QuickSpecs
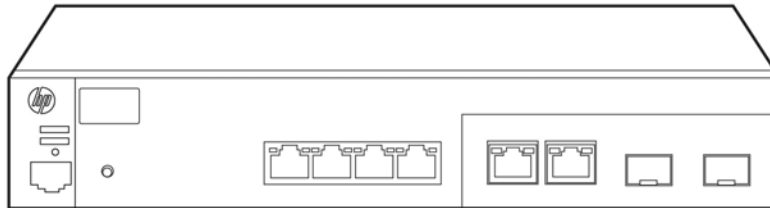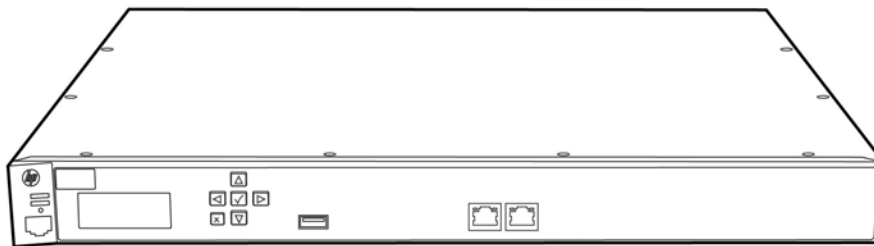
Overview
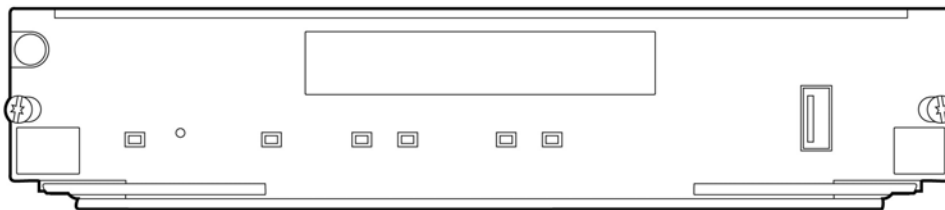
HP MSM Controller Series

HP MSM720 Access Controller (WW)

HP MSM760 Premium Mobility Controller/HP MSM760 Access Controller

HP MSM765 zl Premium Mobility Controller

Key features
- Ease of use, scalability, and redundancy

QuickSpecs

Overview

- Enhanced architecture for flexible network design
- Supports IEEE 802.11a/b/g/n and .11ac AP and access devices
- Comprehensive WLAN security
- Appliance and blade form factors

Product overview

Working in unison with HP and MSM Access Points, the HP MSM Controller Series delivers a high-performance networking solution. The enhanced controller architecture scales to new WLAN standards without requiring a controller replacement. The MSM controllers provide advanced Radio Resource Management (RRM), including client load balancing and interference mitigation. The MSM wireless controllers also support a fast-roaming capability.

Wireless security is comprehensive with integrated wireless IDS and support for internal and external Authentication, Authorization, and Accounting (AAA) servers; a built-in stateful firewall; per-user VLAN mapping; and authentication.

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; optimizes WLAN performance by detecting interference from Wi-Fi and non-Wi-Fi sources—by using spectrum analysis capabilities built into the specific access points (refer to the HP Access Point—Controller compatibility matrix), 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**
    helps ensure equal RF transmission time for wireless clients
- **Spectrum analysis**
  - **Power/frequency spectrum analysis**
    Measures noise from IEEE 802.11 remote sources
  - **Signal detection/classification**
    Identifies source of RF interference; for example, Bluetooth, cordless phones, and microwave ovens
  - **Evaluation of channel quality**
    Helps detect severe channel degradation and improves the reporting of poor RF performance
- **Automated work flows**
  - **Initial controller settings**
    Defines basic operational settings for the controller; for example, network connections, security settings, and system time
  - **Wireless network for employees**
    Enables setup of a new wireless network for employees; for example, network and security settings, and basic voice and video settings
  - **Wireless network for guests**
    Provides wireless access for guest users; for example, network and security settings specific to guest access
- **Dashboard Monitoring and Analytics**
  - Allow administrators to monitor and troubleshoot their HP WLAN infrastructure at a glance
  - Provide analytical visibility into multiple areas such as: Wireless Clients, Access Points and Alarms utilizing intuitive graphics and colors
  - Display a quick operational health assessment of the Wi-Fi network and easy identification of potential issues

Overview

- o Support for environments using Bonjour services
- **Gateway**
  Allows discovery of Bonjour services located in a different layer-3 network
- **HP Zerocast**
  Eliminates Bonjour multicast traffic from the WLAN enabling scalable deployment of Apple devices with no performance impact on the Wi-Fi network
- **Access control**
  Enables filters to be applied inbound and outbound (on the AP) to SSIDs, groups of or specific APs. User based filtering can block Bonjour traffic until the user is authenticated
- **Remote configuration and management**
  Are available through a secure Web browser, command-line interface (console port or SSH), SOAP, or SNMP
- **Management interface control**
  Allows interfaces to be enabled or disabled depending on security preferences
- **Management VLAN**
  Segments traffic to and from management interfaces, including CLI, Web browser interface, and SNMP
- **RADIUS accounting support**
  separates RADIUS accounting server support per SSID; provides detailed session, usage, and billing information for each client activity
- **Logging**
  provides local and remote logging of events via SNMP (v2c and v3) and syslog; provides log throttling and log filtering to reduce the number of log events generated
- **Controller networking**
  Includes IEEE 802.1D-compliant bridging and bridge MIB (RFC 4188), which is supported only on a primary bridge interface; stateful firewall; PPPoE client (RFC 2516); ICMP (RFC 792); IEEE 802.1Q VLAN tagging; NAT (RFC 1631); CIDR (RFC 1519); L2TP and PPTP servers for wireless clients; VPN client, which establishes PPTP or IPSec tunnels to other devices; and IGMP snooping (IGMP proxy v1 and v2), which is supported on the wireless interfaces of APs
- **DHCP support**
  Includes RFC 2131 and RFC 3046 (DHCP relay option 82) for server and built-in DHCP client for client
- **Band steering**
  Redirects 5 GHz-capable clients automatically to the less-congested 5 GHz spectrum
- **Controller management**
  Provides a secure Web browser (Secure Sockets Layer [SSL] and VPN), command-line interface, SOAP, SNMP v2c and v3, MIB-II with traps, RADIUS Authentication Client MIB (RFC 2618), and RIPv2 MIB extension (RFC 1724); implements scheduled configuration and firmware upgrades from a central server; offers per-user activity records by time used or data transferred; and supports remote syslog
- **HP Intelligent Management Center (IMC) and Wireless Services Manager Software**
  Provide centralized management for discovery, logging, status, and configuration management
- **Unified network visibility**
  Provides visibility between a wired and wireless network, using the IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and sFlow
- **Diagnostics**
  Records association, authentication, and DHCP events in client event log; includes a packet capture tool for Ethernet and IEEE 802.11 interfaces (PCAP format), a wireless client data rate matrix, and a client status page; complete session logging provides detailed information for problem identification and resolution

Firewall

- **Stateful firewall**
  enforces firewall policies to control traffic and filter access to network services; maintains session information for every connection passing through it, enabling the firewall to control packets based on existing sessions
- **NAT/PAT**
  Leverages a choice of dynamic partial address translation (PAT) or static network address translation (NAT) preserves a network's IP address pool or conceals the private address of network resources such as Web servers, which are made accessible to users of a guest or public wireless LAN

Overview

- **Authenticated network access**
  Authenticates users with an internal or external RADIUS server or Microsoft® Active Directory before allowing full network connectivity

Quality of Service (QoS)

- **Rate limiting**
  Supports per-wireless client, ingress-enforced maximums and per-wireless client, per-queue guaranteed minimums
- **Centralized traffic**
  Layer 2 and Layer 3 QoS settings are maintained when using Mobility Traffic Manager or guest access

Mobility

- **HP MSM solutions enhanced for businesses**
  Delivers services for a range of vertical markets, including healthcare, hospitality, education, manufacturing, transportation, and service providers
- **Powerful security capabilities**
  Enables robust identity- and role-based user account profiles to use internal or external AAA services
- **Solutions that cover the most important WLAN applications**
  Deliver rich application support, including guest access, location-based services, Voice over Wi-Fi (VoW), hotspot, surveillance, and secure point of sale
- **Capacity that scales from small office to large campus**
  Deploy wireless LANs (WLANs) efficiently with the MSM720 controller (which supports 10 to 40 APs) and the MSM760, MSM765 zl, and MSM775 zl controllers (which control 40 to 200 APs)
- **Premium Mobility scalability features**
  - **Virtual Controller**
    Managed by a single IP address the MSM76x and MSM775 zl each support a team of up to 800 APs and five controllers and the MSM720 a team of up to 40 APs across two controllers (a team requires the same controller type)
  - **N+1 redundancy**
    Teaming provides N+1 redundancy
  - **Seamless failover**
    APs can fail-over without rebooting, preserving mobility services when client traffic is bridged locally at the AP
  - **64 VSC profiles**
    can be defined
- **Mobility Traffic Manager**
  Provides flexible and multiple network distribution schemes address a range of business needs; policies for user network and security profiles are consistently applied and enforced; wireless traffic can be directed anywhere in the network as required; enterprise businesses can easily migrate to the MSM mobility solution, preserving prior network designs
- **Controller client access control**
  provides SSL-protected universal access method, MAC address authentication, and IEEE 802.1x authentication; Web proxy server; support for centralized portal; AAA Security; WPA and WPA2 encryption; client-fixed IP address spoofing; per-site and per-user access lists; white list and black list support; bandwidth limiting per user, per VLAN, or per VSC; and concurrent users (up to 250 for the MSM720, up to 2,000 for the MSM760, MSM765 zl and MSM775 zl controller)
- **Simplified management with central control**
  Reduces the time and complexity of managing a wireless network; the solution controls up to hundreds of APs (depending on the controller) from a single management interface and helps ensure that a consistent set of services is delivered throughout the wireless network; and the controllers push authentication, encryption, QoS enforcement, and access policies to the APs, delivering intelligence to the edge of mobile networks
- **Services**
  Provides standard L2 roaming and VoWLAN support on all controllers, advanced fast roaming on mobility controllers, plug-and-play AP management, as well as public and guest Internet access
- **Advanced fast roaming (requires a mobility controller or upgrade)**
  Provides WPA2 opportunistic key caching through controller support as well as inter/intra-subnet roaming and seamless

Overview

roaming (less than 50 ms roaming delay) support for VoW deployments

Security

- **Integrated IDS support (Premium Mobility version required)**
  - **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 location of a rogue device
  - **Flexible deployment models**
    supports time slicing or dedicating a radio to detect full time
- **Secure shell**
  encrypts all transmitted data for secure remote CLI access over IP networks
- **Secure Sockets Layer (SSL)**
  encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- **IEEE 802.1X, Active Directory, and RADIUS network logins**
  Control wireless network access for authentication and accountability, using the IEEE 802.1X, Microsoft Active Directory, and RADIUS
- **RADIUS-based MAC authentication**
  authenticates a wireless client with a RADIUS server based on the MAC address of the client; this is useful for clients with minimal or no user interface
- **Web-based authentication**
  Provides a Web browser-based environment to authenticate clients that may not support the IEEE 802.1X supplicant
- **IEEE 802.1x supplicant on MSM APs**
  Helps prevent deployment of rogue networking equipment
- **Secure management access**
  Encrypts all access methods (CLI, GUI, or MIB) securely through SSH v2c, SSL, and/or SNMPv3

Policy management

- **Standards-based authentication support for Microsoft Active Directory and IEEE 802.1X**
  Integrates seamlessly into existing authentication services or uses the built-in database
- **Integration with HP IMC Network Management software**
  Helps ensure consistent policy enforcement across wired and wireless networks

Connectivity

- **10GbE connections to the switch fabric (the MSM765 zl and MSM775 zl premium mobility controllers only)**
  Leverages two 10GbE wire-speed internal connections to help ensure that the network connections from the application to the switch backplane do not limit application performance
- **IPv6 wireless client traffic forwarding**
  Is supported for L2 and L3 mobility (MTM) and for client traffic directly bridged at the APs
- **IEEE 802.3ad link-aggregation control protocol (LACP) and HP port trunking (the MSM720 controller only)**
  Support up to six ports bonded via LACP; and facilitates manually configured trunks between an HP switch and the controller

Comprehensive portfolio

- **Access point support**

Overview

Refer to the HP Access Point—Controller Compatibility Matrix (refer to http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA5-0345ENW&cc=us&lc=en)

Performance

- **High-performance processor system**
  - **MSM720 controllers**
  - Freescale Dual Core 800 MHz P1020 Processor, 256 KB cache, and 1 GB DDR3 memory
  - **MSM760 controllers**
    Intel® Core™ 2 Duo Processor E6400, 2.13 GHz, and 2 MB cache
  - **MSM765 zl controller**
    Intel Core 2 Duo Processor T7500, 2.2 GHz, and 4 MB cache
  - **MSM775 zl controller**
    Intel® Ivy Bridge Dual Core CPU Core i3-3120ME, 2.4 GHz, and 3 MB cache
- **Memory subsystems**
  - **MSM720 controllers**
    1 GB of DDR3 memory
  - **MSM760 controllers**
    2 GB of DDR2 memory
  - **MSM765 zl controllers**
    4 GB of DDR2 memory
  - **MSM775 zl controllers**
    4 GB ECC DDR3-1333 SO-DIMM
- **Disk drive (MSM76x models)**
  Enables rapid data reads/writes via the 250 GB SATA II 7200 rpm
  hard disk drive, providing improved application performance
- **Solid state drive (MSM775 zl model)**
  Enables rapid data reads/writes via the 32 GB SATA solid state drive
  (SSD), providing improved application performance

Additional information

- **TAA versions for the MSM720 controller**
  For U.S.-government-manufactured sales requirements, order the TAA MSM720 controller models; and for all other AMS and WW orders, use WW models
- **Licensing model for guest user access (v5.7 and later)**
  The full number of supported guest access user sessions is enabled with the base-level controller models and is no longer tied to the AP upgrade license; for example, the base MSM720 (access and premium mobility) controllers will now support up to 250 concurrent users and the MSM76x base controllers will now support up to 2,000 concurrent users without requiring additional AP license upgrades
- **10-AP license upgrade option**
  This can be used on the MSM720, MSM76x, and MSM775 zl products on all supported firmware releases
- **Licensing model for the MSM317 access device (v5.7 and later)**
  No additional AP license is required for the MSM317; non-MSM317 devices are subject to AP licensing; maximum wireless device limits per controller and team are unchanged, and all devices count toward these maximums; for example, an MSM760 could manage 200 MSM317 devices with no additional AP license, 40 APs and 160 MSM317 devices with no additional AP license; or 80 APs and 120 MSM317 devices with an additional 40-AP license
- **RFC and AP support**
  For a list of RFCs and other industry standards supported by the MSM solution, refer to the "mobility products specification sheet," which can be accessed at h17007.www1.hp.com/docs/mobility/4AA3-3883ENW.pdf. For access point support, refer to the HP Access Point—Controller Compatibility Matrix

Warranty and support

Overview

- **Lifetime Warranty 2.0—5y HDD**
  Advance hardware replacement for as long as you own the MSM720 and MSM765 zl controllers, with the exception of the hard disk drive in the MSM765 zl controller (which comes with a 5-year warranty); and next-business-day delivery (available in most countries)†
- **Lifetime Warranty 2.0**
  Advance hardware replacement for as long as you own the MSM775 zl controller with next-business-day delivery (available in most countries)†
- **Electronic and telephone support (for Lifetime Warranty 2.0)**
  limited 24x7 telephone support is available from HP for the first 3 years; limited electronic and business hours telephone support is available from HP for the entire warranty period; to reach our support centers, refer to www.hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to www.hp.com/networking/warrantysummary
- **1-year Warranty 2.0**
  Advance hardware replacement for the MSM760 controller with next-business-day delivery (available in most countries)
- **Electronic and telephone support (for Warranty 2.0)**
  limited electronic and 24x7 telephone support is available from HP for the entire warranty period; to reach our support centers, refer to www.hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to www.hp.com/networking/warrantysummary
- **Software releases and warranty**
  The MSM720 and MSM775 zl controllers include all offered software releases for as long as you own the products; the MSM765 zl and MSM760 controllers include one year of bug fixes; for details on the software releases available with your product purchase, visit hp.com/networking/ warrantysummary; to find software for your product, visit hp.com/networking/support

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

Configuration

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 MSM720 Access Controller (WW)
- 4 RJ-45 autosensing 10/100/1000 port
- 2 RJ-45 dual-personality 10/100/1000 ports/ SFP Ports

J9693A
See Configuration Note:1, 2

HP MSM720 Premium Mobility Controller (WW)
- 4 RJ-45 autosensing 10/100/1000 port
- 2 RJ-45 dual-personality 10/100/1000 ports/ SFP Ports

J9694A
See Configuration Note:1, 2

HP MSM720 TAA Access Controller
- 4 RJ-45 autosensing 10/100/1000 port
- 2 RJ-45 dual-personality 10/100/1000 ports/ SFP Ports

J9695A
See Configuration Note:1, 2

HP MSM720 TAA Premium Mobility Controller
- 4 RJ-45 autosensing 10/100/1000 port
- 2 RJ-45 dual-personality 10/100/1000 ports/ SFP Ports

J9696A
See Configuration Note:1, 2

HP MSM760 Premium Mobility Controller
- 2 RJ-45 autosensing 10/100/1000 ports

J9420A
See Configuration Note:2

HP MSM760 Access Controller
- 2 RJ-45 autosensing 10/100/1000 ports

J9421A
See Configuration Note:2

HP MSM765 zl Premium Mobility Controller

J9370A
See Configuration Note:2

HP MSM775 zl Premium Controller Module

J9840A

Configuration Rules:

Note 1 — The following Transceivers install into this Controller:
J9054C - HP X111 100M SFP LC FX Transceiver
J9099B - HP X112 100M SFP LC BX-D Transceiver
J9100B - HP X112 100M SFP LC BX-U Transceiver
J4860C - HP X121 1G SFP LC LH Transceiver
J4858C - HP X121 1G SFP LC SX Transceiver
J4859C - HP X121 1G SFP LC LX Transceiver
J9142B - HP X122 1G SFP LC BX-D Transceiver
J9143B - HP X122 1G SFP LC BX-U Transceiver

Configuration

Remarks: The TAA skus in the MSM 700 Controller are WW available.

Internal Power Supplies

- None

Transceivers

SFP Transceivers	HP X111 100M SFP LC FX Transceiver	J9054C
	HP X112 100M SFP LC BX-D Transceiver	J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B

Access Point Options

External Power Supplies	HP 1-port Power Injector	J9407B See Configuration Note:1

Configuration Rules:

Licenses	HP MSM720/760/765 Additional 10 Access Point License	J9697A See Configuration Note:1
	HP MSM720/760/765/800 Add 10 AP E-LTU	J9697AAE See Configuration Note:1
	HP MSM720 Premium Mobility License	J9698A See Configuration Note:2
	MSM720 Premium E-LTU	J9698AAE See Configuration Note:2

Configuration

HP MSM760/765 Additional 40 AP License	J9371A See Configuration Note:3
HP MSM760/765/800 Add 40 AP E-LTU	J9371AAE See Configuration Note:3
HP MSM760 Premium Mobility License	J9491A See Configuration Note:5
HP MSM760 Premium E-LTU	J9491AAE See Configuration Note:5

Configuration Rules

Note 1	This license is supported the following Controllers: J9694A - HP MSM720 Premium Mobility Controller(WW) J9420A - HP MSM760 Premium Mobility Controller J9370A - HP MSM765 zl Premium Mobility Controller J9840A - HP MSM775- zl Premium Controller Module J9693A - HP MSM720 Access Controller (WW) J9696A - HP MSM720 TAA Premium Mobility Controller J9695A - HP MSM720 TAA Access Controller
Note 2	This license is supported the following Controllers: J9693A - HP MSM720 Access Controller (WW) J9695A - HP MSM720 TAA Access Controller
Note 3	This license is supported the following Controllers: J9420A - HP MSM760 Premium Mobility Controller J9370A - HP MSM765 zl Premium Mobility Controller J9840A - HP MSM775- zl Premium Controller Module J9421A - HP MSM760 Access Controller
Note 5	This license is supported the following Controllers: J9421A - HP MSM760 Access Controller

Mounting Kit	HP MSM710 Controller Rack Mounting Kit	J9404A See Configuration Note:1

Configuration Rules

Note 1	If this Mounting Kit is select then one of the following Access Points is required: J9325A - HP MSM710 Mobility Controller J9328A - HP MSM710 Access Controller

Technical Specifications

HP MSM720 Premium Mobility Controller (WW) (J9694A)
HP MSM720 TAA Premium Mobility Controller (J9696A)

I/O ports and slots	4 RJ-45 autosensing 10/100/1000 ports; 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) 2 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)
Additional ports and slots	1 RJ-45 serial console port

Physical characteristics	**Dimensions**	6.28(w) x 10(d) x 1.75(h) in (15.95 x 25.4 x 4.45 cm)
	Weight	3.62 lb (1.64 kg)
Mounting		Supports the mounting options of the 2520-8 PoE switch, including EIA-standard 19 in. telco rack or equipment cabinet (rack-mounting kit included); horizontal surface or wall mounting
Performance	**100 Mb Latency**	< 20.4 µs (LIFO 64-byte packets)
	1000 Mb Latency	< 6.3 µs (LIFO 64-byte packets)
	Throughput	up to 8.9 million pps
Environment	**Operating temperature**	41°F to 113°F (5°C to 45°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C)
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C)
Electrical characteristics	**Frequency**	50/60 Hz
	Maximum heat dissipation	70 BTU/hr (73.85 kJ/hr)
	AC Voltage	100-240 VAC
	Current	.2/.1 A
	Maximum power rating	20 W
Safety		UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1
Emissions		FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003
Features		Supported

- IEEE 802.11 n/a/b/g access points and/or access devices
- 10 to 40 access points and/or access devices (in increments of 10)
- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- 250 simultaneous guest access users

Included services

- Plug-and-play AP management and WLAN management
- Guest access
- Captive portal
- PCI DSS compliance for wireless PoS traffic
- Support for Real-Time Location Services (RTLS)
- Advanced fast roaming with VoWLAN support
- Mobility Traffic Manager (MTM)
- Support for up to 64 VSC profiles

QuickSpecs

Technical Specifications

- Unified policy enforcement and network visibility
- Virtual controller (up to two MSM720 controllers and 40 APs with resiliency; 250 maximum concurrent users)

Notes

Latency values refer to client traffic bridged locally at the AP.
Not all services are supported with the Virtual Controller feature. Please refer to the user documentation for more detail.
For U.S. government manufactured sales requirements, order the TAA MSM720 controller models. For all other AMS and WW orders, use WW models.

Services

3-year, 4-hour onsite, 13x5 coverage for hardware (U0Q97E)
3-year, 4-hour onsite, 24x7 coverage for hardware (U0Q99E)
3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U0R04E)
4-year, 4-hour onsite, 13x5 coverage for hardware (U0R07E)
4-year, 4-hour onsite, 24x7 coverage for hardware (U0R09E)
4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0R14E)
4-year, 24x7 SW phone support, software updates (U0R13E)
5-year, 4-hour onsite, 13x5 coverage for hardware (U0R17E)
5-year, 4-hour onsite, 24x7 coverage for hardware (U0R19E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0R24E)
5-year, 24x7 SW phone support, software updates (U0R23E)
3 Yr 6 hr Call-to-Repair Onsite (U0R01E)
4 Yr 6 hr Call-to-Repair Onsite (U0R11E)
5 Yr 6 hr Call-to-Repair Onsite (U0R21E)
1-year, 4-hour onsite, 13x5 coverage for hardware (U0Q87E)
1-year, 4-hour onsite, 24x7 coverage for hardware (U0Q89E)
1-year, 6 hour Call-To-Repair Onsite for hardware (U0Q91E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U0Q94E)
1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0Q85E)
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U0Q86E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0Q95E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0Q96E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0R05E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0R06E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0R15E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0R16E)
3 Yr NBD Onsite Proactive Care (U2U43E)
4 Yr NBD Onsite Proactive Care (U2U44E)
5 Yr NBD Onsite Proactive Care (U2U45E)
3 Yr 4hr/24x7 Proactive Care (U2U46E)
4 Yr 4hr/24x7 Proactive Care (U2U47E)
5 Yr 4hr/24x7 Proactive Care (U2U48E)
3 Yr 6hr CTR Proactive Care (U2U49E)
4 Yr 6hr CTR Proactive Care (U2U50E)
5 Yr 6hrCTR Proactive Care (U2U51E)

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

Technical Specifications

HP MSM720 Access Controller (WW) (J9693A)
HP MSM720 TAA Access Controller (J9695A)

I/O ports and slots	4 RJ-45 autosensing 10/100/1000 ports; 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) 2 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)	
Additional ports and slots	1 RJ-45 serial console port	
Physical characteristics	**Dimensions**	6.28(w) x 10(d) x 1.75(h) in (15.95 x 25.4 x 4.45 cm)
	Weight	3.62 lb (1.64 kg)
Mounting	Supports the mounting options of the 2520-8 PoE switch, including EIA-standard 19 in. telco rack or equipment cabinet (rack-mounting kit included); horizontal surface or wall mounting	
Performance	**100 Mb Latency**	< 20.4 µs (LIFO 64-byte packets)
	1000 Mb Latency	< 6.3 µs (LIFO 64-byte packets)
	Throughput	up to 8.9 million pps
Environment	**Operating temperature**	41°F to 113°F (5°C to 45°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C)
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C)
Electrical characteristics	**Frequency**	50/60 Hz
	Maximum heat dissipation	70 BTU/hr (73.85 kJ/hr)
	AC Voltage	100-240 VAC
	Current	.2/.1 A
	Maximum power rating	20 W
Safety	UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1	
Emissions	UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1	
Features	Supported	

- IEEE 802.11 n/a/b/g access points and/or access devices
- 10 to 40 access points and/or access devices (in increments of 10)
- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- 250 simultaneous guest access users

Included services

- Plug-and-play AP management and WLAN management
- Guest access
- Captive portal
- PCI DSS compliance for wireless PoS traffic
- Support for Real-Time Location Services (RTLS)
- Standard Layer 2 roaming with VoWLAN support
- Support for up to 16 VSC profiles
- Unified policy enforcement and network visibility

QuickSpecs

HP MSM Controller Series

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Notes	Latency values refer to client traffic bridged locally at the AP. For U.S. government manufactured sales requirements, order the TAA MSM720 controller models. For all other AMS and WW orders, use WW models.
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (U0Q57E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U0Q59E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U0Q64E) 4-year, 4-hour onsite, 13x5 coverage for hardware (U0Q67E) 4-year, 4-hour onsite, 24x7 coverage for hardware (U0Q69E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0Q74E) 4-year, 24x7 SW phone support, software updates (U0Q73E) 5-year, 4-hour onsite, 13x5 coverage for hardware (U0Q77E) 5-year, 4-hour onsite, 24x7 coverage for hardware (U0Q79E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0Q84E) 5-year, 24x7 SW phone support, software updates (U0Q83E) 3 Yr 6 hr Call-to-Repair Onsite (U0Q61E) 4 Yr 6 hr Call-to-Repair Onsite (U0Q71E) 5 Yr 6 hr Call-to-Repair Onsite (U0Q81E) 1-year, 4-hour onsite, 13x5 coverage for hardware (U0Q47E) 1-year, 4-hour onsite, 24x7 coverage for hardware (U0Q49E) 1-year, 6 hour Call-To-Repair Onsite for hardware (U0Q51E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U0Q54E) 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0Q45E) 1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U0Q46E) 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0Q55E) 3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0Q56E) 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0Q65E) 4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0Q66E) 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0Q75E) updates + 4 hour Hardware Exchange (U0Q76E) 3 Yr NBD Onsite Proactive Care (U2U52E) 4 Yr NBD Onsite Proactive Care (U2U53E) 5 Yr NBD Onsite Proactive Care (U2U54E) 3 Yr 4hr/24x7 Proactive Care (U2U55E) 4 Yr 4hr/24x7 Proactive Care (U2U56E) 5 Yr 4hr/24x7 Proactive Care (U2U57E) 3 Yr 6hr CTR Proactive Care (U2U58E) 4 Yr 6hr CTR Proactive Care (U2U59E 5 Yr 6hrCTR Proactive Care (U2U60E) Refer to the HP website at: **www.hp.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP MSM760 Premium Mobility Controller (J9420A)

I/O ports and slots	2 RJ-45 autosensing 10/100/1000 ports; 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)
Additional ports and slots	1 RJ-45 serial console port

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Physical characteristics	Dimensions	17.32(w) x 15.38(d) x 1.75(h) in (43.99 x 39.07 x 4.45 cm) (1U height)
	Weight	13.45 lb (6.1 kg)
Mounting		Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only
Environment	Operating temperature	41°F to 104°F (5°C to 40°C)
	Operating relative humidity	15% to 80%, noncondensing
	Nonoperating/Storage temperature	-40°F to 149°F (-40°C to 65°C)
	Nonoperating/Storage relative humidity	15% to 80%, noncondensing
Electrical characteristics	Frequency	50/60 Hz
	Maximum heat dissipation	434 BTU/hr (457.87 kJ/hr)
	AC Voltage	100-240 VAC
	Current	2/1 A
	Maximum power rating	127 W
Safety		UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1
Emissions		FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003
Features		Supported

- IEEE 802.11 n/a/b/g access points and/or access devices
- 40 to 200 access points and/or access devices (in increments of 10 or 40)
- MSM firmware releases prior to MSM v5.7: 1,000 simultaneous guest access users upgradable in increments of 250 per 40-AP license pack, up to a maximum of 2,000 guest access users Unlimited simultaneous users
- MSM v5.7 and later: 2,000 simultaneous guest access users with base product

Included services

- Plug-and-play AP management and WLAN management
- Guest access
- Captive portal
- PCI DSS compliance for wireless PoS traffic
- Support for Real-Time Location Services (RTLS)
- Advanced fast roaming with VoWLAN support
- Mobility Traffic Manager (MTM)
- Support for up to 64 VSC profiles
- Unified policy enforcement and network visibility
- Virtual controller (up to five MSM765 zl controllers and 800 APs with resiliency)

Services	3-year, parts only, global next-day advance exchange (UQ652E)
	3-year, 4-hour onsite, 13x5 coverage for hardware (UQ653E)
	3-year, 4-hour onsite, 24x7 coverage for hardware (UQ654E)
	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UQ656E)
	3-Year, 9x5 SW phone support, software updates (UQ615E)
	3-year, 24x7 SW phone support, software updates (UQ616E)
	4-year, 4-hour onsite, 13x5 coverage for hardware (U0S08E)
	4-year, 4-hour onsite, 24x7 coverage for hardware (U0S07E)

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4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0S04E)
4-year, 24x7 SW phone support, software updates (U0S05E)
5-year, 4-hour onsite, 13x5 coverage for hardware (U0S10E)
5-year, 4-hour onsite, 24x7 coverage for hardware (U0S09E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0S03E)
5-year, 24x7 SW phone support, software updates (U0S06E)
3 Yr 6 hr Call-to-Repair Onsite (UW334E)
1-year, 4-hour onsite, 13x5 coverage for hardware (HS511E)
1-year, 4-hour onsite, 24x7 coverage for hardware (HS512E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HS515E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates
(HS513E)
1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange
(U0S18E)
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U0S17E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange
(U0S11E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0S16E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange
(U0S13E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0S12E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange
(U0S15E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0S14E)
3 Yr NBD Onsite Proactive Care (U2N31E)
4 Yr NBD Onsite Proactive Care (U2N32E)
5 Yr NBD Onsite Proactive Care (U2N33E)
3 Yr 4hr/24x7 Proactive Care (U2N34E)
4 Yr 4hr/24x7 Proactive Care (U2N35E)
5 Yr 4hr/24x7 Proactive Care (U2N36E)
3 Yr 6hr CTR Proactive Care (U2N37E)
4 Yr 6hr CTR Proactive Care (U2N38E)
5 Yr 6hrCTR Proactive Care (U2N39E)
Refer to the HP website at: **www.hp.com/networking/services** for details on the service-level
descriptions and product numbers. For details about services and response times in your area, please
contact your local HP sales office.

HP MSM760 Access Controller (J9421A)

I/O ports and slots	2 RJ-45 autosensing 10/100/1000 ports; 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)
Additional ports and slots	1 RJ-45 serial console port

Physical characteristics	Dimensions	17.32(w) x 15.38(d) x 1.75(h) in (43.99 x 39.07 x 4.45 cm) (1U height)
	Weight	13.45 lb (6.1 kg)

Mounting and enclosure	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Environment	Operating temperature	41°F to 104°F (5°C to 40°C)
	Operating relative humidity	15% to 80%, noncondensing
	Nonoperating/Storage temperature	-40°F to 149°F (-40°C to 65°C)
	Nonoperating/Storage relative humidity	15% to 80%, noncondensing
Electrical	Frequency	50/60 Hz

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characteristics	**Maximum heat dissipation**	434 BTU/hr (457.87 kJ/hr)
	Voltage	100-240 VAC
	Current	2/1 A
	Maximum power rating	127 W

Safety UL 60950-1; CAN/CSA 22.2 No. 60950-1; IEC 60950-1; EN 60950-1

Emissions FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003

Features Supported

- IEEE 802.11 n/a/b/g access points and/or access devices
- 40 to 200 access points and/or access devices (in increments of 10 or 40)
- MSM firmware releases prior to MSM v5.7: 1,000 simultaneous guest access users upgradable in increments of 250 per 40-AP license pack, up to a maximum of 2,000 guest access users
- MSM v5.7 and later: 2,000 simultaneous guest access users with base product
- Maximum of 2,000 concurrent users are supported

Included services

- Plug-and-play AP management and WLAN management
- Guest access
- Captive portal
- PCI DSS compliance for wireless PoS traffic
- Support for Real-Time Location Services (RTLS)
- Standard Layer 2 roaming with VoWLAN support
- Support for up to 16 VSC profiles
- Unified policy enforcement and network visibility

Services 3-year, parts only, global next-day advance exchange (U4F01E)
3-year, 4-hour onsite, 13x5 coverage for hardware (UQ653E)
3-year, 4-hour onsite, 24x7 coverage for hardware (UQ654E)
3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UQ655E)
3-Year, 9x5 SW phone support, software updates (UQ613E)
3-year, 24x7 SW phone support, software updates (UQ614E)
1-year, post-warranty, parts only, global next-day advance exchange (UQ657PE)
1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (UQ658PE)
1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (UQ659PE)
1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UQ660PE)
3 Yr 6 hr Call-to-Repair Onsite (UW317E)
3-year, parts only, global next-day advance exchange (U4F01E)
1-year, 4-hour onsite, 24x7 coverage for hardware (HS507E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HS510E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HS508E)
1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U4D43E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U4D94E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0T20E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0T71E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U4E45E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0U22E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange

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(U0S69E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0U73E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0U73E)
3 Yr NBD Onsite Proactive Care (U2N04E)
4 Yr NBD Onsite Proactive Care (U2N05E)
5 Yr NBD Onsite Proactive Care (U2N06E)
3 Yr 4hr/24x7 Proactive Care (U2N07E)
4 Yr 4hr/24x7 Proactive Care (U2N08E)
5 Yr 4hr/24x7 Proactive Care (U2N09E)
3 Yr 6hr CTR Proactive Care (U2N10E)
4 Yr 6hr CTR Proactive Care (U2N11E)
5 Yr 6hrCTR Proactive Care (U2N12E)

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

HP MSM775 zl Premium Controller Module (J9840A)

Physical characteristics	**Dimensions**	8.13(w) x 9.75(d) x 1.75(h) in (20.65 x 24.77 x 4.45 cm)
	Weight	2.65 lb (1.2 kg)
Mounting and enclosure	Can be installed in any of the following chassis: HP 5406 zl (J8697A), 5412 zl (J8698A), HP 8206 zl (J9640A),and 8212 zl (J8715A).	
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft (3 km)
	Notes	Non-operating/Storage Altitude up to 15,000 ft (4.6 km) The SSD has a maximum operational wet bulb temperature of 35°C (95°F) and a maximum non-operational wet bulb temperature of 40°C (104°F)
Electrical characteristics	**Maximum heat dissipation**	188 BTU/hr (198.34 kJ/hr)
	Maximum power rating	55 W
	Idle power	30 W
Safety	UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1	
Emissions	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003	
Features	Included services:	

- Plug-and-play AP management and WLAN management
- Guest access (up to 2000 concurrent guest access user sessions are supported)
- Captive portal
- PCI DSS compliance for wireless PoS traffic
- Support for Real-Time Location Services (RTLS)
- Advanced fast roaming with VoWLAN support
- Mobility Traffic Manager (MTM)
- Support for up to 64 VSC profiles
- Unified policy enforcement and network visibility
- Virtual controller (up to five MSM775 zl controllers and 800 APs with resiliency)
- The MSM775 zl module has a 2000 concurrent user limit. When controllers are teamed the limit

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remains 2000 concurrent users regardless of the number of controllers in the team.

The MSM775 zl module provides a module reset switch on the front panel. Refer to the user documentation for more detail.

The MSM775 zl module has a USB port on the front panel. Use of this port is not supported.

Notes
- Not all services are supported with the Virtual Controller feature. Please refer to the user documentation for more detail.
- MSM775 zl modules can only be teamed with other MSM775 zl modules.
- Chassis Configuration Guidelines:
  - Up to six MSM775 modules can be installed in an HP 5406 zl, HP 5412 zl, HP 8206 zl or HP 8212 zl, chassis if no other service modules are installed.
  - Note that the maximum number of service modules in a chassis is 6. So if other service modules are installed in the same chassis, the total number of MSM775 zl modules than can be inserted in a chassis is reduced such that the total number of all service modules in a chassis does not exceed 6.
  - There are no restrictions on what slots the MSM775 zl modules are inserted into.
  - Maximum chassis operating temperature specifications of the HP 5400 zl chassis when the MSM775 zl module is installed is 45°C. Note that the maximum temperature of the chassis is determined by the module with the lowest operating temperature.
  - The maximum HP 8200 zl chassis operating temperature specification (45°C) does not change when a MSM775 zl module is installed.
  - Note that installation of the MSM775 does not increase or decrease documented chassis limits for other service modules.

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

HP MSM765 zl Premium Mobility Controller (J9370A)

Physical characteristics	**Dimensions**	8.13(w) x 10.3(d) x 1.75(h) in (20.65 x 26.16 x 4.45 cm)
	Weight	2.05 lb (0.93 kg)
Mounting	Can be installed in any of the following chassis: HP 5406 zl (J8697A), 5412 zl (J8698A), and 8212 zl (J8715A)	
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	15% to 95% @ 131°F (55°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 95%, noncondensing
Electrical characteristics	**Maximum heat dissipation**	272 BTU/hr (287 kJ/hr)
	Maximum power rating	80 W
	Idle power	36 W
	Idle power is the actual power consumption of the device with no ports connected.	
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; IEC 60950-1; EN 60950-1	
Emissions	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003	
Features	Supported:	

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- IEEE 802.11 n/a/b/g access points and/or access devices
- 40 to 200 access points and/or access devices (in increments of 10 or 40)
- MSM firmware releases prior to MSM v5.7: 1,000 simultaneous guest access users upgradable in increments of 250 per 40-AP license pack, up to a maximum of 2,000 guest access users
- MSM v5.7 and later: 2,000 simultaneous guest access users with base product
- Total maximum concurrent users is 2,000

Included services:

- Plug-and-play AP management and WLAN management
- Guest access
- Captive portal
- PCI DSS compliance for wireless PoS traffic
- Support for Real-Time Location Services (RTLS)
- Advanced fast roaming with VoWLAN support
- Mobility Traffic Manager (MTM)
- Support for up to 64 VSC profiles
- Unified policy enforcement and network visibility
- Virtual controller (up to five MSM765 zl controllers and 800 APs with resiliency)

Notes   A maximum of four MSM765 zl controllers can be installed in the same chassis, and a maximum of three
MSM765 zl controllers are supported in the 5406 zl switch.
Not all services are supported with the Virtual Controller feature. Please refer to the user documentation for more detail.

Services   3-year, 4-hour onsite, 13x5 coverage for hardware (UQ601E)
3-year, 4-hour onsite, 24x7 coverage for hardware (UQ602E)
3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UQ604E)
3-Year, 9x5 SW phone support, software updates (UQ617E)
4-year, 4-hour onsite, 13x5 coverage for hardware (UQ605E)
4-year, 4-hour onsite, 24x7 coverage for hardware (UQ606E)
4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UQ608E)
4-year, 24x7 SW phone support, software updates (UQ607E)
5-year, 4-hour onsite, 13x5 coverage for hardware (UQ609E)
5-year, 4-hour onsite, 24x7 coverage for hardware (UQ610E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UQ612E)
5-year, 24x7 SW phone support, software updates (UQ611E)
3 Yr 6 hr Call-to-Repair Onsite (U4E49E)
1-year, 4-hour onsite, 13x5 coverage for hardware (U0R98E)
1-year, 4-hour onsite, 24x7 coverage for hardware (U0R99E)
1-year, 6 hour Call-To-Repair Onsite for hardware (U0S02E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates
(U0S00E)
1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange
(HV086E)
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HV087E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange
(HV088E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HV089E)
4-year, 24x7 software phone support, softwareupdates + Next Business Day Hardware Exchange
(HV090E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HV091E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange

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(HV092E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HV093E)
3 Yr NBD Onsite Proactive Care (U2N13E)
4 Yr NBD Onsite Proactive Care (U2N14E)
5 Yr NBD Onsite Proactive Care (U2N15E)
3 Yr 4hr/24x7 Proactive Care (U2N16E)
4 Yr 4hr/24x7 Proactive Care (U2N17E)
5 Yr 4hr/24x7 Proactive Care (U2N18E)
3 Yr 6hr CTR Proactive Care (U2N19E)
4 Yr 6hr CTR Proactive Care (U2N20E)
5 Yr 6hrCTR Proactive Care (U2N21E)

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

Accessories

HP MSM Controller Series accessories

HP MSM720 Premium Mobility Controller (WW) (J9694A)	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
HP MSM720 Access Controller (WW) (J9693A)	HP X112 100M SFP LC BX-U Transceiver	J9100B
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
HP MSM720 TAA Premium Mobility Controller (J9696A)	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X111 100M SFP LC FX Transceiver	J9054C
	HP X112 100M SFP LC BX-D Transceiver	J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
	HP MSM Additional 10 Access Point E-LTU	J9697AAE
HP MSM720 TAA Access Controller (J9695A)	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X111 100M SFP LC FX Transceiver	J9054C
	HP X112 100M SFP LC BX-D Transceiver	J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
	HP MSM720 Premium Mobility License	J9698A
	HP MSM Additional 10 Access Point E-LTU	J9697AAE
	HP MSM720 Premium E-LTU	J9698AAE
HP MSM760 Premium Mobility Controller (J9420A)	HP MSM760/765 additional 40 Access Point E-LTU	J9371AAE
HP MSM760 Access Controller (J9421A)	HP MSM Additional 10 Access Point E-LTU	J9697AAE
	HP MSM Additional 40 Access Point E-LTU	J9371AAE
	HP MSM760 Premium E-LTU	J9491AAE
HP MSM775 zl Premium Controller Module (J9840A)	HP MSM Additional 10 Access Point License	J9697A
	HP MSM Additional 40 Access Point License	J9371A
	HP MSM Additional 10 Access Point E-LTU	J9697AAE
	HP MSM Additional 40 Access Point E-LTU	J9371AAE
HP MSM765 zl Premium Mobility Controller (J9370A)	HP MSM Additional 10 Access Point License	J9697A
	HP MSM Additional 40 Access Point License	J9371A
	HP MSM Additional 10 Access Point E-LTU	J9697AAE
	HP MSM Additional 40 Access Point E-LTU	J9371AAE

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HP MSM Controller Series

Accessory Product Details

HP X121 1G SFP LC SX Transceiver (J4858C)

A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550 m on multimode fiber.

Ports	1 LC 1000BASE-SX port; Duplex: full only
Physical characteristics	Dimensions: 2.24(d) x 0.54(w) x 0.48(h) in. (5.69 x 1.37 x 1.22 cm) Weight: 0.04 lb. (0.02 kg) Transceiver form factor: SFP
Environment	Operating temperature: 32°F to 158°F (0°C to 70°C) Operating relative humidity: 5% to 85%, noncondensing Nonoperating/Storage temperature: -40°F to 203°F (-40°C to 85°C) Altitude: up to 10,000 ft. (3 km)
Electrical characteristics	Power consumption typical: 0.4 W Power consumption maximum: 0.7 W
Cabling	Type:

- 62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively;

Maximum distance:

- 2-220 m (62.5 µm core diameter, 160 MHz*km bandwidth
- 2-275 m (62.5 µm core diameter, 200 MHz*km bandwidth
- 2-500 m (50 µm core diameter, 400 MHz*km bandwidth)
- 2-550 m (50 µm core diameter, 500 MHz*km bandwidth)

Cable length: 2-550m
Fiber type: Multi Mode

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

HP X121 1G SFP LC LX Transceiver (J4859C)

HP X121 1G SFP LC LX Transceiver: An SFP format gigabit transceiver with LC connectors using LX technology.

Ports	1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only
Physical characteristics	Dimensions: 2.24(d) x 0.54(w) x 0.486(h) in. (5.69 x 1.37 x 1.23 cm) Weight:0.04 lb. (0.02 kg)
Environment	Operating temperature: 32°F to 158°F (0°C to 70°C) Operating relative humidity: 0% to 85%, noncondensing Nonoperating/Storage temperature: -40°F to 212°F (-40°C to 100°C) Altitude: up to 10,000 ft. (3 km)
Cabling	Type:

- Either single mode or multimode; 62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1;

Maximum distance:

- 2-550 m (multimode 62.5 µm core diameter, 500 MHz*km bandwidth)
- 2-550 m (multimode 50 µm core diameter, 400 MHz*km

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bandwidth)
- 2-550 m (multimode 50 µm core diameter, 500 MHz*km bandwidth)
- 2-10,000 m (single-mode fiber)

	Notes	A mode conditioning patch cord may be needed in some multimode fiber installations. Wavelength: 1310nm Power Consumption: < 500mW Typical
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP X121 1G SFP LC LH Transceiver (J4860C) A small form-factor pluggable (SFP) Gigabit LH transceiver that provides a full-duplex Gigabit solution up to 70 km on single-mode fiber.	**Ports**	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics); Duplex: full only	
	Physical characteristics	Dimensions: 2.17(d) x 0.60(w) x 0.46(h) in. (5.5 x 1.53 x 1.18 cm) Weight: 0.04 lb. (0.02 kg)	
	Environment	Operating temperature: -40°F to 185°F (-40°C to 85°C) Operating relative humidity: 0% to 95% @ 77°F (25°C), noncondensing Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C) Altitude: up to 10,000 ft. (3 km)	
	Cabling	Cable type: • Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1; Maximum distance: • 10-70,000 m (single-mode fiber)	
	Notes	Power consumption is 0.8 watts typical with 1 watt maximum at 100% utilization. For distances less than 20 km, a 10 dB attenuator must be used. For distances between 20 km and 40 km, a 5 dB attenuator must be used. Attenuators can be purchased from most cable vendors.	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP X111 100M SFP LC FX Transceiver (J9054C)	**Ports**	1 LC 100BASE-FX port (IEEE 802.3u Type 100BASE-FX); Duplex: half or full	
	Physical characteristics	**Dimensions**	2.7(d) x 0.54(w) x 0.48(h) in. (6.86 x 1.38 x 1.22 cm)
		Weight	0.06 lb. (0.03 kg)
	Environment	**Operating temperature**	32°F to 158°F (0°C to 70°C)
		Operating relative humidity	5% to 95%
		Nonoperating/Storage temperature	-40°F to 185°F (-40°C to 85°C)
		Nonoperating/Storage relative humidity	5% to 85%

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		Altitude	up to 10,000 ft. (3 km)
	Cabling	Cable type:	
		62.5/125 ìm or 50/125 ìm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively;	
		Maximum distance:	
		• 2 km (full duplex) or 412 m (half duplex)	
	Notes	Transmitter wavelength: 1310nm	
		Power consumption is 1.1 watt maximum.	
		For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J9054B 100-FX SFP-LC Transceiver" on the "ProCurve Mini-GBICs and SFPs" Manuals Web page.	
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP X112 100M SFP LC BX-D Transceiver (J9099B)	Ports	1 LC 100BASE-BX10 port (IEEE 802.3ah Type 100BASE-BX10-D); Duplex: full only	
A small form-factor pluggable (SFP) 100-Megabit BX (bi-directional) "downstream" transceiver that provides 100 Mbps full-duplex connectivity up to 10 km on one strand of singlemode fiber. The J9099B connects to the J9100B "upstream" transceiver, or to any IEEE-standard 100BASE-BX10-U ("upstream") device.	Physical characteristics	Dimensions	2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm)
		Weight	0.04 lb. (0.03 kg)
	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, noncondensing
		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
	Cabling	Type:	
		Single-mode fiber optic, complying with ITU-T G.652;	
		Maximum distance:	
		• 0.5-10,000 m (single-mode fiber)	
	Notes	Transmit wavelength: 1550 nm. Receive wavelength: 1310 nm.	
		Power consumption is 1.1 watt maximum.	
		For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page.	
		The J9099B connects to the J9100B "upstream" transceiver, or to any IEEE-standard 100BASE-BX10-U ("upstream") device. (A 100-BX-D transceiver can only connect to a 100-BX-U product. You cannot connect two 100-BX-D transceivers together.)	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP X112 100M SFP LC BX-	Ports	1 LC 100BASE-BX10 port (IEEE 802.3ah Type 100BASE-BX10-U); Duplex: full only	

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U Transceiver (J9100B)	**Physical characteristics**	**Dimensions**	2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm)
A small form-factor pluggable (SFP) 100-Megabit BX (bi-directional) "upstream" transceiver that provides 100 Mbps full-duplex connectivity up to 10 km on one strand of singlemode fiber. The J9100B connects to the J9099B "downstream" transceiver, or to any IEEE-standard 100BASE-BX10-D ("downstream") device.		**Weight**	0.07 lb. (.03 kg)
	Environment	**Operating temperature**	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, noncondensing
		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
	Cabling	Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 0.5-10,000 m (single-mode fiber)	
	Notes	For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9100B connects to the J9099B "downstream" transceiver, or to any IEEE-standard 100BASE-BX10- D ("downstream") device. (A 100-BX-U transceiver can only connect to a 100-BX-D product. You cannot connect two 100-BX-U transceivers together.) Transmit wavelength: 1310 nm. Receive wavelength: 1550 nm. Power consumption is 1.1 watts maximum.	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X122 1G SFP LC BX-D Transceiver (J9142B)	**Ports**	1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-D); Duplex: full only	
A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) "downstream" transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand of single-mode fiber. The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE-standard 1000BASE-BX10-U ("upstream") device.	**Physical characteristics**	**Dimensions**	2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)
		Weight	0.04 lb. (0.02 kg)
	Environment	**Operating temperature**	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, non-condensing
		Non-operating/ Storage temperature	−40ºF to 185ºF −40ºC to 85ºC)
	Cabling	Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 0.5-10,000 m (single-mode fiber)	
	Notes	Transmit wavelength: 1490 nm. Receive wavelength: 1310 nm. Power consumption is 1 watt maximum. For supported platforms and minimum software requirements to support	

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	this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE-standard 1000BASE-BX10-U ("upstream") device. (A 1000-BX-D transceiver can only connect to a 1000-BX-U product. You cannot connect two 1000-BX-D transceivers together.)	
Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP X122 1G SFP LC BX-U Transceiver (J9143B) A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) "upstream" transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand of single-mode fiber. The J9143B connects to the J9142B "downstream" transceiver, or to any IEEE-standard 1000BASE-BX10-D ("downstream") device.	**Ports**	1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-U); Duplex: full only	
	Physical characteristics	Dimensions	2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)
		Weight	0.04 lb. (0.02 kg)
	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, non-condensing
		Non-operating/ Storage temperature	−40ºF to 185ºF −40ºC to 85ºC)
	Cabling	Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 0.5-10,000 m (single-mode fiber)	
	Notes	Transmit wavelength: 1310 nm. Receive wavelength: 1490 nm. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9143B connects to the J9142B "downstream" transceiver, or to any IEEE-standard 1000BASE-BX10-D ("downstream") device. (A 1000-BX-U transceiver can only connect to a 1000-BX-D product. You cannot connect two 1000-BX-U transceivers together.) Power consumption is 1 watt maximum.	
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP 1-port Power Injector (J9407B)	**Physical characteristics**	Dimensions	5.71(d) x 2.36(w) x 1.22(h) in. (14.5 x 6 x 3.1 cm)
		Weight	1 lb. (0.45 kg)
	Environment	Operating temperature	32°F to 104°F (0°C to 40°C)
		Operating relative humidity	5% to 93%, noncondensing
		Nonoperating/Storage temperature	-4°F to 158°F (-20°C to 70°C)
		Nonoperating/Storage	5% to 95%, noncondensing

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	relative humidity	
	Altitude	up to 10,000 ft. (3 km)
Electrical characteristics	**Voltage**	100-240 VAC
	Current	0.3/0.2 A
	Frequency	50/60 Hz
	Notes	IEEE 802.3af compliant
	Safety	UL 60950; EN 60950
	Emissions	EN 55024; EN 55022 (CISPR 22) Class B with FTP Cabling; FCC Part 15, Class B with FTP cabling
	Notes	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.
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP X121 1G SFP RJ45 T Transceiver (J8177C) HP X121 1G SFP RJ45 T Transceiver: An SFP format gigabit transceiver with RJ45 connectors using 1000BaseT technology.	**Ports**	1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T); Duplex: full only
	Physical characteristics	Dimensions: 2.71(d) x 0.54(w) x 0.55(h) in. (6.88 x 1.37 x 1.4 cm) Weight: 0.06 lb. (0.03 kg)
	Environment	Operating temperature: 32°F to 158°F (0°C to 70°C); with 100 LFM airflow over the SFP module) Operating relative humidity: 0% to 95% @ 75°F (25°C), noncondensing Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C) Nonoperating/Storage relative humidity: 0% to 95% @ 77°F (25°C), noncondensing Altitude: up to 10,000 ft. (3000 km)
	Cabling	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 Ù differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T; Maximum distance: • 100 m
	Notes	Power consumption is nominally 1 watt. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J8177C 1000Base-T Mini-GBIC" on the "ProCurve Mini-GBICs and SFPs" Manuals Web page. The J8177C Gigabit copper mini-GBIC is not supported on dual-personality ports. The J8177C is capable of 100 Mb operation. This is supported on only the HP ProCurve Switch 8200zl, 5400zl, and 6200yl Series using software version K.12.21 or later. Use the "auto-100" port setting to enable 100 Mb operation. Important: The earlier J8177B does not support 100 Mb operation. When used in the ProCurve Switch gl 20-Port 10/100/1000 Module (J4908A), the J8177C mini-GBIC can be installed in either the upper or lower mini-GBIC port, but will block access to the other port.
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales

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office.

Summary of Changes

Date	Version History	Action	Description of Change:
23-May-2014	From Version 19 to 20	Changed	Content QS edits
20-Dec-2013	From Version 16 to 17	Changed	External Power Supplies were revised.
09-Dec-2013	From Version 15 to 16	Changed	Updates made to the Configuration section.
22-Apr-2013	From Version 14 to 15	Added	Overview: Added Images
25-Mar-2013	From Version 13 to 14	Added	Overview: Added Build to Order section to the Featrues and benefits section.
		Removed	Overview: Removed entire Models section.
22-Dec-2011	From Version 12 to 13	Changed	Updated the warranty statements in Features and Benefits.
16-Nov-2011	From Version 10 to 12	Changed	The QuickSpec was rewritten, including changing the title.
18-Jul-2011	From Version 9 to 10	Changed	Accessories were revised.
08-Oct-2010	From Version 8 to 9	Changed	The QuickSpec was rewritten, including changing the title.
02-Jun-2010	From Version 7 to 8	Changed	Updated the Introduction and Key Features.
25-Mar-2010	From Version 6 to 7	Changed	Updated the Introduction and Key Features.
10-Jan-2010	From Version 5 to 6	Changed	Updated the Introduction, Key Features, and Features and Benefits sections.
21-Oct-2009	From Version 3 to 4	Changed	Updated the Introduction and Key Features sections.
10-Aug-2009	From Version 2 to 3	Removed	Removed several models throughout the document.
01-Jun-2009	From Version 1 to 2	Added	Added several new modules throughout the document.

Summary of Changes

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