

### Overview

## HPE 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 APs
  - Support for a range of indoor and outdoor antennas for the MSM466 and outdoor MSM466-R APs
  - Comprehensive WLAN security
  - Indoor APs include Limited Lifetime Warranty
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### Product overview

Working in unison with HPE controllers, the HPE 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 HPE wireless controllers support a fast-roaming capability—an important feature, especially for VoIP communications.

The APs 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 they 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 HPE MSM controllers, these access points work with the HPE 10500/7500 20G Unified Wired-WLAN Module, the HPE 800 Series Unified Wired-WLAN Controllers and Switches, and the HPE WX5002/5004 wireless controllers.

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### Features and benefits

#### Management

- **Wi-Fi Clear Connect**  
Provides a system-wide approach to delivering 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—by 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 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**

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- **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 (Premium Mobility version required)**  
Detects and locates unknown and rogue devices (refer to the controller data sheet for details)
- **Access point management**  
Provides a 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 an embedded HTML management tool with secure access (SSL and VPN); and implements scheduled configuration and firmware upgrades from a central controller
- **HPE Intelligent Management Center and Wireless Services Manager Software**  
Provide centralized management for discovery, logging, status, and configuration management
- **Diagnostics**  
Records association, authentication, and DHCP events in client event log; and includes a packet capture tool for Ethernet and IEEE 802.11 interfaces (PCAP format) as well as 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 HPE WLAN Controllers, HPE Unified Switches and Modules**
  - 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 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**  
Supports IEEE 802.1p VLAN priority, SpectraLink SVP, and DiffServ
  - **Virtual Service Community (VSC)**  
Assigns Wi-Fi MultiMedia (WMM), IEEE 802.11e EDCF, and service-aware priority
  - **VoIP call capacity**  
Supports 12 active calls per radio, maximum
- **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

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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; and delivers potentially more than a 50 percent increase in performance over any two spatial stream products

- **Beam forming**

Provides better coverage area and better performance at distances from the AP

- **Band steering**

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

- **Concurrent operation in the 5 GHz band**

Provides the capability to run both radios in the 5 GHz band for outstanding performance (MSM466 and MSM466-R access points only)

- **MSM430 and MSM460 AP antennas**

Provide 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 omni-directional and two directional MIMO antennas are weatherproof IP67 tested

- **Anywhere, anytime wireless coverage**

Enhances point-to-point, multipoint, mesh, and outdoor coverage; two omni-directional and two directional MIMO antennas are weatherproof IP67 tested

- **Medical standards**

Meets the European EN60601-1-2 standard for healthcare

- **Virtual Service Communities (VSCs)**

Includes up to 16 SSIDs, each with a unique MAC address and configurable SSID broadcasts; individual security and QoS profiles per VSC; configurable DTIM and a 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**

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- 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
- Refer to the controller data sheet for more
- **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 "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>
- **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**  
See <http://www.hpe.com/networking/warrantysummary> for warranty and support information included with your product purchase.
- **1-year 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 425 Wireless 802.11n (AM) AP	JG653A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	
HP 425 Wireless 802.11n (AM) 8 Pack AP	JG687A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port (Each)</li> </ul>	
HP 425 Wireless 802.11n (WW) AP	JG654A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	See Configuration <b>NOTE:2</b>
HP 425 Wireless 802.11n (WW) 8 Pack AP	JG688A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port (Each)</li> </ul>	See Configuration <b>NOTE:2</b>
HP 425 Wireless 802.11n (JP) AP	JG655A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	
HP 425 Wireless 802.11n (IL) AP	JG656A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	See Configuration <b>NOTE:3</b>
MSM430 Dual Radio 802.11n AP (AM)	J9650A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	
HP MSM430 Dual Radio 802.11n Access Point (WW)	J9651A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	See Configuration <b>NOTE:2</b>
MSM430 Dual Radio 802.11n AP (WW)	J9651A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	See Configuration <b>NOTE:2</b>
HP MSM430 Dual Radio 802.11n Access Point (JP)	J9652A

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<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	
MSM430 Dual Radio 802.11n AP (JP)	J9652A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	
HP MSM430 Dual Radio 802.11n Access Point (IL)	J9653A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	See Configuration <b>NOTE:3</b>
MSM430 Dual Radio 802.11n AP (IL)	J9653A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	See Configuration <b>NOTE:3</b>
HP MSM460 Dual Radio 802.11n Access Point (AM)	J9590A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	
MSM460 Dual Radio 802.11n AP (AM)	J9590A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	
HP MSM460 Dual Radio 802.11n Access Point (WW)	J9591A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	See Configuration <b>NOTE:2</b>
MSM460 Dual Radio 802.11n AP (WW)	J9591A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	See Configuration <b>NOTE:2</b>
HP MSM460 Dual Radio 802.11n Access Point (JP)	J9589A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	
MSM460 Dual Radio 802.11n AP (JP)	J9589A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	
HP MSM460 Dual Radio 802.11n Access Point (IL)	J9618A
<ul style="list-style-type: none"> <li>1 RJ-45 autosensing 10/100/1000 port</li> </ul>	See Configuration <b>NOTE:3</b>

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MSM460 Dual Radio 802.11n AP (IL) <ul style="list-style-type: none"><li>1 RJ-45 autosensing 10/100/1000 port</li></ul>	J9618A See Configuration <b>NOTE:3</b>
HP MSM466 Dual Radio 802.11n Access Point (AM) <ul style="list-style-type: none"><li>1 RJ-45 autosensing 10/100/1000 port</li></ul>	J9621A
MSM466 Dual Radio 802.11n AP (AM) <ul style="list-style-type: none"><li>1 RJ-45 autosensing 10/100/1000 port</li></ul>	J9621A
HP MSM466 Dual Radio 802.11n Access Point (WW) <ul style="list-style-type: none"><li>1 RJ-45 autosensing 10/100/1000 port</li></ul>	J9622A See Configuration <b>NOTE:2</b>
MSM466 Dual Radio 802.11n AP (WW) <ul style="list-style-type: none"><li>1 RJ-45 autosensing 10/100/1000 port</li></ul>	J9622A See Configuration <b>NOTE:2</b>
HP MSM466 Dual Radio 802.11n Access Point (JP) <ul style="list-style-type: none"><li>1 RJ-45 autosensing 10/100/1000 port</li></ul>	J9620A
MSM466 Dual Radio 802.11n AP (JP) <ul style="list-style-type: none"><li>1 RJ-45 autosensing 10/100/1000 port</li></ul>	J9620A
HP MSM466 Dual Radio 802.11n Access Point (IL) <ul style="list-style-type: none"><li>1 RJ-45 autosensing 10/100/1000 port</li></ul>	J9619A See Configuration <b>NOTE:3</b>
MSM466 Dual Radio 802.11n AP (IL) <ul style="list-style-type: none"><li>1 RJ-45 autosensing 10/100/1000 port</li></ul>	J9619A See Configuration <b>NOTE:3</b>
HP MSM466-R Dual Radio Outdoor 802.11n Access Point (AM) <ul style="list-style-type: none"><li>1 RJ-45 autosensing 10/100/1000 port</li></ul>	J9715A
HP MSM466-R Dual Radio Outdoor 802.11n Access Point (WW)	J9716A

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- 1 RJ-45 autosensing 10/100/1000 port

See  
Configuration  
**NOTE:2**

HP MSM466-R Dual Radio Outdoor 802.11n Access Point (JP)

J9717A

- 1 RJ-45 autosensing 10/100/1000 port

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

J9718A

- 1 RJ-45 autosensing 10/100/1000 port

See  
Configuration  
**NOTE:3**

Configuration Rules:

Note 2 Not available Israel. (Warning in Clic only)

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

## Access Point Options

### External Power Supplies

HP 1-port Power Injector

J9407B

HP Gigabit IntelliJack 48V Power Supply

JD055B  
See  
Configuration  
**NOTE:1, 2**

HP Single-PRT 802.3at Gig PoE PS

J9867A  
See  
Configuration  
**NOTE:2, 3**

Configuration Rules:

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

Note 2 Localization required. (See Localization Menu)



## Configuration

Note 3 This power supply is supported on the following Access Points:  
 J9715A - HP MSM466-R Dual Radio Outdoor 802.11n Access Point (AM)  
 J9716A - HP MSM466-R Dual Radio Outdoor 802.11n Access Point (WW)  
 J9717A - HP MSM466-R Dual Radio Outdoor 802.11n Access Point (JP)  
 J9718A - HP MSM466-R Dual Radio Outdoor 802.11n Access Point (IL)

<b>External Antenna</b>	HP Indoor Omnidirectional Dual Band 2.5/6dBi MIMO 6 Element Antenna	J9659A  See Configuration <b>NOTE:1</b>
	HP Indoor Omnidirectional Dual Band 3/4dBi MIMO 3 Element Antenna	J9717A  See Configuration <b>NOTE:1</b>
	HP Indoor-Outdoor Narrow Sector Dual Band 8/10dBi MIMO 3 Element Antenna	J9169A  See Configuration <b>NOTE:1, 4</b>
	HP Indoor-Outdoor Point-to-Point Dual Band 10/13dBi MIMO 3 Element Antenna	J9170A  See Configuration <b>NOTE:1, 4</b>
	HP Antenna Lightning Arrester	J8996A  See Configuration <b>NOTE:1</b>
	HP Outdoor Omnidirectional 6dBi at 2.4GHz MIMO 3 Element Antenna	J9719A  See Configuration <b>NOTE:2, 3</b>
	HP Outdoor Omnidirectional 8dBi at 5GHz MIMO 3 Element Antenna	J9720A  See Configuration <b>NOTE:2, 3</b>

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HP Indoor Omni 2.5/6dBi MIMO 4 Elmnt Ant	JG696A
	See Configuration
	<b>NOTE:5</b>

### Configuration Rules:

Note 1	This Antenna is supported on the following Access Points:	
	HP MSM466 Dual Radio 802.11n Access Point (JP)	J9620A
	MSM466 Dual Radio 802.11n AP (JP)	J9620B
	HP MSM466 Dual Radio 802.11n Access Point (AM)	J9621A
	MSM466 Dual Radio 802.11n AP (AM)	J9621B
	HP MSM466 Dual Radio 802.11n Access Point (WW)	J9622A
	MSM466 Dual Radio 802.11n AP (WW)	J9622B
	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
	HP MSM466 Dual Radio 802.11n Access Point (IL)	J9619A
	MSM466 Dual Radio 802.11n AP (IL)	J9619B
Note 2	This Antenna is supported on the following Access Points:	
	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
Note 3	If this Antenna is select then THREE of the following Lightning Arresters per sku ordered is required:	
	HP Antenna Lightning Arrester	J8996A
Note 4	If this Antenna is select then THREE of the following Lightning Arresters per sku ordered is required for Outdoor use:	
	HP Antenna Lightning Arrester	J8996A
Note 5	This Antenna 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
Remarks:	If you plan on connecting an outdoor antenna to the unit make sure that proper lightning surge protection and grounding precautions are taken according to local electrical code.	

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<b>HP MSM430 Dual Radio 802.11n Access Point (AM)</b> (J9650A)	<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
<b>HP MSM430 Dual Radio 802.11n Access Point (WW)</b> (J9651A)	<b>Additional ports and slots</b>	1 RJ-45 serial console port
<b>HP MSM430 Dual Radio 802.11n Access Point (JP)</b> (J9652A)	<b>AP characteristics</b>	<b>Radios (built-in)</b> 802.11a/n, b/g/n <b>Radio operation modes</b> Client access, Local mesh, Packet capture <b>AP operation modes</b> Autonomous and controlled <b>Wi-Fi Alliance Certification</b> a/b/g/n Wi-Fi Certified
<b>HP MSM430 Dual Radio 802.11n Access Point (IL)</b> (J9653A)	<b>Antenna</b>	(3) 5 dBi 2.4 GHz and (3) 7 dBi 5 GHz omnidirectional antennas
<b>HP MSM430 Dual Radio 802.11n Access Point (TAA)</b> (J9654A)	<b>Number of internal antennas</b>	6
<b>HP MSM430 Dual Radio 802.11n Access Point (BR)</b> (JL009A)	<b>Physical characteristics</b>	<b>Dimensions</b> 8(w) x 6.75(d) x 2.62(h) in (20.32 x 17.15 x 6.65 cm)
<b>HP MSM430 Dual Radio 802.11n Access Point (BR)</b> (JL009A)	<b>Weight</b>	2.25 lb (1.02 kg) mounting bracket
<b>HP MSM430 Dual Radio 802.11n Access Point (BR)</b> (JL009A)	<b>Memory and processor</b>	Dual core @ 800 MHz, 128 MB flash, 256 MB SDRAM
<b>HP MSM430 Dual Radio 802.11n Access Point (BR)</b> (JL009A)	<b>Mounting and enclosure</b>	Indoor, plenum rated; Includes two ceiling mounting clips
<b>HP MSM430 Dual Radio 802.11n Access Point (BR)</b> (JL009A)	<b>Environment</b>	<b>Operating temperature</b> 32°F to 122°F (0°C to 50°C) <b>Operating relative humidity</b> 5% to 95%, noncondensing <b>Nonoperating/Storage temperature</b> -40°F to 158°F (-40°C to 70°C) <b>Nonoperating/Storage relative humidity</b> 5% to 95%, noncondensing
<b>HP MSM430 Dual Radio 802.11n Access Point (BR)</b> (JL009A)	<b>Electrical characteristics</b>	<b>Description</b> IEEE 802.3af PoE compliant for Gigabit Ethernet <b>Maximum power rating</b> 12.9 W
<b>HP MSM430 Dual Radio 802.11n Access Point (BR)</b> (JL009A)	<b>Frequency band and operating channels</b>	<b>Americas</b> 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) <b>European Union</b> 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) <b>Rest of World (Actual channels designated by selecting country in UI)</b> 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)

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	<b>Taiwan</b>	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)
	<b>Japan</b>	2.412 - 2.472 GHz (1 - 13 channels) 5.180 - 5.320 GHz (36 - 64 channels) 5.500 - 5.700 GHz (100 - 140 channels)
	<b>Israel</b>	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>Emissions</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	
<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>	Dual radio: IEEE 802.11a/n for high-throughput applications and IEEE 802.11b/g/n for legacy support and high-speed applications - Integrated antennas for both IEEE radios, supporting two spatial streams and 3x3 MIMO - Six embedded antennas - Both radios operate at full power and full performance on IEEE 802.3af PoE/Gigabit Ethernet	
<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	
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.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 Hewlett Packard Enterprise sales office.	

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

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

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

### 802.11n 5 GHz @ 20 MHz channel

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

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

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

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

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

### IEEE 802.11a 5 GHz

<b>Data rate</b>	6 Mbps	54 Mbps
<b>Receiver sensitivity</b>	-100 dBm	-87 dBm
<b>Transmit power</b>	27 dBm	25 dBm

### IEEE 802.11b/g 2.4 GHz

<b>Data rate</b>	1 Mbps	11 Mbps	6 Mbps	54 Mbps
<b>Receiver sensitivity</b>	-100 dBm	-95 dBm	-99 dBm	-85 dBm
<b>Transmit power</b>	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	157.5
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

## Technical Specifications

13	104	216	115.6	240
14	117	243	130	270
15	130	270	144.4	300

<b>HP MSM460 Dual Radio 802.11n Access Point (AM)</b> (J9590A)	<b>I/O ports and slots</b>	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)
<b>HP MSM460 Dual Radio 802.11n Access Point (WW)</b> (J9591A)	<b>Additional ports and slots</b>	1 RJ-45 serial console port
<b>HP MSM460 Dual Radio 802.11n Access Point (JP)</b> (J9589A)	<b>AP characteristics</b>	<b>Radios (built-in)</b> 802.11 a/n, b/g/n <b>Radio operation modes</b> Client access, Local mesh, Packet capture <b>AP operation modes</b> Autonomous and controlled <b>Wi-Fi Alliance Certification</b> a/b/g/n Wi-Fi Certified
<b>HP MSM460 Dual Radio 802.11n Access Point (IL)</b> (J9618A)	<b>Antenna</b>	(3) 5 dBi 2.4 GHz and (3) 7 dBi 5 GHz
<b>HP MSM460 Dual Radio 802.11n Access Point (TAA)</b> (J9655A)	<b>Number of internal antennas</b>	6
<b>HP MSM460 Dual Radio 802.11n Access Point (BR)</b> (JL010A)	<b>Physical characteristics</b>	<b>Dimensions</b> 8(w) x 6.75(d) x 2.62(h) in (20.32 x 17.15 x 6.65 cm) <b>Weight</b> 2.25 lb (1.02 kg) mounting bracket
	<b>Memory and processor</b>	Dual core @ 800 MHz, 128 MB flash, 256 MB SDRAM
	<b>Mounting</b>	Indoor, plenum rated; Includes two ceiling mounting clips
	<b>Environment</b>	<b>Operating temperature</b> 32°F to 122°F (0°C to 50°C) <b>Operating relative humidity</b> 5% to 95%, noncondensing <b>Nonoperating/Storage temperature</b> -40°F to 158°F (-40°C to 70°C) <b>Nonoperating/Storage relative humidity</b> 5% to 95%, noncondensing
	<b>Electrical characteristics</b>	<b>Description</b> IEEE 802.3af PoE compliant for Gigabit Ethernet <b>Maximum power rating</b> 12.9 W
	<b>Frequency band and operating channels</b>	<b>Americas</b> 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) <b>European Union</b> 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) <b>Rest of World (Actual channels designated by selecting country in UI)</b> 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

	<b>Taiwan</b>	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)
	<b>Japan</b>	2.412 - 2.472 GHz (1 - 13 channels) 5.180 - 5.320 GHz (36 - 64 channels) 5.500 - 5.700 GHz (100 - 140 channels)
	<b>Israel</b>	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>Emissions</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	
<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>	Dual radio: IEEE 802.11a/n for 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 reaching 450 Mb/s per radio - Six embedded antennas - Both radios operate at full power and full performance on IEEE 802.3af PoE/Gigabit Ethernet	
<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. 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 Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.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 Hewlett Packard Enterprise sales office.	

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

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

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

## Technical Specifications

### 802.11n 5 GHz @ 20 MHz channel

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

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

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

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

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

### IEEE 802.11a 5 GHz

<b>Data rate</b>	6 Mbps	54 Mbps
<b>Receiver sensitivity</b>	-100 dBm	-87 dBm
<b>Transmit power</b>	27 dBm	25 dBm

### IEEE 802.11b/g 2.4 GHz

<b>Data rate</b>	1 Mbps	11 Mbps	6 Mbps	54 Mbps
<b>Receiver sensitivity</b>	-100 dBm	-95 dBm	-99 dBm	-85 dBm
<b>Transmit power</b>	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	157.5
8	13	27	14.4	30
9	26	54	28.9	60
10	39	81	43.3	90



## Technical Specifications

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

<b>HP MSM466 Dual Radio 802.11n Access Point (AM)</b> (J9621A)	<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		
	<b>Additional ports and slots</b>	1 RJ-45 serial console port		
<b>HP MSM466 Dual Radio 802.11n Access Point (WW)</b> (J9622A)	<b>AP characteristics</b>	<b>Radios (built-in)</b>	802.11a/n, a/b/g/n	
		<b>Radio operation modes</b>	Client access, Local mesh, Packet capture	
<b>HP MSM466 Dual Radio 802.11n Access Point (JP)</b> (J9620A)		<b>AP operation modes</b>	Autonomous and controlled	
		<b>Wi-Fi Alliance Certification</b>	a/b/g/n Wi-Fi Certified	
<b>HP MSM466 Dual Radio 802.11n Access Point (IL)</b> (J9619A)		<b>Antenna</b>	External antennas only; six RP-SMA connectors	
		<b>Number of external antennas</b>	6	
<b>HP MSM466 Dual Radio 802.11n Access Point (TAA)</b> (J9656A)	<b>Physical characteristics</b>	<b>Dimensions</b>	8(w) x 6.75(d) x 2.62(h) in (20.32 x 17.15 x 6.65 cm)	
		<b>Weight</b>	2.25 lb (1.02 kg) mounting bracket	
	<b>Memory and processor</b>	Dual core @ 800 MHz, 128 MB flash, 256 MB SDRAM		
	<b>Mounting and enclosure</b>	Indoor, plenum rated; Includes two ceiling mounting clips		
<b>Environment</b>	<b>Operating temperature</b>	32°F to 122°F (0°C to 50°C)		
	<b>Operating relative humidity</b>	5% to 95%, noncondensing		
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)		
	<b>Nonoperating/Storage relative humidity</b>	5% to 95%, noncondensing		
	<b>Electrical characteristics</b>	<b>Description</b>	IEEE 802.3af PoE compliant for Gigabit Ethernet	
<b>Frequency band and operating channels</b>	<b>Maximum power rating</b>	12.9 W		
	<b>Americas</b>	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)		
	<b>European Union</b>	5.745 - 5.825 GHz (149 - 165 channels)		
		2.412 - 2.472 GHz (1 - 13 channels)		
5.180 - 5.320 GHz (36 - 64 channels)				
<b>Rest of World (Actual</b>	5.500 - 5.700 GHz (100 - 140 (excluding 5600-5650 MHz) channels)			
	2.412 - 2.472 GHz (1 - 13 channels)			

## Technical Specifications

	<p><b>channels designated by selecting country in UI)</b> 5.180 - 5.320 GHz (36 - 64 channels) 5.500 - 5.700 GHz (100 - 140 channels) 5.745 - 5.825 GHz (149 - 165 channels)</p> <p><b>Taiwan</b> 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)</p> <p><b>Japan</b> 2.412 - 2.472 GHz (1 - 13 channels) 5.180 - 5.320 GHz (36 - 64 channels) 5.500 - 5.700 GHz (100 - 140 channels)</p> <p><b>Israel</b> 2.412 - 2.472 GHz (1 - 13 channels) 5.180 - 5.320 GHz (36 - 64 channels)</p>
<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>Emissions</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
<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.
<b>Features</b>	<p>Dual radio: IEEE 802.11a/n for high-throughput applications and IEEE 802.11a/b/g/n for legacy support and high-speed applications</p> <ul style="list-style-type: none"> <li>- Both IEEE radios, supporting three spatial streams and 3x3 MIMO reaching 450 Mb/s per radio.</li> <li>- Six RP-SMA connectors for external MIMO antennas</li> <li>- Both radios operate at full power and full performance on IEEE 802.3af PoE/Gigabit Ethernet</li> <li>- Both radios can operate in the 5 GHz band for the highest performance</li> </ul>
<b>Notes</b>	<p>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.</p> <p>Three spatial stream AP, supporting 450 Mb/s per radio.</p> <p>Maximum transmit power varies by country.</p> <p>When used with an HP MIMO outdoor antenna, the AP requires a RP-SMA to N Type adapter/cable (available separately).</p> <p>Outdoor antennas should be installed by a professional installer with proper grounding and lightning protection.</p> <p>Regulatory model number: MRLBB-1002</p>
<b>Services</b>	<p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and</p>

## Technical Specifications

response times in your area, please contact your local Hewlett Packard Enterprise sales office.

**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

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

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

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

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

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

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

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

### IEEE 802.11a 5 GHz

<b>Data rate</b>	6 Mbps	54 Mbps
<b>Receiver sensitivity</b>	-93 dBm	-80 dBm
<b>Transmit power</b>	20 dBm	18 dBm

### Radio characteristics: IEEE 802.11a 2.4 GHz

<b>Data rate</b>	1 Mbps	54 Mbps
<b>Receiver sensitivity</b>	-100 dBm	-80 dBm
<b>Transmit power</b>	20 dBm	18 dBm

### Standards and protocols Mobility

(Applies to all products in series)

- 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

## Technical Specifications

IEEE 802.11i Medium Access Control (MAC) Security Enhancements  
IEEE 802.11n WLAN Enhancements for Higher Throughput

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	157.5
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

<b>HP MSM466-R Dual Radio Outdoor 802.11n Access Point (AM)</b> (J9715A)	<b>I/O ports and slots</b>	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>	<b>Radios (built-in)</b> 802.11 a/n, a/b/g/n <b>Radio operation modes</b> Client access, Local mesh, Packet capture <b>AP operation modes</b> Autonomous and controlled <b>Wi-Fi Alliance Certification</b> a/b/g/n Wi-Fi Certified <b>Antenna</b> External antennas only; six Type N connectors
	<b>Physical characteristics</b>	<b>Number of external antennas</b> 6 <b>Dimensions</b> 4.92(w) x 8.27(d) x 9.84(h) in (12.5 x 21.01 x 24.99 cm) <b>Weight</b> 6.06 lb (2.75 kg) mounting bracket
<b>HP MSM466-R Dual Radio Outdoor 802.11n Access Point (WW)</b> (J9716A)		
<b>HP MSM466-R Dual Radio Outdoor 802.11n Access Point (JP)</b> (J9717A)		

## Technical Specifications

<b>HP MSM466-R Dual Radio Outdoor 802.11n Access Point (IL)</b> (J9718A)	<b>Memory and processor</b>	Dual core @ 800 MHz, 128 MB flash, 256 MB SDRAM	
	<b>Mounting and enclosure</b>	Outdoor IP67 and NEMA 4X; Includes hardware for pole and wall mount applications	
	<b>Environment</b>	<b>Operating temperature</b>	-40°F to 131°F (-40°C to 55°C); Below -20°C requires 802.3at PoE power to run embedded heater
		<b>Operating relative humidity</b>	5% to 95%, noncondensing
		<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
		<b>Nonoperating/Storage relative humidity</b>	5% to 95%, noncondensing
	<b>Electrical characteristics</b>	<b>Description</b>	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.
		<b>Maximum power rating</b>	12.9 W
		<b>Notes</b>	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.
	<b>Frequency band and operating channels</b>	<b>Americas</b>	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)			
<b>European Union</b>		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)	
<b>Rest of World (Actual channels designated by selecting country in UI)</b>		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)		
<b>Taiwan</b>	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)		
<b>Japan</b>	2.412 - 2.472 GHz (1 - 13 channels)		
	5.180 - 5.320 GHz (36 - 64 channels)		
	5.500 - 5.700 GHz (100 - 140 channels)		
<b>Israel</b>	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)		
<b>Safety</b>	UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1;		

## Technical Specifications

	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
<b>Medical</b>	EN60601-1-2
<b>RF Exposure</b>	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.
<b>Features</b>	<p>Dual radio: IEEE 802.11a/n for high-throughput applications and IEEE 802.11ab/g/n for legacy support and high-speed applications</p> <ul style="list-style-type: none"> <li>- Both IEEE radios, supporting three spatial streams and 3x3 MIMO reaching 450 Mb/s per radio</li> <li>- Six Type N connectors for external MIMO antennas</li> <li>- Both radios operate at full power and full performance on IEEE 802.3af PoE/Gigabit Ethernet</li> <li>- Run both radios at 5 GHz for outstanding performance</li> </ul>
	<p>Outdoor enclosure</p> <ul style="list-style-type: none"> <li>- IP67 rate</li> <li>- NEMA 4X rated</li> <li>- -40°C to +55°C</li> </ul>
<b>Notes</b>	<p>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.</p> <p>Three spatial stream AP, supporting 450 Mb/s per radio.</p> <p>Maximum transmit power varies by country.</p> <p>When used with an HP MIMO indoor antenna, the AP requires an RP-SMA to N Type adapter/cable (available separately).</p> <p>Outdoor antennas should be installed by a professional installer with proper grounding and lightning protection.</p> <p>Wind speeds are supported up to 165 m/h (265 km/h).</p> <p>Dimensions do not include the additional space required for cables.</p> <p>Regulatory model number: MRLBB-1102</p> <p>Additional Railway EMC emission standards</p> <ul style="list-style-type: none"> <li>• EN 55011</li> <li>• EN 50121-3-2</li> </ul>
<b>Services</b>	<p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.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 Hewlett Packard Enterprise sales office.</p>

**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

<b>Data rate</b>	MCS0,	MCS7,
	MCS8,	MCS15,
	MCS16	MCS23

## Technical Specifications

	45 Mbps	450 Mbps
<b>Receiver sensitivity</b>	-90 dBm	-73 dBm
<b>Transmit power</b>	17 dBm	12 dBm
<b>IEEE 802.11n 5 GHz @ 20 MHz channel</b>		
<b>Data rate</b>	MCS0, MCS8, MCS16 21.7 Mbps	MCS7, MCS15, MCS23 216.7 Mbps
<b>Receiver sensitivity</b>	-93 dBm	-77 dBm
<b>Transmit power</b>	17 dBm	12 dBm
<b>IEEE 802.11n 2.4 GHz @ 40 MHz channel</b>		
<b>Data rate</b>	MCS0, MCS8, MCS16 45 Mbps	MCS7, MCS15, MCS23 450 Mbps
<b>Receiver sensitivity</b>	-90 dBm	-75 dBm
<b>Transmit power</b>	20 dBm	16 dBm
<b>IEEE 802.11n 2.4 GHz @ 20 MHz channel</b>		
<b>Data rate</b>	MCS0, MCS8, MCS16 21.7 Mbps	MCS7, MCS15, MCS23 216.7 Mbps
<b>Receiver sensitivity</b>	-93 dBm	-77 dBm
<b>Transmit power</b>	20 dBm	17 dBm
<b>IEEE 802.11a 5 GHz</b>		
<b>Data rate</b>	6 Mbps	54 Mbps
<b>Receiver sensitivity</b>	-93 dBm	-80 dBm
<b>Transmit power</b>	20 dBm	18 dBm
<b>Radio characteristics: IEEE 802.11a 2.4 GHz</b>		
<b>Data rate</b>	1 Mbps	54 Mbps
<b>Receiver sensitivity</b>	-100 dBm	-80 dBm
<b>Transmit power</b>	20 dBm	18 dBm

### Standards and protocols Mobility

(applies to all products in series)

- 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

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

**Technical Specifications**

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	157.5
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



## Accessory Product Details

**NOTE:** Details are not available for all accessories. The following specifications were available at the time of publication.

<b>HP 1-port Power Injector</b> (J9407B)	<b>Physical characteristics</b>	<b>Dimensions</b>	5.71(d) x 2.36(w) x 1.22(h) in. (14.5 x 6 x 3.1 cm)
		<b>Weight</b>	1 lb. (0.45 kg)
	<b>Environment</b>	<b>Operating temperature</b>	32°F to 104°F (0°C to 40°C)
		<b>Operating relative humidity</b>	5% to 93%, noncondensing
		<b>Nonoperating/Storage temperature</b>	-4°F to 158°F (-20°C to 70°C)
		<b>Nonoperating/Storage relative humidity</b>	5% to 95%, noncondensing
		<b>Altitude</b>	up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	<b>Voltage</b>	100-240 VAC
		<b>Current</b>	0.3/0.2 A
		<b>Frequency</b>	50/60 Hz
		<b>Notes</b>	IEEE 802.3af compliant
	<b>Safety</b>	UL 60950; EN 60950	
	<b>Emissions</b>	EN 55024; EN 55022 (CISPR 22) Class B with FTP Cabling; FCC Part 15, Class B with FTP cabling	
	<b>Notes</b>	The 1-port power converter has 1 AC power cord input, 1 RJ-45 10/100/1000 Mbps port for data coming from the network infrastructure, and 1 RJ-45 for data plus IEEE 802.3af-compliant PoE for Gigabit Ethernet to power the access point.	
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.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 Hewlett Packard Enterprise sales office.		

### HP Indoor Omnidirectional Dual Band 2.5/6dBi MIMO 6 Element Antenna (J9659A)

<b>Electrical characteristics</b>	<b>Frequency range 1</b>	2400 - 2500
	<b>Gain 1 dBi (with antenna cable)</b>	2.5
	<b>Frequency range 2</b>	5150 - 5850
	<b>Gain 2 dBi (with antenna cable)</b>	5.9
	<b>VSWR max</b>	2:0
	<b>H-Plane (3 dB beamwidth)</b>	Omnidirectional
	<b>Polarization</b>	Linear (vertical)
	<b>Impedance (Ohms)</b>	50

## Accessory Product Details

	<b>RF connector</b>	Reverse SMA (male)
	<b>Cable length</b>	2.75 ft. (0.84 m)
<b>Physical characteristics</b>	<b>Dimensions</b>	8.58(d) x 1.69(h) in. (21.79 x 4.29 cm)
	<b>Weight</b>	1.5 lb. (0.68 kg)
	<b>Mounting style</b>	Single 1 inch diameter hole
	<b>Enclosure</b>	Polycarbonate
<b>Environment</b>	<b>Operating temperature</b>	-22°F to 131°F (-30°C to 55°C)
	<b>Nonoperating/Storage temperature</b>	-40°F to 149°F (-40°C to 65°C)
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.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 Hewlett Packard Enterprise sales office.	

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### HP Indoor Omnidirectional Dual Band 3/4dBi MIMO 3 Element Antenna (J9171A)

<b>Electrical characteristics</b>	<b>Frequency range 1</b>	2400 - 2500	
	<b>Gain 1 dBi (with antenna cable)</b>	3	
	<b>Frequency range 2</b>	4900 - 5900	
	<b>Gain 2 dBi (with antenna cable)</b>	4	
	<b>VSWR max</b>	2:1	
	<b>E-Plane (3 dB beamwidth)</b>	60 degrees	
	<b>H-Plane (3 dB beamwidth)</b>	Omnidirectional	
	<b>Polarization</b>	Linear (vertical)	
	<b>Impedance (Ohms)</b>	50	
		<b>RF connector</b>	Reverse SMA (male)
		<b>Cable length</b>	2.75 ft. (0.84 m)
	<b>Physical characteristics</b>	<b>Dimensions</b>	3.6(d) x 12.14(w) x 0.87(h) in. (9.14 x 30.84 x 2.21 cm)
		<b>Weight</b>	0.86 lb. (0.39 kg)
<b>Mounting style</b>		Ceiling	
<b>Enclosure</b>		White ASA IP-67 rated	
<b>Environment</b>	<b>Operating temperature</b>	-22°F to 131°F (-30°C to 55°C)	
	<b>Nonoperating/Storage temperature</b>	-40°F to 149°F (-40°C to 65°C)	
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.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 Hewlett Packard Enterprise sales office.		

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### HP Indoor-Outdoor Sector Dual Band 8/10dBi MIMO 3 Element Antenna (J9169A)

<b>Electrical characteristics</b>	<b>Frequency range 1</b>	2400 - 2500
	<b>Gain 1 dBi (with antenna</b>	8

## Accessory Product Details

	<b>cable)</b>	
	<b>Frequency range 2</b>	5100 - 5900
	<b>Gain 2 dBi (with antenna cable)</b>	10.7
	<b>VSWR max</b>	2:1
	<b>E-Plane (3 dB beamwidth)</b>	75/55
	<b>H-Plane (3 dB beamwidth)</b>	70/60
	<b>Polarization</b>	Linear (vertical)
	<b>Impedance (Ohms)</b>	50
	<b>RF connector</b>	N (male)
	<b>Cable length</b>	2.75 ft. (0.84 m)
<b>Physical characteristics</b>	<b>Dimensions</b>	3.6(d) x 12.14(w) x 0.87(h) in. (9.14 x 30.84 x 2.21 cm)
	<b>Weight</b>	0.86 lb. (0.39 kg)
	<b>Mounting style</b>	Ceiling
	<b>Enclosure</b>	White ASA IP-67 rated
<b>Environment</b>	<b>Operating temperature</b>	-22°F to 149°F (-30°C to 65°C); IP-67 rated for outdoor use
	<b>Nonoperating/Storage temperature</b>	-40°F to 149°F (-40°C to 65°C)
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.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 Hewlett Packard Enterprise sales office.	

### HP Indoor-Outdoor Point-to-Point Dual Band 10/13dBi MIMO 3 Element Antenna (J9170A)

<b>Electrical characteristics</b>	<b>Frequency range 1</b>	2400 - 2500
	<b>Gain 1 dBi (with antenna cable)</b>	10.9
	<b>Frequency range 2</b>	5100 - 5900
	<b>Gain 2 dBi (with antenna cable)</b>	13.5
	<b>VSWR max</b>	2:1
	<b>E-Plane (3 dB beamwidth)</b>	45/20 degrees
	<b>H-Plane (3 dB beamwidth)</b>	45/20 degrees
	<b>Polarization</b>	Linear (vertical)
	<b>Impedance (Ohms)</b>	50
	<b>RF connector</b>	N (male)
	<b>Cable length</b>	2.75 ft. (0.84 m)
<b>Physical characteristics</b>	<b>Dimensions</b>	1.4(d) x 16.2(w) x 14.7(h) in. (3.56 x 41.15 x 37.34 cm)
	<b>Weight</b>	2.43 lb. (1.1 kg)

## Accessory Product Details

	<b>Mounting style</b>	Pole Mount
	<b>Enclosure</b>	White ASA IP-67 rated
<b>Environment</b>	<b>Operating temperature</b>	-22°F to 149°F (-30°C to 65°C); IP-67 rated for outdoor use
	<b>Nonoperating/Storage temperature</b>	-40°F to 149°F (-40°C to 65°C)
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.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 Hewlett Packard Enterprise sales office.	

<b>HP Dual-Band Antenna Lightning Arrester (J8996A)</b>	<b>Electrical characteristics</b>	<b>VSWR max</b>	1.4:1
	<b>Physical characteristics</b>	<b>Dimensions</b>	2.4(d) x 0.9(w) x 1.2(h) in. (6.1 x 2.29 x 3.05 cm)
	<b>Notes</b>	Input RF power, 100 MHz/6000 MHz: 250 W/10 W 50 Meg Ohm insulation resistance Maximum insertion loss of 0.4 dB	
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.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 Hewlett Packard Enterprise sales office.	

### HP Outdoor Omnidirectional 6dBi at 2.4GHz MIMO 3 Element Antenna (J9719A)

<b>Electrical characteristics</b>	<b>Frequency range 1</b>	2400 - 2500
	<b>Gain 1 dBi (with antenna cable)</b>	6
	<b>Impedance (Ohms)</b>	50
	<b>RF connector</b>	N Type (Male) x 3
	<b>Cable length</b>	3 ft. (.9 m)
<b>Physical characteristics</b>	<b>Dimensions</b>	8.25(d) x 10(h) in. (20.96 x 25.4 cm)
	<b>Wind surface area</b>	.32 sq. ft. (0.03 sq. m)
	<b>Wind survival</b>	125 mph (201.13 km/hr)
	<b>Wind gust survival</b>	165 mph (266 km/h)
	<b>Mounting style</b>	Pole or Wall
<b>Environment</b>	<b>Operating temperature</b>	-40°F to 158°F (-40°C to +70°C) (Cable Install Low Temp -20°C)
	<b>Nonoperating/Storage temperature</b>	-40°F to 185°F (-40°C to 85°C)
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.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 Hewlett Packard Enterprise sales office.	

### HP Outdoor Omnidirectional 8dBi at 5GHz MIMO 3 Element Antenna (J9720A)

<b>Electrical characteristics</b>	<b>Frequency range 1</b>	5150 - 5875
	<b>Gain 1 dBi (with antenna cable)</b>	8

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**Accessory Product Details**

	<b>Impedance (Ohms)</b>	50
	<b>RF connector</b>	N Type (Male) x 3
	<b>Cable length</b>	3 ft. (.9 m)
<b>Physical characteristics</b>	<b>Dimensions</b>	8.25(d) x 10(h) in. (20.96 x 25.4 cm)
	<b>Wind surface area</b>	.32 sq. ft. (0.03 sq. m)
	<b>Wind survival</b>	125 mph (201.13 km/hr)
	<b>Wind gust survival</b>	165 mph (266 km/h)
	<b>Mounting style</b>	Pole or Wall
<b>Environment</b>	<b>Operating temperature</b>	-40°F to 158°F (-40°C to +70°C) (Cable Install Low Temp -20°C)
	<b>Nonoperating/Storage temperature</b>	-40°F to 185°F (-40°C to 85°C)
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.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 Hewlett Packard Enterprise sales office.	

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## Summary of Changes

Date	Version History	Action	Description of Change:
01-Dec-2015	From Version 14 to 15	Changed	Overview and Technical Specifications updated
01-Dec-2014	From Version 13 to 14	Changed	Warranty and support updated
11-Aug-2014	From Version 12 to 13	Changes	Configuration was revised
23-May-2014	From Version 11 to 12	Added	Added two new: JL009A, JL010A
31-Mar-2014	From Version 10 to 11	Changed	Updated the specifications for all 4 sets of models.  Updated Features and Benefits
09-Dec-2013	From Version 9 to 10	Added	Added two new TAA models
		Changed	Updated the specifications for all 4 sets of models.
25-Oct-2013	From Version 7 to 9	Changed	Configuration was revised  Accessories was removed
		Added	HP 425 Wireless 802.11n (AM) AP, HP 425 Wireless 802.11n (AM) 8 Pack AP, HP 425 Wireless 802.11n (WW) AP, HP 425 Wireless 802.11n (WW) 8 Pack AP, HP 425 Wireless 802.11n (JP) AP, and HP 425 Wireless 802.11n (JP) 8 Pack AP were added to Build to Order  HP Gigabit IntelliJack 48V Power Supply was added to External Power Supplies  HP Indoor Omni 2.5/6dBi MMO 4 Elmnt Ant was added to External Antenna
22-May-2013	From Version 5 to 6	Changed	Updated Configuration section.
13-May-2013	From Version 4 to 5	Removed	Technical Specifications: Removed J9654A, J9655A, and J9656A references.  Accessories: Removed J9656A, J9659A, J9171A, J9169A and J9170A references.
		Changed	Overview: Updated Features and benefits, and Build to Order section.
25-Mar-2013	From Version 3 to 4	Added	Overview: Added Build to Order to the Features and benefits section.
		Removed	Overview: Removed Models section completely  Completely removed the Accessories section
08-Nov-2011	From Version 2 to 3	Changed	Changes were made throughout, including changing the title.
17-May-2011	From Version 1 to 2	Changed	Radio Characteristics were revised.

## Summary of Changes



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