

HP MSR93x Router Series



Product overview

The HP MSR93x Router Series is a high-performance small-branch router that delivers integrated routing, switching, security, SIP, embedded IEEE 802.11b/g/n WLAN connectivity, integrated 4G LTE and 3G, serial port, ADSL2+ (annex A/M, annex B/J, ADSL2+ over POTS, and ADSL2+ over ISDN), 4-pair G.SHDSL, and an optional dual 3G WAN—all in a single box.

The MSR93x solutions deliver up to 300 Kpps forwarding with comprehensive IPv4 and IPv6 routing, MPLS, QoS, firewall, network address translation (NAT), VPN, switching, voice, and wireless capabilities in a compact, fixed form factor. Moreover, this router series is based on open standards for seamless integration within small-branch deployments.

A summary of the highlights of the MSR93x Router Series:

- Converged high-performance routing, switching, security, SIP, and 300 Kpps performance
- Integrated GbE WAN and LAN, ADSL2+, G.SHDSL, and an optional serial port
- Integrated 4G LTE and 3G/dual 3G wireless WAN (WWAN) as well as IEEE 802.11b/g/n WLAN
- Embedded encryption, firewall, NAT, Dynamic Virtual Private Network (DVPN), GDVPN, and security features
- Unified OS, zero-touch solution, and single-pane-of-glass management

Features and benefits

Quality of Service (QoS)

- **Traffic policing**
Supports Committed Access Rate (CAR) and line rate
- **Congestion management**
Supports FIFO, PQ, CQ, WFQ, CBQ, and RTPQ
- **Weighted random early detection (WRED)/random early detection (RED)**
Delivers congestion avoidance capabilities through the use of queue management algorithms
- **Other QoS technologies**
Support traffic shaping, FR QoS, and MP QoS/LFI

Management

- **Industry-standard CLI with a hierarchical structure**
Reduces training time and expenses; and increases productivity in multivendor installations
- **Management security**
Restricts access to critical configuration commands; offers multiple privilege levels with password protection; uses access control lists (ACLs) to provide Telnet and SNMP access; and leverages local and remote syslog capabilities to allow logging of all access
- **SNMPv1, v2, and v3**
Provide complete support of the SNMP and industry-standard Management Information Base (MIB) as well as private extensions; SNMPv3 supports increased security using encryption
- **Remote monitoring (RMON)**
Uses standard SNMP to monitor essential network functions; and supports events, alarms, history, and statistics groups as well as a private alarm extension group
- **FTP, Trivial FTP (TFTP), and Secure FTP (SFTP) support**
Offers different mechanisms for configuration updates; the FTP allows bidirectional transfers over a TCP/IP network; the TFTP is a simpler method that uses the UDP; and the SFTP runs over an secure shell (SSH) tunnel to provide additional security
- **Debug and sampler utility**
Supports ping and trace-route for both IPv4 and IPv6
- **Network Time protocol (NTP)**
Synchronizes timekeeping among distributed time servers and clients; and keeps timekeeping consistent among all clock-dependent devices within the network, so that the devices can provide diverse applications, based on the consistent time
- **Information center**
Provides a central repository for system and network information; aggregates all logs, traps, and debugging information generated by the system and maintains them in the order of severity; and sends out the network information to multiple channels, based on user-defined rules

Connectivity

- **Packet storm protection**
Protects against broadcast, multicast, or unicast storms with user-defined thresholds
- **Loopback**
Supports internal loopback testing for maintenance purposes and an increase in availability; loopback detection protects against incorrect cabling or network configurations and can be enabled on a per-port basis for added flexibility

- **Integrated 3G WWAN capability**

- Offers models with built-in 3G and dual 3G WWAN connectivity
- Supports up to 4 antennas in dual 3G models for improved connectivity and throughput
- Comes with a default 3G antenna; additional 3G antennas are also available

- **3G and 4G LTE access**

Supports popular 3G and 4G LTE USB modems; for a list of supported products, contact your local HP representative

- **Multiple Gigabit Ethernet connection options**

Provides GbE WAN and GbE LAN ports onboard

- **4G LTE Verizon and global carrier support**

Delivers embedded 4G LTE wireless WAN backhaul connectivity with two different carrier chipset options

- **Multiple advanced WAN interfaces**

Provide traditional connection options including serial, ADSL2+ (annex A/M, annex B/J, over POTS, or ISDN), 4-pair G.SHDSL, and WAN Gigabit Ethernet ports; and offer wireless access with 4G LTE and 3G connectivity

Performance

- **Forwarding performance**

Provides up to 300 Kpps; and meets current and future bandwidth-intensive application demands for enterprise businesses

- **Embedded encryption**

Supports up to 100 VPN tunnels and up to 160 Mb/s encryption throughput

- **Gigabit Ethernet interface**

Provides a connection to the network that helps eliminates network bottlenecks

Resiliency and high availability

- **Backup Center**

Acts as a part of the management and backup function to provide backup for device interfaces; and delivers reliability by switching traffic over to a backup interface when the primary one fails

- **Virtual Router Redundancy Protocol (VRRP)**

Allows groups of two routers to dynamically back each other up to create highly available routed environments; and supports VRRP load balancing

- **WWAN with integrated 3G**

Allows small-branch users to maintain remote office-data connectivity to the data center or headquarters, using integrated carrier connections

L2 switching

- **Spanning Tree Protocol (STP)**

Supports the standard IEEE 802.1D STP, IEEE 802.1w rapid STP for faster convergence, and IEEE 802.1s multiple STP

- **Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) protocol snooping**

Controls and manages the flooding of multicast packets in an L2 network

- **Port mirroring**

Duplicates port traffic (ingress and egress) to a local or remote monitoring port

- **Port isolation**

Increases security by isolating ports within a VLAN, while still allowing them to communicate with other VLANs

- **VLANs**

Supports IEEE 802.1Q-based VLANs

- **sFlow**

Allows traffic sampling

L3 services

- **Address Resolution Protocol (ARP)**

Determines the MAC address of another IP host in the same subnet; and supports static ARPs; a gratuitous ARP allows detection of duplicate IP addresses; and a proxy ARP allows normal ARP operation between subnets or when subnets are separated by an L2 network

- **Dynamic Host Configuration Protocol (DHCP)**

Simplifies the management of large IP networks and supports both clients and servers; DHCP relay enables DHCP operation across subnets

- **Built-in application support**

- **Device management controller (DMC)**

Acts as the gateway to a virtual “network training room”

- **Wisdom Network (WiNet) technology**

Helps manage a large number of scattered network devices centrally

- **Remote terminal connection (RTC) and true type terminal (TTY) access**

Allows the connection of a terminal to a router through an asynchronous interface for data exchange with a front-end processor (FEP) or another terminal through the router

L3 routing

- **Static IPv4 routing**

Provides simple manually configured IPv4 routing

- **Routing Information Protocol (RIP)**

uses a distance vector algorithm with UDP packets for route determination; supports RIPv1 and RIPv2 routing; includes loop protection

- **Open shortest path first (OSPF)**

Delivers faster convergence; and uses this link-state-routing Interior Gateway Protocol (IGP), which supports ECMP, NSSA, and MD5 authentication for increased security and graceful restart for faster failure recovery

- **Border Gateway Protocol 4 (BGP-4)**

Delivers an implementation of the Exterior Gateway Protocol (EGP) utilizing path vectors; uses TCP for enhanced reliability for the route discovery process; reduces bandwidth consumption by advertising only incremental updates; supports extensive policies for increased flexibility; and scales to very large networks

- **Intermediate system to intermediate system (IS-IS)**

Uses a path vector Interior Gateway Protocol (IGP), which is defined by the ISO organization for IS-IS routing and extended by IETF RFC 1195 to operate in both TCP/IP and the OSI reference model (integrated IS-IS)

- **Static IPv6 routing**

Provides simple manually configured IPv6 routing

- **Dual IP stack**

Maintains separate stacks for IPv4 and IPv6 to ease the transition from an IPv4-only network design to an IPv6-only network design

- **Routing Information Protocol next generation (RIPng)**

Extends RIPv2 to support IPv6 addressing

- **OSPFv3**

Provides OSPF support for IPv6

- **BGP+**

Extends BGP-4 to support Multiprotocol BGP (MBGP), including support for IPv6 addressing

- **IS-IS for IPv6**

Extends IS-IS to support IPv6 addressing

- **IPv6 tunneling**

Is an important element for the transition from IPv4 to IPv6; and allows IPv6 packets to traverse IPv4-only networks by encapsulating the IPv6 packet into a standard IPv4 packet; supports manually configured, 6 to 4, intra-site-automatic-tunnel-addressing-protocol (ISATAP) tunnels

- **Policy routing**

Allows custom filters for increased performance and security; and supports ACLs, IP prefixes, AS paths, community lists, and aggregate policies

- **BGP4+ support**

Utilizes the BGP4 (RFC 4271) exterior routing protocol for routing integrity and reliability between different autonomous systems

Security

- **Access Control List (ACL)**

Supports powerful ACLs for both IPv4 and IPv6; and helps filter traffic to prevent unauthorized users from accessing the network or control network traffic in order to save resources; rules can either deny or permit traffic to be forwarded; rules can be based on an L2 header or an L3 protocol header; and rules can be set to operate on specific dates or times

- **Terminal Access Controller Access-Control System (TACACS+)**

Delivers an authentication tool, using TCP with encryption of the full authentication request, providing additional security

- **Network login**

Allows authentication of multiple users per port, using the IEEE 802.1X standard

- **Remote Authentication Dial-in user Service (RADIUS) login**

Eases security access administration by using a password authentication server

- **NAT enablement**

Facilitates one-to-one NAT, many-to-many NAT, and NAT control—enabling NAT-PT to support multiple connections; supports blacklisting in the NAT/NAT-PT; and enables a limit on the number of connections, session logs, and multiple instances

- **SSHv2**

Uses external servers to securely log in to a remote device or MSRs from a remote location; protects against IP spoofing and plain-text password interception, with authentication and encryption; and increases the security of SFTP transfers

- **Unicast Reverse Path Forwarding (uRPF)**

Allows normal packets to be forwarded correctly, but discards the attaching packets due to lack of a reverse path route or an incorrect inbound interface; and helps prevent source spoofing and distributed attacks

- **IPSec VPN**

Supports DES, 3DES, and AES 128/192/256 encryption as well as MD5 and SHA-1 authentication

- **DVPN**

Collects, maintains, and distributes dynamic public addresses through the VPN Address Management (VAM) protocol, making the VPN establishment available between enterprise branches that use dynamic addresses to access the public network; compared to traditional VPN technologies, the DVPN technology is more flexible and has richer features, such as NAT traversal of DVPN packets, AAA identity authentication, IPSec protection of data packets, and multiple VPN domains

Convergence

- **IGMP**

Utilizes Any-Source Multicast (ASM) or Source-Specific Multicast (SSM) to manage IPv4 multicast networks; and supports IGMPv1, v2, and v3

- **Protocol Independent Multicast (PIM)**

Defines modes of Internet IPv4 and IPv6 multicasting to allow one-to-many and many-to-many transmission of information; and supports PIM Dense Mode (DM), Sparse Mode (SM), and SSM

- **Multicast Source Discovery Protocol (MSDP)**

Allows multiple PIM-SM domains to interoperate; and is used for inter-domain multicast applications

- **Multicast Border Gateway Protocol (MBGP)**

Allows multicast traffic to be forwarded across BGP networks and kept separate from unicast traffic

- **Internet Group Management Protocol (IGMP) snooping and proxy**

- Monitors and observes IGMP network traffic, allowing the network device to listen in on the IGMP conversation between hosts and routers—enabling better IP multicast stream control
- Allows a multicast router to learn multicast group membership information; and enables it to forward multicast packets

- **Multicast VPN and bidirectional protocol-independent multicasting (PIM)**

- Allows rich multicast services such as video conferencing and data sharing amongst enterprise VPN-based deployments
- Improves scalability of various applications through the use of bidirectional PIM

Integration

- **Embedded NetStream**

Improves traffic distribution, using powerful scheduling algorithms, including L4 to L7 services; and monitors the health status of servers and firewalls

- **Embedded VPN firewall**

- Provides enhanced stateful packet inspection and filtering
- Delivers advanced VPN services with Triple DES (3DES) and Advanced Encryption Standard (AES) encryption at high performance and low latency
- Offers Web content filtering and application prioritization and enhancement

Additional information

- **Green initiative support**

Provides support for RoHS and WEEE regulations

- **OPEX savings**

Simplifies and streamlines deployment, management, and training through the use of a common operating system—cutting costs as well as reducing the risk of human errors associated with having to manage multiple operating systems across different platforms and network layers

- **Faster time to market**

Allows new and custom features to be brought rapidly to the market through engineering efficiencies, delivering better initial and ongoing stability

Warranty and support

- **1-year Warranty 2.0**

Advance hardware replacement 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, visit hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, visit hp.com/networking/warrantysummary

- **Software releases**

To find software for your product, visit hp.com/networking/support; for details on the software releases available with your product purchase, visit hp.com/networking/warrantysummary

HP MSR93x Router Series

Specifications



HP MSR930 Router (JG511A)



HP MSR930 3G Router (JG513A)



HP MSR931 Router (JG514A)

Ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports 1 serial port
Physical characteristics	9.06(w) x 6.3(d) x 1.72(h) in. (23 x 16 x 4.36 cm)	9.06(w) x 6.3(d) x 1.72(h) in. (23 x 16 x 4.36 cm)	11.81(w) x 7.87(d) x 1.74(h) in. (30 x 20 x 4.42 cm)
Weight	3.97 lb (1.8 kg)	3.97 lb (1.8 kg)	5.95 lb (2.7 kg)
Memory and processor			
Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash
Performance			
Throughput	Up to 300 Kpps (64-byte packets)	300 Kpps (64-byte packets)	300 Kpps (64-byte packets)
Routing table size	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)
Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)
Environment			
Operating temperature	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)
Operating relative humidity	5% to 90%, noncondensing	5% to 90%, noncondensing	5% to 90%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	5% to 90%, noncondensing	5% to 90%, noncondensing	5% to 90%, noncondensing
Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms
Altitude	Up to 6,561 ft. (2 km)	Up to 6,561 ft. (2 km)	Up to 6,561 ft. (2 km)
Electrical characteristics			
Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)	20 BTU/hr (21.1 kJ/hr)	20 BTU/hr (21.1 kJ/hr)
Voltage	100-240 VAC	100-240 VAC	100-240 VAC
Maximum power rating	24 W	24 W	24 W
Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J

HP MSR93x Router Series (Continued)

Specifications (Continued)

	HP MSR930 Router (JG511A)	HP MSR930 3G Router (JG513A)	HP MSR931 Router (JG514A)
Emissions	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B
Telecom	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5
Management	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes		Supports HSPA+ SIM card not included Default antennas: 1 Maximum antennas: 2 Optional antenna cable also available for remote location 3G firmware changes through CLI	
Services	<p>3-year, parts only, global next-day advance exchange (U8L62E)</p> <p>3-year, 4-hour onsite, 13x5 coverage for hardware (U8L66E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U8L67E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U8L72E)</p> <p>3-year, 24x7 SW phone support, software updates (U8L71E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (U8L76E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (U8L77E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L82E)</p> <p>4-year, 24x7 SW phone support, software updates (U8L81E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (U8L86E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (U8L87E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L92E)</p> <p>5-year, 24x7 SW phone support, software updates (U8L91E)</p> <p>3-year, 6-hour Call-to-Repair Onsite (U8L69E)</p>	<p>3-year, parts only, global next-day advance exchange (U8L62E)</p> <p>3-year, 4-hour onsite, 13x5 coverage for hardware (U8L66E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U8L67E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U8L72E)</p> <p>3-year, 24x7 SW phone support, software updates (U8L71E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (U8L76E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (U8L77E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L82E)</p> <p>4-year, 24x7 SW phone support, software updates (U8L81E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (U8L86E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (U8L87E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L92E)</p> <p>5-year, 24x7 SW phone support, software updates (U8L91E)</p> <p>3-year, 6-hour Call-to-Repair Onsite (U8L69E)</p>	<p>3-year, parts only, global next-day advance exchange (U8M00E)</p> <p>3-year, 4-hour onsite, 13x5 coverage for hardware (U8M04E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U8M05E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U8M10E)</p> <p>3-year, 24x7 SW phone support, software updates (U8M09E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (U8M14E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (U8M15E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8M20E)</p> <p>4-year, 24x7 SW phone support, software updates (U8M19E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (U8M24E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (U8M25E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8M30E)</p> <p>5-year, 24x7 SW phone support, software updates (U8M29E)</p> <p>3-year, 6-hour Call-to-Repair Onsite (U8M07E)</p>

HP MSR93x Router Series (Continued)

Specifications (Continued)

	HP MSR930 Router (JG511A)	HP MSR930 3G Router (JG513A)	HP MSR931 Router (JG514A)
Services (Continued)	4-year, 6-hour Call-to-Repair Onsite (U8L79E)	4-year, 6-hour Call-to-Repair Onsite (U8L79E)	4-year, 6-hour Call-to-Repair Onsite (U8M17E)
	5-year, 6-hour Call-to-Repair Onsite (U8L89E)	5-year, 6-hour Call-to-Repair Onsite (U8L89E)	5-year, 6-hour Call-to-Repair Onsite (U8M27E)
	1-year, 4-hour onsite, 13x5 coverage for hardware (U8L57E)	1-year, 4-hour onsite, 13x5 coverage for hardware (U8L57E)	1-year, 4-hour onsite, 13x5 coverage for hardware (U8L95E)
	1-year, 4-hour onsite, 24x7 coverage for hardware (U8L58E)	1-year, 4-hour onsite, 24x7 coverage for hardware (U8L58E)	1-year, 4-hour onsite, 24x7 coverage for hardware (U8L96E)
	1-year, 6 hour Call-to-Repair Onsite for hardware (U8L59E)	1-year, 6 hour Call-to-Repair Onsite for hardware (U8L59E)	1-year, 6 hour Call-to-Repair Onsite for hardware (U8L97E)
	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U8L61E)	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U8L61E)	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U8L99E)
	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L55E)	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L55E)	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L93E)
	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U8L56E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U8L56E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U8L94E)
	3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L63E)	3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L63E)	3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8M01E)
	3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L64E)	3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L64E)	3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M02E)
	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L73E)	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L73E)	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8M11E)
	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L74E)	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L74E)	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M12E)
	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L83E)	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L83E)	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8M21E)
	5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L84E)	5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L84E)	5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M22E)
	Refer to the HP website at 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.	Refer to the HP website at 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.	Refer to the HP website at 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 MSR93x Router Series (Continued)

Specifications (Continued)



HP MSR931 3G Router (JG515A)



HP MSR931 Dual 3G Router (JG531A)



**HP MSR930 Wireless Router (JG512A)
(not available in AMS)**

Ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports 1 serial port	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports 1 serial port	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports 1 serial port
AP characteristics			
Radios			Dual (b/g/n)
Physical characteristics	11.81(w) x 7.87(d) x 1.74(h) in. (30 x 20 x 4.42 cm)	11.81(w) x 7.87(d) x 1.74(h) in. (30 x 20 x 4.42 cm)	9.06(w) x 6.3(d) x 1.72(h) in. (23 x 16 x 4.36 cm)
Weight	5.95 lb (2.7 kg)	5.95 lb (2.7 kg)	2.65 lb (1.2 kg)
Memory and processor			
Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash
Performance			
Throughput	300 Kpps (64-byte packets)	300 Kpps (64-byte packets)	300 Kpps (64-byte packets)
Routing table size	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)
Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)
Environment			
Operating temperature	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)
Operating relative humidity	5% to 90%, noncondensing	5% to 90%, noncondensing	5% to 90%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	5% to 90%, noncondensing	5% to 90%, noncondensing	5% to 90%, noncondensing
Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms
Altitude	Up to 6,561 ft. (2 km)	Up to 6,561 ft. (2 km)	Up to 6,561 ft. (2 km)
Electrical characteristics			
Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)	20 BTU/hr (21.1 kJ/hr)	20 BTU/hr (21.1 kJ/hr)
Voltage	100–240 VAC	100–240 VAC	100–240 VAC
Maximum power rating	24 W	24 W	24 W
Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.

HP MSR93x Router Series (Continued)

Specifications (Continued)

	HP MSR931 3G Router (JG515A)	HP MSR931 Dual 3G Router (JG531A)	HP MSR930 Wireless Router (JG512A)
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	UL 60950-1; CAN/CSA 22.2 No. 60950-1; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; AS/NZS 60950-1
Emissions	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B
Telecom	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5
Management	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	Supports HSPA+ SIM card not included Default antennas: 1 Maximum antennas: 2 Optional antenna cable also available for remote location 3G firmware changes through CLI For regional carrier certifications please contact your local HP sales representative	Supports HSPA+ SIM cards not included Default antennas: 2 Maximum antennas: 4 Optional antenna cable also available for remote location 3G firmware changes through CLI For regional carrier certifications please contact your local HP sales representative	Supports 802.11b/g/n Default antennas: 2 Maximum antennas: 2
Services	3-year, parts only, global next-day advance exchange (U8M00E) 3-year, 4-hour onsite, 13x5 coverage for hardware (U8M04E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U8M05E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U8M10E) 3-year, 24x7 SW phone support, software updates (U8M09E) 4-year, 4-hour onsite, 13x5 coverage for hardware (U8M14E) 4-year, 4-hour onsite, 24x7 coverage for hardware (U8M15E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8M20E) 4-year, 24x7 SW phone support, software updates (U8M19E) 5-year, 4-hour onsite, 13x5 coverage for hardware (U8M24E) 5-year, 4-hour onsite, 24x7 coverage for hardware (U8M25E)	3-year, parts only, global next-day advance exchange (U8M00E) 3-year, 4-hour onsite, 13x5 coverage for hardware (U8M04E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U8M05E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U8M10E) 3-year, 24x7 SW phone support, software updates (U8M09E) 4-year, 4-hour onsite, 13x5 coverage for hardware (U8M14E) 4-year, 4-hour onsite, 24x7 coverage for hardware (U8M15E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8M20E) 4-year, 24x7 SW phone support, software updates (U8M19E) 5-year, 4-hour onsite, 13x5 coverage for hardware (U8M24E) 5-year, 4-hour onsite, 24x7 coverage for hardware (U8M25E)	3-year, parts only, global next-day advance exchange (U8L62E) 3-year, 4-hour onsite, 13x5 coverage for hardware (U8L66E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U8L67E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U8L72E) 3-year, 24x7 SW phone support, software updates (U8L71E) 4-year, 4-hour onsite, 13x5 coverage for hardware (U8L76E) 4-year, 4-hour onsite, 24x7 coverage for hardware (U8L77E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L82E) 4-year, 24x7 SW phone support, software updates (U8L81E) 5-year, 4-hour onsite, 13x5 coverage for hardware (U8L86E) 5-year, 4-hour onsite, 24x7 coverage for hardware (U8L87E)

HP MSR93x Router Series (Continued)

Specifications (Continued)

	HP MSR931 3G Router (JG515A)	HP MSR931 Dual 3G Router (JG531A)	HP MSR930 Wireless Router (JG512A)
Services (Continued)	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8M30E)	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8M30E)	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L92E)
	5-year, 24x7 SW phone support, software updates (U8M29E)	5-year, 24x7 SW phone support, software updates (U8M29E)	5-year, 24x7 SW phone support, software updates (U8L91E)
	3-year, 6-hour Call-to-Repair Onsite (U8M07E)	3-year, 6-hour Call-to-Repair Onsite (U8M07E)	3-year, 6-hour Call-to-Repair Onsite (U8L69E)
	4-year, 6-hour Call-to-Repair Onsite (U8M17E)	4-year, 6-hour Call-to-Repair Onsite (U8M17E)	4-year, 6-hour Call-to-Repair Onsite (U8L79E)
	5-year, 6-hour Call-to-Repair Onsite (U8M27E)	5-year, 6-hour Call-to-Repair Onsite (U8M27E)	5-year, 6-hour Call-to-Repair Onsite (U8L89E)
	1-year, 4-hour onsite, 13x5 coverage for hardware (U8L95E)	1-year, 4-hour onsite, 13x5 coverage for hardware (U8L95E)	1-year, 4-hour onsite, 13x5 coverage for hardware (U8L57E)
	1-year, 4-hour onsite, 24x7 coverage for hardware (U8L96E)	1-year, 4-hour onsite, 24x7 coverage for hardware (U8L96E)	1-year, 4-hour onsite, 24x7 coverage for hardware (U8L58E)
	1-year, 6 hour Call-to-Repair Onsite for hardware (U8L97E)	1-year, 6 hour Call-to-Repair Onsite for hardware (U8L97E)	1-year, 6 hour Call-to-Repair Onsite for hardware (U8L59E)
	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U8L99E)	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U8L99E)	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U8L61E)
	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L93E)	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L93E)	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L55E)
	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U8L94E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U8L94E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U8L56E)
	3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8M01E)	3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8M01E)	3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L63E)
	3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M02E)	3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M02E)	3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L64E)
	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8M11E)	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8M11E)	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L73E)
	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M12E)	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M12E)	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L74E)
	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8M21E)	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8M21E)	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L83E)
	5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M22E)	5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M22E)	5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L84E)
	Refer to the HP website at 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.	Refer to the HP website at 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.	Refer to the HP website at 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 MSR93x Router Series (Continued)

Specifications (Continued)



HP MSR930 4G LTE/3G CDMA Router (JG596A)



HP MSR933 Router (JG516A)



HP MSR933 3G Router (JG517A)

Ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports 1 G.SHDSL (8-wire) port	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports 1 G.SHDSL (8-wire) port
Physical characteristics	9.06(w) x 6.3(d) x 1.72(h) in. (23 x 16 x 4.36 cm)	11.81(w) x 7.87(d) x 1.74(h) in. (30 x 20 x 4.42 cm)	11.81(w) x 7.87(d) x 1.74(h) in. (30 x 20 x 4.42 cm)
Weight	3.97 lb (1.8 kg)	3.97 lb (1.8 kg)	3.97 lb (1.8 kg)
Memory and processor			
Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash
Performance			
Throughput	Up to 300 Kpps (64-byte packets)	Up to 300 Kpps (64-byte packets)	Up to 300 Kpps (64-byte packets)
Routing table size	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)
Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 10000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)
Environment			
Operating temperature	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)
Operating relative humidity	5% to 90%, noncondensing	5% to 90%, noncondensing	5% to 90%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	5% to 90%, noncondensing	5% to 90%, noncondensing	5% to 90%, noncondensing
Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms
Altitude	Up to 6,561 ft. (2 km)	Up to 6,561 ft. (2 km)	Up to 6,561 ft. (2 km)
Electrical characteristics			
Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)	20 BTU/hr (21.1 kJ/hr)	20 BTU/hr (21.1 kJ/hr)
Voltage	100–240 VAC	100–240 VAC	100–240 VAC
Maximum power rating	24 W	24 W	24 W
Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J

HP MSR93x Router Series (Continued)

Specifications (Continued)

	HP MSR930 4G LTE/3G CDMA Router (JG596A)	HP MSR933 Router (JG516A)	HP MSR933 3G Router (JG517A)
Emissions	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B
Telecom	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5
Management	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	<p>For local 4G LTE/3G carrier certification, please contact your regional sales team. This router has the Sierra Wireless MC7750 AirPrime Series</p> <ul style="list-style-type: none"> Module embedded with support the following specs: Air Interface: LTE/EV-DO LTE Freq. Bands: 700 (B13) MHz CDMA 1xRTT/EV-DO RevA: 800/1900 MHz This model (JG665A) is certified with Verizon Wireless 4G LTE networks Carrier SIM Card Not Included Default Antennas: 2 Maximum Antennas: 2 Optional antenna cable extensions available <ul style="list-style-type: none"> HP MSR 3G RF 2.8m Antenna Cable (JG522A) HP MSR 3G RF 6m Antenna Cable (JG666A) HP MSR 3G RF 15m Antenna Cable (JG667A) Only 4G Antenna (JG669A HP MSR 4G 5W TNC Antenna) is supported. 		<p>Supports HSPA+ SIM card included Default antennas: 1 Maximum antennas: 2 Optional antenna cable also available for remote location 3G firmware changes through CLI For regional carrier certifications please contact your local HP sales representative</p>
Services	<p>3-year, parts only, global next-day advance exchange (U8L62E)</p> <p>3-year, 4-hour onsite, 13x5 coverage for hardware (U8L66E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U8L67E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U8L72E)</p> <p>3-year, 24x7 SW phone support, software updates (U8L71E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (U8L76E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (U8L77E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L82E)</p> <p>4-year, 24x7 SW phone support, software updates (U8L81E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (U8L86E)</p>	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U0X58E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U0XT0E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U0XT9E)</p> <p>3-year, 24x7 SW phone support, software updates (U0XT8E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (U0XU5E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (U0XU7E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0XV6E)</p> <p>4-year, 24x7 SW phone support, software updates (U0XV5E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (U0XW2E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (U0XW4E)</p>	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U0XS8E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U0XT0E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U0XT9E)</p> <p>3-year, 24x7 SW phone support, software updates (U0XT8E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (U0XU5E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (U0XU7E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0XV6E)</p> <p>4-year, 24x7 SW phone support, software updates (U0XV5E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (U0XW2E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (U0XW4E)</p>

HP MSR93x Router Series (Continued)

Specifications (Continued)

	HP MSR930 4G LTE/3G CDMA Router (JG596A)	HP MSR933 Router (JG516A)	HP MSR933 3G Router (JG517A)
Services (Continued)	5-year, 4-hour onsite, 24x7 coverage for hardware (U8L87E)	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0XX3E)	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0XX3E)
	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L92E)	5-year, 24x7 SW phone support, software updates (U0XX2E)	5-year, 24x7 SW phone support, software updates (U0XX2E)
	5-year, 24x7 SW phone support, software updates (U8L91E)	3-year, 6-hour Call-to-Repair Onsite (U0XT4E)	3-year, 6-hour Call-to-Repair Onsite (U0XT4E)
	3-year, 6-hour Call-to-Repair Onsite (U8L69E)	4-year, 6-hour Call-to-Repair Onsite (U0XV1E)	4-year, 6-hour Call-to-Repair Onsite (U0XV1E)
	4-year, 6-hour Call-to-Repair Onsite (U8L79E)	5-year, 6-hour Call-to-Repair Onsite (U0XW8E)	5-year, 6-hour Call-to-Repair Onsite (U0XW8E)
	5-year, 6-hour Call-to-Repair Onsite (U8L89E)	1-year, 4-hour onsite, 13x5 coverage for hardware (U0XS0E)	1-year, 4-hour onsite, 13x5 coverage for hardware (U0XS0E)
	1-year, 4-hour onsite, 13x5 coverage for hardware (U8L57E)	1-year, 4-hour onsite, 24x7 coverage for hardware (U0XS1E)	1-year, 4-hour onsite, 24x7 coverage for hardware (U0XS1E)
	1-year, 4-hour onsite, 24x7 coverage for hardware (U8L58E)	1-year, 6-hour Call-to-Repair Onsite for hardware (U0XS2E)	1-year, 6-hour Call-to-Repair Onsite for hardware (U0XS2E)
	1-year, 6-hour Call-to-Repair Onsite for hardware (U8L59E)	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U0XS3E)	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U0XS3E)
	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U8L61E)	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XR8E)	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XR8E)
	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L55E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U0XR9E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U0XR9E)
	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U8L56E)	3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XS4E)	3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XS4E)
	3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L63E)	3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XS5E)	3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XS5E)
	3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L64E)	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XU1E)	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XU1E)
	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L73E)	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XU2E)	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XU2E)
	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L74E)	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XV8E)	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XV8E)
	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L83E)	5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XV9E)	5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XV9E)
	5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L84E)		
	Refer to the HP website at 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.	Refer to the HP website at 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. 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XV9E)	Refer to the HP website at 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 MSR93x Router Series (Continued)

Specifications (Continued)



HP MSR935 Router (JG518A)



HP MSR935 Wireless Router (JG519A)



HP MSR935 3G Router (JG520A)

Ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports 1 ADSL 2+ ANNEX A/M port	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports 1 ADSL 2+ ANNEX A/M port	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports 1 ADSL 2+ ANNEX A/M port
AP characteristics			
Radios	N/A	Dual (b/g/n)	N/A
Physical characteristics			
Weight	11.81(w) x 7.87(d) x 1.74(h) in. (30 x 20 x 4.42 cm) 3.97 lb (1.8 kg)	11.81(w) x 7.87(d) x 1.74(h) in. (30 x 20 x 4.42 cm) 3.97 lb (1.8 kg)	11.81(w) x 7.87(d) x 1.74(h) in. (30 x 20 x 4.42 cm) 3.97 lb (1.8 kg)
Memory and processor			
Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash
Performance			
Throughput	Up to 300 Kpps (64-byte packets)	Up to 300 Kpps (64-byte packets)	Up to 300 Kpps (64-byte packets)
Routing table size	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)
Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)
Environment			
Operating temperature	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)
Operating relative humidity	5% to 90%, noncondensing	5% to 90%, noncondensing	5% to 90%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	5% to 90%, noncondensing	5% to 90%, noncondensing	5% to 90%, noncondensing
Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms
Altitude	Up to 6,561 ft. (2 km)	Up to 6,561 ft. (2 km)	Up to 6,561 ft. (2 km)
Electrical characteristics			
Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)	20 BTU/hr (21.1 kJ/hr)	20 BTU/hr (21.1 kJ/hr)
Voltage	100–240 VAC	100–240 VAC	100–240 VAC
Maximum power rating	24 W	24 W	24 W
Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J

HP MSR93x Router Series (Continued)

Specifications (Continued)

	HP MSR935 Router (JG518A)	HP MSR935 Wireless Router (JG519A)	HP MSR935 3G Router (JG520A)
Emissions	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B
Telecom	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5
Management	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	Supports ADSL 2+ ANNEX A/M	Supports 802.11b/g/n Default antennas: 2 Maximum antennas: 2	Supports HSPA+ SIM card included Default antennas: 1 Maximum antennas: 2 Optional antenna cable also available for remote location 3G firmware changes through CLI For regional carrier certifications please contact your local HP sales representative
Services	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U0XY5E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U0XY7E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U0XZ6E)</p> <p>3-year, 24x7 SW phone support, software updates (U0XZ5E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (U0YA2E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (U0YA4E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YB3E)</p> <p>4-year, 24x7 SW phone support, software updates (U0YB2E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (U0YB9E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (U0YC1E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YD0E)</p> <p>5-year, 24x7 SW phone support, software updates (U0YC9E)</p>	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U0XY5E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U0XY7E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U0XZ6E)</p> <p>3-year, 24x7 SW phone support, software updates (U0XZ5E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (U0YA2E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (U0YA4E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YB3E)</p> <p>4-year, 24x7 SW phone support, software updates (U0YB2E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (U0YB9E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (U0YC1E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YD0E)</p> <p>5-year, 24x7 SW phone support, software updates (U0YC9E)</p>	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U0XY5E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U0XY7E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U0XZ6E)</p> <p>3-year, 24x7 SW phone support, software updates (U0XZ5E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (U0YA2E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (U0YA4E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YB3E)</p> <p>4-year, 24x7 SW phone support, software updates (U0YB2E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (U0YB9E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (U0YC1E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YD0E)</p> <p>5-year, 24x7 SW phone support, software updates (U0YC9E)</p>

HP MSR93x Router Series (Continued)

Specifications (Continued)

	HP MSR935 Router (JG518A)	HP MSR935 Wireless Router (JG519A)	HP MSR935 3G Router (JG520A)
Services (Continued)	<p>3-year, 6-hour Call-to-Repair Onsite (U0XZ1E)</p> <p>4-year, 6-hour Call-to-Repair Onsite (U0YA8E)</p> <p>5-year, 6-hour Call-to-Repair Onsite (U0YC5E)</p> <p>1-year, 4-hour onsite, 13x5 coverage for hardware (U0XX7E)</p> <p>1-year, 4-hour onsite, 24x7 coverage for hardware (U0XX8E)</p> <p>1-year, 6-hour Call-to-Repair Onsite for hardware (U0XX9E)</p> <p>1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U0XY0E)</p> <p>1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XX5E)</p> <p>1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U0XX6E)</p> <p>3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XY1E)</p> <p>3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XY2E)</p> <p>4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XZ8E)</p> <p>4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XZ9E)</p> <p>5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YB5E)</p> <p>5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0YB6E)</p> <p>Refer to the HP website at 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.</p>	<p>3-year, 6-hour Call-to-Repair Onsite (U0XZ1E)</p> <p>4-year, 6-hour Call-to-Repair Onsite (U0YA8E)</p> <p>5-year, 6-hour Call-to-Repair Onsite (U0YC5E)</p> <p>1-year, 4-hour onsite, 13x5 coverage for hardware (U0XX7E)</p> <p>1-year, 4-hour onsite, 24x7 coverage for hardware (U0XX8E)</p> <p>1-year, 6-hour Call-to-Repair Onsite for hardware (U0XX9E)</p> <p>1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U0XY0E)</p> <p>1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XX5E)</p> <p>1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U0XX6E)</p> <p>3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XY1E)</p> <p>3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XY2E)</p> <p>4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XZ8E)</p> <p>4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XZ9E)</p> <p>5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YB5E)</p> <p>5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0YB6E)</p> <p>Refer to the HP website at 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.</p>	<p>3-year, 6-hour Call-to-Repair Onsite (U0XZ1E)</p> <p>4-year, 6-hour Call-to-Repair Onsite (U0YA8E)</p> <p>5-year, 6-hour Call-to-Repair Onsite (U0YC5E)</p> <p>1-year, 4-hour onsite, 13x5 coverage for hardware (U0XX7E)</p> <p>1-year, 4-hour onsite, 24x7 coverage for hardware (U0XX8E)</p> <p>1-year, 6-hour Call-to-Repair Onsite for hardware (U0XX9E)</p> <p>1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U0XY0E)</p> <p>1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XX5E)</p> <p>1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U0XX6E)</p> <p>3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XY1E)</p> <p>3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XY2E)</p> <p>4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XZ8E)</p> <p>4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XZ9E)</p> <p>5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YB5E)</p> <p>5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0YB6E)</p> <p>Refer to the HP website at 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.</p>

HP MSR93x Router Series (Continued)

Specifications (Continued)



HP MSR936 Wireless Router (JG597A)



HP MSR930 4G LTE/3G WCDMA Global Router (JG665A)

Ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports 1 ADSL 2+ ANNEX B/J ISDN backup port	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports
AP characteristics		
Radios	Dual (b/g/n)	N/A
Physical characteristics		
Weight	11.81(w) x 7.87(d) x 1.74(h) in. (30 x 20 x 4.42 cm) 3.97 lb (1.8 kg)	9.06(w) x 6.3(d) x 1.72(h) in. (23 x 16 x 4.36 cm) 3.97 lb (1.8 kg)
Memory and processor		
Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash
Performance		
Throughput	Up to 300 Kpps (64-byte packets)	Up to 300 Kpps (64-byte packets)
Routing table size	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)
Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)	10000 entries (IPv4), 5000 entries (IPv6)
Environment		
Operating temperature	32°F to 104°F (0°C to 40°C)	32°F to 104°F (0°C to 40°C)
Operating relative humidity	5% to 90%, noncondensing	5% to 90%, noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	5% to 90%, noncondensing	5% to 90%, noncondensing
Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms
Altitude	Up to 6,561 ft. (2 km)	Up to 6,561 ft. (2 km)
Electrical characteristics		
Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)	20 BTU/hr (21.1 kJ/hr)
Voltage	100–240 VAC	100–240 VAC
Maximum power rating	24 W	24 W
Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J	UL 60950-1; CAN/CSA 22.2 No. 60950-1; AS/NZS 60950; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1-03; EN 60950-1/A11; FDA 21 CFR Subchapter J
Emissions	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B	ANSI C63.4; EN 55022 Class B; ICES-003 Class B; ETSI EN 300 386 V1.3.3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-3-2:2006; EN 61000-3-3:1995+A1:2001+A2:2005; EMC Directive 2004/108/EC; EN 55024:1998+A1:2001+A2:2003; EN 61000-4-11:2004; EN 61000-4-8:2001; AS/NZS CISPR 22 Class B; FCC (CFR 47, Part 15) Class B
Telecom	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5

HP MSR93x Router Series (Continued)

Specifications (Continued)

	HP MSR936 Wireless Router (JG597A)	HP MSR930 4G LTE/3G WCDMA Global Router (JG665A)
Management	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB	IMC—Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	Supports 802.11b/g/n Default antennas: 2 Maximum antennas: 2	For local 4G LTE/3G carrier certification, please contact your regional sales team. This router has the Sierra Wireless MC7710 AirPrime Series Wireless Module embedded with support the following specifications: Air Interface: LTE/HSPA+ LTE Freq. Bands: 800/900/1800/2100/2600 MHz WCDMA: 900/2100 MHz GSM/GPRS/EDGE: 900/1800/1900 MHz This model (JG665A) is pre-certified with T-Mobile (EU) and conforms to above specifications for local certifications. Carrier SIM Card Not Included Default Antennas: 2 Maximum Antennas: 2 Optional antenna cable extensions available HP MSR 3G RF 2.8m Antenna Cable (JG522A) HP MSR 3G RF 6m Antenna Cable (JG666A) HP MSR 3G RF 15m Antenna Cable (JG667A) Only 4G Antenna (JG669A HP MSR 4G 5W TNC Antenna) is supported.
Services	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U0YE2E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U0YE4E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U0YF3E)</p> <p>3-year, 24x7 SW phone support, software updates (U0YF2E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (U0YF9E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (U0YG1E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YH0E)</p> <p>4-year, 24x7 SW phone support, software updates (U0YG9E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (U0YH6E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (U0YH8E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YJ7E)</p> <p>5-year, 24x7 SW phone support, software updates (U0YJ6E)</p> <p>3-year, 6-hour Call-to-Repair Onsite (U0YE8E)</p> <p>4-year, 6-hour Call-to-Repair Onsite (U0YG5E)</p> <p>5-year, 6-hour Call-to-Repair Onsite (U0YJ2E)</p> <p>1-year, 4-hour onsite, 13x5 coverage for hardware (U0YD4E)</p> <p>1-year, 4-hour onsite, 24x7 coverage for hardware (U0YD5E)</p> <p>1-year, 6 hour Call-to-Repair Onsite for hardware (U0YD6E)</p> <p>1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U0YD7E)</p> <p>1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YD2E)</p> <p>1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U0YD3E)</p> <p>3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YD8E)</p> <p>3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0YD9E)</p>	<p>3-year, parts only, global next-day advance exchange (U8L62E)</p> <p>3-year, 4-hour onsite, 13x5 coverage for hardware (U8L66E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U8L67E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U8L72E)</p> <p>3-year, 24x7 SW phone support, software updates (U8L71E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (U8L76E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (U8L77E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L82E)</p> <p>4-year, 24x7 SW phone support, software updates (U8L81E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (U8L86E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (U8L87E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L92E)</p> <p>5-year, 24x7 SW phone support, software updates (U8L91E)</p> <p>3-year, 6-hour Call-to-Repair Onsite (U8L69E)</p> <p>4-year, 6-hour Call-to-Repair Onsite (U8L79E)</p> <p>5-year, 6-hour Call-to-Repair Onsite (U8L89E)</p> <p>1-year, 4-hour onsite, 13x5 coverage for hardware (U8L57E)</p> <p>1-year, 4-hour onsite, 24x7 coverage for hardware (U8L58E)</p> <p>1-year, 6 hour Call-To-Repair Onsite for hardware (U8L59E)</p> <p>1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U8L61E)</p> <p>1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L55E)</p> <p>1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U8L56E)</p> <p>3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L63E)</p>

HP MSR93x Router Series (Continued)

Specifications (Continued)

	HP MSR936 Wireless Router (JG597A)	HP MSR930 4G LTE/3G WCDMA Global Router (JG665A)
Services (Continued)	<p>4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YF5E)</p> <p>4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0YF6E)</p> <p>5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YH2E)</p> <p>5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0YH3E)</p> <p>Refer to the HP website at 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.</p>	<p>3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L64E)</p> <p>4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L73E)</p> <p>4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L74E)</p> <p>4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L83E)</p> <p>5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L84E)</p> <p>Refer to the HP website at 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.</p>

Standards and Protocols

(applies to all products in series)

BGP	RFC 1163 Border Gateway Protocol (BGP) RFC 1267 Border Gateway Protocol 3 (BGP-3) RFC 1657 Definitions of Managed Objects for BGPv4	RFC 1771 BGPv4 RFC 1772 Application of the BGP RFC 1773 Experience with the BGP-4 Protocol RFC 1774 BGP-4 Protocol Analysis	RFC 1997 BGP Communities Attribute RFC 1998 PPP Gandalf FZA Compression Protocol RFC 2385 BGP Session Protection via TCP MD5 RFC 2439 BGP Route Flap Damping
Denial of service protection		CPU DoS Protection	Rate Limiting by ACLs
Device management	RFC 1305 NTPv3	RFC 1945 Hypertext Transfer Protocol—HTTP/1.0 RFC 2452 MIB for TCP6	RFC 2454 MIB for UDP6

Standards and Protocols (Continued)

(applies to all products in series)

General protocols

IEEE 802.1: LAN/MAN Bridge and Management	RFC 1624 Incremental Internet Checksum	RFC 3036 LDP Specification
IEEE 802.1D MAC Bridges	RFC 1631 NAT	RFC 3046 DHCP Relay Agent Information Option
IEEE 802.1p Priority	RFC 1638 PPP Bridging Control Protocol (BCP)	RFC 3065 Support AS confederation
IEEE 802.1Q VLANs	RFC 1661 The Point-to-Point Protocol (PPP)	RFC 3137 OSPF Stub Router Advertisement
IEEE 802.1s (MSTP)	RFC 1662 PPP in HDLC-like Framing	RFC 3209 RSVP-TE Extensions to RSVP for LSP Tunnels
IEEE 802.1s Multiple Spanning Trees	RFC 1695 Definitions of Managed Objects for ATM Management Version 8.0 using SMIv2	RFC 3210 Applicability Statement for Extensions to RSVP for LSP-Tunnels
IEEE 802.1w Rapid Reconfiguration of Spanning Tree	RFC 1701 Generic Routing Encapsulation	RFC 3212 Constraint-Based LSP setup using LDP (CR-LDP)
IEEE 802.1X: Authenticated VLAN (multiple MAC, multiple VLANs per port)	RFC 1702 Generic Routing Encapsulation over IPv4	RFC 3214 LSP Modification Using CR-LDP
IEEE 802.2: Logical Link Control networks	RFC 1721 RIP-2 Analysis	RFC 3215 LDP State Machine
IEEE 802.3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) access method and physical layer specifications	RFC 1722 RIP-2 Applicability	RFC 3268 Advanced Encryption Standard (AES) Ciphersuites for Transport Layer Security (TLS) specifications
IEEE 802.3ad Link Aggregation (LAG) RFC 768 UDP	RFC 1723 RIP v2	RFC 3277 IS-IS Transient Blackhole Avoidance
RFC 783 TFTP Protocol (revision 2)	RFC 1795 Data Link Switching: Switch-to-Switch Protocol AIW DLSw RIG: DLSw Closed Pages, DLSw Standard Version 1	RFC 3279 Algorithms and Identifiers for the Internet
RFC 791 IP	RFC 1812 IPv4 Routing	X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
RFC 792 ICMP	RFC 1829 The ESP DES-CBC Transform	RFC 3280 Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
RFC 793 TCP	RFC 1877 PPP Internet Protocol Control Protocol Extensions for Name Server Addresses	RFC 3392 Support BGP capabilities advertisement
RFC 826 ARP	RFC 1944 Benchmarking Methodology for Network Interconnect Devices	RFC 3526 More Modular Exponential (MODP) Diffie-Hellman groups for Internet Key Exchange (IKE)
RFC 854 Telnet	RFC 1973 PPP in Frame Relay	RFC 3602 The AES-CBC Cipher Algorithm and Its Use with IPsec
RFC 855 Telnet Option Specification RFC 856 Telnet	RFC 1974 PPP Stac LZS Compression Protocol	RFC 3706 A Traffic-Based Method of Detecting Dead Internet Key Exchange (IKE) Peers
RFC 858 Telnet Suppress Go Ahead Option RFC 894 IP over Ethernet	RFC 1990 The PPP Multilink Protocol (MP)	RFC 3784 ISIS TE support
RFC 925 Multi-LAN Address Resolution	RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)	RFC 3786 Extending the Number of IS-IS LSP Fragments Beyond the 256 Limit
RFC 950 Internet Standard Subnetting Procedure RFC 959 File Transfer Protocol (FTP)	RFC 2091 Trigger RIP	RFC 3847 Restart signaling for IS-IS
RFC 1006 ISO transport services on top of the TCP: Version 3	RFC 2131 DHCP	FRF.1.2: PVC User-to-Network Interface (UNI) Implementation Agreement—July 2000
RFC 1027 Proxy ARP	RFC 2132 DHCP Options and BOOTP Vendor Extensions	FRF.10.1: Network-to-Network Frame Relay/ATM SVC Service Interworking Implementation Agreement
RFC 1034 Domain Concepts and Facilities	RFC 2166 APPN Implementer's Workshop Closed Pages Document DLSw v2.0 Enhancements	FRF.11.1: Voice over Frame Relay Implementation Agreement—May 1997—Annex J added March 1999
RFC 1035 Domain Implementation and specification RFC 1042 IP Datagrams	RFC 2205 Resource ReSerVation Protocol (RSVP)—Version 1 Functional Specification	FRF.15: End-to-End Multilink Frame Relay Implementation Agreement
RFC 1058 RIPv1	RFC 2280 Routing Policy Specification Language (RPSL)	FRF.16: Multilink Frame Relay UNI/NNI Implementation Agreement
RFC 1071 Computing the Internet Checksum	RFC 2284 EAP over LAN	
RFC 1091 Telnet Terminal-type Option	RFC 2338 VRRP	
RFC 1122 Host Requirements	RFC 2364 PPP Over AAL5	
RFC 1141 Incremental updating of the Internet checksum	RFC 2374 An Aggregatable Global Unicast Address Format	
RFC 1142 OSI IS-IS Intra-domain Routing Protocol	RFC 2451 The ESP CBC-Mode Cipher Algorithms	
RFC 1144 Compressing TCP/IP headers for low-speed serial links	RFC 2453 RIPv2	
RFC 1195 OSI ISIS for IP and Dual Environments	RFC 2510 Internet X.509 Public Key Infrastructure Certificate Management Protocols	
RFC 1256 ICMP Router Discovery Protocol (IRDP)	RFC 2511 Internet X.509 Certificate Request Message Format	
RFC 1293 Inverse Address Resolution Protocol		
RFC 1315 Management Information Base for Frame Relay DTEs		

Standards and Protocols (Continued)

(applies to all products in series)

General protocols (Continued)	RFC 1332 The PPP Internet Protocol Control Protocol (IPCP)	RFC 2516 A Method for Transmitting PPP Over Ethernet (PPPoE)	FRF.17: Frame Relay Privacy Implementation Agreement FRF.18: Network-to-Network Frame Relay/ATM SVC
	RFC 1333 PPP Link Quality Monitoring	RFC 2644 Directed Broadcast Control RFC 2661 L2TP	Service Interworking Implementation Agreement
	RFC 1334 PPP Authentication Protocols (PAP)	RFC 2663 NAT Terminology and Considerations	FRF.19: Frame Relay Operations, Administration and Maintenance Implementation
	RFC 1349 Type of Service	RFC 2684 Multiprotocol Encapsulation over ATM Adaptation Layer 5	FRF.2.1: Frame Relay Network-to-Network (NNI) Implementation Agreement Version 2.1
	RFC 1350 TFTP Protocol (revision 2)	RFC 2694 DNS extensions to Network Address Translators (DNS_ALG)	FRF.20: Frame Relay IP Header Compression Implementation Agreement—June 2001
	RFC 1377 The PPP OSI Network Layer Control Protocol (OSINLCP)	RFC 2747 RSVP Cryptographic Authentication	FRF.3.2: Frame Relay Multiprotocol Encapsulation Implementation Agreement—April 2000
	RFC 1381 SNMP MIB Extension for X.25 LAPB	RFC 2763 Dynamic Name-to-System ID mapping support	FRF.4.1: SVC User-to-Network Interface (UNI) Implementation Agreement
	RFC 1471 The Definitions of Managed Objects for the Link Control Protocol of the Point-to-Point Protocol	RFC 2765 Stateless IP/ICMP Translation Algorithm (SIIT)	FRF.5: Frame Relay/ATM Network Internetworking Implementation Agreement
	RFC 1472 The Definitions of Managed Objects for the Security Protocols of the Point-to-Point Protocol	RFC 2766 Network Address Translation—Protocol	FRF.6: Frame Relay Service Customer Network Management Implementation
	RFC 1490 Multiprotocol Interconnect over Frame Relay RFC 1519 CIDR	Translation (NAT-PT)	FRF.7: Frame Relay PVC Multicast Service and Protocol Description—October 1994
	RFC 1534 DHCP/BOOTP Interoperation	RFC 2784 Generic Routing Encapsulation (GRE)	FRF.8.1: Frame Relay/ATM PVC Service Internetworking Implementation Agreement
	RFC 1542 Clarifications and Extensions for the Bootstrap Protocol	RFC 2787 Definitions of Managed Objects for VRRP	FRF.9: Data Compression Over Frame Relay Implementation Agreement—January 1996
	RFC 1552 The PPP Internetworking Packet Exchange Control Protocol (IPXCP)	RFC 2961 RSVP Refresh Overhead Reduction Extensions	ITU-T Recommendation X.29: Public Data Networks: Procedures for the Exchange of Control Information and User Data
	RFC 1577 Classical IP and ARP over ATM	RFC 2966 Domain-wide Prefix Distribution with Two-Level IS-IS	Q.921: ISDN user network interface—Data Link Layer specification
	RFC 1613 Cisco Systems X.25 over TCP (XOT)	RFC 2973 IS-IS Mesh Groups	Q.922: Annex A: Core aspects of Q.922 for use with frame relaying bearer service
		RFC 2993 Architectural Implications of NAT	Q.931: ISDN user network interface-Layer 3 specification for basic call control
		RFC 3022 Traditional IP Network Address Translator (Traditional NAT)	Q.933: Annex A: Additional procedures for Permanent Virtual Connection (PVC) status management (using Unnumbered Information frames)
		RFC 3027 Protocol Complications with the IP Network Address Translator	X.25: Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE)
	RFC 3031 Multiprotocol Label Switching Architecture		
	RFC 3246 Expedited Forwarding PHB		
IP multicast	RFC 1112 IGMP	RFC 2236 IGMPv2 RFC 2283 Multiprotocol Extensions for BGP-4	RFC 2362 PIM Sparse Mode RFC 2934 Protocol Independent Multicast MIB for IPv4
IPv6	RFC 1981 IPv6 Path MTU Discovery RFC 2080 RIPng for IPv6 RFC 2292 Advanced Sockets API for IPv6 RFC 2373 IPv6 Addressing Architecture RFC 2460 IPv6 Specification RFC 2461 IPv6 Neighbor Discovery	RFC 2462 IPv6 Stateless Address Auto-configuration RFC 2463 ICMPv6 RFC 2464 Transmission of IPv6 over Ethernet Networks RFC 2472 IP Version 6 over PPP RFC 2473 Generic Packet Tunneling in IPv6 RFC 2529 Transmission of IPv6 Packets over IPv4 RFC 2545 Use of MP-BGP-4 for IPv6	RFC 2553 Basic Socket Interface Extensions for IPv6 RFC 2740 OSPFv3 for IPv6 RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers RFC 3056 Connection of IPv6 Domains via IPv4 Clouds RFC 3513 IPv6 Addressing Architecture RFC 3596 DNS Extension for IPv6

Standards and Protocols (Continued)

(applies to all products in series)

MIBs	RFC 1213 MIB II RFC 1229 Interface MIB Extensions RFC 1286 Bridge MIB RFC 1493 Bridge MIB RFC 1573 SNMP MIB II RFC 1724 RIPv2 MIB	RFC 1757 Remote Network Monitoring MIB RFC 1850 OSPFv2 MIB RFC 2011 SNMPv2 MIB for IP RFC 2012 SNMPv2 MIB for TCP RFC 2013 SNMPv2 MIB for UDP RFC 2233 Interfaces MIB RFC 2454 IPV6-UDP-MIB	RFC 2465 IPv6 MIB RFC 2466 ICMPv6 MIB RFC 2618 RADIUS Client MIB RFC 2620 RADIUS Accounting MIB RFC 2674 802.1p and IEEE 802.1Q Bridge MIB RFC 2737 Entity MIB (Version 2) RFC 2863 The Interfaces Group MIB
Network management	IEEE 802.1D (STP) RFC 1155 Structure of Management Information RFC 1157 SNMPv1	RFC 1905 SNMPv2 Protocol Operations RFC 2272 SNMPv3 Management Protocol RFC 2273 SNMPv3 Applications RFC 2274 USM for SNMPv3	RFC 2275 VACM for SNMPv3 RFC 2575 SNMPv3 View-based Access Control Model (VACM) RFC 3164 BSD syslog Protocol
OSPF	RFC 1245 OSPF protocol analysis RFC 1246 Experience with OSPF	RFC 1587 OSPF NSSA RFC 1765 OSPF Database Overflow	RFC 1850 OSPFv2 Management Information Base (MIB), traps RFC 2328 OSPFv2 RFC 2370 OSPF Opaque LSA Option
QoS/CoS	IEEE 802.1P (CoS)	RFC 2474 DS Field in the IPv4 and IPv6 Headers RFC 2475 DiffServ Architecture	RFC 2597 DiffServ Assured Forwarding (AF) RFC 2598 DiffServ Expedited Forwarding (EF)
Security	IEEE 802.1X Port Based Network Access Control RFC 1321 The MD5 Message-Digest Algorithm RFC 2082 RIP-2 MD5 Authentication	RFC 2104 Keyed-Hashing for Message Authentication RFC 2138 RADIUS Authentication RFC 2209 RSVP-Message Processing RFC 2246 Transport Layer Security (TLS)	RFC 2716 PPP EAP TLS Authentication Protocol RFC 2865 RADIUS Authentication RFC 2866 RADIUS Accounting
VPN	RFC 2403—HMAC-MD5-96 RFC 2404—HMAC-SHA1-96	RFC 2405—DES-CBC Cipher algorithm RFC 2796 BGP Route Reflection—An Alternative to Full Mesh IBGP	RFC 2842 Capabilities Advertisement with BGP-4 RFC 2858 Multiprotocol Extensions for BGP-4 RFC 2918 Route Refresh Capability for BGP-4
IPSec	RFC 1828 IP Authentication using Keyed MD5 RFC 2401 IP Security Architecture RFC 2402 IP Authentication Header	RFC 2406 IP Encapsulating Security Payload RFC 2407—Domain of interpretation RFC 2410—The NULL Encryption Algorithm and its use with IPSec	RFC 2411 IP Security Document Roadmap RFC 2412—OAKLEY RFC 2865—Remote Authentication Dial In User Service (RADIUS)
IKEv1		RFC 2865—Remote Authentication Dial In User Service (RADIUS)	RFC 3748—Extensible Authentication Protocol (EAP)

HP MSR93x Router Series accessories

HP MSR930 Router (JG511A)

HP MSR930 Chassis Rack Mount Kit (JG852A)

HP MSR930 3G Router (JG513A)

HP MSR930 Chassis Rack Mount Kit (JG852A)

HP MSR 3G Antenna (JG521A)

HP MSR 3G RF 2.8m Antenna Cable (JG522A)

HP MSR 3G RF 6m Antenna Cable (JG666A)

HP MSR 3G RF 15m Antenna Cable (JG667A)

HP MSR931 Router (JG514A)

NEW HP MSR930-4G LTE/931/933/935/936 Chassis Rack Mount Kit (JG853A)

HP MSR931 3G Router (JG515A)

NEW HP MSR930-4G LTE/931/933/935/936 Chassis Rack Mount Kit (JG853A)

HP MSR 3G Antenna (JG521A)

HP MSR 3G RF 2.8m Antenna Cable (JG522A)

HP MSR 3G RF 6m Antenna Cable (JG666A)

HP MSR 3G RF 15m Antenna Cable (JG667A)

HP MSR931 Dual 3G Router (JG531A)

NEW HP MSR930-4G LTE/931/933/935/936 Chassis Rack Mount Kit (JG853A)

HP MSR 3G Antenna (JG521A)

HP MSR 3G RF 2.8m Antenna Cable (JG522A)

HP MSR 3G RF 6m Antenna Cable (JG666A)

HP MSR 3G RF 15m Antenna Cable (JG667A)

HP MSR930 Wireless Router (JG512A)

HP MSR930 Chassis Rack Mount Kit (JG852A)

HP MSR930 4G LTE/3G CDMA Router (JG596A)

NEW HP MSR930-4G LTE/931/933/935/936 Chassis Rack Mount Kit (JG853A)

HP MSR 3G RF 2.8m Antenna Cable (JG522A)

HP MSR 3G RF 6m Antenna Cable (JG666A)

HP MSR 3G RF 15m Antenna Cable (JG667A)

HP MSR 4G 5W TNC Antenna (JG669A)

HP MSR933 Router (JG516A)

NEW HP MSR930-4G LTE/931/933/935/936 Chassis Rack Mount Kit (JG853A)

HP MSR933 3G Router (JG517A)

NEW HP MSR930-4G LTE/931/933/935/936 Chassis Rack Mount Kit (JG853A)
HP MSR 3G Antenna (JG521A)
HP MSR 3G RF 2.8m Antenna Cable (JG522A)
HP MSR 3G RF 6m Antenna Cable (JG666A)
HP MSR 3G RF 15m Antenna Cable (JG667A)

HP MSR935 Router (JG518A)

NEW HP MSR930-4G LTE/931/933/935/936 Chassis Rack Mount Kit (JG853A)

HP MSR935 Wireless Router (JG519A)

NEW HP MSR930-4G LTE/931/933/935/936 Chassis Rack Mount Kit (JG853A)

HP MSR935 3G Router (JG520A)

NEW HP MSR930-4G LTE/931/933/935/936 Chassis Rack Mount Kit (JG853A)
HP MSR 3G Antenna (JG521A)
HP MSR 3G RF 2.8m Antenna Cable (JG522A)
HP MSR 3G RF 6m Antenna Cable (JG666A)
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