac Wave 2) APs. The added benefit is the ability to multiply the number of clients that can now send traffic, thus optimizing client-to-AP spatial stream diversity. Wi-Fi 6 and MU-MIMO aware client optimization.

HPE Aruba Networking's patented AI-powered ClientMatch technology eliminates sticky client issues by placing Wi-Fi 6 capable devices on the best available AP. Session metrics are used to steer mobile devices to the best AP based on available bandwidth, types of applications being used and traffic type—even as users roam.

HPE Aruba Networking Advanced Cellular Coexistence (ACC)

The ACC 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 APs 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.

IOT platform capabilities

Like all HPE Aruba Networking Wi-Fi 6 APs, the 560 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 560 Series as an IoT platform, which eliminates the need for an overlay infrastructure and additional IT resources.

Target Wake Time (TWT)

Ideal for IoTs 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.

Secure infrastructure

The HPE Aruba Networking 560 Series includes components of Zero Trust Security 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 HPE Aruba Networking NAC.

VPN tunnels

In Remote AP (RAP) and IAP-VPN deployments, the HPE Aruba Networking 560 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 PE Aruba Networking APs have an installed TPM for secure storage of credentials and keys, and boot code.

Simple and secure access

To simplify policy enforcement, the HPE Aruba Networking 560 Series uses our policy enforcement firewall (PEF) feature to encapsulate all traffic from the AP 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.

Additional WI-FI features

Each AP also includes the following standards-based technologies:

Transmit Beamforming (TxBF)	Increased signal reliability and range
Passpoint Release 2	Seamless cellular-to-Wi-Fi carryover for guests
Dynamic Frequency Selection (DFS)	Optimized use of available RF spectrum
Maximum Ratio Combining (MRC)	Improved receiver performance for multi-antenna access points
Cyclic Delay/Shift Diversity (CDD/CSD)	Enable use of multiple transmit antennas
Space-Time Block Coding (STBC)	Increased connection robustness
Low-Density Parity Check (LDPC)	High performance error detection and correction coding for enhanced receiver performance

High density connectivity

Each HPE Aruba Networking 560 Series AP provides connectivity for a maximum of 256 associated clients per radio (512 in total). In real-world scenarios, the maximum recommended client density is dependent on environmental conditions.

Flexible operation and management

Controller-less (instant) mode
In controllerless mode, one AP serves as a virtual controller for the entire network. Learn more about Instant mode in this technology brief.

Mobility controller mode
For optimized network performance, roaming and security, APs tunnel all traffic to a mobility controller for centrally managed traffic forwarding and segmentation, data encryption, and policy enforcement. Learn more in the HPE Aruba Networking Operating System data sheet.

Specifications

Hardware variants
- AP-565

  – Built-in Omni Directional Antennas

  – 5 GHz Antennas 5.4 dBi

  – 2.4 GHz Antennas 3.2 dBi

  – BLE/802.15.4 Antennas 3.3 dBi

- AP-567

  – Built-in 90°H x 90°V Directional Antennas

  – 5 GHz Antennas 6.8 dBi

  – 2.4 GHz Antennas 7.1 dBi

  – BLE/802.15.4 Antennas 3.0 dBi

Wi-Fi specifications
- AP type: Outdoor Hardened, Wi-Fi 6 dual radio, 5 GHz 2x2 MIMO and 2.4 GHz 2x2 MIMO

- Software-configurable dual radio supports 5 GHz (Radio 0) and 2.4 GHz (Radio 1)

- 5 GHz:

  – Two spatial stream Single User (SU) MIMO for up to 1.2 Gbps wireless data rate with individual 2SS HE80 802.11ax client devices, or with two 1SS HE80 802.11ax MU-MIMO capable client devices simultaneously

- 2.4 GHz:

  – Two spatial stream Single User (SU) MIMO for up to 574 Mbps (287 Mbps) wireless data rate with individual 2SS HE40 (HE20) 802.11ax client devices or with two 1SS HE40 (HE20) 802.11ax MU-MIMO capable client devices simultaneously

- Up to 256 associated client devices per radio

- 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 5.875 GHz (U-NII-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)

  – 802.11ax: Orthogonal frequency-division multiple access (OFDMA) with up to 16 resource units (RU)

- 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-QAM

- 802.11n 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: 6.5 to 300 (MCS0 to MCS15, HT20 to HT40), 400 with 256-QAM

  – 802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS = 1 to 2, VHT20 to VHT80), 1,083 with 1024-QAM

  – 802.11ax (2.4GHz): 3.6 to 574 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40)

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

- Transmit power: Configurable in increments of 0.5 dBm

- Maximum (conducted) transmit power (limited by local regulatory requirements):

  – 2.4 GHz band: +23 dBm per chain, +26 dBm aggregate (2x2)

  – 5 GHz band: +23 dBm per chain, +26 dBm aggregate (2x2)

  – Note: conducted transmit power levels exclude antenna gain.

- Maximum EIRP (limited by local regulatory requirements):

  – 2.4 GHz band:

    ▫ 565: 29.2 dBm EIRP

    ▫ 567: 33 dBm EIRP

  – 5 GHz band:

    ▫ 565: 31.4 dBm EIRP

    ▫ 567: 32.7 dBm EIRP

- 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) to enable the use of multiple transmit antennas

- Short guard interval for 20-MHz, 40-MHz, and 80-MHz

- 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

- 802.11mc Fine Timing Measurement (FTM) for precision distance ranging

Power
- Maximum (worst-case) power consumption: 15.6W

- Maximum (worst case) power consumption in idle mode: 4.2W

- Maximum (worst case) power consumption in deep-sleep mode: 1.7

- Power sources sold separately

- Power over Ethernet (PoE+): 802.3at-compliant

- When powered by 1x 802.3at, there are no restrictions

- When powered by 1x 802.3af with IPM enabled, the AP will start up in unrestricted mode, but may dynamically apply restrictions depending on the POE budget and actual power. The feature restrictions can be programmed

- When powered by 1x 802.3af with IPM disabled, the AP will lower the 2.4Ghz radio to 1x1:1

Additional Interfaces
- E0: 10/100/1000BASE-T (RJ-45)

  – Auto-sensing link speed and MDI/MDX

  – PoE-PD: 48Vdc (nominal) 802.3at/bt (Class 3 or higher)

  – 802.3az Energy Efficient Ethernet (EEE)

- Bluetooth 5 and 802.15.4 radio

  – 2.4 GHz

  – Bluetooth 5: up to 8 dBm transmit power and -95 dBm receive sensitivity

  – Zigbee: up to 8 dBm transmit power and -97 dBm receive sensitivity

  – Up to 4 dBm transmit power (class 2) and -91 dBm receive sensitivity

Mounting
- Optional mounting kits:

  – AP-OUT-MNT-V1A: Outdoor Pole/Wall Long Mount Kit

  – AP-270-MNT-V2: Outdoor Pole/Wall Short Mount Kit

  – AP-270-MNT-H1: Outdoor AP Hanging or Tilt Install Mount Kit

  – AP-270-MNT-H2: Outdoor Flush Wall or Ceiling Mount

  – AP-270-MNT-H3: Outdoor AP Hanging or Dual-Tilt Install Mount Kit

Mechanical
- AP-565

  – Dimensions/weight (excluding mount):

    ▫ 16.5 cm (W) x 16.5 cm (D) x 13 cm (H)

    ▫ 6.5" (W) x 6.5" (D) x 5.1" (H)

    ▫ 1.03 kg/2.27 lbs

- AP-567

  – Dimensions/weight (excluding mount):

    ▫ 16.5 cm (W) x 16.5 cm (D) x 13 cm (H)

    ▫ 6.5" (W) x 6.5" (D) x 5.1" (H)

    ▫ 1.09 kg/2.4 lbs

Environmental
- Operating:

  – Temperature: -40° C to +55° C (-40° F to +131° F) with full solar loading

  – Humidity: 5% to 95% non-condensing internal

  – Rated for operation in all weather conditions

- Storage and transportation:

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

- Operating Altitude: 3,000 m

- Water and Dust

  – IP66/67

- Salt Tolerance

  – Tested to ASTM B117-07A Salt Spray 200hrs

- Wind Survival: Up to 165 Mph

- Shock and Vibration ETSI 300-19-2-4

Regulatory
- FCC/ISED

- CE Marked

- RED Directive 2014/53/EU

- EMC Directive 2014/30/EU

- Low Voltage Directive 2014/35/EU

- IEC/EN/UL 62368-1

- EN 60601-1-1, EN60601-1-2

- Railway Certs:

  – 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-565: APEX0565

- AP-567: APEX0567

Certifications
- CB Scheme Safety, cTUVus

- UL2043 plenum rating

- Wi-Fi Alliance certified 802.11a/b/g/n/

- Wi-Fi Alliance certified Wi-Fi 6 (802.11ax)

- Wi-Fi CERTIFIED™ ac (with wave 2 features)

- Passpoint® (Release 2) with HPE Aruba Networking Operating System and Instant 8.3+

- Wi-Fi CERTIFIED Location™

Warranty

HPE Aruba Networking's hardware limited lifetime warranty.

Minimum operating system software versions

• HPE Aruba Networking Operating System and HPE Aruba Networking InstantOS 8.7.1.0

• HPE Aruba Networking Operating System 10.3.0.0

RF performance table

Band rate	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
2.4 GHz, 802.11b		
1 Mbps	22	-97
11 Mbps	22	-89
2.4 GHz, 802.11g		
6 Mbps	22	-93
54 Mbps	20	-76
2.4 GHz, 802.11n/ac HT20		
MCS0	22	-93
MCS8	19	-75
2.4 GHz, 802.11ax HE20		
MCS0	22	-93
MCS11	17	-62
5 GHz, 802.11a		
6 Mbps	22	-92
54 Mbps	20	-75
5 GHz, 802.11n/ac HT20/VHT20		
MCS0	22	-92
MCS8	19	-72
5 GHz, 802.11n/ac HT40/VHT40		
MCS0	22	-90
MCS9	19	-65

Band rate	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
5 GHz, 802.11ac VHT80		
MCS0	22	-88
MCS9	19	-63
5 GHz, 802.11ax HE20		
MCS0	22	-94
MCS11	17	-62
5 GHz, 802.11ax HE40		
MCS0	22	-91
MCS11	17	-60
5 GHz, 802.11ax HE80		
MCS0	22	-87
MCS11	17	-57

Maximum capability of the hardware provided (excluding antenna gain). Maximum transmit power is limited by local regulatory settings.

Chassis ordering information

Part number	Description
AP-560 Series Unified Outdoor Access Points	
R4W40A	HPE Aruba Networking AP-565 (EG) 802.11ax Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
R4W41A	HPE Aruba Networking AP-565 (IL) 802.11ax Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
R4W42A	HPE Aruba Networking AP-565 (JP) 802.11ax Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
R4W43A	HPE Aruba Networking AP-565 (RW) 802.11ax Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
R4W44A	HPE Aruba Networking AP-565 (US) 802.11ax Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
R4W45A	HPE Aruba Networking AP-567 (EG) 802.11ax Dual 2x2:2 Radio Integrated Directional Antenna Outdoor AP
R4W46A	HPE Aruba Networking AP-567 (IL) 802.11ax Dual 2x2:2 Radio Integrated Directional Antenna Outdoor AP
R4W47A	HPE Aruba Networking AP-567 (JP) 802.11ax Dual 2x2:2 Radio Integrated Directional Antenna Outdoor AP
R4W48A	HPE Aruba Networking AP-567 (RW) 802.11ax Dual 2x2:2 Radio Integrated Directional Antenna Outdoor AP
R4W49A	HPE Aruba Networking AP-567 (US) 802.11ax Dual 2x2:2 Radio Integrated Directional Antenna Outdoor AP
AP-560 Series Unified Outdoor Access Points TAA	
R4W50A	HPE Aruba Networking AP-565 (EG) TAA 802.11ax Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
R4W51A	HPE Aruba Networking AP-565 (IL) TAA 802.11ax Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
R4W52A	HPE Aruba Networking AP-565 (JP) TAA 802.11ax Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
R4W53A	HPE Aruba Networking AP-565 (RW) TAA 802.11ax Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
R4W54A	HPE Aruba Networking AP-565 (US) TAA 802.11ax Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
R4W55A	HPE Aruba Networking AP-567 (EG) TAA 802.11ax Dual 2x2:2 Radio Integ Directional Antenna Outdoor AP
R4W56A	HPE Aruba Networking AP-567 (IL) TAA 802.11ax Dual 2x2:2 Radio Integ Directional Antenna Outdoor AP
R4W57A	HPE Aruba Networking AP-567 (JP) TAA 802.11ax Dual 2x2:2 Radio Integ Directional Antenna Outdoor AP
R4W58A	HPE Aruba Networking AP-567 (RW) TAA 802.11ax Dual 2x2:2 Radio Integ Directional Antenna Outdoor AP
R4W59A	HPE Aruba Networking AP-567 (US) TAA 802.11ax Dual 2x2:2 Radio Integ Directional Antenna Outdoor AP

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