

Overview

Models

HP MSR930 Router	JG511A
HP MSR930 Wireless Router	JG512A
HP MSR935 Wireless Router	JG519A
HP MSR930 3G Router	JG513A
HP MSR931 Router	JG514A
HP MSR931 3G Router	JG515A
HP MSR931 Dual 3G Router	JG531A
HP MSR930 4G LTE/3G CDMA Router	JG596A
HP MSR933 Router	JG516A
HP MSR933 3G Router	JG517A
HP MSR935 Router	JG518A
HP MSR935 3G Router	JG520A
HP MSR936 Wireless Router	JG597A
HP MSR930 4G LTE/3G WCDMA Global Router	JG665A

Key features

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

Product overview

The HP MSR93x 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, ADSL2+ over ISDN), 4-pair G.SHDSL, and optional dual 3G WAN in a single box.

These solutions deliver up to 300 Kpps forwarding with comprehensive IPv4 and IPv6 routing, MPLS, QoS, firewall, NAT, VPN, switching, voice, and wireless capabilities in a compact, fixed, form factor. Additionally, the MSR93x Series is based on open standards for seamless integration within small-branch deployments.

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**

Overview

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; ACLs provide telnet and SNMP access; local and remote syslog capabilities allow logging of all access
- **SNMPv1, v2, and v3**
provide complete support of SNMP; provide full support of industry-standard Management Information Base (MIB) plus private extensions; SNMPv3 supports increased security using encryption
- **Remote monitoring (RMON)**
uses standard SNMP to monitor essential network functions; supports events, alarm, history, and statistics group plus a private alarm extension group
- **FTP, TFTP, and SFTP support**
offers different mechanisms for configuration updates; FTP allows bidirectional transfers over a TCP/IP network; trivial FTP (TFTP) is a simpler method using User Datagram Protocol (UDP); Secure File Transfer Protocol (SFTP) runs over an SSH tunnel to provide additional security
- **Debug and sampler utility**
supports ping and traceroute for both IPv4 and IPv6
- **Network Time Protocol (NTP)**
synchronizes timekeeping among distributed time servers and clients; 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 order of severity; outputs the network information to multiple channels based on user-defined rules
- **Network Quality Analyzer (NQA)**
analyzes network performance and service quality by sending test packets, and provides network performance and service quality parameters such as jitter, TCP, or FTP connection delays; allows network manager to determine overall network performance and diagnose and locate network congestion points or failures
- **Zero-touch deployment**
eases HP MSR93x Router installations and rollouts

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 Wireless WAN (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 default 3G antenna; additional 3G antennas 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

Overview

- **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**
provides 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; offers wireless access with 4G LTE and 3G connectivity

Performance

- **Forwarding performance**
provides up to 300 Kpps; meets current and future bandwidth-intensive application demands for enterprise businesses
- **Embedded encryption**
supports up to 100 VPN tunnels and up to 160 Mbps encryption throughput
- **Gigabit Ethernet interface**
provides a connection to the network that eliminates the network as a bottleneck

Resiliency and high availability

- **Backup Center**
acts as a part of the management and backup function to provide backup for device interfaces; 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; supports VRRP load balancing
- **Wireless WAN (WWAN) with integrated 3G**
allows small-branch users to maintain remote office data connectivity to data center or headquarters using the integrated carrier connections

Layer 2 switching

- **Spanning Tree Protocol (STP)**
supports standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- **Internet Group Management Protocol (IGMP) and Multicast**
Listener Discovery (MLD) protocol snooping controls and manages the flooding of multicast packets in a Layer 2 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

Layer 3 services

- **Address Resolution Protocol (ARP)**
determines the MAC address of another IP host in the same subnet; supports static ARPs; gratuitous ARP allows detection of duplicate IP addresses; proxy ARP allows normal ARP operation between subnets or when subnets are separated by a Layer 2 network
- **Dynamic Host Configuration Protocol (DHCP)**
simplifies the management of large IP networks and supports client and server; DHCP Relay enables DHCP operation across

Overview

subnets

- **Built-in applications support**

- Device management controller (DMC) acts as the gateway of 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

Layer 3 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; 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; 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 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**

allows IPv6 packets to traverse IPv4-only networks by encapsulating the IPv6 packet into a standard IPv4 packet; supports manually configured, 6to4, and Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) tunnels; is an important element for the transition from IPv4 to IPv6

- **Policy routing**

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

- **BGP4+ support**

utilizes the BGP-4 (RFC 4271) exterior routing protocol for routing integrity and reliability between different autonomous systems

Security

Overview

- **Access control list (ACL)**
supports powerful ACLs for both IPv4 and IPv6; ACLs are used for filtering traffic to prevent unauthorized users from accessing the network, or for controlling network traffic to save resources; rules can either deny or permit traffic to be forwarded; rules can be based on a Layer 2 header or a Layer 3 protocol header; 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
- **RADIUS login**
eases security access administration by using a password authentication server
- **Network address translation (NAT)**
supports one-to-one NAT, many-to-many NAT, and NAT control, enabling NAT-PT to support multiple connections; supports blacklist in NAT/NAT-PT, a limit on the number of connections, session logs, and multi-instances
- **Secure Shell (SSHv2)**
uses external servers to securely log in to a remote device or securely log in to MSR from a remote location; with authentication and encryption, it protects against IP spoofing and plain text password interception; increases the security of SFTP transfers
- **Unicast Reverse Path Forwarding (URPF)**
allows normal packets to be forwarded correctly, but discards the attaching packet due to lack of reverse path route or incorrect inbound interface; prevents source spoofing and distributed attacks
- **IPSec VPN**
supports DES, 3DES, and AES 128/192/256 encryption, and MD5 and SHA-1 authentication
- **Dynamic Virtual Private Network (DVPN)**
collects, maintains, and distributes dynamic public addresses through the VPN Address Management (VAM) protocol, making VPN establishment available between enterprise branches that use dynamic addresses to access the public network; compared to traditional VPN technologies, 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

- **Internet Group Management Protocol (IGMP)**
utilizes Any-Source Multicast (ASM) or Source-Specific Multicast (SSM) to manage IPv4 multicast networks; 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; supports PIM Dense Mode (DM), Sparse Mode (SM), and Source-Specific Mode (SSM)
- **Multicast Source Discovery Protocol (MSDP)**
allows multiple PIM-SM domains to interoperate; 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**

Overview

improves traffic distribution using powerful scheduling algorithms, including Layer 4 to 7 services; 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, thereby 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 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, 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**

to find software for your product, refer to: www.hp.com/networking/support; for details on the software releases available with your product purchase, refer to: www.hp.com/networking/warrantysummary

Configuration

Build To Order:

BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-Shippable solution.

HP MSR930 Router	JG511A
<ul style="list-style-type: none">• 1 RJ-45 autosensing 10/100/1000 WAN port• 4 RJ-45 autosensing 10/100/1000 LAN ports	See Configuration Note:5, 9
HP MSR930 Wireless Router	JG512A
<ul style="list-style-type: none">• 1 RJ-45 autosensing 10/100/1000 WAN port• 4 RJ-45 autosensing 10/100/1000 LAN ports• Wireless - 802.11 b/g/n• Included antennas: 2• Maximum antennas: 2	See Configuration Note:2, 3
C15 PDU NA	JG512A#B2B
<ul style="list-style-type: none">• C15 to C14 Jumper Cord (NA)	
C15 PDU ROW	JG512A#B2C
<ul style="list-style-type: none">• C15 to C14 Jumper Cord (ROW)	
220 NA	JG512A#B2E
<ul style="list-style-type: none">• NEMA L6-20P Cord	
HP MSR930 3G Router	JG513A
<ul style="list-style-type: none">• 1 RJ-45 autosensing 10/100/1000 WAN port• 4 RJ-45 autosensing 10/100/1000 LAN ports• Included 3G antennas: 1• Maximum 3G antennas: 2	See Configuration Note:5, 9
HP MSR931 Router	JG514A
<ul style="list-style-type: none">• 1 RJ-45 autosensing 10/100/1000 WAN port• 4 RJ-45 autosensing 10/100/1000 LAN ports• 1 Serial port (min=0 \ max=1 Serial Port Cable)	See Configuration Note:5, 4, 9
HP MSR931 3G Router	JG515A
<ul style="list-style-type: none">• 1 RJ-45 autosensing 10/100/1000 WAN port• 4 RJ-45 autosensing 10/100/1000 LAN ports• 1 Serial port (min=0 \ max=1 Serial Port Cable)• Included 3G antennas: 1• Maximum 3G antennas: 2	See Configuration Note:5, 4, 9
HP MSR933 Router	JG516A
<ul style="list-style-type: none">• 1 RJ-45 autosensing 10/100/1000 WAN port• 4 RJ-45 autosensing 10/100/1000 LAN ports• 1 8-wire G.SHDSL port	See Configuration Note:2, 3

Configuration

C15 PDU NA <ul style="list-style-type: none">C15 to C14 Jumper Cord (NA)	JG516A #B2B
C15 PDU ROW <ul style="list-style-type: none">C15 to C14 Jumper Cord (ROW)	JG516A #B2C
220 NA <ul style="list-style-type: none">NEMA L6-20P Cord	JG516A#B2E
HP MSR933 3G Router <ul style="list-style-type: none">1 RJ-45 autosensing 10/100/1000 WAN port4 RJ-45 autosensing 10/100/1000 LAN ports1 8-wire G.SHDSL portEmbedded 3GIncluded 3G antennas: 1Maximum 3G antennas: 2	JG517A See Configuration Note:2, 3
C15 PDU NA <ul style="list-style-type: none">C15 to C14 Jumper Cord (NA)	JG517A #B2B
C15 PDU ROW <ul style="list-style-type: none">C15 to C14 Jumper Cord (ROW)	JG517A #B2C
220 NA <ul style="list-style-type: none">NEMA L6-20P Cord	JG517A#B2E
HP MSR935 Router <ul style="list-style-type: none">1 RJ-45 autosensing 10/100/1000 WAN port4 RJ-45 autosensing 10/100/1000 LAN ports1 ADSL2+ ANNEX A/M port	JG518A See Configuration Note:2, 3
C15 PDU NA <ul style="list-style-type: none">C15 to C14 Jumper Cord (NA)	JG518A #B2B
C15 PDU ROW <ul style="list-style-type: none">C15 to C14 Jumper Cord (ROW)	JG518A #B2C
220 NA <ul style="list-style-type: none">NEMA L6-20P Cord	JG518A#B2E
HP MSR935 Wireless Router <ul style="list-style-type: none">1 RJ-45 autosensing 10/100/1000 WAN port4 RJ-45 autosensing 10/100/1000 LAN ports1 ADSL2+ ANNEX A/M portWireless - 802.11 b/g/nIncluded antennas: 2Maximum antennas: 2	JG519A See Configuration Note:2, 3

Configuration

C15 PDU NA <ul style="list-style-type: none">• C15 to C14 Jumper Cord (NA)	JG519A #B2B
C15 PDU ROW <ul style="list-style-type: none">• C15 to C14 Jumper Cord (ROW)	JG519A #B2C
220 NA <ul style="list-style-type: none">• NEMA L6-20P Cord	JG519A#B2E
HP MSR935 3G Router <ul style="list-style-type: none">• 1 RJ-45 autosensing 10/100/1000 WAN port• 4 RJ-45 autosensing 10/100/1000 LAN ports• 1 ADSL2+ ANNEX A/M port• Embedded 3G• Included 3G antennas: 1• Maximum 3G antennas: 2	JG520A See Configuration Note:2, 3
C15 PDU NA <ul style="list-style-type: none">• C15 to C14 Jumper Cord (NA)	JG520A #B2B
C15 PDU ROW <ul style="list-style-type: none">• C15 to C14 Jumper Cord (ROW)	JG520A #B2C
220 NA <ul style="list-style-type: none">• NEMA L6-20P Cord	JG520A#B2E
HP MSR931 Dual 3G Router <ul style="list-style-type: none">• 1 RJ-45 autosensing 10/100/1000 WAN port• 4 RJ-45 autosensing 10/100/1000 LAN ports• 1 Serial port (min=0 \ max=1 Serial Port Cable)• Included 3G antennas: 2• Maximum 3G antennas: 4	JG531A See Configuration Note:5, 4, 9
HP MSR930 4G LTE/3G CDMA Router <ul style="list-style-type: none">• 1 RJ-45 autosensing 10/100/1000 WAN port• 4 RJ-45 autosensing 10/100/1000 LAN ports• 1 GPS L1/GLONASS Antenna port• 4G-LTE-V• Included 4G antennas: 2• Maximum 4G antennas: 2	JG596A See Configuration Note:2, 3
C15 PDU NA <ul style="list-style-type: none">• C15 to C14 Jumper Cord (NA)	JG596A #B2B
220 NA <ul style="list-style-type: none">• NEMA L6-20P Cord	JG596A#B2E

Configuration

HP MSR936 Wireless Router

- 1 RJ-45 autosensing 10/100/1000 WAN port
- 4 RJ-45 autosensing 10/100/1000 LAN ports
- 1 ADSL2+ ANNEX B/J port
- Wireless - 802.11 b/g/n
- Included antennas: 2
- Maximum antennas: 2

JG597A
See Configuration
Note:2

C15 PDU NA

- C15 to C14 Jumper Cord (NA)

JG597A#B2B

C15 PDU ROW

- C15 to C14 Jumper Cord (ROW)

JG597A#B2C

HP MSR930 4G LTE/3G WCDMA Global Router

- 1 RJ-45 autosensing 10/100/1000 WAN port
- 4 RJ-45 autosensing 10/100/1000 LAN ports
- 1 GPS L1/GLONASS Antenna port
- 4G-LTE-G
- Included 4G antennas: 2
- Maximum 4G antennas: 2

JG665A
See Configuration
Note:2

C15 PDU NA

- C15 to C14 Jumper Cord (NA)

JG665A #B2B

C15 PDU ROW

- C15 to C14 Jumper Cord (ROW)

JG665A #B2C

Configuration Rules:

Note 2 Localization required on orders without #B2B, #B2C or #B2E. (See Localization Menu)

Note 3 #B2E is Offered only in AMS, Taiwan, and Japan.

Note 4 The following Cables install into this Router:
JD519A - HP X200 V.24 DTE 3m Serial Port Cable
JD521A - HP X200 V.24 DCE 3m Serial Port Cable
JD523A - HP X200 V.35 DTE 3m Serial Port Cable
JD525A - HP X200 V.35 DCE 3m Serial Port Cable
JD527A - HP X200 X.21 DTE 3m Serial Port Cable
JD529A - HP X200 X.21 DCE 3m Serial Port Cable
JF825A - HP X260 RS449 3m DTE Serial Port Cable
JF826A - HP X260 RS449 3m DCE Serial Port Cable
JF827A - HP X260 RS530 3m DTE Serial Port Cable
JF828A - HP X260 RS530 3m DCE Serial Port Cable

Configuration

Note 5 If this product is ordered with the option (For Russia and other countries requiring Low Encryption), then the # must replace the existing localization.

Note 9 Localization required. (See Localization Menu)

Router Options

3G / 4G Antenna's

(JG513A, JG515A, JG517A, JG520A) System (std 1 // max 2) User Selection (min 0 // max 1) per Router

(JG512A, JG519A, JG597A, JG596A, JG665A) System (std 2 // max 2) User Selection (min 0 // max 0) per Router

(JG531A) System (std 2 // max 4) User Selection (min 0 // max 2) per Router

HP MSR 3G Antenna

JG521A
See Configuration
Note:1

HP MSR 4G 5W Antenna

- Spare Parts Only

JG669A
See Configuration
Note:3

Configuration Rules:

Note 1 This Antenna is supported on the following Routers:

JG513A - HP MSR930 3G Router
JG515A - HP MSR931 3G Router
JG517A - HP MSR933 3G Router
JG520A - HP MSR935 3G Router
JG531A - HP MSR931 Dual 3G Router

Note 3 This Antenna is supported on the following Routers:

JG596A - HP MSR930 4G LTE/3G CDMA Router
JG665A - HP MSR930 4G LTE/3G WCDMA Global Router

Antenna Cables

System (std 0 // max 1) User Selection (min 0 // max 1) per Antenna (Supported on JG521A and JG669A)

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

Configuration

Cables

HP X200 V.24 DTE 3m Serial Port Cable	JD519A
HP X200 V.24 DCE 3m Serial Port Cable	JD521A
HP X200 V.35 DTE 3m Serial Port Cable	JD523A
HP X200 V.35 DCE 3m Serial Port Cable	JD525A
HP X200 X.21 DTE 3m Serial Port Cable	JD527A
HP X200 X.21 DCE 3m Serial Port Cable	JD529A
HP X260 RS449 3m DTE Serial Port Cable	JF825A
HP X260 RS449 3m DCE Serial Port Cable	JF826A
HP X260 RS530 3m DTE Serial Port Cable	JF827A
HP X260 RS530 3m DCE Serial Port Cable	JF828A

Technical Specifications

HP MSR930 Router (JG511A)

Ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports												
Physical characteristics	<table border="0"> <tr> <td style="vertical-align: top;">Dimensions</td> <td>9.06(w) x 6.3(d) x 1.72(h) in (23 x 16 x 4.36 cm)</td> </tr> <tr> <td style="vertical-align: top;">Weight</td> <td>3.97 lb (1.8 kg)</td> </tr> </table>	Dimensions	9.06(w) x 6.3(d) x 1.72(h) in (23 x 16 x 4.36 cm)	Weight	3.97 lb (1.8 kg)								
Dimensions	9.06(w) x 6.3(d) x 1.72(h) in (23 x 16 x 4.36 cm)												
Weight	3.97 lb (1.8 kg)												
Memory and processor	Processor RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash												
Performance	<table border="0"> <tr> <td style="vertical-align: top;">Throughput</td> <td>up to 300 Kpps (64-byte packets)</td> </tr> <tr> <td style="vertical-align: top;">Routing table size</td> <td>10000 entries (IPv4), 5000 entries (IPv6)</td> </tr> </table>	Throughput	up to 300 Kpps (64-byte packets)	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)								
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Environment	<table border="0"> <tr> <td style="vertical-align: top;">Operating temperature</td> <td>32°F to 104°F (0°C to 40°C)</td> </tr> <tr> <td style="vertical-align: top;">Operating relative humidity</td> <td>5% to 90%, noncondensing</td> </tr> <tr> <td style="vertical-align: top;">Nonoperating/Storage temperature</td> <td>-40°F to 158°F (-40°C to 70°C)</td> </tr> <tr> <td style="vertical-align: top;">Nonoperating/Storage relative humidity</td> <td>5% to 90%, noncondensing</td> </tr> <tr> <td style="vertical-align: top;">Shock and vibration</td> <td>Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms</td> </tr> <tr> <td style="vertical-align: top;">Altitude</td> <td>up to 6,561 ft (2 km)</td> </tr> </table>	Operating temperature	32°F to 104°F (0°C to 40°C)	Operating relative humidity	5% to 90%, noncondensing	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	Nonoperating/Storage relative humidity	5% to 90%, noncondensing	Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms	Altitude	up to 6,561 ft (2 km)
Operating temperature	32°F to 104°F (0°C to 40°C)												
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Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms												
Altitude	up to 6,561 ft (2 km)												
Electrical characteristics	<table border="0"> <tr> <td style="vertical-align: top;">Maximum heat dissipation</td> <td>20 BTU/hr (21.1 kJ/hr)</td> </tr> <tr> <td style="vertical-align: top;">Voltage</td> <td>100-240 VAC</td> </tr> <tr> <td style="vertical-align: top;">Maximum power rating</td> <td>24 W</td> </tr> <tr> <td style="vertical-align: top;">Notes</td> <td>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.</td> </tr> </table>	Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)	Voltage	100-240 VAC	Maximum power rating	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 heat dissipation	20 BTU/hr (21.1 kJ/hr)												
Voltage	100-240 VAC												
Maximum power rating	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.												
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												
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												
Telecom	FCC part 68												
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB												
Services	<ul style="list-style-type: none"> 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) 												

Technical Specifications

- 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)
- 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L92E)
- 5-year, 24x7 SW phone support, software updates (U8L91E)
- 3 Yr 6 hr Call-to-Repair Onsite (U8L69E)
- 4 Yr 6 hr Call-to-Repair Onsite (U8L79E)
- 5 Yr 6 hr Call-to-Repair Onsite (U8L89E)
- 1-year, 4-hour onsite, 13x5 coverage for hardware (U8L57E)
- 1-year, 4-hour onsite, 24x7 coverage for hardware (U8L58E)
- 1-year, 6 hour Call-To-Repair Onsite for hardware (U8L59E)
- 1-year, 24x7 software phone support, software updates (U8L60E)
- 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 (U8L55E)
- 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 (U8L63E)
- 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 (U8L73E)
- 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 (U8L83E)
- 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L84E)

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 MSR930 3G Router (JG513A)

Ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports	
Physical characteristics	Dimensions	9.06(w) x 6.3(d) x 1.72(h) in (23 x 16 x 4.36 cm)
	Weight	3.97 lb (1.8 kg)
Memory and processor	Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash
Performance	Throughput	up to 300 Kpps (64-byte packets)
	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
	Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 90%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)

Technical Specifications

	Nonoperating/Storage relative humidity	5% to 90%, noncondensing
	Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms
	Altitude	up to 6,561 ft (2 km)
Electrical characteristics	Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	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.
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	
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	
Telecom Management	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5	
Notes	<p>IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB</p> <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) 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) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L92E) 5-year, 24x7 SW phone support, software updates (U8L91E) 3 Yr 6 hr Call-to-Repair Onsite (U8L69E) 4 Yr 6 hr Call-to-Repair Onsite (U8L79E) 5 Yr 6 hr Call-to-Repair Onsite (U8L89E) 1-year, 4-hour onsite, 13x5 coverage for hardware (U8L57E) 1-year, 4-hour onsite, 24x7 coverage for hardware (U8L58E)</p>	

Technical Specifications

- 1-year, 6 hour Call-To-Repair Onsite for hardware (U8L59E)
- 1-year, 24x7 software phone support, software updates (U8L60E)
- 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 (U8L55E)
- 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 (U8L63E)
- 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 (U8L73E)
- 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 (U8L83E)
- 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L84E)

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 MSR931 Router (JG514A)

Ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports 1 Serial port	
Physical characteristics	Dimensions	11.81(w) x 7.87(d) x 1.74(h) in (30 x 20 x 4.42 cm)
	Weight	5.95 lb (2.7 kg)
Memory and processor	Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash
Performance	Throughput	up to 300 Kpps (64-byte packets)
	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
	Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 90%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 90%, noncondensing
	Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms
	Altitude	up to 6,561 ft (2 km)
Electrical characteristics	Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	24 W

Technical Specifications

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.
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
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
Telecom	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
Services	<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, 24x7 software phone (U8M30E)</p> <p>5-year, 24x7 SW phone support, software updates (U8M29E)</p> <p>3 Yr 6 hr Call-to-Repair Onsite (U8M07E)</p> <p>4 Yr 6 hr Call-to-Repair Onsite (U8M17E)</p> <p>5 Yr 6 hr Call-to-Repair Onsite (U8M27E)</p> <p>1-year, 4-hour onsite, 13x5 coverage for hardware (U8L95E)</p> <p>1-year, 4-hour onsite, 24x7 coverage for hardware (U8L96E)</p> <p>1-year, 6 hour Call-To-Repair Onsite for hardware (U8L97E)</p> <p>1-year, 24x7 software phone support, software updates (U8L98E)</p> <p>1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U8L99E)</p> <p>1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8L93E)</p> <p>1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U8L94E)</p> <p>3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8M01E)</p> <p>3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M02E)</p> <p>4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8M11E)</p> <p>4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M12E)</p> <p>5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U8M21E)</p> <p>5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M22E)</p>

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

Technical Specifications

HP sales office.

HP MSR931 3G Router (JG515A)

Ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports 1 Serial port												
Physical characteristics	<table border="0"> <tr> <td style="vertical-align: top;">Dimensions</td> <td>11.81(w) x 7.87(d) x 1.74(h) in (30 x 20 x 4.42 cm)</td> </tr> <tr> <td style="vertical-align: top;">Weight</td> <td>5.95 lb (2.7 kg)</td> </tr> </table>	Dimensions	11.81(w) x 7.87(d) x 1.74(h) in (30 x 20 x 4.42 cm)	Weight	5.95 lb (2.7 kg)								
Dimensions	11.81(w) x 7.87(d) x 1.74(h) in (30 x 20 x 4.42 cm)												
Weight	5.95 lb (2.7 kg)												
Memory and processor	Processor RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash												
Performance	<table border="0"> <tr> <td style="vertical-align: top;">Throughput</td> <td>up to 300 Kpps (64-byte packets)</td> </tr> <tr> <td style="vertical-align: top;">Routing table size</td> <td>10000 entries (IPv4), 5000 entries (IPv6)</td> </tr> <tr> <td style="vertical-align: top;">Forwarding table size</td> <td>10000 entries (IPv4), 5000 entries (IPv6)</td> </tr> </table>	Throughput	up to 300 Kpps (64-byte packets)	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)	Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)						
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Routing table size	10000 entries (IPv4), 5000 entries (IPv6)												
Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)												
Environment	<table border="0"> <tr> <td style="vertical-align: top;">Operating temperature</td> <td>32°F to 104°F (0°C to 40°C)</td> </tr> <tr> <td style="vertical-align: top;">Operating relative humidity</td> <td>5% to 90%, noncondensing</td> </tr> <tr> <td style="vertical-align: top;">Nonoperating/Storage temperature</td> <td>-40°F to 158°F (-40°C to 70°C)</td> </tr> <tr> <td style="vertical-align: top;">Nonoperating/Storage relative humidity</td> <td>5% to 90%, noncondensing</td> </tr> <tr> <td style="vertical-align: top;">Shock and vibration</td> <td>Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms</td> </tr> <tr> <td style="vertical-align: top;">Altitude</td> <td>up to 6,561 ft (2 km)</td> </tr> </table>	Operating temperature	32°F to 104°F (0°C to 40°C)	Operating relative humidity	5% to 90%, noncondensing	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	Nonoperating/Storage relative humidity	5% to 90%, noncondensing	Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms	Altitude	up to 6,561 ft (2 km)
Operating temperature	32°F to 104°F (0°C to 40°C)												
Operating relative humidity	5% to 90%, noncondensing												
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)												
Nonoperating/Storage relative humidity	5% to 90%, noncondensing												
Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms												
Altitude	up to 6,561 ft (2 km)												
Electrical characteristics	<table border="0"> <tr> <td style="vertical-align: top;">Maximum heat dissipation</td> <td>20 BTU/hr (21.1 kJ/hr)</td> </tr> <tr> <td style="vertical-align: top;">Voltage</td> <td>100-240 VAC</td> </tr> <tr> <td style="vertical-align: top;">Maximum power rating</td> <td>24 W</td> </tr> <tr> <td style="vertical-align: top;">Notes</td> <td>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.</td> </tr> </table>	Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)	Voltage	100-240 VAC	Maximum power rating	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 heat dissipation	20 BTU/hr (21.1 kJ/hr)												
Voltage	100-240 VAC												
Maximum power rating	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.												
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												
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												
Telecom	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												
Notes	Supports HSPA+ SIM card included Default antennas: 1 Maximum antennas: 2												

Technical Specifications

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

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)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8M30E)
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3 Yr 6 hr Call-to-Repair Onsite (U8M07E)
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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 (U8L93E)
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 (U8M01E)
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 (U8M11E)
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 (U8M21E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M22E)

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 MSR931 Dual 3G Router (JG531A)

Ports

1 RJ-45 autosensing 10/100/1000 WAN port
4 RJ-45 autosensing 10/100/1000 LAN ports
1 Serial port

Physical characteristics

Dimensions	11.81(w) x 7.87(d) x 1.74(h) in (30 x 20 x 4.42 cm)
Weight	5.95 lb (2.7 kg)



Technical Specifications

Memory and processor	Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash
Performance	Throughput	up to 300 Kpps (64-byte packets)
	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
	Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 90%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 90%, noncondensing
	Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms
	Altitude	up to 6,561 ft (2 km)
Electrical characteristics	Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	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.
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	
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	
Telecom	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	
Notes	Supports HSPA+ SIM card 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	
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)	

Technical Specifications

- 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)
- 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8M30E)
- 5-year, 24x7 SW phone support, software updates (U8M29E)
- 3 Yr 6 hr Call-to-Repair Onsite (U8M07E)
- 4 Yr 6 hr Call-to-Repair Onsite (U8M17E)
- 5 Yr 6 hr Call-to-Repair Onsite (U8M27E)
- 1-year, 4-hour onsite, 13x5 coverage for hardware (U8L95E)
- 1-year, 4-hour onsite, 24x7 coverage for hardware (U8L96E)
- 1-year, 6 hour Call-To-Repair Onsite for hardware (U8L97E)
- 1-year, 24x7 software phone support, software updates (U8L98E)
- 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 (U8L93E)
- 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 (U8M01E)
- 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 (U8M11E)
- 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 (U8M21E)
- 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8M22E)

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

Ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports	
Physical characteristics	Dimensions	9.06(w) x 6.3(d) x 1.72(h) in (23 x 16 x 4.36 cm)
	Weight	3.97 lb (1.8 kg)
Memory and processor	Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash
Performance	Throughput	up to 300 Kpps (64-byte packets)
	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
	Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 90%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)

Technical Specifications

	Nonoperating/Storage relative humidity	5% to 90%, noncondensing
	Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms
	Altitude	up to 6,561 ft (2 km)
Electrical characteristics	Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	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.
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	
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	
Telecom	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	
Notes	<p>For local 4GLTE/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: 800/1900MHz • This model (JG665A) is certified with Verion Wireless 4GLTE networks • 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, 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) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L92E) 5-year, 24x7 SW phone support, software updates (U8L91E)</p>	

Technical Specifications

- 3 Yr 6 hr Call-to-Repair Onsite (U8L69E)
- 4 Yr 6 hr Call-to-Repair Onsite (U8L79E)
- 5 Yr 6 hr Call-to-Repair Onsite (U8L89E)
- 1-year, 4-hour onsite, 13x5 coverage for hardware (U8L57E)
- 1-year, 4-hour onsite, 24x7 coverage for hardware (U8L58E)
- 1-year, 6 hour Call-To-Repair Onsite for hardware (U8L59E)
- 1-year, 24x7 software phone support, software updates (U8L60E)
- 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 (U8L55E)
- 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 (U8L63E)
- 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 (U8L73E)
- 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 (U8L83E)
- 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L84E)

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 MSR933 Router (JG516A)

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	
Physical characteristics	Dimensions	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)
Memory and processor	Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash
Performance	Throughput	up to 300 Kpps (64-byte packets)
	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
	Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 90%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 90%, noncondensing
	Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms
	Altitude	up to 6,561 ft (2 km)

Technical Specifications

Electrical characteristics	<p>Maximum heat dissipation 20 BTU/hr (21.1 kJ/hr)</p> <p>Voltage 100-240 VAC</p> <p>Maximum power rating 24 W</p> <p>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.</p>
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
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
Telecom	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
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 Yr 6 hr Call-to-Repair Onsite (U8L69E)</p> <p>4 Yr 6 hr Call-to-Repair Onsite (U8L79E)</p> <p>5 Yr 6 hr 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, 24x7 software phone support, software updates (U8L60E)</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> <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>

Technical Specifications

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 (U8L84E)

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 MSR933 3G Router (JG517A)

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												
Physical characteristics	<table border="0"> <tr> <td style="vertical-align: top;">Dimensions</td> <td>11.81(w) x 7.87(d) x 1.74(h) in (30 x 20 x 4.42 cm)</td> </tr> <tr> <td style="vertical-align: top;">Weight</td> <td>3.97 lb (1.8 kg)</td> </tr> </table>	Dimensions	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)								
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Weight	3.97 lb (1.8 kg)												
Memory and processor	Processor RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash												
Performance	<table border="0"> <tr> <td style="vertical-align: top;">Throughput</td> <td>up to 300 Kpps (64-byte packets)</td> </tr> <tr> <td style="vertical-align: top;">Routing table size</td> <td>10000 entries (IPv4), 5000 entries (IPv6)</td> </tr> <tr> <td style="vertical-align: top;">Forwarding table size</td> <td>10000 entries (IPv4), 5000 entries (IPv6)</td> </tr> </table>	Throughput	up to 300 Kpps (64-byte packets)	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)	Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)						
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Environment	<table border="0"> <tr> <td style="vertical-align: top;">Operating temperature</td> <td>32°F to 104°F (0°C to 40°C)</td> </tr> <tr> <td style="vertical-align: top;">Operating relative humidity</td> <td>5% to 90%, noncondensing</td> </tr> <tr> <td style="vertical-align: top;">Nonoperating/Storage temperature</td> <td>-40°F to 158°F (-40°C to 70°C)</td> </tr> <tr> <td style="vertical-align: top;">Nonoperating/Storage relative humidity</td> <td>5% to 90%, noncondensing</td> </tr> <tr> <td style="vertical-align: top;">Shock and vibration</td> <td>Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms</td> </tr> <tr> <td style="vertical-align: top;">Altitude</td> <td>up to 6,561 ft (2 km)</td> </tr> </table>	Operating temperature	32°F to 104°F (0°C to 40°C)	Operating relative humidity	5% to 90%, noncondensing	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	Nonoperating/Storage relative humidity	5% to 90%, noncondensing	Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms	Altitude	up to 6,561 ft (2 km)
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Altitude	up to 6,561 ft (2 km)												
Electrical characteristics	<table border="0"> <tr> <td style="vertical-align: top;">Maximum heat dissipation</td> <td>20 BTU/hr (21.1 kJ/hr)</td> </tr> <tr> <td style="vertical-align: top;">Voltage</td> <td>100-240 VAC</td> </tr> <tr> <td style="vertical-align: top;">Maximum power rating</td> <td>24 W</td> </tr> <tr> <td style="vertical-align: top;">Notes</td> <td>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.</td> </tr> </table>	Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)	Voltage	100-240 VAC	Maximum power rating	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.				
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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.												
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												
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												
Telecom	FCC part 68; TIA-968-B; CS03 Part 8; AS/ACIF S043; G.992.1/2/3/5												

Technical Specifications

Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	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	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) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L92E) 5-year, 24x7 SW phone support, software updates (U8L91E) 3 Yr 6 hr Call-to-Repair Onsite (U8L69E) 4 Yr 6 hr Call-to-Repair Onsite (U8L79E) 5 Yr 6 hr Call-to-Repair Onsite (U8L89E) 1-year, 4-hour onsite, 13x5 coverage for hardware (U8L57E) 1-year, 4-hour onsite, 24x7 coverage for hardware (U8L58E) 1-year, 6 hour Call-To-Repair Onsite for hardware (U8L59E) 1-year, 24x7 software phone support, software updates (U8L60E) 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 (U8L55E) 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 (U8L63E) 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 (U8L73E) 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 (U8L83E) 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L84E)

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 MSR935 Router (JG518A)

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												
Physical characteristics	<table border="0"> <tr> <td style="vertical-align: top;">Dimensions</td> <td>11.81(w) x 7.87(d) x 1.74(h) in (30 x 20 x 4.42 cm)</td> </tr> <tr> <td style="vertical-align: top;">Weight</td> <td>3.97 lb (1.8 kg)</td> </tr> </table>	Dimensions	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)								
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Weight	3.97 lb (1.8 kg)												
Memory and processor	<table border="0"> <tr> <td style="vertical-align: top;">Processor</td> <td>RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash</td> </tr> </table>	Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash										
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Performance	<table border="0"> <tr> <td style="vertical-align: top;">Throughput</td> <td>up to 300 Kpps (64-byte packets)</td> </tr> <tr> <td style="vertical-align: top;">Routing table size</td> <td>10000 entries (IPv4), 5000 entries (IPv6)</td> </tr> <tr> <td style="vertical-align: top;">Forwarding table size</td> <td>10000 entries (IPv4), 5000 entries (IPv6)</td> </tr> </table>	Throughput	up to 300 Kpps (64-byte packets)	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)	Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)						
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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												
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												
Telecom	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												
Notes	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												

Technical Specifications

Services

local HP sales representative

- 3-year, 4-hour onsite, 13x5 coverage for hardware (U0XY5E)
- 3-year, 4-hour onsite, 24x7 coverage for hardware (U0XY7E)
- 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U0XZ6E)
- 3-year, 24x7 SW phone support, software updates (U0XZ5E)
- 4-year, 4-hour onsite, 13x5 coverage for hardware (U0YA2E)
- 4-year, 4-hour onsite, 24x7 coverage for hardware (U0YA4E)
- 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YB3E)
- 4-year, 24x7 SW phone support, software updates (U0YB2E)
- 5-year, 4-hour onsite, 13x5 coverage for hardware (U0YB9E)
- 5-year, 4-hour onsite, 24x7 coverage for hardware (U0YC1E)
- 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YD0E)
- 5-year, 24x7 SW phone support, software updates (U0YC9E)
- 3 Yr 6 hr Call-to-Repair Onsite (U0XZ1E)
- 1-year, 4-hour onsite, 13x5 coverage for hardware (U0XX7E)
- 1-year, 4-hour onsite, 24x7 coverage for hardware (U0XX8E)
- 1-year, 6 hour Call-To-Repair Onsite for hardware (U0XX9E)
- 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U0XY0E)
- 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XX5E)
- 1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U0XX6E)
- 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XY1E)
- 3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XY2E)
- 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XZ8E)
- 4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XZ9E)
- 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YB5E)
- 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0YB6E)

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 MSR935 3G Router (JG520A)

Ports	1 RJ-45 autosensing 10/100/1000 WAN port 4 RJ-45 autosensing 10/100/1000 LAN ports ADSL 2+ ANNEX A/M port	
Physical characteristics	Dimensions	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)
Memory and processor	Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash
Performance	Throughput	up to 300 Kpps (64-byte packets)
	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
	Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)

Technical Specifications

	Operating relative humidity	5% to 90%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 90%, noncondensing
	Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms
	Altitude	up to 6,561 ft (2 km)
Electrical characteristics	Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	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.
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	
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	
Telecom	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	
Notes	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	3-year, 4-hour onsite, 13x5 coverage for hardware (U0XY5E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U0XY7E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U0XZ6E) 3-year, 24x7 SW phone support, software updates (U0XZ5E) 4-year, 4-hour onsite, 13x5 coverage for hardware (U0YA2E) 4-year, 4-hour onsite, 24x7 coverage for hardware (U0YA4E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YB3E) 4-year, 24x7 SW phone support, software updates (U0YB2E) 5-year, 4-hour onsite, 13x5 coverage for hardware (U0YB9E) 5-year, 4-hour onsite, 24x7 coverage for hardware (U0YC1E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YD0E) 5-year, 24x7 SW phone support, software updates (U0YC9E) 3 Yr 6 hr Call-to-Repair Onsite (U0XZ1E)	

Technical Specifications

- 1-year, 4-hour onsite, 13x5 coverage for hardware (U0XX7E)
- 1-year, 4-hour onsite, 24x7 coverage for hardware (U0XX8E)
- 1-year, 6 hour Call-To-Repair Onsite for hardware (U0XX9E)
- 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U0XY0E)
- 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XX5E)
- 1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U0XX6E)
- 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XY1E)
- 3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XY2E)
- 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0XZ8E)
- 4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0XZ9E)
- 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YB5E)
- 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0YB6E)

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 MSR936 Wireless Router (JG597A)

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	
Physical characteristics	Dimensions	9.06(w) x 6.3(d) x 1.72(h) in (23 x 16 x 4.36 cm)
	Weight	2.65 lb (1.2 kg)
Memory and processor	Processor	RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash
Performance	Throughput	up to 300 Kpps (64-byte packets)
	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
	Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 90%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 90%, noncondensing
	Shock and vibration	Anti-Seismic ETS 300 019-2-3 HALT: 0~40Grms
	Altitude	up to 6,561 ft (2 km)
Electrical characteristics	Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)
	Voltage	100-240 VAC

Technical Specifications

Maximum power rating 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.

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

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

Telecom 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

Notes Supports HSPA+
SIM card 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

Services 3-year, 4-hour onsite, 13x5 coverage for hardware (U0YE2E)
3-year, 4-hour onsite, 24x7 coverage for hardware (U0YE4E)
3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U0YF3E)
3-year, 24x7 SW phone support, software updates (U0YF2E)
4-year, 4-hour onsite, 13x5 coverage for hardware (U0YF9E) 3-year, 24x7 SW phone support, software updates (U8L71E)
4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YH0E)
4-year, 24x7 SW phone support, software updates (U0YG9E)
5-year, 4-hour onsite, 13x5 coverage for hardware (U0YH6E)
5-year, 4-hour onsite, 24x7 coverage for hardware (U0YH8E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U0YJ7E)
5-year, 24x7 SW phone support, software updates (U0YJ6E)
3 Yr 6 hr Call-to-Repair Onsite (U0YE8E)
4 Yr 6 hr Call-to-Repair Onsite (U0YG5E)
5 Yr 6 hr Call-to-Repair Onsite (U0YJ2E)
1-year, 4-hour onsite, 13x5 coverage for hardware (U0YD4E)
1-year, 4-hour onsite, 24x7 coverage for hardware (U0YD5E)
1-year, 6 hour Call-To-Repair Onsite for hardware (U0YD6E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U0YD7E)
1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YD2E)
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (U0YD3E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YD8E)

Technical Specifications

3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0YD9E)
 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YF5E)
 4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0YF6E)
 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (U0YH2E)
 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U0YH3E)
 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 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												
Physical characteristics	<table border="0"> <tr> <td style="vertical-align: top;">Dimensions</td> <td>9.06(w) x 6.3(d) x 1.72(h) in (23 x 16 x 4.36 cm)</td> </tr> <tr> <td style="vertical-align: top;">Weight</td> <td>3.97 lb (1.8 kg)</td> </tr> </table>	Dimensions	9.06(w) x 6.3(d) x 1.72(h) in (23 x 16 x 4.36 cm)	Weight	3.97 lb (1.8 kg)								
Dimensions	9.06(w) x 6.3(d) x 1.72(h) in (23 x 16 x 4.36 cm)												
Weight	3.97 lb (1.8 kg)												
Memory and processor	Processor RISC @ 533 MHz, 256 MB DDR SDRAM, 128 MB flash												
Performance	<table border="0"> <tr> <td style="vertical-align: top;">Throughput</td> <td>up to 300 Kpps (64-byte packets)</td> </tr> <tr> <td style="vertical-align: top;">Routing table size</td> <td>10000 entries (IPv4), 5000 entries (IPv6)</td> </tr> <tr> <td style="vertical-align: top;">Forwarding table size</td> <td>10000 entries (IPv4), 5000 entries (IPv6)</td> </tr> </table>	Throughput	up to 300 Kpps (64-byte packets)	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)	Forwarding table size	10000 entries (IPv4), 5000 entries (IPv6)						
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Operating temperature	32°F to 104°F (0°C to 40°C)												
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Altitude	up to 6,561 ft (2 km)												
Electrical characteristics	<table border="0"> <tr> <td style="vertical-align: top;">Maximum heat dissipation</td> <td>20 BTU/hr (21.1 kJ/hr)</td> </tr> <tr> <td style="vertical-align: top;">Voltage</td> <td>100-240 VAC</td> </tr> <tr> <td style="vertical-align: top;">Maximum power rating</td> <td>24 W</td> </tr> <tr> <td style="vertical-align: top;">Notes</td> <td>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.</td> </tr> </table>	Maximum heat dissipation	20 BTU/hr (21.1 kJ/hr)	Voltage	100-240 VAC	Maximum power rating	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.				
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Maximum power rating	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.												
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												

Technical Specifications

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
Telecom	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
Notes	<p>For local 4GLTE/3G carrier certification, please contact your regional sales team. This router has the Sierra Wireless MC7710 AirPrime Series Wireless Module</p> <ul style="list-style-type: none">• Module embedded with support the following specs:- 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, 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) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U8L92E) 5-year, 24x7 SW phone support, software updates (U8L91E) 3 Yr 6 hr Call-to-Repair Onsite (U8L69E) 4 Yr 6 hr Call-to-Repair Onsite (U8L79E) 5 Yr 6 hr Call-to-Repair Onsite (U8L89E) 1-year, 4-hour onsite, 13x5 coverage for hardware (U8L57E) 1-year, 4-hour onsite, 24x7 coverage for hardware (U8L58E) 1-year, 6 hour Call-To-Repair Onsite for hardware (U8L59E) 1-year, 24x7 software phone support, software updates (U8L60E) 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 (U8L55E) 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 (U8L63E) 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 (U8L73E)</p>

Technical Specifications

- 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 (U8L83E)
- 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (U8L84E)

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.

Standards and Protocols **BGP** (applies to all products in series)

- 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

General protocols

- IEEE 802.1:LAN/MAN Bridge and Management
- IEEE 802.1D MAC Bridges
- IEEE 802.1p Priority
- IEEE 802.1Q VLANs
- IEEE 802.1s (MSTP)
- IEEE 802.1s Multiple Spanning Trees
- IEEE 802.1w Rapid Reconfiguration of Spanning Tree
- IEEE 802.1X: Authenticated VLAN (multiple MAC, multiple VLANs per port)
- IEEE 802.2:Logical Link Control
- IEEE 802.3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) access method and physical layer specifications
- IEEE 802.3ad Link Aggregation (LAG)
- RFC 768 UDP
- RFC 783 TFTP Protocol (revision 2)
- RFC 791 IP
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 854 TELNET
- RFC 855 Telnet Option Specification
- RFC 856 TELNET
- RFC 858 Telnet Suppress Go Ahead Option
- RFC 894 IP over Ethernet
- RFC 925 Multi-LAN Address Resolution
- RFC 950 Internet Standard Subnetting Procedure

Technical Specifications

RFC 959 File Transfer Protocol (FTP)
RFC 1006 ISO transport services on top of the TCP: Version 3
RFC 1027 Proxy ARP
RFC 1034 Domain Concepts and Facilities
RFC 1035 Domain Implementation and Specification
RFC 1042 IP Datagrams
RFC 1058 RIPv1
RFC 1071 Computing the Internet Checksum
RFC 1091 Telnet Terminal-Type Option
RFC 1122 Host Requirements
RFC 1141 Incremental updating of the Internet checksum
RFC 1142 OSI IS-IS Intra-domain Routing Protocol
RFC 1144 Compressing TCP/IP headers for low-speed serial links
RFC 1195 OSI ISIS for IP and Dual Environments
RFC 1256 ICMP Router Discovery Protocol (IRDP)
RFC 1293 Inverse Address Resolution Protocol
RFC 1315 Management Information Base for Frame Relay DTEs
RFC 1332 The PPP Internet Protocol Control Protocol (IPCP)
RFC 1333 PPP Link Quality Monitoring
RFC 1334 PPP Authentication Protocols (PAP)
RFC 1349 Type of Service
RFC 1350 TFTP Protocol (revision 2)
RFC 1377 The PPP OSI Network Layer Control Protocol (OSINLCP)
RFC 1381 SNMP MIB Extension for X.25 LAPB
RFC 1471 The Definitions of Managed Objects for the Link Control Protocol of the Point-to-Point Protocol
RFC 1472 The Definitions of Managed Objects for the Security Protocols of the Point-to-Point Protocol
RFC 1490 Multiprotocol Interconnect over Frame Relay
RFC 1519 CIDR
RFC 1534 DHCP/BOOTP Interoperation
RFC 1542 Clarifications and Extensions for the Bootstrap Protocol
RFC 1552 The PPP Internetworking Packet Exchange Control Protocol (IPXCP)
RFC 1577 Classical IP and ARP over ATM
RFC 1613 Cisco Systems X.25 over TCP (XOT)
RFC 1624 Incremental Internet Checksum
RFC 1631 NAT
RFC 1638 PPP Bridging Control Protocol (BCP)
RFC 1661 The Point-to-Point Protocol (PPP)
RFC 1662 PPP in HDLC-like Framing
RFC 1695 Definitions of Managed Objects for ATM Management Version 8.0 using SMlv2
RFC 1701 Generic Routing Encapsulation
RFC 1702 Generic Routing Encapsulation over IPv4 networks
RFC 1721 RIP-2 Analysis
RFC 1722 RIP-2 Applicability
RFC 1723 RIP v2
RFC 1795 Data Link Switching: Switch-to-Switch Protocol AIW DLSw RIG: DLSw Closed Pages, DLSw Standard Version 1
RFC 1812 IPv4 Routing
RFC 1829 The ESP DES-CBC Transform

Technical Specifications

RFC 1877 PPP Internet Protocol Control Protocol Extensions for Name Server Addresses

RFC 1944 Benchmarking Methodology for Network Interconnect Devices

RFC 1973 PPP in Frame Relay

RFC 1974 PPP Stac LZS Compression Protocol

RFC 1990 The PPP Multilink Protocol (MP)

RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)

RFC 2091 Trigger RIP

RFC 2131 DHCP

RFC 2132 DHCP Options and BOOTP Vendor Extensions

RFC 2166 APPN Implementer's Workshop Closed Pages Document DLSw v2.0 Enhancements

RFC 2205 Resource ReSerVation Protocol (RSVP) - Version 1 Functional Specification

RFC 2280 Routing Policy Specification Language (RPSL)

RFC 2284 EAP over LAN

RFC 2338 VRRP

RFC 2364 PPP Over AAL5

RFC 2374 An Aggregatable Global Unicast Address Format

RFC 2451 The ESP CBC-Mode Cipher Algorithms

RFC 2453 IPv2

RFC 2510 Internet X.509 Public Key Infrastructure Certificate Management Protocols

RFC 2511 Internet X.509 Certificate Request Message Format

RFC 2516 A Method for Transmitting PPP Over Ethernet (PPPoE)

RFC 2644 Directed Broadcast Control

RFC 2661 L2TP

RFC 2663 NAT Terminology and Considerations

RFC 2684 Multiprotocol Encapsulation over ATM Adaptation Layer 5

RFC 2694 DNS extensions to Network Address Translators (DNS_ALG)

RFC 2747 RSVP Cryptographic Authentication

RFC 2763 Dynamic Name-to-System ID mapping support

RFC 2765 Stateless IP/ICMP Translation Algorithm (SIIT)

RFC 2766 Network Address Translation - Protocol Translation (NAT-PT)

RFC 2784 Generic Routing Encapsulation (GRE)

RFC 2787 Definitions of Managed Objects for VRRP

RFC 2961 RSVP Refresh Overhead Reduction Extensions

RFC 2966 Domain-wide Prefix Distribution with Two-Level IS-IS

RFC 2973 IS-IS Mesh Groups

RFC 2993 Architectural Implications of NAT

RFC 3022 Traditional IP Network Address Translator (Traditional NAT)

RFC 3027 Protocol Complications with the IP Network Address Translator

RFC 3031 Multiprotocol Label Switching Architecture

RFC 3036 LDP Specification

RFC 3046 DHCP Relay Agent Information Option

RFC 3065 Support AS confederation

RFC 3137 OSPF Stub Router Advertisement

RFC 3209 RSVP-TE Extensions to RSVP for LSP Tunnels

RFC 3210 Applicability Statement for Extensions to RSVP for LSP-Tunnels

RFC 3212 Constraint-Based LSP setup using LDP (CR-LDP)

RFC 3214 LSP Modification Using CR-LDP

Technical Specifications

RFC 3215 LDP State Machine
RFC 3268 Advanced Encryption Standard (AES) Ciphersuites for Transport Layer Security (TLS)
RFC 3277 IS-IS Transient Blackhole Avoidance
RFC 3279 Algorithms and Identifiers for the Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
RFC 3280 Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
RFC 3392 Support BGP capabilities advertisement
RFC 3526 More Modular Exponential (MODP) Diffie-Hellman groups for Internet Key Exchange (IKE)
RFC 3526 More Modular Exponential (MODP) Diffie-Hellman groups for Internet Key Exchange (IKE)
RFC 3706 A Traffic-Based Method of Detecting Dead Internet Key Exchange (IKE) Peers
RFC 3784 ISIS TE support
RFC 3786 Extending the Number of IS-IS LSP Fragments Beyond the 256 Limit
RFC 3847 Restart signaling for IS-IS
FRF.1.2 PVC User-to-Network Interface (UNI) Implementation Agreement - July 2000
FRF.10.1: Network-to-Network Frame Relay/ATM SVC Service Interworking Implementation Agreement
FRF.11.1 Voice over Frame Relay Implementation Agreement - May 1997 - Annex J added March 1999
FRF.15: End-to-End Multilink Frame Relay Implementation Agreement
FRF.16: Multilink Frame Relay UNI/NNI Implementation Agreement
FRF.17: Frame Relay Privacy Implementation Agreement
FRF.18: Network-to-Network Frame Relay/ATM SVC Service Interworking Implementation Agreement
FRF.19: Frame Relay Operations, Administration and Maintenance Implementation
FRF.2.1: Frame Relay Network-to-Network (NNI) Implementation Agreement Version 2.1
FRF.20 Frame Relay IP Header Compression Implementation Agreement - June 2001
FRF.3.2 Frame Relay Multiprotocol Encapsulation Implementation Agreement - April 2000
FRF.4.1: SVC User-to-Network Interface (UNI) Implementation Agreement
FRF.5: Frame Relay/ATM Network Internetworking Implementation Agreement
FRF.6: Frame Relay Service Customer Network Management Implementation
FRF.7 Frame Relay PVC Multicast Service and Protocol Description - October 1994
FRF.8.1: Frame Relay/ATM PVC Service Internetworking Implementation Agreement
FRF.9 Data Compression Over Frame Relay Implementation Agreement - January 1996
ITU-T Recommendation X.29: Public Data Networks: Procedures for the Exchange of Control Information and User Data
Q.921: ISDN user network interface-Data Link Layer specification
Q.922 Annex A: Core aspects of Q.922 for use with frame relaying bearer

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	service
	Q.931: ISDN user network interface-Layer 3 specification for basic call control
	Q.933 Annex A: Additional procedures for Permanent Virtual Connection (PVC) status management (using Unnumbered Information frames)
	X.25: Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE)
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
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

Technical Specifications

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)

Technical Specifications

HP MSR93x Series accessories

External Antenna

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 MSR 4G 5W TNC Antenna	JG669A

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