Models

HP 425 Wireless Dual Radio 802.11n (AM) Access Point	JG653A
HP 425 Wireless Dual Radio 802.11n (WW) Access Point	JG654A
HP 425 Wireless Dual Radio 802.11n (JP) Access Point	JG655A
HP 425 Wireless Dual Radio 802.11n (IL) Access Point	JG656A
HP 425 Wireless Dual Radio 802.11n (AM) 8 unit Eco-pack Access Points	JG687A
HP 425 Wireless Dual Radio 802.11n (WW) 8 unit Eco-pack Access Points	JG688A

Key features

- Dual radio—two spatial stream access supporting 300 Mb/s per radio
- Supports embedded antennas as well as an optional external antenna
- Powered via IEEE 802.3af PoE or local power supply
- Comprehensive WLAN security
- Lifetime Warranty 2.0 with 24x7 phone support for three years

Introduction

Working in unison with HP controllers, the HP 425 802.11n Dual Radio Access Point Series delivers high-performance networking solutions. The enhanced controller architecture scales to IEEE 802.11n without requiring a controller replacement. The controller provides advanced radio resource management (RRM), including client load balancing and interference mitigation. The HP wireless controllers support a fast-roaming capability—an important feature, especially for VoIP communications.

The HP 425 access point works in managed mode with an HP wireless LAN controller. The access points provide RF spectrum analysis with detection and classification of non-IEEE 802.11 interference, and have the ability to automatically avoid interference. Wireless security is comprehensive with integrated wireless IDS and support for internal and external authentication, authorization, and accounting (AAA) servers; built-in stateful firewall; per-user VLAN mapping; and authentication.

In addition to working with the HP MSM controllers, the access points work with the new HP 10500/7500 20G Unified Wired-WLAN Module, the HP 800 Series Unified Wired-WLAN Switch, and the HP WX5002/5004 wireless controllers.

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

Overview

- ○ **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 improves the reporting of poor RF performance
- **Integrated IDS**
  detects and locates unknown and rogue devices (see controller data sheet 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
- **HP Intelligent Management Center and Wireless Services Manager Software**
  provide 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 HP controllers and unified switches and modules**
  - ○ HP MSM720, MSM760, MSM765zl and MSM775zl version 6.2, minimum
  - ○ HP WX5000 Access Controller Series; controller software version CMW520-R2308P29-EI, minimum
  - ○ HP 10500/7500 20G Unified Wired-WLAN Module; software version CMW520-R2308P29, minimum
  - ○ HP 830 Unified Wired-WLAN Switch Series controller software version CMW520-R3308P29, minimum

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**
    IEEE 802.1p VLAN priority, SpectraLink SVP, and DiffServ
  - ○ **Virtual Service Community (VSC)**
    assign Wi-Fi MultiMedia (WMM), IEEE 802.11e EDCF, and Service-Aware priority
  - ○ **VoIP call capacity**
    supports 12 active calls per radio, maximum
- **SpectraLink Voice Priority (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 802.3af Power over Ethernet (PoE) support**

Overview

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
- **Local power option**
  offers 48V DC power connector for use with an optional power supply when PoE is not available
- **Auto-MDIX**
  adjusts automatically for straight-through or crossover cables on the Ethernet interface
- **Console port**
  aids problem resolution

Mobility

- **Bandsteering**
  redirects 5 GHz-capable clients automatically to the less-congested 5 GHz spectrum
- **HP 425 Antenna**
  - **Embedded antenna**
    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
  - **Optional external antenna**
    includes four indoor RP-SMA connectors for use with optional external antennas
- **Anywhere, anytime wireless coverage**
  dual-radio IEEE 802.11b/g/n and 802.11a/n 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 client devices; and IEEE 802.3af PoE
- **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 details)
- **IEEE 802.1X support**

Overview

provides port-based user authentication with support for Extensible Authentication Protocol (EAP) MD5, TLS, TTLS, and PEAP with choice of AES, 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 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 standard
- **Local wireless bridge client traffic filtering**
  prevents communication between wireless devices associated with the same access point

Additional information

- **RFC support**
  refer to the "Mobility Specification Sheet" for a list of RFCs and other industry standards supported by the MSM solution at http://h17007.www1.hp.com/docs/mobility/4AA3-3883ENW.pdf

Warranty and support

- **Lifetime Warranty 2.0**
  advance hardware replacement for as long as you own the product with next-business-day delivery (available in most countries)†
- **Electronic and telephone support (for Lifetime Warranty 2.0)**
  limited 24x7 telephone support is available from HP for the first 3 years; limited electronic and business hours telephone support is available from HP for the entire warranty period; to reach our support centers, refer to www.hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to www.hp.com/networking/warrantysummary
- **Software releases**
  to find software for your product, refer to www.hp.com/networking/support; for details on the software releases available with your product purchase, refer to www.hp.com/networking/warrantysummary

*†HP warranty includes repair or replacement of hardware for as long as you own the product, with next business day advance replacement (available in most countries). The disk drive included with HP AllianceOne Advanced Services and Services zl Modules, HP Threat Management Services zl Module, HP AllianceOne Extended zl Module with Riverbed Steelhead, HP MSM765 zl Mobility Controller and HP Survivable Branch Communication zl Module powered by Microsoft® Lync has a five-year hardware warranty. For details, refer to the Software license and hardware warranty statements at www.hp.com/networking/warranty.

Configuration

HP 425 802.11n Dual Radio Access Point Series accessories

External Power Supplies	HP 1-port Power Injector	J9407B See Configuration Note:2
	HP Gigabit IntelliJack 48V Power Supply	JD055B See Configuration Note:1, 2
External Antenna	HP Indoor Omni 2.5/6dBi MIMO 4 Elmnt Ant	JG696A

Configuration Rules:

Note 1	This power supply is supported on the following Access Points:	
	HP 425 Wireless 802.11n (AM) AP	JG653A
	HP 425 Wireless 802.11n (AM) 8 Pack AP	JG687A
	HP 425 Wireless 802.11n (WW) AP	JG654A
	HP 425 Wireless 802.11n (WW) 8 Pack AP	JG688A
	HP 425 Wireless 802.11n (JP) AP	JG655A
	HP 425 Wireless 802.11n (IL) AP	JG656A
Note 2	Localization required. (See Localization Menu)	

Technical Specifications

HP 425 Wireless Dual Radio 802.11n (AM) Access Point (JG653A)
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Ports		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 1 RJ-45 serial console port
AP characteristics	**Radios (built-in)**	802.11 a/n, b/g/n
	Radio operation modes	Client access, Local mesh, Packet capture
	AP operation modes	Controlled
	Wi-Fi Alliance Certification	a/b/g/n 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**	7.43(w) x 7.43(d) x 2(h) in (18.86 x 18.86 x 5.08 cm)
	Weight	1.65 lb (.75 kg) mounting bracket
Memory and processor		Single core @ 560 MHz, 128 MB flash, 128 MB SDRAM
Mounting and enclosure		Indoor, plenum rated;Includes ceiling/wall mount kei as well as two ceiling mounting
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	5% to 95%, noncondensing
	Non-operating/ Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating/ Storage relative humidity	5% to 95%, noncondensing
Electrical characteristics	**Description**	IEEE 802.3af PoE compliant for Gigabit Ethernet
	Maximum power rating	12.9 W
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 5600-5670 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 - 140 channels) 5.745 - 5.825 GHz (149 - 165 channels)

Technical Specifications

	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 5600-5670 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 for 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
The HP 425 access point power information listed excludes the embedded antenna. Review the HP documentation for your AP to understand the maximum output setting for your AP based on your country's regulations.
Two spatial stream AP, supporting 300 Mb/s per radio.
Maximum transmit power varies by country.
Regulatory model number: BJNGA-FB0002

Services
Refer to the HP website at **www.hp.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 HP sales office.

Radio characteristics

Note: These radio characteristics apply to the HP 425 access points, including the embedded antenna. Power is limited based on country of operation.

Technical Specifications

IEEE 802.11n 5 GHz @ 40 MHz channel	Data rate	MCS0, MCS8 30 Mbps	MCS7, MCS15 300 Mbps		
	Receiver sensitivity	-92 dBm	-70 dBm		
	Transmit power	25 dBm	20 dBm		
IEEE 802.11n 5 GHz @ 20 MHz channel	Data rate	MCS0, MCS8 14.4 Mbps	MCS7, MCS15 144.4 Mbps		
	Receiver sensitivity	-95 dBm	-73 dBm		
	Transmit power	25 dBm	20 dBm		
IEEE 802.11n 2.4 GHz @ 40 MHz channel	Data rate	MCS0, MCS8 30 Mbps	MCS7, MCS15 300 Mbps		
	Receiver sensitivity	-93 dBm	-73 dBm		
	Transmit power	24 dBm	22 dBm		
IEEE 802.11n 2.4 GHz @ 20 MHz channel	Data rate	MCS0, MCS8 14.4 Mbps	MCS7, MCS15 144.4 Mbps		
	Receiver sensitivity	-96 dBm	-76 dBm		
	Transmit power	24 dBm	22 dBm		
IEEE 802.11a 5 GHz	Data rate	6 Mbps	54 Mbps		
	Receiver sensitivity	-95 dBm	-76 dBm		
	Transmit power	25 dBm	22 dBm		
IEEE 802.11b/g 2.4 GHz	Data rate	1 Mbps	11 Mbps	6 Mbps	54 Mbps
	Receiver sensitivity	-99 dBm	-93 dBm	-96 dBm	-79 dBm
	Transmit power	25 dBm	25 dBm	25 dBm	23 dBm

Technical Specifications

MCS Index	800 nS Guard Interval		400 nS Guard Interval	
	20 MHz Rate (Mbps)	40 MHz Rate (Mbps)	20 MHz Rate (Mbps)	40 MHz Rate (Mbps)
0	6.5	13.5	7.2	15
1	13	27	14.4	30
2	19.5	40.5	21.7	45
3	26	54	28.9	60
4	39	81	43.3	90
5	52	108	57.8	120
6	58.5	121.5	65	135
7	65	135	72.2	150
8	13	27	14.4	30
9	26	54	28.9	60
10	39	81	43.3	90
11	52	108	57.8	120
12	78	162	86.7	180
13	104	216	115.6	240
14	117	243	130	270
15	130	270	144.4	300

Standards and Protocols
(applies to all products in series)

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

Accessories

HP 425 802.11n 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

To learn more, visit www.hp.com/networking