

### Overview

### Models

HP MSM310 Access Point (US)	J9374B
HP MSM310 Access Point (WW)	J9379B
HP MSM310 Access Point (JP)	J9524B

### Key features

- Single radio
- Intelligent traffic forwarding
- Self-healing, advanced mesh capabilities
- Client access
- Indoor industrial enclosures

### Product overview

HP offers intelligent single and dual radio access points designed to provide reliable, easy-to-use wireless connectivity across networks. All HP MSM access points can be managed by any HP MSM controllers and the HP RF Manager for the RF security sensors. All HP MSM access points can also work in autonomous mode. HP MSM access points are IEEE 802.3af compliant and require a single Power over Ethernet (PoE) cable drop or can be powered directly via a power adaptor. HP offers a full range of both indoor and outdoor MSM access points.

### Features and benefits

#### Quality of Service (QoS)

- **IEEE 802.1p prioritization**
  - delivers data to devices based on the priority and type of traffic
- **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
- **Wireless**
  - L2/L3/L4 classification: IEEE 802.1p VLAN priority, SpectraLink SVP, and DiffServ
  - Wi-Fi MultiMedia (WMM), IEEE 802.11e EDCF, and Service-Aware priority assigned by Virtual Service Communities (VSC)
  - Maximum VoIP call capacity: 12 active calls on IEEE 802.11a/b/g/n
- **Network management**
  - Fully manageable using HP PCM 3.0 AU1 and HP Mobility Manager 3.0 AU2
  - SNMP v2c, SNMP v3, MIB-II with Traps, and RADIUS Authentication Client MIB (RFC 2618)
  - Embedded HTML management tool with secure access (SSL and VPN)
  - Scheduled configuration and firmware upgrades from a central server
- **Diagnostic**
  - Client event log records association, authentication, and DHCP events
  - Packet capture tool for Ethernet and IEEE 802.11 interfaces (PCAP format)
  - Data rate matrix
- **RF management**
  - Automatically selects channel on power-up and continuously improves channel selection based on background interference scan

### Overview

- Provides configurable background rogue scanning
- Automatically adjusts transmit power to reduce interference

### Connectivity

- **Auto-MDIX**  
automatically adjusts for straight-through or crossover cables on all 10/100 ports
- **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

### Mobility

- **Anywhere, anytime wireless coverage**
  - Single radio IEEE 802.11a/b/g access points
  - Per-radio software-selectable configuration of frequency bands
  - Self-healing, self-optimizing local mesh extends network availability
  - Wi-Fi Alliance certified for interoperability with all 802.11a/b/g client devices
  - IEEE 802.3af PoE or external power cord on selected models
- **Interoperability**  
Wi-Fi Alliance certifications, including IEEE 802.11g Wi-Fi and WPA2 to help ensure multivendor interoperability
- **Virtual Service Communities (VSCs)**
  - Up to 16 SSIDs, each with unique MAC address, configurable SSID broadcasts
  - Individual security and QoS profiles per VSC
  - Configurable DTIM and minimum data rate per VSC
  - Each VSC can be mapped to separate IEEE 802.1Q VLANs
  - WMM and/or WMM-PS
  - Security filter
  - IP filter
- **AP client access control functions**
  - IEEE 802.1X authentication using EAP-SIM, EAP-FAST, EAP-TLS, EAP-TTLS, and PEAP
  - MAC address authentication using local or RADIUS access lists
  - RADIUS AAA using EAP-MD5, PAP, CHAP, and MS-CHAPv2
  - RADIUS Client (RFC 2865 and 2866) with location-aware support
  - Layer 2 wireless client isolation
- **Auto Channel Select (ACS)**  
helps reduce radio co-channel interference by automatically selecting the radio channel with the least interference
- **MSM325 and MSM335 with HP RF sensor license Included**  
are ready, out of the box, to function as an RF monitor for the HP RF Manager IDS/IPS system

### Security

- **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
- **Local wireless bridge client traffic filtering**  
when enabled, prevents communication between wireless devices associated with the same access point
- **IEEE 802.1X:**  
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

### Overview

#### Warranty and support

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

†HP warranty includes repair or replacement of hardware for as long as you own the product, with next business day advance replacement (available in most countries). The disk drive included with HP AllianceOne Advanced Services and Services zL Modules, HP Threat Management Services zL Module, HP AllianceOne Extended zL Module with Riverbed Steelhead, HP MSM765zL Mobility Controller and HP Survivable Branch Communication zL Module powered by Microsoft Lync has a five-year hardware warranty. For details, refer to the Software license and hardware warranty statements at [www.hp.com/networking/warranty](http://www.hp.com/networking/warranty).

### Configuration

#### HP MSM-802.11a/b/g Access Point Series accessories

<b>Power Supply</b>	HP MSM31x/MSM32x Power Supply	J9405A <a href="#">See Configuration Note:1</a>
	HP 1-Port Power Injector	J9407B <a href="#">See Configuration Note:1</a>
<b>Mounting Kit</b>	HP MSM310/MSM320 Access Point Mounting Bracket	J9403A
<b>External Antenna</b>	HP 5 dBi Indoor/Outdoor Omnidirectional Antenna	J8441A
	HP 8 dBi Outdoor Omnidirectional Antenna	J8444A
	HP 3 dBi Dual-Band Diversity Antenna	J8997A
	HP 7 dBi Dual-Band Directional Antenna	J8999A
	HP Antenna Lightning Arrester	J8996A
<b>Wireless Antenna</b>	HP Dual Band Indoor Short Omnidirectional Antenna	J9401A

#### Accessory Product Details

##### Configuration Rules:

Note 1            [Localization required. \(See Localization Menu\)](#)

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

### Technical Specifications

**HP MSM310 Access Point (US)** (J9374B)

**HP MSM310 Access Point (WW)** (J9379B)

**HP MSM310 Access Point (JP)** (J9524B)

<b>Ports</b>	2 RJ-45 autosensing 10/100 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
<b>AP characteristics</b>	<b>Radios</b>	Single (a/b/g)
	<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 Wi-Fi Certified
	* 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.	
<b>Physical characteristics</b>	<b>Dimensions</b>	6.4(w) x 6.52(d) x 1.88(h) in. (16.26 x 16.56 x 4.78 cm)
	<b>Weight</b>	1.41 lb. (0.64 kg)
	<b>Enclosure</b>	Indoor, plenum rated
<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 176°F (-40°C to 80°C)
	<b>Nonoperating/Storage relative humidity</b>	5% to 95%, noncondensing
<b>Electrical characteristics</b>	<b>Description</b>	IEEE 802.3af PoE compliant or 5 VDC from available AC power supply
	<b>Maximum power rating</b>	6.5 W
	<b>Antenna Connector</b>	(2) RP-SMA with diversity
	<b>Antenna</b>	2) 2 dBi dual-band 2.4/5 GHz omnidirectional antennas
	<b>Number of external antennas</b>	2
<b>Frequency band and Operating channels</b>	<b>FCC</b>	2.412 - 2.462 GHz (1 - 11 channels) 5.180 - 5.240 GHz (36 - 48 channels) 5.745 - 5.825 GHz (149 - 165 channels)
	<b>EN</b>	2.412 - 2.472 GHz (1 - 13 channels) 5.180 - 5.240 GHz (36 - 48 channels)
	<b>RCR</b>	2.412 - 2.472 GHz (1 - 13 channels) 5.170 - 5.230 GHz (34 - 46 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); MIC approval (Korea); RCR STD-33; ARIB STD-T71 (Japan); EN 301 893 (EU)	
<b>Safety</b>	UL 2043; IEC 60950-1; EN 60950-1; EN 60601-1-2	
<b>Emissions</b>	EN 55022 Class B; EN 60601-1-2; EN 301 489-1; EN 301 489-17; ICES-003 Class B; FCC Part 15, Class B	
<b>RF Exposure</b>	FCC Bulletin OET-65C; RSS-102; EN 50385	
<b>Notes</b>	Maximum transmit power varies by country.	

### Technical Specifications

#### Services

- 3-year, 4-hour onsite, 13x5 coverage for hardware (UN687E)
- 3-year, 4-hour onsite, 24x7 coverage for hardware (UN688E)
- 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UN690E)
- 3-year, 24x7 SW phone support, software updates (UN689E)
- 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR924E)
- 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR925E)
- 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR926E)
- 4-year, 4-hour onsite, 13x5 coverage for hardware (US021E)
- 4-year, 4-hour onsite, 24x7 coverage for hardware (US022E)
- 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (US023E)
- 4-year, 24x7 SW phone support, software updates (US024E)
- 5-year, 4-hour onsite, 13x5 coverage for hardware (US025E)
- 5-year, 4-hour onsite, 24x7 coverage for hardware (US026E)
- 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (US027E)
- 5-year, 24x7 SW phone support, software updates (US028E)
- 3 Yr 6 hr Call-to-Repair Onsite (UW419E)
- 4 Yr 6 hr Call-to-Repair Onsite (UW420E)
- 5 Yr 6 hr Call-to-Repair Onsite (UW421E)
- 1-year, 6 hour Call-To-Repair Onsite for hardware (HR928E)
- 1-year, 24x7 software phone support, software updates (HR927E)
- 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HV150E)
- 1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HV151E)
- 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HV152E)
- 3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HU318E)
- 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HU319E)
- 4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HU320E)
- 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HU321E)
- 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HU322E)

Refer to the HP website at: [www.hp.com/networking/services](http://www.hp.com/networking/services) for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

#### Radio characteristics: IEEE 802.11a/b/g

	IEEE 802.11a	IEEE 802.11a	IEEE 802.11b	IEEE 802.11b	IEEE 802.11g	IEEE 802.11g
<b>Data rate</b>	6 Mbps	54 Mbps	1 Mbps	11 Mbps	6 Mbps	54 Mbps
<b>Receiver sensitivity</b>	-87 dBm	-67 dBm	-94 dBm	-87 dBm	-87 dBm	-70 dB
<b>Transmit power</b>	18 dBm	12 dBm	18.5 dBm	18.5 dBm	18 dBm	13 dBm

### Accessories

#### HP MSM-802.11a/b/g Access Point Series accessories

##### Power Supply

[HP MSM31x/MSM32x Power Supply](#)

J9405A

[HP 1-Port Power Injector](#)

J9407B

##### Mounting Kit

HP MSM310/MSM320 Access Point Mounting Bracket

J9403A

##### External Antenna

[HP 5 dBi Indoor/Outdoor Omnidirectional Antenna](#)

J8441A

[HP 8 dBi Outdoor Omnidirectional Antenna](#)

J8444A

[HP 3 dBi Dual-Band Diversity Antenna](#)

J8997A

[HP 7 dBi Dual-Band Directional Antenna](#)

J8999A

[HP Antenna Lightning Arrester](#)

J8996A

##### Wireless Antenna

[HP Dual Band Indoor Short Omnidirectional Antenna](#)

J9401A

### Accessory Product Details

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

<b>HP MSM31x/MSM32x Power Supply (J9405A)</b>	<b>Physical characteristics</b>	<b>Dimensions</b>	3.35(d) x 1.97(w) x 1.27(h) in. (8.5 x 5 x 3.22 cm)
		<b>Weight</b>	0.88 lb. (0.4 kg)
		<b>Environment</b>	
	<b>Environment</b>	<b>Operating temperature</b>	32°F to 104°F (0°C to 40°C)
		<b>Operating relative humidity</b>	5% to 95%, noncondensing
		<b>Nonoperating/Storage temperature</b>	-4°F to 176°F (-20°C to 80°C)
		<b>Nonoperating/Storage relative humidity</b>	5% to 95%, noncondensing
		<b>Electrical characteristics</b>	
	<b>Electrical characteristics</b>	<b>Voltage</b>	100-240 VAC
		<b>Current</b>	0.5/0.3 A
		<b>Frequency</b>	50/60 Hz
		<b>Notes</b>	Output voltage: 5 VDC
	<b>Services</b>	Refer to the HP website at: <a href="http://www.hp.com/networking/services">www.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.	

<b>HP 1-port Power Injector (J9407B)</b>	<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>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.	



### Accessory Product Details

#### Services

Refer to the HP website at: [www.hp.com/networking/services](http://www.hp.com/networking/services) for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

#### HP 5 dBi Indoor/Outdoor Omnidirectional Antenna (J8441A)

#### Electrical characteristics

**Frequency range 1** 2400 - 2500

**Gain 1 dBi** (with antenna cable) 4.4

**VSWR max** 1.7:1

**E-Plane** (3 dB beamwidth) 31 degrees

**H-Plane** (3 dB beamwidth) Omnidirectional

**Polarization** Linear (vertical)

**Impedance** (Ohms) 50

**RF connector** Reverse SMA (male)

**Cable length** 2.75 ft. (0.84 m)

#### Physical characteristics

**Dimensions** 11.5(h) in. (29.21 cm)

**Wind surface area** 0.08 sq. ft. (0.01 sq. m)

**Wind survival** 125.1 mph (201.13 km/hr)

**Weight** 0.30 lb. (0.14 kg)

**Mounting style** Ceiling T-bar, I-beam, or mast

**Enclosure** Polycarbonate

#### Environment

**Operating temperature** -22°F to 131°F (-30°C to 55°C)

**Nonoperating/Storage temperature** -40°F to 149°F (-40°C to 65°C)

#### Services

Refer to the HP website at: [www.hp.com/networking/services](http://www.hp.com/networking/services) for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

#### HP 8 dBi Outdoor Omnidirectional Antenna (J8444A)

#### Electrical characteristics

**Frequency range 1** 2400 - 2500

**Gain 1 dBi** (with antenna cable) 8

**VSWR max** 1.5:1

**E-Plane** (3 dB beamwidth) 13 degrees

**H-Plane** (3 dB beamwidth) Omnidirectional

**Polarization** Linear (vertical)

**Impedance** (Ohms) 50

**RF connector** N (male)

**Cable length** 2.75 ft. (0.84 m)

#### Physical characteristics

**Dimensions** 25.25(h) in. (64.14 cm)

**Wind surface area** 0.11 sq. ft. (0.01 sq. m)

**Wind survival** 125 mph (201.13 km/hr)

### Accessory Product Details

<b>Environment</b>	<b>Weight</b>	0.5 lb. (0.23 kg)
	<b>Mounting style</b>	Mast
	<b>Enclosure</b>	Polycarbonate
	<b>Operating temperature</b>	-22°F to 131°F (-30°C to 55°C)
<b>Services</b>	<b>Nonoperating/Storage temperature</b>	-40°F to 149°F (-40°C to 65°C)
	Refer to the HP website at: <a href="http://www.hp.com/networking/services">www.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.	

### HP 3 dBi Dual-Band Diversity Antenna (J8997A)

<b>Electrical characteristics</b>	<b>Frequency range 1</b>	2400 - 2500
	<b>Gain 1 dBi</b> (with antenna cable)	3
	<b>Frequency range 2</b>	4900 - 5990
	<b>Gain 2 dBi</b> (with antenna cable)	4
	<b>VSWR max</b>	2.0:1
	<b>E-Plane</b> (3 dB beamwidth)	60 degrees
	<b>E-plane radiation plots</b>	2.45 GHz, E Plane
	<b>H-Plane</b> (3 dB beamwidth)	Omnidirectional
	<b>H-plane radiation plots</b>	2.45 GHz, H Plane
	<b>Impedance</b> (Ohms)	50
	<b>Grounding</b>	DC
	<b>RF connector</b>	Reverse SMA (male)
	<b>Cable length</b>	2.75 ft. (0.84 m)
	<b>Physical characteristics</b>	<b>Dimensions</b>
<b>Weight</b>		0.5 lb. (0.23 kg)
<b>Mounting style</b>		Ceiling grid
<b>Environment</b>	<b>Enclosure</b>	PVC/Acrylic
	<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 HP website at: <a href="http://www.hp.com/networking/services">www.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.	

### Accessory Product Details

<b>HP 7 dBi Dual-Band Directional Antenna (J8999A)</b>	<b>Electrical characteristics</b>	<b>Frequency range 1</b>	2400 - 2500	
		<b>Gain 1 dBi</b> (with antenna cable)	6.9	
		<b>Frequency range 2</b>	4900 - 5990	
		<b>Gain 2 dBi</b> (with antenna cable)	7.7	
		<b>VSWR max</b>	2.0:1	
		<b>E-Plane</b> (3 dB beamwidth)	66 degrees	
		<b>E-plane radiation plots</b>	E Plane 2.45 GHz	
		<b>H-Plane</b> (3 dB beamwidth)	68 degrees	
		<b>H-plane radiation plots</b>	H Plane 2.45 GHz	
		<b>Polarization</b>	Linear (vertical)	
		<b>Impedance</b> (Ohms)	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>	5.16(d) x 5.16(w) x 1.37(h) in. (13.11 x 13.11 x 3.48 cm)
			<b>Wind surface area</b>	0.12 sq. ft. (0.01 sq. m)
			<b>Wind survival</b>	120 mph (193.08 km/hr)
			<b>Weight</b>	0.5 lb. (0.23 kg)
			<b>Mounting style</b>	Flush wall mount, articulating wall, or mast
			<b>Enclosure</b>	PVC/Acrylic
			<b>Front-to-back ratio</b> (dB)	10
<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 HP website at: <a href="http://www.hp.com/networking/services">www.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.			

<b>HP 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 HP website at: <a href="http://www.hp.com/networking/services">www.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.	

### Accessory Product Details

**HP Dual Band Indoor Short Omnidirectional Antenna**  
(J9401A)

**Notes**

**Electrical characteristics**

**Services**

**Dimensions**

3.78(h) in. (9.59 cm)

**Base diameter**

0.37 in. (0.93 cm)

2.1 dBi (2.45 GHz), 2.4 dBi (4.9 GHz), 2.6 dBi (5.25 GHz), 3.4 dBi (5.875 GHz)

Polarization: vertical, omnidirectional

VSWR 2:1 max. across all bands

**Connector**

RP-SMA

Refer to the HP website at: [www.hp.com/networking/services](http://www.hp.com/networking/services) for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

---

To learn more, visit: [www.hp.com/networking](http://www.hp.com/networking)

© Copyright 2013 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.