



# HP MSM-802.11n Dual Radio Access Point Series



## Key features

- First three-spatial stream MIMO AP in the industry
- Up to 450 Mb/s per radio on MSM460 and MSM466/MSM466-R access points
- Support for a range of indoor and outdoor antennas for the MSM466 and outdoor MSM466-R access points
- Comprehensive WLAN security
- Indoor APs include Limited Lifetime hardware Warranty 2.0 with 24x7 phone support for three years

## Product overview

Working in unison with HP controllers, the HP 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 access points can be used in managed as well as autonomous mode without a 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, these access points work with the HP 10500/7500 20G Unified Wired-WLAN Module, the HP 800 Series Unified Wired-WLAN Controllers and Switches, 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
  - 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 IDS
  - detects and locates 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
- HP 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 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 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 SVP, and DiffServ
  - Multiple SSIDs per radio
    - Wi-Fi MultiMedia (WMM), IEEE 802.11e EDCA, 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 Power over Ethernet (PoE) support
  - 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
- 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 450 Mb/s of signaling per radio; delivers potentially more than a 50 percent increase in performance over any two spatial stream product
- Beamforming
  - provides better coverage area and better performance at distances from the AP
- Bandsteering
  - redirects 5 GHz-capable clients automatically to the less-congested 5 GHz spectrum
- Concurrent operation in the 5 GHz band
  - provides the ability to run both radios in the 5 GHz band for outstanding performance (MSM466 and MSM466-R access points only)
- MSM430 and MSM460 AP 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

- MSM466 and MSM466-R access points
  - External antenna options
    - MSM466 access point includes six indoor RP-SMA connectors; MSM466-R access point includes six outdoor standard N connectors
  - Two indoor ceiling mount antennas
    - provide good coverage when embedded antennas are not an option
  - Outdoor IP67-rated antennas
    - enhances point-to-point, multipoint, mesh, and outdoor coverage; two omnidirectional and two directional MIMO antennas are weatherproof IP67 tested
- Anywhere, anytime wireless coverage
  - includes dual-radio IEEE 802.11a/b/g/n and 802.11n 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 client devices; and 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 unique MAC address, configurable SSID broadcasts
  - Individual security and QoS profiles
  - Configurable DTIM and minimum data rate
  - Each mapped to separate IEEE 802.1Q VLANs
  - WMM and/or WMM-PS
  - Security 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 detail

- IEEE 802.1X support  
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 controller datasheet for specific RFCs and other industry standards supported
- TAA-compliant versions available  
for U.S. government manufactured sales requirements, order the TAA variant of the MSM430, MSM460, and MSM466 access point (all MSM466-R units are TAA approved)

#### **Warranty and support**

- Limited Lifetime Warranty 2.0  
for indoor access points, 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)  
for indoor access points, 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 [hp.com/networking/contact-support](http://hp.com/networking/contact-support); for details on the duration of support provided with your product purchase, refer to [hp.com/networking/warrantysummary](http://hp.com/networking/warrantysummary)
- 1-year Warranty 2.0  
for outdoor access points, advance hardware replacement with next-business-day delivery (available in most countries)
- Electronic and telephone support (for Warranty 2.0)  
for outdoor access points, limited electronic and 24x7 telephone support is available from HP for the entire warranty period; to reach our support centers, refer to [hp.com/networking/contact-support](http://hp.com/networking/contact-support); for details on the duration of support provided with your product purchase, refer to [hp.com/networking/warrantysummary](http://hp.com/networking/warrantysummary)
- Software releases  
to find software for your product, refer to [hp.com/networking/support](http://hp.com/networking/support); for details on the software releases available with your product purchase, refer to [hp.com/networking/warrantysummary](http://hp.com/networking/warrantysummary)

## HP MSM-802.11n Dual Radio Access Point Series

### Specifications



	<b>HP MSM430 Dual Radio 802.11n Access Point (AM) (J9650A)</b> <b>HP MSM430 Dual Radio 802.11n Access Point (WW) (J9651A)</b> <b>HP MSM430 Dual Radio 802.11n Access Point (JP) (J9652A)</b> <b>HP MSM430 Dual Radio 802.11n Access Point (IL) (J9653A)</b> <b>HP MSM430 Dual Radio 802.11n Access Point (TAA) (J9654A)</b> <b>HP MSM430 Dual Radio 802.11n Access Point (BR) (JL009A)</b>	<b>HP MSM460 Dual Radio 802.11n Access Point (AM) (J9590A)</b> <b>HP MSM460 Dual Radio 802.11n Access Point (WW) (J9591A)</b> <b>HP MSM460 Dual Radio 802.11n Access Point (JP) (J9589A)</b> <b>HP MSM460 Dual Radio 802.11n Access Point (IL) (J9618A)</b> <b>HP MSM460 Dual Radio 802.11n Access Point (TAA) (J9655A)</b> <b>HP MSM460 Dual Radio 802.11n Access Point (BR) (JL010A)</b>
<b>I/O ports and slots</b>	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 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>Additional ports and slots</b>	1 RJ-45 serial console port	1 RJ-45 serial console port
<b>AP characteristics</b>	Radios (built-in) 802.11a/n, b/g/n Radio operation modes Client access, Local mesh, Packet capture AP operation modes Autonomous and controlled Wi-Fi Alliance Certification a/b/g/n Wi-Fi Certified Antenna (3) 5 dBi 2.4 GHz and (3) 7 dBi 5 GHz omnidirectional antennas Number of internal antennas 6	Radios (built-in) 802.11a/n, b/g/n Radio operation modes Client access, Local mesh, Packet capture AP operation modes Autonomous and controlled Wi-Fi Alliance Certification a/b/g/n Wi-Fi Certified Antenna (3) 5 dBi 2.4 GHz and (3) 7 dBi 5 GHz Number of internal antennas 6
<b>Physical characteristics</b>	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	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
<b>Memory and processor</b>	Dual core @ 800 MHz, 128 MB flash, 256 MB SDRAM	Dual core @ 800 MHz, 128 MB flash, 256 MB SDRAM
<b>Mounting and enclosure</b>	Indoor, plenum rated; Includes two ceiling mounting clips	Indoor, plenum rated; Includes two ceiling mounting clips
<b>Environment</b>	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	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
<b>Electrical characteristics</b>	Description IEEE 802.3af PoE compliant for Gigabit Ethernet Maximum power rating 12.9 W	Description IEEE 802.3af PoE compliant for Gigabit Ethernet Maximum power rating 12.9 W

	<b>HP MSM430 Dual Radio 802.11n Access Point (AM) (J9650A)</b> <b>HP MSM430 Dual Radio 802.11n Access Point (WW) (J9651A)</b> <b>HP MSM430 Dual Radio 802.11n Access Point (JP) (J9652A)</b> <b>HP MSM430 Dual Radio 802.11n Access Point (IL) (J9653A)</b> <b>HP MSM430 Dual Radio 802.11n Access Point (TAA) (J9654A)</b> <b>HP MSM430 Dual Radio 802.11n Access Point (BR) (JL009A)</b>	<b>HP MSM460 Dual Radio 802.11n Access Point (AM) (J9590A)</b> <b>HP MSM460 Dual Radio 802.11n Access Point (WW) (J9591A)</b> <b>HP MSM460 Dual Radio 802.11n Access Point (JP) (J9589A)</b> <b>HP MSM460 Dual Radio 802.11n Access Point (IL) (J9618A)</b> <b>HP MSM460 Dual Radio 802.11n Access Point (TAA) (J9655A)</b> <b>HP MSM460 Dual Radio 802.11n Access Point (BR) (JL010A)</b>
<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)	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)	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)	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)	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)	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)	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)	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	UL 2043; UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1
<b>Emissions</b>	EN 55022 Class B; EN 301 489-1; EN 301 489-17; ICES-003 Class B; FCC Part 15, Class B	EN 55022 Class B; EN 301 489-1; EN 301 489-17; ICES-003 Class B; FCC Part 15, Class B
<b>Medical</b>	EN60601-1-2	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.	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>	Dual radio: IEEE 802.11a/n for high-throughput applications and IEEE 802.11b/g/n for legacy support and high-speed applications <ul style="list-style-type: none"> <li>• Integrated antennas for both IEEE radios, supporting two spatial streams and 3x3 MIMO</li> <li>• Six embedded antennas</li> <li>• Both radios operate at full power and full performance on IEEE 802.3af PoE/Gigabit Ethernet</li> </ul>	Dual radio: IEEE 802.11a/n for high-throughput applications and IEEE 802.11b/g/n for legacy support and high-speed applications <ul style="list-style-type: none"> <li>• Integrated antennas for both IEEE radios, supporting three spatial streams and 3x3 MIMO reaching 450 Mb/s per radio</li> <li>• Six embedded antennas</li> <li>• Both radios operate at full power and full performance on IEEE 802.3af PoE/Gigabit Ethernet</li> </ul>
<b>Notes</b>	The MSM430 and MSM460 access point power information listed includes 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: MRLBB-1001	The MSM430 and MSM460 access point power information listed includes 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. Three spatial stream AP, supporting 450 Mb/s per radio. Maximum transmit power varies by country. Regulatory model number: MRLBB-1001
<b>Services</b>	Refer to the HP website at <a href="http://hp.com/networking/services">hp.com/networking/services</a> 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.	Refer to the HP website at <a href="http://hp.com/networking/services">hp.com/networking/services</a> 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.

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**Note**

These radio characteristics apply to the MSM430 and MSM460 access points, including the embedded antenna.

**IEEE 802.11n 5 GHz @ 40 MHz channel**

Data rate	MCS0, MCS8, MCS16	MCS7, MCS15, MCS23
	45 Mbps	450 Mbps
Receiver sensitivity	-97 dBm	-80 dBm
Transmit power	24 dBm	19 dBm

**IEEE 802.11n 5 GHz @ 20 MHz channel**

Data rate	MCS0, MCS8, MCS16	MCS7, MCS15, MCS23
	21.7 Mbps	216.7 Mbps
Receiver sensitivity	-100 dBm	-84 dBm
Transmit power	24 dBm	19 dBm

**IEEE 802.11n 2.4 GHz @ 40 MHz channel**

Data rate	MCS0, MCS8, MCS16	MCS7, MCS15, MCS23
	45 Mbps	450 Mbps
Receiver sensitivity	-95 dBm	-80 dBm
Transmit power	25 dBm	21 dBm

**IEEE 802.11n 2.4 GHz @ 20 MHz channel**

Data rate	MCS0, MCS8, MCS16	MCS7, MCS15, MCS23
	21.7 Mbps	216.7 Mbps
Receiver sensitivity	-98 dBm	-82 dBm
Transmit power	25 dBm	22 dBm

**IEEE 802.11a 5 GHz**

Data rate	6 Mbps	54 Mbps
Receiver sensitivity	-100 dBm	-87 dBm
Transmit power	27 dBm	25 dBm

**IEEE 802.11b/g 2.4 GHz**

Data rate	1 Mbps	11 Mbps	6 Mbps	54 Mbps
Receiver sensitivity	-100 dBm	-95 dBm	-99 dBm	-85 dBm
Transmit power	25 dBm	25 dBm	25 dBm	23 dBm



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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

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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
16	19.5	40.5	21.7	45
17	39	81	43.4	90
18	58.5	121.5	65	135
19	78	162	86.7	180
20	117	243	130	270
21	156	324	173.3	360
22	178.5	364	195	405
23	195	405	216.7	450

## HP MSM-802.11n Dual Radio Access Point Series

### Specifications (continued)



**HP MSM466 Dual Radio 802.11n Access Point (AM) (J9621A)**  
**HP MSM466 Dual Radio 802.11n Access Point (WW) (J9622A)**  
**HP MSM466 Dual Radio 802.11n Access Point (JP) (J9620A)**  
**HP MSM466 Dual Radio 802.11n Access Point (IL) (J9619A)**  
**HP MSM466 Dual Radio 802.11n Access Point (TAA) (J9656A)**

**HP MSM466-R Dual Radio Outdoor 802.11n Access Point (AM) (J9715A)**  
**HP MSM466-R Dual Radio Outdoor 802.11n Access Point (WW) (J9716A)**  
**HP MSM466-R Dual Radio Outdoor 802.11n Access Point (JP) (J9717A)**  
**HP MSM466-R Dual Radio Outdoor 802.11n Access Point (IL) (J9718A)**

<b>I/O ports and slots</b>	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 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>Additional ports and slots</b>	1 RJ-45 serial console port	
<b>AP characteristics</b>		
Radios (built-in)	802.11a/n, a/b/g/n	802.11a/n, a/b/g/n
Radio operation modes	Client access, Local mesh, Packet capture	Client access, Local mesh, Packet capture
AP operation modes	Autonomous and controlled	Autonomous and controlled
Wi-Fi Alliance Certification	a/b/g/n Wi-Fi Certified	a/b/g/n Wi-Fi Certified
Antenna	External antennas only; six RP-SMA connectors	External antennas only; six Type N connectors
Number of external antennas	6	6
<b>Physical characteristics</b>		
Dimensions	8(w) x 6.75(d) x 2.62(h) in (20.32 x 17.15 x 6.65 cm)	4.92(w) x 8.27(d) x 9.84(h) in (12.5 x 21.01 x 24.99 cm)
Weight	2.25 lb (1.02 kg) mounting bracket	6.06 lb (2.75 kg) mounting bracket
<b>Memory and processor</b>	Dual core @ 800 MHz, 128 MB flash, 256 MB SDRAM	Dual core @ 800 MHz, 128 MB flash, 256 MB SDRAM
<b>Mounting and enclosure</b>	Indoor, plenum rated; Includes two ceiling mounting clips	Outdoor IP67 and NEMA 4X; Includes hardware for pole and wall mount applications
<b>Environment</b>		
Operating temperature	32°F to 122°F (0°C to 50°C)	-40°F to 131°F (-40°C to 55°C); for temperatures below -4°F (-20°C), IEEE 802.3at PoE power is required to run the embedded heater.
Operating relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing
<b>Electrical characteristics</b>		
Description	IEEE 802.3af PoE compliant for Gigabit Ethernet	IEEE 802.3af PoE compliant for Gigabit Ethernet for operation down to -4°F (-20°C). For operation down to -40°F (-40°C), IEEE 802.3at power is required.
Maximum power rating	12.9 W	12.9 W
<b>Notes</b>	Antenna is purchased separately.	Antenna is purchased separately. For temperatures below -4°F (-20°C), IEEE 802.3at PoE power is required to run the embedded heater. The maximum power draw is 25 W.

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**HP MSM466 Dual Radio 802.11n Access Point (IL) (J9619A)**  
**HP MSM466 Dual Radio 802.11n Access Point (TAA) (J9656A)**

**HP MSM466-R Dual Radio Outdoor 802.11n Access Point (AM) (J9715A)**  
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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 - 140 (excluding 5600-5650 MHz) channels) 5.745 - 5.825 GHz (149 - 165 channels)	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)	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)	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)	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)	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)	2.412 - 2.472 GHz (1 - 13 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)	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	UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1; EN62479
<b>Emissions</b>	EN 55022 Class B; EN 301 489-1; EN 301 489-17; ICES-003 Class B; FCC Part 15, Class B	EN 55022 Class B; EN 301 489-1; EN 301 489-17; ICES-003 Class B; FCC Part 15, Class B
<b>Medical</b>	EN60601-1-2	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.; To ensure compliance with various national and international Electromagnetic Field (EMF) standards, this device should only be operated with HP-approved antennas and accessories.	FCC Bulletin OET-65C; RSS-102; EN 300-328; ETS 301 893; CFR 47, Part 2, Subpart J; ANSI/IEEE C95.1 (99); Ministry of Health Safety Code 6; Australian Radiation Protection Std.; To ensure compliance with various national and international Electromagnetic Field (EMF) standards, this device should only be operated with HP-approved antennas and accessories.

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**Features**

Dual radio: IEEE 802.11a/n for high-throughput applications and IEEE 802.11a/b/g/n for legacy support and high-speed applications

- Both IEEE radios, supporting three spatial streams and 3x3 MIMO reaching 450 Mb/s per radio.
- Six RP-SMA connectors for external MIMO antennas
- Both radios operate at full power and full performance on IEEE 802.3af PoE/Gigabit Ethernet
- Both radios can operate in the 5 GHz band for the highest performance

Dual radio: IEEE 802.11a/n for high-throughput applications and IEEE 802.11a/b/g/n for legacy support and high-speed applications

- Both IEEE radios, supporting three spatial streams and 3x3 MIMO reaching 450 Mb/s per radio
- Six Type N connectors for external MIMO antennas
- Both radios operate at full power and full performance on IEEE 802.3af PoE/Gigabit Ethernet
- Run both radios at 5 GHz for outstanding performance

Outdoor enclosure

- IP67 rate
- NEMA 4X rated
- -40°F (-40°C) to 131°F (55°C)

**Notes**

The MSM466 and MSM466-R access point power information listed does not include an antenna. Review the HP documentation for your AP to understand the maximum output setting for your AP based on your country's regulations. Three spatial stream AP, supporting 450 Mb/s per radio. Maximum transmit power varies by country. When used with an HP MIMO outdoor antenna, the AP requires a RP-SMA to N Type adapter/cable (available separately). Outdoor antennas should be installed by a professional installer with proper grounding and lightning protection. Regulatory model number: MRLBB-1002

The MSM466 and MSM466-R access point power information listed does not include an antenna. Review the HP documentation for your AP to understand the maximum output setting for your AP based on your country's regulations. Three spatial stream AP, supporting 450 Mb/s per radio. Maximum transmit power varies by country. When used with an HP MIMO indoor antenna, the AP requires an RP-SMA to N Type adapter/cable (available separately). Outdoor antennas should be installed by a professional installer with proper grounding and lightning protection. Wind speeds are supported up to 165 m/h (265 km/h). Dimensions do not include the additional space required for cables. Regulatory model number: MRLBB-1102 Additional Railway EMC emission standards

- EN 55011
- EN 50121-3-2

**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.

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**Note**

These radio characteristics apply to the MSM466 and MSM466-R access points and exclude any external antenna.

**IEEE 802.11n 5 GHz @ 40 MHz channel**

Data rate	MCS0, MCS8, MCS16	MCS7, MCS15, MCS23
	45 Mbps	450 Mbps
Receiver sensitivity	-90 dBm	-73 dBm
Transmit power	17 dBm	12 dBm

**IEEE 802.11n 5 GHz @ 20MHz channel**

Data rate	MCS0, MCS8, MCS16	MCS7, MCS15, MCS23
	21.7 Mbps	216.7 Mbps
Receiver sensitivity	-93 dBm	-77 dBm
Transmit power	17 dBm	12 dBm

**IEEE 802.11n 2.4 GHz @ 40MHz channel**

Data rate	MCS0, MCS8, MCS16	MCS7, MCS15, MCS23
	45 Mbps	450 Mbps
Receiver sensitivity	-90 dBm	-75 dBm
Transmit power	20 dBm	16 dBm

**IEEE 802.11n 2.4 GHz @ 20MHz channel**

Data rate	MCS0, MCS8, MCS16	MCS7, MCS15, MCS23
	21.7 Mbps	216.7 Mbps
Receiver sensitivity	-93 dBm	-77 dBm
Transmit power	20 dBm	17 dBm

**IEEE 802.11a 5 GHz**

Data rate	6 Mbps	54 Mbps
Receiver sensitivity	-93 dBm	-80 dBm
Transmit power	20 dBm	18 dBm

**IEEE 802.11b/g 2.4 GHz**

Data rate	1 Mbps	54 Mbps
Receiver sensitivity	-100 dBm	-80 dBm
Transmit power	20 dBm	18 dBm

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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
16	19.5	40.5	21.7	45
17	39	81	43.4	90
18	58.5	121.5	65	135
19	78	162	86.7	180
20	117	243	130	270
21	156	324	173.3	360
22	175.5	364.5	195	405
23	195	405	216.7	450

**Standards and Protocols**

(applies to all products in series)

<b>Mobility</b>	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 802.11i Medium Access Control (MAC) Security Enhancements IEEE 802.11n WLAN Enhancements for Higher Throughput
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## HP MSM-802.11n Dual Radio Access Point Series accessories

### Power Supply

HP 1-port Power Injector (J9407B)

**HP MSM466 Dual Radio 802.11n Access Point (AM) (J9621A)**  
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**HP MSM466 Dual Radio 802.11n Access Point (TAA) (J9656A)**

HP Indoor Omnidirectional Dual Band 2.5/6dBi MIMO 6 Element Antenna (J9659A)  
HP Indoor Omnidirectional Dual Band 3/4dBi MIMO 3 Element Antenna (J9171A)  
HP Indoor-Outdoor Narrow Sector Dual Band 8/10dBi MIMO 3 Element Antenna (J9169A)  
HP Indoor-Outdoor Point-to-Point Dual Band 10/13dBi MIMO 3 Element Antenna (J9170A)  
HP Antenna Lightning Arrester (J8996A)

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**HP MSM466-R Dual Radio Outdoor 802.11n Access Point (IL) (J9718A)**

HP Single-Port 802.3at Gigabit PoE In-Line Power Supply (J9867A)  
HP Antenna Lightning Arrester (J8996A)  
HP Indoor-Outdoor Narrow Sector Dual Band 8/10dBi MIMO 3 Element Antenna (J9169A)  
HP Indoor-Outdoor Point-to-Point Dual Band 10/13dBi MIMO 3 Element Antenna (J9170A)  
HP Indoor Omnidirectional Dual Band 3/4dBi MIMO 3 Element Antenna (J9171A)  
HP Indoor Omnidirectional Dual Band 2.5/6dBi MIMO 6 Element Antenna (J9659A)  
HP Outdoor Omnidirectional 6dBi at 2.4GHz MIMO 3 Element Antenna (J9719A)  
HP Outdoor Omnidirectional 8dBi at 5GHz MIMO 3 Element Antenna (J9720A)

Learn more at  
[hp.com/networking](http://hp.com/networking)



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.

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