QuickSpecs

Overview

HPE 525 802.11ac Dual Radio Access Point Series

Models

HP 525 Wireless Dual Radio 802.11ac (AM) Access Point	JG993A
HP 525 Wireless Dual Radio 802.11ac (WW) Access Point	JG994A
HP 525 Wireless Dual Radio 802.11ac (JP) Access Point	JG995A
HP 525 Wireless Dual Radio 802.11ac (IL) Access Point	JG996A
HP 525 Wireless Dual Radio 802.11ac (AM) 8-unit Eco-pack Access Points	JG997A
HP 525 Wireless Dual Radio 802.11ac (WW) 8-unit Eco-pack Access Points	JG998A

Key features

- Two-spatial stream 802.11ac MIMO Access Point with optional external antennas
- Up to 867 Mbps on the 802.11ac radio and 300 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 and prevention offers threat protection
- Limited Lifetime Warranty

Introduction

HPE 525 802.11ac Dual Radio Access Point Series bring 867 Mbps performance, faster application processing, and increased range to 802.11 clients over 802.11n access points. 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 HP Unified wireless controllers.

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

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Overview

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 via a wireless controller**
  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
- **Compatible with HPE Unified Switches, Controllers and Module**
  - Refer to the HPE Access Point—Controller Compatibility Matrix at
    http://h20195.www2.hp.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**

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

- **Wireless**
  - o **L2/L3/L4 classification**
    supports IEEE 802.1p VLAN priority, SpectraLink SVP, and DiffServ
  - o **Multiple SSIDs per radio**
    Wi-Fi MultiMedia (WMM), IEEE 802.11e EDCF, and Service-Aware priority

Connectivity

- **IEEE 802.3 (PoE)**
  - o 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
  - o 802.3af the AP will operate with both radios at full performance
- **Auto-MDIX**
  adjusts automatically for straight-through or crossover cables on the Ethernet interface

Mobility

- **Two spatial stream MIMO technology**
  provides the latest in Wi-Fi technology, which allows for 867 Mbps in the 5GHz frequency band and 300 Mbps in the 2.4GHz band of signaling
- **Band steering**
  redirects 5 GHz-capable clients automatically to the less-congested 5 GHz spectrum
- **HPE 525 embedded antennas**
  provides excellent coverage through use of embedded high-gain antennas (4 dBi antenna at 2.4 GHz and 5 dBi antenna at 5 GHz); no need for the added cost of external antennas
- **External antenna**
  - o Optional external antenna for better antenna placement via RP-SMA connectors
- **Anywhere, anytime wireless coverage**
  dual-radio IEEE 802.11b/g/n and 802.11a/n/ac access point; 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
- **Multiple SSIDs**
  - o Up to 16 SSIDs per radio, each with unique MAC address, configurable SSID broadcasts
  - o Individual security and QoS profiles
  - o Configurable DTIM and minimum data rate
  - o Each mapped to separate IEEE 802.1Q VLANs
  - o WMM and/or WMM-PS
  - o Security filter
- **AP client access control functions**
  - o offers IEEE 802.1X authentication using EAP-SIM, EAP-FAST, EAP-TLS, EAP-TTLS, and PEAP
  - o delivers MAC address authentication using local or RADIUS access lists
  - o provides RADIUS AAA using EAP-MD5, PAP, CHAP, and MS-CHAPv2
  - o supports RADIUS Client (RFC 2865 and 2866) with location-aware support
  - o provides Layer 2 wireless client isolation

Security

Overview

- **Integrated IDS support**
  - o **Automated AP and client classification**
    reduces manual effort (administrator can override AP classification)
  - o **Comprehensive detection capabilities**
    detects a wide range of attacks
  - o **Flexible event reporting**
    enables configuration of which events will result in notifications
  - o **Location tracking capabilities**
    helps identify the rogue device location
  - o **Flexible deployment models**
    supports time slicing or dedicating a radio to detect full-time
  - o see the controller datasheet for more detail
- **Choice of IEEE 802.11i, WPA2, or WPA**
  locks out unauthorized wireless access by authenticating users prior to granting network access; robust Advanced Encryption Standard (AES) or Temporal Key Integrity Protocol (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 and standards**
  refer to the controller datasheet for details

Warranty and support

- **Limited Lifetime Warranty**
  see **http://www.hpe.com/networking/warrantysummary** for warranty and support information included with your product purchase.
- **Software releases**
  to find software for your product, refer to **http://www.hpe.com/networking/support**; for details on the software releases available with your product purchase, refer to **http://www.hpe.com/networking/warrantysummary**

Configuration

Build To Order:

BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-Shippable solution.

HP 525 Wireless 802.11ac (AM) AP   JG993A
- 2 RJ-45 autosensing 10/100/1000 port (only one supporting PoE)   See Configuration
NOTE:1

HP 525 Wireless 802.11ac (WW) AP   JG994A
- 2 RJ-45 autosensing 10/100/1000 port (only one supporting PoE)   See Configuration
NOTE:2

HP 525 Wireless 802.11ac (JP) AP   JG995A
- 2 RJ-45 autosensing 10/100/1000 port (only one supporting PoE)   See Configuration
NOTE:3

HP 525 Wireless 802.11ac (IL) AP   JG996A
- 2 RJ-45 autosensing 10/100/1000 port (only one supporting PoE)   See Configuration
NOTE:4

HP 525 Wireless 802.11ac (AM) 8 Pack AP   JG997A
- 2 RJ-45 autosensing 10/100/1000 port (only one supporting PoE) (Each)   See Configuration
NOTE:1

HP 525 Wireless 802.11ac (WW) 8 Pack AP   JG998A
- 2 RJ-45 autosensing 10/100/1000 port (only one supporting PoE) (Each)   See Configuration
NOTE:2

Configuration Rules:

Note 1   Only available in AMS. (Warning in Clic only)

Note 2   Not available in AMS, Japan or Israel. (Warning in Clic only)

Note 3   Only available in Japan. (Warning in Clic only)

Note 4   Only available in Israel. (Warning in Clic only)

Access Point Options

External Power Supplies

HP 1-port Power Injector   J9407B

Configuration

See Configuration
NOTE:1, 2

HP Gigabit IntelliJack 48V Power Supply   JD055B

See Configuration
NOTE:1, 2

Configuration Rules:

Note 1   This power supply is supported on the following Access Points:
                HP 525 Wireless Dual Radio 802.11ac (AM) Access Point   JG993A
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                HP 525 Wireless Dual Radio 802.11ac (JP) Access Point   JG995A
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Note 2   Localization required. (See Localization Menu)

External Antenna

HP Indoor Omni 2.5/6dBi MIMO 4 Elmnt Ant   JG696A

See Configuration
NOTE:1

Note 1   This Antenna is supported on the following Access Points:
                HP 525 Wireless Dual Radio 802.11ac (AM) Access Point   JG993A
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Technical Specifications

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HP 525 Wireless Dual Radio 802.11ac (WW) 8-unit Eco-pack Access Points	**JG998A**

I/O ports and slots	1 RJ-45 autosensing 10/100/1000 PoE port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3af PoE); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	1 RJ-45 autosensing 10/100/1000 port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
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	Controlled
	Wi-Fi Alliance Certification	a/b/g/n/ac Wi-Fi Certified
	Antenna	(2) 4 dBi 2.4 GHz and (2) 5 dBi 5 GHz omnidirectional antennas
	Number of internal antennas	4
	Number of external antennas	4
Physical characteristics	Dimensions	8.66(w) x 8.66(d) x 2.36(h) in (22 x 22 x 6 cm)
	Weight	1.65 lb (0.75 kg) mounting bracket
Memory and processor	Single core @ 720 MHz, 128 MB flash, 256 MB SDRAM	
Mounting and enclosure	Indoor, plenum rated; Includes ceiling/wall mount kit as well as two ceiling mounting clips	
Environment	Operating temperature	32°F to 113°F (0°C to 45°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
Electrical characteristics	Description	IEEE 802.3af PoE compliant for Gigabit Ethernet
	Maximum power rating	12.9 W
	Notes	Optional 48V DC power supply
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 - 140 (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)

Technical Specifications

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 - 140 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 - 140 (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 applications
- Integrated antennas for both IEEE radios, supporting two spatial streams and 2x2 MIMO
- Four embedded antennas
- Both radios operate at full power and full performance on IEEE 802.3af PoE/Gigabit Ethernet
- External antenna, optional

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 300 Mbps (MCS0 to MCS15, 1 and 2 spatial streams)
• 802.11ac: 6.5 Mbps to 866 Mbps (MCS0 to MCS9, 1 and 2 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 525 access point power information listed includes the embedded antenna. Review the Hewlett Packard Enterprise documentation for your AP to understand the maximum output setting for your AP based on your country's regulations.
Two spatial stream AP, supporting 866 Mbps in the 5GHz band and 300 Mbps in the 2.4GHz band. Maximum transmit power varies by country.
Regulatory model number: BJNGA-FB0004

Services
Refer to the Hewlett Packard Enterprise website at **http://www.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.

Radio characteristics

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HP 525 Wireless Dual Radio 802.11ac (WW) Access Point	**JG994A**

Technical Specifications

HP 525 Wireless Dual Radio 802.11ac (JP) Access Point	**JG995A**
HP 525 Wireless Dual Radio 802.11ac (IL) Access Point	**JG996A**
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HP 525 Wireless Dual Radio 802.11ac (WW) 8-unit Eco-pack Access Points	**JG998A**

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

IEEE 802.11ac 5GHz @ 80MHz channel				
	Data rate	MCS9 - 866 Mbps	MCS0 - 65 Mbps	
	Receiver sensitivity	-64 dBm	-89 dBm	
	Transmit power	22 dBm	27 dBm	

IEEE 802.11ac 5GHz @ 40MHz channel				
	Data rate	MCS9 - 400 Mbps	MCS0 - 30 Mbps	
	Receiver sensitivity	-67 dBm	-92 dBm	
	Transmit power	22 dBm	27 dBm	

IEEE 802.11n 5GHz @ 40MHz channel				
	Data rate	MCS15 - 300 Mbps	MCS8 - 30 Mbps	
	Receiver sensitivity	-72 dBm	-92 dBm	
	Transmit power	24 dBm	27 dBm	

IEEE 802.11n 5GHz @ 20MHz channel				
	Data rate	MCS15 - 144.4 Mbps	MCS8 - 14.4 Mbps	
	Receiver sensitivity	-75 dBm	-95 dBm	
	Transmit power	24 dBm	27 dBm	

IEEE 802.11n 2.4GHz @ 40MHz channel				
	Data rate	MCS15 - 300 Mbps	MCS8 - 30 Mbps	
	Receiver sensitivity	-72 dBm	-91 dBm	
	Transmit power	26 dBm	26 dBm	

IEEE 802.11n 2.4GHz @ 20MHz channel				
	Data rate	MCS15 - 144.4 Mbps	MCS8 - 14.4 Mbps	
	Receiver sensitivity	-75 dBm	-95 dBm	
	Transmit power	26 dBm	26 dBm	

IEEE 802.11a 5GHz				
	Data rate	54 Mbps	6 Mbps	
	Receiver sensitivity	-78 dBm	-95 dBm	
	Transmit power	25 dBm	27 dBm	

IEEE 802.11b/g 2.4GHz				
	Data rate	54 Mbps	11 Mbps	6 Mbps	1 Mbps
	Receiver sensitivity	-78 dBm	-93 dBm	-95 dBm	-98 dBm
	Transmit power	26 dBm	26 dBm	26 dBm	26 dBm

Technical Specifications

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

Accessories

HPE 525 802.11ac Dual Radio Access Point Series accessories

Power Supply

HP 1-port Power Injector   J9407B
HP Gigabit Intellijack 48V Power Supply   JD055B

External Antenna

HP Indoor Omnidirectional Dual Band 2.5/6dBi MIMO 4 Element Antenna   JG696A

Summary of Changes

Date	Version History	Action	Description of Change
01-Dec-2015	From Version 1 to 2	Changed	Overview and Technical Specifications updated

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