

# HP 425 802.11n Dual Radio Access Point Series



## Product overview

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

The 425 Access Points work in a managed mode with HP wireless LAN controllers. The access points (APs) provide RF spectrum analysis with detection and classification of non-IEEE 802.11 interference; and they have the ability to automatically resist interference. Wireless security is comprehensive with integrated wireless IDS (Intrusion Detection System) and support for internal and external authentication, authorization, and accounting (AAA) servers; built-in stateful firewalls; per-user VLAN mapping; and authentication.

### A summary of the highlights of the 425 Access Points:

- Dual radio—two spatial stream access supporting 300 Mb/s per radio
- Support for embedded antennas as well as an optional external antenna
- Powered via the IEEE 802.3af power over Ethernet (PoE) or the local power supply
- Comprehensive WLAN security
- Limited Lifetime Warranty 2.0—which comes with 24x7 telephone support for three years

## 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 mitigating interference from Wi-Fi and non-Wi-Fi sources—using spectrum analysis capabilities built into the APs, identifying rogue activity, and making decisions at a system-wide level

- Advanced RRM

- 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 the 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

- Channel quality evaluation

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

- Integrated IDS

Detects and locates unknown and rogue devices (refer to the controller data sheet for details)

- AP management

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

- HP Intelligent Management Center and Wireless Services Manager Software

Provide centralized discovery, logging, status, and configuration management

- Diagnostics

Records association, authentication, and DHCP events in the client event log; provides a packet capture tool for Ethernet and IEEE 802.11 interfaces (PCAP format); and includes a 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 WLAN Controllers, HP Unified Switches and Modules
  - Refer to the HP Access Point—Controller Compatibility Matrix at [h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA5-0345ENW&cc=us&lc=en](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 L2 and L3 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
    - Using IEEE 802.1p VLAN priority, SpectraLink SVP, and DiffServ
  - Multiple SSIDs per radio
    - Assigns Wi-Fi MultiMedia (WMM), IEEE 802.11e EDCF, and service-aware priority
- Microsoft Lync Server 2010 and 2013 Qualified
  - Qualified in the Microsoft Lync Server Wi-Fi interoperability program to ensure that products comply with Microsoft's guidelines for voice and video quality of service (QoS) delivery
- 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 PoE support
  - Simplifies deployment and dramatically reduces installation costs by helping eliminate the time and cost involved in supplying local power at each AP 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 the use of embedded high-gain antennas (4 dBi antenna at 2.4 GHz and 5 dBi antenna at 5 GHz); and helps save on the added cost of external antennas
  - Optional external antenna
    - Includes four indoor RP-SMA connectors to be used with optional external antennas
- Anywhere, anytime wireless coverage
  - Dual-radio IEEE 802.11b/g/n and 802.11a/n AP
  - 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
  - IEEE 802.3af PoE
- Medical standards
  - Meets the European EN60601-1-2 standard for healthcare
- Multiple SSIDs per radio
  - Up to 16 SSIDs per radio, each with a unique MAC address and configurable SSID broadcasts
  - Individual security and QoS profiles
  - Configurable DTIM and minimum data rate
  - Each mapped to a separate IEEE 802.1Q VLAN
  - WMM and/or WMM-PS
  - Security filter
- AP client-access control
  - 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
  - Enables L2 wireless client isolation

## **Security**

- Integrated IDS support
  - Automated AP and client classification
    - Reduces manual effort; however, the administrator can override AP classification
  - Comprehensive detection capabilities
    - Detects a wide range of attacks
  - Flexible event reporting
    - Enables configuration to classify 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 for full-time detection of attacks (refer to the controller data sheet for details)

- IEEE 802.1X support

Provides port-based user authentication with support for the 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 AP

- Choice of IEEE 802.11i, WPA2, or WPA

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

- 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

Mitigates communication between wireless devices associated with the same AP

### **Additional information**

- RFC support

Refer to the controller datasheet for specific RFCs and other industry standards supported

### **Warranty and support**

- Limited Lifetime Warranty 2.0

Offers 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 Limited Lifetime Warranty 2.0)

Limited 24x7 telephone support is provided by HP for the first three years; and limited electronic and telephone support during business hours is provided by HP for the complete warranty period; to reach our support centers, visit [hp.com/networking/contact-support](http://hp.com/networking/contact-support); for details on the duration of support provided with your product purchase, visit [hp.com/networking/warrantysummary](http://hp.com/networking/warrantysummary)

- Software releases

To find software for your product, visit [hp.com/networking/support](http://hp.com/networking/support); for details on the software releases available with your product purchase, visit [hp.com/networking/warrantysummary](http://hp.com/networking/warrantysummary)

## HP 425 802.11n Dual Radio Access Point Series

### Specifications



**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)**

**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

<b>AP characteristics</b>	1 RJ-45 serial console port	
	Radios	Dual (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

<b>Physical characteristics</b>	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
	Enclosure	Indoor, plenum rated

**Memory and processor** Single core @ 560 MHz, 128 MB flash, 128 MB SDRAM

**Mounting** Includes ceiling/wall mount kei as well as two ceiling mounting clips

<b>Environment</b>	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

<b>Electrical characteristics</b>	Description	IEEE 802.3af PoE compliant for Gigabit Ethernet
	Maximum power rating	12.9 W
	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
<b>Notes</b> Optional 48V DC power supply		
<b>Frequency band and operating channels</b>	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)
	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)
<b>Radio</b>	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)	
<b>Safety</b>	UL 2043; UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1	
<b>Medical</b>	EN60601-1-2	
<b>RF Exposure</b>	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.	
<b>Features</b>	<p>Dual radio: IEEE 802.11a/n for high-throughput applications and IEEE 802.11b/g/n for legacy support applications</p> <ul style="list-style-type: none"> <li>• Integrated antennas for both IEEE radios, supporting two spatial streams and 2x2 MIMO</li> <li>• Four embedded antennas</li> <li>• Both radios operate at full power and full performance on IEEE 802.3af PoE/Gigabit Ethernet</li> <li>• External antenna, optional</li> </ul>	

**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 [hp.com/networking/services](http://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**

**Notes**

These radio characteristics apply to the HP 425 Access Points, including the embedded antenna. Power is limited based on country of operation.

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



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 802.11d 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



HP 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.

## HP 425 802.11n Dual Radio Access Point Series accessories

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Power supply	HP 1-port Power Injector (J9407B) HP Gigabit IntelliJack 48V Power Supply (JD055B)
External antenna	HP Indoor Omnidirectional Dual Band 2.5/6 dBi MIMO 4 Element Antenna (JG696A)

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