Hewlett Packard Enterprise

HPE 560 802.11ac Dual Radio Access Point Series

Key features

- Three-spatial stream 802.11ac MIMO AP
- Up to 1.3 Gbps on the 802.11ac radio and 450 Mbps on the 2.4 GHz 802.11n radio
- Built-in spectral analysis scans the 2.4 GHz and 5 GHz bands to identify sources of RF interference
- Comprehensive WLAN security with intrusion detection offers threat protection
- Limited Lifetime Warranty

Product overview

The HPE 560 802.11ac Dual Radio Access Point Series bring 1.3 GbE performance, faster application processing, and increased range to 802.11 clients. Ideal for dense client environments and high bandwidth applications, the access points can be powered by Power over Ethernet (PoE) and offer full compatibility with legacy 802.11 clients and existing HPE wireless controllers.

The access points can be used in managed as well as autonomous mode without a controller. The access points provide Radio Frequency spectrum analysis with detection and classification of non-IEEE 802.11 interference and has the ability to automatically avoid interference. Wireless security is comprehensive when operating with a controller; with integrated wireless IDS/IPS, support for internal and external authentication, authorization, and accounting (AAA) servers; built-in stateful firewall; per-user VLAN mapping; and authentication.

Features and benefits

Management

- Wi-Fi Clear Connect

  Provides a system-wide approach to improving WLAN reliability by proactively determining and adjusting to changing RF conditions; helps optimize WLAN performance by detecting interference from Wi-Fi and non-Wi-Fi sources using spectrum analysis capabilities built into the access points, identifying rogue activity, and making decisions at a system-wide level

- Advanced radio resource management

  – Automatic radio power adjustments

  Include real-time power adjustments based on changing environmental conditions and signal coverage adjustment

  – Automatic radio channel

  Provides intelligent channel switching and real-time interference detection

  – Intelligent client load balancing

  Determines number of clients across neighboring APs and adjusts client allocation to balance the load

  – Airtime fairness

  Provides equal RF transmission time for wireless clients

- Spectrum analysis

  – Power/frequency spectrum analysis

  Measures noise from IEEE 802.11 remote sources

  – Signal detection/classification

  Identifies source of RF interference, for example, Bluetooth, cordless phones, and microwave ovens

  – Evaluation of channel quality

  Helps detect severe channel degradation and improve the reporting of poor RF performance

- Integrated wireless IDS/IPS

  Detects and locates and mitigates unknown and rogue devices (see controller datasheet for details)

- Access point management

  Provides secure web browser (SSL and VPN), command-line interface, SNMP v2c, SNMP v3, MIB-II with traps, and RADIUS Authentication Client MIB (RFC 2618); offers embedded HTML management tool with secure access (SSL and VPN); implements scheduled configuration and firmware upgrades from a central controller

- HPE Intelligent Management Center and Wireless Services Manager software

  Provides central management for discovery, logging, status, and configuration management

- Diagnostics

  Records association, authentication, and DHCP events in client event log; packet capture tool for Ethernet and IEEE 802.11 interfaces (PCAP format); includes data rate matrix

- Enhanced AP survivability

  Continues to operate using the old IP address while the AP searches for a new controller

- Compatible with HPE MSM Controllers, HPE Unified Switches, HPE Unified Controllers and Module
  - Refer to the HPE Access Point—Controller Compatibility Matrix at **h20195.www2.hpe.com/V2/GetDocument.aspx?docname=4AA5-0345ENW&cc=us&lc=en**
  - Refer to the release notes for minimum version numbers required

Quality of Service (QoS)

- Rate limiting

  Supports per-wireless client ingress-enforced maximums and per-wireless client, per-queue guaranteed minimums

- Centralized traffic

  Maintains Layer 2 and Layer 3 QoS settings when using centralized traffic or guest access

- IEEE 802.1p prioritization

  Delivers data to devices based on the priority and type of traffic

- Wireless
  - L2/L3/L4 classification

    Supports IEEE 802.1p VLAN priority, SpectraLink Voice Priority (SVP), and DiffServ
  - Virtual Service Community (VSC)

    Assigns Wi-Fi MultiMedia (WMM), IEEE 802.11e EDCF, and Service-Aware priority
  - Microsoft Lync Certified

    Voice Lync calls are supported by both HPE and Microsoft

- SVP support

  Prioritizes SpectraLink voice IP packets sent from a SpectraLink NetLink SVP server to SpectraLink wireless voice handsets to help ensure excellent voice quality

Connectivity

- IEEE 802.3 PoE
  - Simplifies deployment and dramatically reduces installation costs by helping to eliminate the time and cost involved in supplying local power at each access point location
  - 802.3at (AT) the AP will operate with both radios at full performance, 3x3:3 MIMO mode
  - 802.3af (AF) the 802.11a/n/ac 5 GHz radio will operate at full performance 3x3:3, while the 802.11b/g/n 2.4GHz radio will run in 2x2:2 MIMO mode

- Auto-MDIX

  Adjusts automatically for straight-through or crossover cables on the Ethernet interface

Mobility

- Three spatial stream MIMO technology

  Provides the latest in Wi-Fi technology, which allows for 1.3 Gbps in the 5 GHz frequency band and 450 Mbps in the 2.4 GHz band of signaling

- Band steering

  Redirects 5 GHz-capable clients automatically to the less-congested 5 GHz spectrum

- HPE 560 embedded antennas

  Provides excellent coverage through use of embedded high-gain antennas (5 dBi antenna at 2.4 GHz and 7 dBi antenna at 5 GHz); no need for the added cost of external antennas

- Anywhere, anytime wireless coverage

  Dual-radio IEEE 802.11b/g/n and 802.11a/n/ac access points; per-radio software-selectable configuration of frequency bands; self-healing, self-optimizing local mesh that extends network availability; Wi-Fi Alliance Certifications for interoperability with all IEEE 802.11a/b/g/n/ac client devices

- Medical standards

  Meets the European EN60601-1-2 standard for healthcare

- Virtual Service Communities (VSCs)

  Includes up to 16 SSIDs per radio, each with unique MAC address and configurable SSID broadcasts; individual security and QoS profiles per VSC; configurable DTIM and minimum data rate per VSC; VSCs that can be mapped to separate IEEE 802.1Q VLANs; WMM and/or WMM-PS; a security filter; and an IP filter

- AP client access control functions
  - Offers IEEE 802.1X authentication using EAP-SIM, EAP-FAST, EAP-TLS, EAP-TTLS, and PEAP
  - Delivers MAC address authentication using local or RADIUS access lists
  - Provides RADIUS AAA using EAP-MD5, PAP, CHAP, and MS-CHAPv2
  - Supports RADIUS client (RFC 2865 and 2866) with location-aware support
  - Provides Layer 2 wireless client isolation

Security

- Integrated IDS support
  - Automated AP and client classification

    Reduces manual effort (administrator can override AP classification)
  - Comprehensive detection capabilities

    Detects a wide range of attacks
  - Flexible event reporting

    Enables configuration of which events will result in notifications
  - Location tracking capabilities

    Helps identify the rogue device location
  - Flexible deployment models

    Supports time slicing or dedicating a radio to detect full-time
  - See the controller datasheet for more details

- IEEE 802.1X support

  Provides port-based user authentication with support for Extensible Authentication Protocol (EAP) MD5, TLS, TTLS, and PEAP with choice of Advanced Encryption Standard (AES), Temporal Key Integrity Protocol (TKIP), and static or dynamic WEP encryption for protecting wireless traffic between authenticated clients and the access point

- Choice of IEEE 802.11i, WPA2, or WPA

  Locks out unauthorized wireless access by authenticating users prior to granting network access; robust AES or TKIP encryption secures the data integrity of wireless traffic

- TKIP/WEP encryption

  Is supported only on legacy IEEE 802.11a/b/g clients as it has been deprecated from the IEEE 802.11n and 802.11ac standards

- Local wireless bridge client traffic filtering

  Prevents communication between wireless devices associated with the same access point

Additional information

- RFC support

  Refers to the "Mobility Specification Sheet" for a list of RFCs and other industry standards supported by the MSM solution at **h17007.www1.hpe.com/docs/mobility/4AA5-5461ENW.pdf**

Warranty and support

- Limited Lifetime Warranty

  See **hpe.com/networking/warrantysummary** for warranty and support information included with your product purchase

- Software releases

  To find software for your product, visit **hpe.com/networking/support**; for details on the software releases available with your product purchase, visit **hpe.com/networking/warrantysummary**

HPE 560 802.11ac Dual Radio Access Point Series

SPECIFICATIONS

HPE 560 Wireless Dual Radio 802.11ac (AM) Access Point (J9845A)
HPE 560 Wireless Dual Radio 802.11ac (WW) Access Point (J9846A)
HPE 560 Wireless Dual Radio 802.11ac (JP) Access Point (J9847A)
HPE 560 Wireless Dual Radio 802.11ac (IL) Access Point (J9848A)

I/O ports and slots	1 RJ-45 autosensing 10/100/1000 port; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)
Additional ports and slots	1 RJ-45 serial console port
AP characteristics	
Radios (built-in)	802.11b/g/n, a/n/ac
Radio operation modes	Client access, Local mesh, Packet capture
AP operation modes	Autonomous and controlled
Wi-Fi Alliance Certification	a/b/g/n/ac Wi-Fi Certified
Antenna	(3) 5 dBi 2.4 GHz and (3) 7 dBi 5 GHz
Number of internal antennas	6
Physical characteristics	
Dimensions	8(w) x 6.75(d) x 2.62(h) in (20.32 x 17.15 x 6.65 cm)
Weight	2.25 lb (1.02 kg) mounting bracket
Memory and processor	Dual core @ 800 MHz, 128 MB flash, 256 MB SDRAM
Mounting and enclosure	Indoor, plenum rated; includes two ceiling mounting clips
Environment	
Operating temperature	32°F to 122°F (0°C to 50°C)
Operating relative humidity	5% to 95%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	5% to 95%, noncondensing
Altitude	up to 10,000 ft (3 km)
Electrical characteristics	
Description	IEEE 802.3af/802.3at PoE compliant for Gigabit Ethernet
Maximum power rating	14 W
PoE power	13 W PoE+

Notes
With 802.3af PoE, the 2.4 GHz radio will operate in 2x2:2 MIMO mode, < 12.9 watts; With 802.3at PoE+, both radios will operate in 3x3:3 MIMO mode, < 14 watts

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Frequency band and operating channels	
Americas	2.412-2.462 GHz (1-11 channels) 5.180-5.320 GHz (36-64 channels) 5.500-5.700 GHz (100-144 (excluding 5600-5650 MHz) channels) 5.745-5.825 GHz (149-165 channels)
European Union	2.412-2.472 GHz (1-13 channels) 5.180-5.320 GHz (36-64 channels) 5.500-5.700 GHz (100-140 (excluding 5600-5650 MHz) channels)
Rest of World (Actual channels designated by selecting country in UI)	2.412-2.472 GHz (1-13 channels) 5.180-5.320 GHz (36-64 channels) 5.500-5.700 GHz (100-144 channels) 5.745-5.825 GHz (149-165 channels)
Taiwan	2.412-2.462 GHz (1-11 channels) 5.280-5.320 GHz (56-64 channels) 5.500-5.700 GHz (100-144 (excluding 5600-5650 MHz) channels) 5.745-5.825 GHz (149-165 channels)
Japan	2.412-2.472 GHz (1-13 channels) 5.180-5.320 GHz (36-64 channels) 5.500-5.700 GHz (100-140 channels)
Israel	2.412-2.472 GHz (1-13 channels) 5.180-5.320 GHz (36-64 channels)
Radio	FCC Part 15.247; FCC Part 15.407 (US); RSS-210 (Canada); EN 300 328; ARIB STD-T66; IDA Registration (Singapore); RCR STD-33; ARIB STD-T71 (Japan); EN 301 893 (EU); KCC approval (Korea)
Safety	UL 2043; UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1
Medical	EN60601-1-2
RF exposure	FCC Bulletin OET-65C; RSS-102; CFR 47, Part 2, Subpart J; ANSI/IEEE C95.1 (99); Ministry of Health Safety Code 6; Australian Radiation Protection Std.
Features	Dual radio: IEEE 802.11a/n/ac for very high-throughput applications and IEEE 802.11b/g/n for legacy support and high-speed applications • Integrated antennas for both IEEE radios, supporting three spatial streams and 3x3 MIMO • Six embedded antennas • Both radios operate at full functionality with IEEE 802.3at PoE+ power • The 2.4 GHz 802.11b/g/n radio operates at 2x2:2 mode with 802.3af power, while the 5 GHz 802.11ac radio operates at full functionality

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Emissions	EN 55022 Class B; EN 301 489-1; EN 301 489-17; ICES-003 Class B; FCC Part 15, Class B
Notes	Supported data rates • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: 6.5 to 450 Mbps (MCS0 to MCS23, 1 to 3 spatial streams) • 802.11ac: 6.5 Mbps to 1.3Gbps (MCS0 to MCS9, 1 to 3 spatial streams) • 802.11n high-throughput (HT) 20/40 • 802.11ac very high throughput (VHT) 20/40/80 • 802.11n/ac packet aggregation A-MPDU and A-MSDU The HPE 560 access point power information listed includes the embedded antenna. The software will automatically adjust the maximum power levels based on the country of operation. Three spatial stream AP, supporting 450 Mbps on the 2.4 GHz band and 1.3 GHz on the 5 GHz band. Maximum transmit power varies by country. Regulatory model number for the HPE 560 Access Point-MRLBB-1304 • 802.11n Radio-MRLBB-1001 • 802.11ac Radio-MRLBB-1303
Services	Refer to the Hewlett Packard Enterprise website at **hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services, and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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Radio characteristics:
HPE 560 Wireless Dual Radio 802.11ac (AM) Access Point

Note
This transmit power data is EIRP and includes the embedded antennas. The receiver sensitivity also includes the antenna gain.

IEEE 802.11ac 5GHz @ 80 MHz channel				
Data rate	MCS9-1300 Mbps	MCS0 - 97.5 Mbps		
Receiver sensitivity	-67 dBm	-94 dBm		
Transmit power	25 dBm	29 dBm		
IEEE 802.11n 5GHz @ 40MHz channel				
Data rate	MCS23 - 450 Mbps	MCS16 - 45 Mbps		
Receiver sensitivity	-77 dBm	-97 dBm		
Transmit power	27 dBm	29 dBm		
IEEE 802.11n 5GHz @ 20MHz channel				
Data rate	MCS23 - 144 Mbps	MCS16 - 14.4 Mbps		
Receiver sensitivity	-80 dBm	-100 dBm		
Transmit power	27 dBm	29 dBm		
IEEE 802.11n 2.4GHz @ 40MHz channel				
Data rate	MCS23 - 450 Mbps	MCS16 - 45 Mbps		
Receiver sensitivity	-82 dBm	-97 dBm		
Transmit power	20 dBm	20 dBm		
IEEE 802.11n 2.4GHz @ 20MHz channel				
Data rate	MCS23 - 144 Mbps	MCS16 - 14.4 Mbps		
Receiver sensitivity	-84 dBm	-100 dBm		
Transmit power	20 dBm	20 dBm		
IEEE 802.11a 5GHz				
Data rate	54 Mbps	6 Mbps		
Receiver sensitivity	-83 dBm	-100 dBm		
Transmit power	29 dBm	29 dBm		
IEEE 802.11b/g 2.4GHz				
Data rate	54 Mbps	11 Mbps	6 Mbps	1 Mbps
Receiver sensitivity	-85 dBm	-99 dBm	-95 dBm	-100 dBm
Transmit power	20 dBm	20 dBm	20 dBm	26 dBm

STANDARDS AND PROTOCOLS
(applies to all products in series)

Mobility	IEEE 802.11a High Speed Physical Layer in the 5 GHz Band IEEE 802.11ac WLAN Enhancements for Very High Throughput IEEE 802.11b Higher-Speed Physical Layer Extension in the 2.4 GHz Band IEEE 802.11d Global Harmonization IEEE 802.11g Further Higher Data Rate Extension in the 2.4 GHz Band IEEE 802.11h Dynamic Frequency Selection IEEE 802.11i Medium Access Control (MAC) Security Enhancements IEEE 802.11n WLAN Enhancements for Higher Throughput

HPE 560 802.11ac Dual Radio Access Point Series accessories

Power supply	HPE 1-port Power Injector (J9407B) HPE Single-port 802.3at Gigabit PoE In-Line Power Supply (J9867A)

Learn more at
hpe.com/networking

HPE access points and access devices are Wi-Fi Certified, providing our customers with the assurance that these products have met and passed the rigorous interoperability testing performed by the Wi-Fi Alliance Organization. See the Specifications section of this series for more information.

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