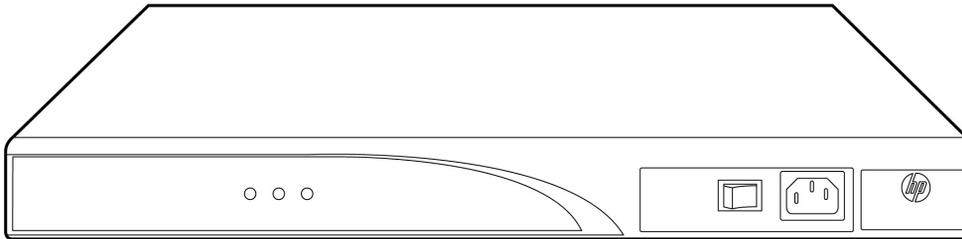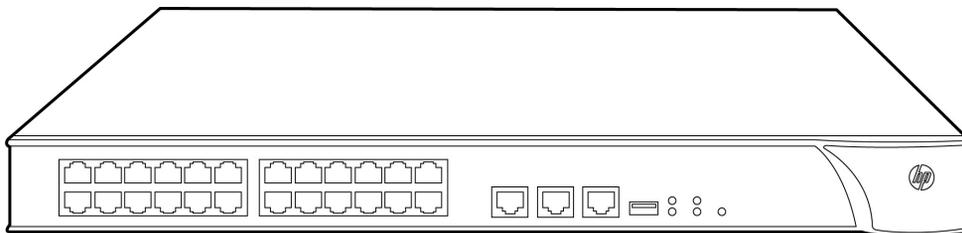# QuickSpecs

Overview

Product overview

HP MSR30 Series routers are a component of the HP FlexBranch solution, which is part of the HP FlexNetwork architecture.

MSR30 Series routers are ideal for the branch and regional offices of medium to large enterprises that require high-performance integrated routing, switching, security, wireless, voice, and virtualized applications.

With a rich set of modular WAN, LAN, and voice interface connectivity options in a single device, these routers help reduce operating and capital costs and reduce complexity by enabling remote users in branch locations to securely and reliably access enterprise applications and corporate resources.
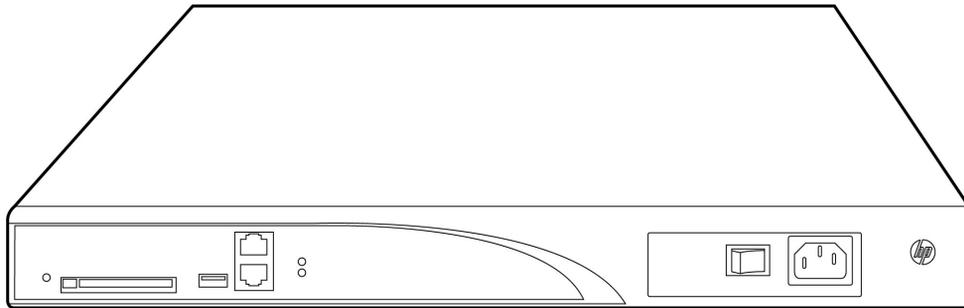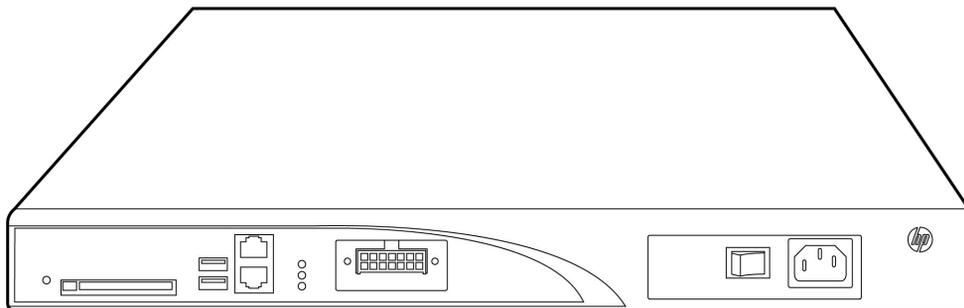
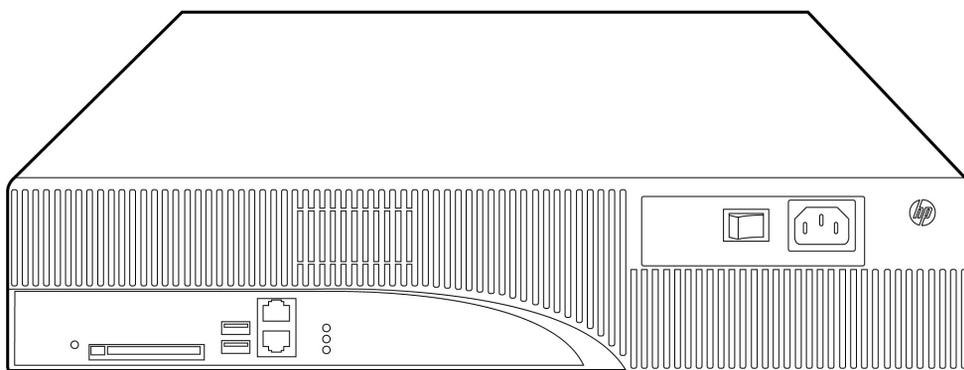**HP MSR30-10 Router**

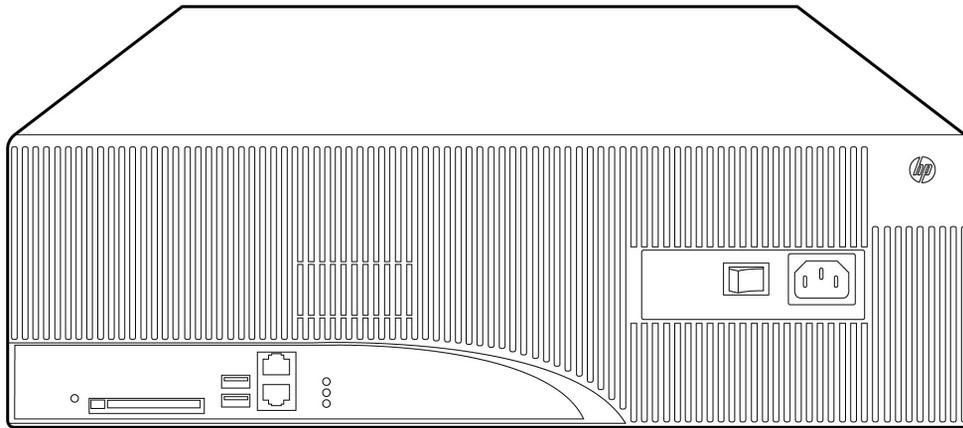**HP MSR30-11E Router**

Overview

HP MSR30-16 Router

HP MSR30-20 Router

HP MSR30-40 Router

Overview

HP MSR30-60 Router

Key features

- Converged routing, switching, voice, security
- Embedded encryption, firewall, security features
- OAA with converged IP telephony solution
- Unified wired and wireless WAN/LAN
- Support for AC/DC power and PoE

Features and benefits

Quality of Service (QoS)

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

Management

- **Management interface control**
  provides management access through modem port and terminal interface; provides access through terminal interface, telnet, or SSH
- **Industry-standard CLI with a hierarchical structure**
  reduces training time and expenses, and increases productivity in multivendor installations
- **Management security**
  multiple privilege levels with password protection restrict access to critical configuration commands; 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

Overview

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**
  FTP allows bidirectional transfers over a TCP/IP network and is used for configuration updates; Trivial FTP is a simpler method using User Datagram Protocol (UDP)
- **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
- **Info center**
  provides a central information center 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

Connectivity

- **High-density port connectivity**
  provides up to 10 interface module slots and up to 90 Fast Ethernet ports
- **Multiple WAN and LAN interfaces**
  provide a traditional link with E3, T3, E1, T1, ADSL, ADSL2, ADSL2+, G.SHDSL, OC-3, POS, ATM, and ISDN/AM backup; deliver high-density Ethernet access with WAN Fast Ethernet/Gigabit Ethernet, LAN Fast Ethernet, and PoE; offer mobility access with IEEE 802.11b/g/n Wi-Fi and 3G
- **Ideal IP telephony solutions**
  support FXO, FXS, T1, E1, and BRI in various densities; support SIP voice communications to VCX; provide Web browser-based administration, Smart Dial Routing, FXS and FXO 1:1 binding for all ports, Power to Escape to PSTN when IP failures occur, and Enhanced Local MSR Survivability
- **Flexible port selection**
  provides a combination of fiber and copper interface modules, 100/1000BASE-X auto-speed selection, and 10/100/1000BASE-T auto-speed detection plus auto duplex and MDI/MDI-X
- **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 or per-VLAN basis for added flexibility
- **3G access support**
  provides 3G wireless access for primary or backup connectivity via a 3G SIC module certified on various cellular networks; optional carrier 3G USB modems are available

Performance

- **Excellent forwarding performance**
  provides forwarding performance from 220 Kpps to 360 Kpps; meets current and future bandwidth-intensive application demands of enterprise businesses
- **Powerful encryption capacity**
  includes embedded hardware encryption accelerator to improve encryption performance

Overview

- **Flexible chassis selection**
  offers a choice of more than five routers, meeting different requirements on enterprise branches

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
- **External redundant power supply**
  provides high reliability
- **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

Layer 2 switching

- **Spanning Tree Protocol (STP)**
  fully 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 effectively control and manage 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
- **VLANs**
  support up to 4,094 port or 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
- **User Datagram Protocol** (UDP) **helper**
  redirects UDP broadcasts to specific IP subnets to prevent server spoofing
- **Dynamic Host Configuration Protocol** (DHCP)
  simplifies the management of large IP networks and supports client and server; DHCP Relay enables DHCP operation across subnets

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
- **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

Overview

policies for increased flexibility; scales to very large networks

- **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
- **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
- **Multiprotocol Label Switching (MPLS)**
  uses BGP to advertise routes across Label Switched Paths (LSPs), but uses simple labels to forward packets from any Layer 2 or Layer 3 protocol, thus reducing complexity and increasing performance; supports graceful restart for reduced failure impact; supports LSP tunneling and multilevel stacks
- **Multiprotocol Label Switching (MPLS) Layer 3 VPN**
  allows Layer 3 VPNs across a provider network; uses MP-BGP to establish private routes for increased security; supports RFC 2547bis multiple autonomous system VPNs for added flexibility; supports IPv6 MPLS VPN
- **Multiprotocol Label Switching (MPLS) Layer 2 VPN**
  establishes simple Layer 2 point-to-point VPNs across a provider network using only MPLS Label Distribution Protocol (LDP); requires no routing and therefore decreases complexity, increases performance, and allows VPNs of non-routable protocols; uses no routing information for increased security; supports Circuit Cross Connect (CCC), Static Virtual Circuits (SVCs), Martini draft, and Kompella-draft technologies
- **Policy routing**
  allows custom filters for increased performance and security; supports ACLs, IP prefix, AS paths, community lists, and aggregate policies

Security

- **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+)**
  is an authentication tool using TCP with encryption of the full authentication request that provides additional security
- **Media access control** (MAC) **authentication**
  provides simple authentication based on a user's MAC address; supports local or RADIUS-based authentication
- **Network login**

Overview

use standard IEEE 802.1X allowing authentication of multiple users per port

- **RADIUS**
  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 the router 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)
  is used by IP hosts to establish and maintain multicast groups; supports IGMPv1, v2, and v3; utilizes Any-Source Multicast (ASM) or Source-Specific Multicast (SSM) to manage IPv4 multicast networks
- **Protocol Independent Multicast** (PIM)
  is used for IPv4 and IPv6 multicast applications; supports PIM Dense Mode (PIM-DM), Sparse Mode (PIM-SM), and Source-Specific Mode (PIM-SSM)
- **Multicast Source Discovery Protocol** (MSDP)
  is used for inter-domain multicast applications, allowing multiple PIM-SM domains to interoperate
- **Multicast Border Gateway Protocol** (MBGP)
  allows multicast traffic to be forwarded across BGP networks and kept separate from unicast traffic

Integration

- **Embedded NetStream**
  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, Web content filtering, and application prioritization and enhancement

Additional information

- **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
- **High reliability**

Overview

provides a state-of-the-art unified code base

- **Faster time to market**
  allows new and custom features to be brought rapidly to market through engineering efficiencies, delivering better initial and ongoing stability
- **Green initiative support**
  provides support for RoHS and WEEE regulations

Product architecture

- **Ideal multiservice platform**
  provides a WAN router, Ethernet switch, wireless LAN, 3G WAN, firewall, VPN, and SIP/voice gateway all in one box
- **High-density voice interfaces**
  provide flexible analog and digital voice interface options for easy integration within a wide range of deployments
- **Embedded service modules for security and voice**
  embedded voice co-processing modules (VCPMs) and voice processing modules (VPMs) accommodate digital signal processor (DSP) modules for voice packet processing; embedded hardware encryption modules, Standard Network Data Encryption (SNDE) cards, and Advanced Network Data Encryption (ANDE) cards do not occupy I/O slots
- **Open Application Platform (OAP) and virtualization**
  are available on HP MSR Open Architecture Platform (OAP) Module with VMware vSphere; offer an industry-leading virtualization platform that integrates third-party applications with the MSR series routers; provides application and services flexibility; delivers the potential functionality of multiple devices, creating capital and operational expense savings and lasting investment protection
- **USB interface**
  uses USB memory disk to download and upload configuration files; supports an external USB 3G modem for a 3G WAN uplink
- **Flexible modular design**
  includes multiple types of modules that meet different requirements, such as Smart Interface Cards (SICs), which are small and cost-effective modules; Multi-functional Interface Modules (MIMs), which are more high-density and affordable modules; Flexible Interface Cards (FICs), which provide high reliability and are hot-swappable; and double-width modules, which provide high density
- **SIP trunk**
  the SIP trunk link can carry multiple concurrent calls, and the carrier authenticates only the link, rather than carrying each SIP call on this link

Warranty and support

- **1-year Warranty**
  with advance replacement and 10-calendar-day delivery (available in most countries)
- **Electronic and telephone support**
  limited electronic and business-hours telephone support is available from HP for the entire warranty period; to reach our support centers, refer to www.hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to www.hp.com/networking/warrantysummary
- **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.

Models

HP MSR30-10 2 FE /2 SIC /1 MIM MS Rtr — JF816A
- 2 autosensing 10/100 WAN ports — See Configuration
- 2 - SIC module slots — Note: 9
- 1 - MIM module slot
- 1 - HP MSR 256MB SDRAM Included
- 1 - ESM Slot
- 0 - VCPM slots
- 1 - VPM slot
- AC Power Supply included

HP MSR30-10 DC Router — JG184A
- 2 autosensing 10/100 WAN ports
- 2 - SIC module slots
- 1 - MIM module slot
- 1 - HP MSR 256MB SDRAM Included
- 1 - ESM Slot
- 0 - VCPM slots
- 1 - VPM slot
- DC Power Supply included

HP MSR30-11E Router — JG182A
- 2 autosensing 10/100 WAN ports — See Configuration
- 24 RJ-45 autosensing 10/100 LAN ports — Note: 9
- 2 - SIC module slots
- 1 - MIM module slot
- 1 - HP MSR 256MB SDRAM Included
- 1 - ESM Slots
- 0 - VCPM slot
- 0 - VPM slots
- AC Power Supply included

HP MSR30-11F Router — JG183A
- 2 autosensing 10/100 WAN ports — See Configuration
- 24 RJ-45 autosensing 10/100 LAN ports — Note: 9
- 2 - SIC module slots
- 1 - MIM module slot
- 1 - HP MSR 256MB SDRAM Included
- 1 - ESM Slots
- 0 - VCPM slot
- 0 - VPM slots
- AC Power Supply included

HP MSR30-16 Router — JF233A
- 2 autosensing 10/100 WAN ports — See Configuration
- 4 - SIC module slots — Note: 9
- 1 - MIM module slot
- 1 - HP MSR 256MB SDRAM Included
- 2 - ESM Slots

Configuration

- 1 - VCPM slot
- 2 - VPM slots
- AC Power Supply included

HP MSR30-16 PoE Router   JF234A

- 2 autosensing 10/100 WAN ports   See Configuration
- 4 - SIC module slots   Note: 1
- 1 - MIM module slot
- 1 - HP MSR 256MB SDRAM Included
- 2 - ESM Slots
- 1 - VCPM slot
- 2 - VPM slots
- AC Power Supply included

HP MSR30-20 Router   JF284A

- 2 autosensing 10/100 WAN ports   See Configuration
- 4 - SIC module slots   Note: 1,9
- 2 - MIM module slots
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - ESM Slots
- 1 - VCPM slot
- 2 - VPM slots
- AC Power Supply included

HP MSR30-20 PoE Router   JF802A

- 2 autosensing 10/100 WAN ports   See Configuration
- 4 - SIC module slots   Note: 1,9
- 2 - MIM module slots
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - ESM Slot
- 1 - VCPM slot
- 2 - VPM slot
- AC Power Supply included

HP MSR30-20 DC Router   JF235A

- 2 autosensing 10/100/1000 ports   See Configuration
- 4 - SIC module slots   Note: 1
- 2 - MIM module slots
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - ESM Slots
- 1 - VCPM slot
- 2 - VPM slot
- DC Power Supply included

HP MSR30-40 Router   JF229A

- 2 -1000BASE-T ports   See Configuration
- 4 - SIC module slots   Note: 1,9
- 4 - MIM module slots
- min=0 \ max=2 SFP Transceivers
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - fixed Gigabit Ethernet SFP ports

Configuration

- 2 - ESM Slots
- 1 - VCPM slot
- 3 - VPM slot
- AC Power Supply included

HP MSR30-40 PoE Router

- 2- 1000BASE-T ports
- 4 - SIC module slots
- 4 - MIM module slots
- min=0 \ max=2 SFP Transceivers
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - fixed Gigabit Ethernet SFP ports
- 2 - ESM Slots
- 1 - VCPM slot
- 3 - VPM slots
- AC Power Supply included

JF803A

See Configuration
Note: 1,9

HP MSR30-40 DC Router

- 2- 1000BASE-T ports
- 4 - SIC module slots
- 4 - MIM module slots
- min=0 \ max=2 SFP Transceivers
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - fixed Gigabit Ethernet SFP ports
- 2 - ESM Slots
- 1 - VCPM slot
- 3 - VPM slots
- DC Power Supply included

JF287A

See Configuration
Note: 1

HP MSR30-60 Router

- 2- 1000BASE-T ports
- 4 - SIC module slots
- 6 - MIM module slots
- min=0 \ max=2 SFP Transceivers
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - fixed Gigabit Ethernet SFP ports
- 2 - ESM Slots
- 1 - VCPM slot
- 3 - VPM slots
- AC Power Supply included

JF230A

See Configuration
Note: 1,9

HP MSR30-60 PoE Router

- 2 -1000BASE-T ports
- 4 - SIC module slots
- 6 - MIM module slots
- min=0 \ max=2 SFP Transceivers
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - fixed Gigabit Ethernet SFP ports
- 2 - ESM Slots
- 1 - VCPM slot

JF804A

See Configuration
Note: 1,9

Configuration

- 3 - VPM slots
- AC Power Supply included

HP MSR30-60 DC Router   JF801A

- 2 -1000BASE-T ports   See Configuration
- 4 - SIC module slots   Note: 1
- 6 - MIM module slots
- min=0 \ max=2 SFP Transceivers
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - fixed Gigabit Ethernet SFP ports
- 2 - ESM Slots
- 1 - VCPM slot
- 3 - VPM slots
- DC Power Supply included

Configuration Rules:

Note 1   The following Transceivers install into this Router:

HP X120 1G SFP LC SX Transceiver   JD118B

HP X120 1G SFP LC LX Transceiver   JD119B

HP X125 1G SFP LC LH40 1310nm Transceiver   JD061A

HP X120 1G SFP LC LH40 1550nm Transceiver   JD062A

HP X125 1G SFP LC LH70 Transceiver   JD063B

Note 9   Localization required. (See Localization Menu)

Configuration Information - Factory Integrated Models - CTO

HP MSR30-10 2 FE /2 SIC /1 MIM MS Rtr   JF816A

- 2 autosensing 10/100 WAN ports   See Configuration
- 2 - SIC module slots   Note: 2, 9,11
- 1 - MIM module slot
- 1 - HP MSR 256MB SDRAM Included
- 1 - ESM Slot
- 0 - VCPM slots
- 1 - VPM slot
- AC Power Supply included

HP MSR30-11E Router   JG182A

- 2 autosensing 10/100 WAN ports   See Configuration
- 24 RJ-45 autosensing 10/100 LAN ports   Note: 2, 9,11
- 2 - SIC module slots
- 1 - MIM module slot
- 1 - HP MSR 256MB SDRAM Included
- 1 - ESM Slots
- 0 - VCPM slot
- 0 - VPM slots
- AC Power Supply included

HP MSR30-11F Router   JG183A

- 2 autosensing 10/100 WAN ports   See Configuration
- 24 RJ-45 autosensing 10/100 LAN ports   Note: 2, 9,11

Configuration

- 2 - SIC module slots
- 1 - MIM module slot
- 1 - HP MSR 256MB SDRAM Included
- 1 - ESM Slots
- 0 - VCPM slot
- 0 - VPM slots
- AC Power Supply included

HP MSR30-16 Router   JF233A
- 2 autosensing 10/100 WAN ports   See Configuration
- 4 - SIC module slots   Note: 2, 9,11
- 1 - MIM module slot
- 1 - HP MSR 256MB SDRAM Included
- 2 - ESM Slots
- 1 - VCPM slot
- 2 - VPM slots
- AC Power Supply included

HP MSR30-20 Router   JF284A
- 2 autosensing 10/100 WAN ports   See Configuration
- 4 - SIC module slots   Note: 2, 9,11
- 2 - MIM module slots
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - ESM Slots
- 1 - VCPM slot
- 2 - VPM slots
- AC Power Supply included

HP MSR30-20 DC Router   JF235A
- 2 autosensing 10/100 WAN ports   See Configuration
- 4 - SIC module slots   Note: 2, 11
- 2 - MIM module slots
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - ESM Slots
- 1 - VCPM slot
- 2 - VPM slot
- DC Power Supply included

HP MSR30-40 Router   JF229A
- 2-1000BASE-T ports   See Configuration
- 4 - SIC module slots   Note: 1,2, 9,11
- 4 - MIM module slots
- min=0 \ max=2 SFP Transceivers
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - fixed Gigabit Ethernet SFP ports
- 2 - ESM Slots
- 1 - VCPM slot
- 3 - VPM slot
- AC Power Supply included

HP MSR30-60 Router   JF230A
- 2- 1000BASE-T ports   See Configuration

Configuration

- 4 - SIC module slots   Note: 1,2, 9,11
- 6 - MIM module slots
- min=0 \ max=2 SFP Transceivers
- 1 - 512MB HP MSR 512MB SDRAM Included
- 1 - 256MB HP X600 256M Compact Flash Card Included
- 2 - fixed Gigabit Ethernet SFP ports
- 2 - ESM Slots
- 1 - VCPM slot
- 3 - VPM slots
- AC Power Supply included

Note 1	HP X120 1G SFP LC SX Transceiver	JD118B
	HP X120 1G SFP LC LX Transceiver	JD119B
	HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
	HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
	HP X125 1G SFP LC LH70 Transceiver	JD063B

Note 2   If this Switch is selected integrated to the CTO Switch Solution, Then a Minimum of 1 factory integrated accessory must be ordered and integrated to CTO chassis. See Menu below, option must have a #0D1 to be integrated to the CTO Chassis.

Note 9   Localization required. (See Localization Menu)

Note 10   This HPN CTO switch cannot be factory racked. (Future Release)

Note 11   If the Router Chassis is to be Box Level Factory Integrated (CTO), Then the #0D1 is required on the Router Chassis and integrated to the JG500A - HP MSR CTO Enablement. (Min 1/Max 1 Router per SSP)

Enter the following menu selections as integrated to the CTO Model X server above if order is factory built.

Modules

SIC Modules   **JF816A, JG184A, JG182A, and JG183A Only System (std 0 // max 2) User Selection (min 0 // max 2) per enclosure JF233A, JF284A, JF229A, JF230A, JF235A, JF287A, JF801A, JF234A, JF802A, JF803A, and JF804A Only**

HP MSR 4-port 10/100 SIC Module	JD573B	
	See Configuration Note: 14, 16, 19	
HP MSR 9-port 10/100 DSIC Module	JD574B	
	See Configuration Note: 2, 3, 15, 19, 20	
HP A-MSR 4-port 10/100Base-T PoE Switch SIC Module	JD620A	
	See Configuration Note: 3, 15, 19, 20	
HP A-MSR 9-port 10/100Base-T PoE Switch DSIC Module	JD621A	
	See Configuration Note: 2, 3, 15, 19, 20	
HP MSR 1-port 10/100 SIC Module	JD545B	
	See Configuration Note: 3, 16, 19	
HP 1-port 100Mbt SFP SIC Router Module	JF280A	

Configuration

- min=0 \ max=1 SFP Transceivers — See Configuration Note: 4, 14, 16, 19

HP MSR 1-port 10/100/1000 SIC Module — JD572A
- min=0 \ max=1 SFP Transceivers — See Configuration Note: 5, 14, 16, 19

HP MSR 2-port FXO SIC Module — JD558A

HP MSR 1-port FXO SIC Module — JD559A

HP MSR 2-port FXS SIC Module — JD560A

HP MSR 1-port FXS SIC Module — JD561A

HP MSR 1-port E1-Voice SIC Module — JD575A
- min=0 \ max=1 E1 Cable — See Configuration Note: 6, 11, 14, 15

HP MSR 1-port T1-Voice SIC Module — JD576A
- min=0 \ max=1 E1 Cable — See Configuration Note: 7, 14, 15

HP 2p ISDN-S/T Voice Interface SIC Mod — JF821A
See Configuration Note: 3, 16

HP MSR 2FXS + 1FXO Voice Intfc SIC Mod — JD632A
See Configuration Note: 3

HP MSR 1-port Fractional E1 SIC Module — JD634B
- min=0 \ max=1 E1 Cable — See Configuration Note: 3, 6

HP MSR 1-port Fractional SIC Module — JD538A
- min=0 \ max=1 E1 Cable — See Configuration Note: 3, 7, 16, 21

HP MSR 2-port Fractional E1 SIC Module — JF842A
- min=0 \ max=1 2E1 Cable — See Configuration Note: 3, 10, 21

HP MSR 1-port Enhanced Serial SIC Mod — JD557A
- min=0 \ max=1 Serial Port Cable — See Configuration Note: 3, 8

HP A-MSR 1-port ADSL over POTS SIC Module — JD537A
See Configuration Note: 14, 16, 19

HP MSR 1-port ISDN-S/T SIC Module — JD571A
See Configuration Note: 3, 16

HP A-MSR 8-port Async Serial SIC Module — JF281A
- Must select 1 8AS Communication Cable (min=1 \ max=1 cable) — See Configuration Note: 3, 9

HP 802.11b/g/n Wireless AP SIC Module — JF819A
See Configuration Note: 14, 16, 19, 20

HP MSR 802.11b/g/n Wless AP SIC Mod (NA) — JG211A

Configuration

	See Configuration Note: 14, 16, 19, 20
HP MSR 1p 8-wire G.SHDSL (RJ45) DSIC Mod	JG191A
	See Configuration Note: 2, 3, 15
HP MSR 1-port ADSL over ISDN SIC Module	JG056B
	See Configuration Note: 14, 16, 19
HP MSR 16-port Async Serial SIC Module	JG186A
● Must select 4 HP X260 mini D-28/4-RJ45 0.3m Rtr Cables (min=4 \ max=4 cables)	See Configuration Note: 3, 10
HP A-MSR 4-port FXS/1-port FXO DSIC Mod	JG189A
	See Configuration Note: 2, 3, 15
HP A-MSR HSPA/WCDMA SIC Module	JG187A
	See Configuration Note: 14, 16, 19, 20
HP MSR 1-port E1/CE1/PRI SIC Module	JF253B
	See Configuration Note: 14, 16

Configuration Rules

Note 2	This Module takes up two slots.	
Note 3	These Modules are NOT supported on the following routers:	
	HP MSR30-10 2 FE /2 SIC /1 MIM MS Rtr	JF816A
	HP MSR30-10 DC Router	JG184A
Note 4	The following Transceivers install into this Module: (Use #0D1 if router is CTO) - if applicable	
	HP X110 100M SFP LC LH40 Transceiver	JD090A
	HP X110 100M SFP LC LH80 Transceiver	JD091A
	HP X110 100M SFP LC FX Transceiver	JD102B
	HP X110 100M SFP LC LX Transceiver	JD120B
Note 5	The following Transceivers install into this Module: (Use #0D1 if router is CTO) - if applicable	
	HP X125 1G SFP LC LH70 Transceiver	JD063B
	HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
	HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
	HP X120 1G SFP LC BX 10-U Transceiver	JD098B
	HP X120 1G SFP LC BX 10-D Transceiver	JD099B
	HP X120 1G SFP LC LH100 Transceiver	JD103A
	HP X120 1G SFP LC SX Transceiver	JD118B
	HP X120 1G SFP LC LX Transceiver	JD119B
Note 6	The following E1 Cables install into this Module:	

Configuration

	HP X260 E1 (2) BNC 75 ohm 3m Rtr Cable	JD175A
	HP X260 E1 BNC 20m Router Cable	JD514A
	HP X260 E1/2 BNC 75 ohm 40m Router Cable	JD516A
Note 7	The following T1 Cables install into this Module:	
	T1 Cable RJ45/RJ45-3m	JD518A
Note 8	The following Cables install into this Module:	
	V.24 Serial Port Cable, DTE, 3m	JD519A
	V.24 Serial Port Cable, DCE, 3m	JD521A
	V.35 Serial Port Cable, DTE, 3m	JD523A
	V.35 Serial Port Cable, DCE, 3m	JD525A
	X.21 Serial Port Cable, DTE, 3m	JD527A
	X.21 Serial Port Cable, DCE, 3m	JD529A
	RS449 Serial Port Cable, DTE, 3m	JF825A
	RS449 Serial Port Cable, DCE, 3m	JF826A
	RS530 Serial Port Cable, DTE, 3m	JF827A
	RS530 Serial Port Cable, DCE, 3m	JF828A
Note 9	If this module is selected Then 1 JD642A - HP X260 SIC-8AS RJ45 0.28m Router Cable is required.	
Note 10	If this module is selected Then 4 - JG263A HP X260 mini D-28/4-RJ45 0.3m Rtr Cable are required to be on the same order.	
Note 11	The following E1 Cables install into this Module:	
	HP X260 E1 RJ45 3m Router Cable	JD509A
	HP X260 E1 RJ45 20m Router Cable	JD517A
Note 12	The following 2E1 Cables install into this Module:	
	HP X260 2E1 BNC 3m Router Cable	JD643A
Note 14	If these Modules are added to the following routers Then the Module Max = 1:	
	HP MSR30-10 2 FE /2 SIC /1 MIM MS Rtr	JF816A
	HP MSR30-10 DC Router	JG184A
Note 15	These Modules are NOT supported on the following routers:	
	HP MSR30-11 Router	JF800A
	HP MSR30-11E Router	JG182A
	HP MSR30-11F Router	JG183A
Note 16	If these Modules are added to the following routers Then the Module Max = 1:	
	HP MSR30-11 Router	JF800A
	HP MSR30-11E Router	JG182A
	HP MSR30-11F Router	JG183A
Note 19	If this module is selected in the JF233A, JF284A, JF229A, JF230A, Then the Module Max = 2.	
Note 21	If this module is selected in the JG182A, JG183A, Then the Module Max = 1.	

MIM Modules	**JF816A, JG184A, JG182A, JG183A, JF233A, JF234A, System (std 0 // max 1) User Selection (min 0 // max 1)**	
	JF284A, JF235A, JF802A System (std 0 // max 2) User Selection (min 0 // max 2)	
	JF229A, JF287A, JF803A System (std 0 // max 4) User Selection (min 0 // max 4)	
	JF230A, JF801A, and JF804A System (std 0 // max 6) User Selection (min 0 // max 6)	
	HP MSR 2-port 10/100 MIM Module	JD613A

Configuration

HP MSR 4-port 10/100BASE-TX Module		JD551A
HP MSR 2-port Gig-T MIM Module		JD548A
HP MSR 24-port 10/100 DMIM Module		JD564A
• min=0 \ max=2 SFP Transceivers		See Configuration Note: 2, 3, 4, 5, 13
HP MSR 16-port 10/100 XMIM Module		JF279A
		See Configuration Note: 1
HP MSR 24-port 10/100 XMIM Module		JF276A
		See Configuration Note: 1
HP MSR 16-port 10/100 PoE MIM Module		JD618A
HP MSR 24-port 10/100 PoE DMIM Module		JD619A
• min=0 \ max=2 SFP Transceivers		See Configuration Note: 2, 3, 4, 5, 13
HP MSR 2-port Enhanced Serial MIM Mod		JD540A
• min=0 \ max=2 Serial Port Cable		See Configuration Note: 6
HP MSR 4-port Enhanced Serial MIM Module		JD541A
• min=0 \ max=4 Serial Port Cable		See Configuration Note: 6
HP MSR 8p Sync/Async Interface Enh Mod		JD552A
• min=0 \ max=8 Serial Port Cable		See Configuration Note: 6
HP MSR 8p Async Serial Intrfc MIM Module		JF840A
• min=0 \ max=8 AUX Cables		See Configuration Note: 7
HP MSR 2-port FXO MIM Module		JD543A
HP MSR 4-port FXO MIM Module		JD542A
HP MSR 4-port FXS MIM Module		JD553A
HP MSR 1-port E1 Voice MIM Module		JD565A
• min=0 \ max=1 E1 Cable		See Configuration Note: 14
HP MSR 1-port T1 Voice MIM Module		JD566A
• min=0 \ max=1 E1 Cable		See Configuration Note: 8
HP MSR 2-port E1-Voice MIM Module		JD567A
• min=0 \ max=2 E1 Cable		See Configuration Note: 14
HP MSR 2-port T1 Voice MIM Module		JD568A
• min=0 \ max=2 E1 Cable		See Configuration Note: 8
HP 16p FXS Voice Interface MIM Module		JF822A
HP 4p ISDN BRI S/T Voice Intrfc MIM Mod		JF837A
HP MSR 4-port Voice E and M MIM Module		JD539A
HP MSR 2-port CE1/PRI MIM Module		JD544A

Configuration

- min=0 \ max=2 E1 Cable   See Configuration Note: 14

HP MSR 2-port FT1/CT1 PRI MIM Module   JD549A
- min=0 \ max=2 T1 Cable   See Configuration Note: 8

HP MSR 4-port CE1/PRI MIM Module   JD550A
- min=0 \ max=4 E1 Cable   See Configuration Note: 14

HP MSR 8-port E1/CE1/PRI (75ohm) MIM Mod   JD563A
- min=1 \ Max=1 8-port E1 Cable   See Configuration Note: 9

HP A-MSR 8-port E1/Fractional E1 (75ohm) MIM Module   JF255A
- min=1 \ Max=1 8-port E1 Cable   See Configuration Note: 9

HP MSR 1-port FT3/CT3 MIM Module   JD628A
- min=0 \ max=2 E3/T3 Cable   See Configuration Note: 11

HP MSR 1-port FE3/CE3 MIM Module   JD630A
- min=0 \ max=2 E3/T3 Cable   See Configuration Note: 11

HP MSR 1-port OC-3 ATM MIM Module   JD624A
- min=0 \ max=1 SFP Modules   See Configuration Note: 12

HP MSR 1-port OC-3c/STM-1c POS MIM Mod   JG193A
- min=0 \ max=1 SFP Modules   See Configuration Note: 12

HP A-MSR 8-p E1 IMA (75ohm) MIM Module   JD555B
- min=1 \ Max=1 8-port E1 Cable   See Configuration Note: 9

HP A-MSR 4-port E1/Fractional E1 MIM Mod   JF257B
- min=0 \ max=4 E1 Cable   See Configuration Note: 14

HP A-MSR 4-port T1/Fractional T1 MIM Mod   JF254B
- min=0 \ max=4 E1 Cable   See Configuration Note: 8

HP MSR OAP MIM Mod w/VMware vSphere   JG532A
HP MSR SSB Com MIM Mod pwrby Msft Lync   JG587A

     See Configuration Note: 15, 16, 17

HP MSR MSB Com MIM Mod pwrby Msft Lync   JG588A

     See Configuration Note: 15, 16

Configuration Rules

Note 1   These Modules are ONLY supported on the following routers:

     HP MSR30-10 2 FE /2 SIC /1 MIM MS Rtr   JF816A

     HP MSR30-10 DC Router   JG184A

Note 2   HP A-MSR30-40 Router   JF229A

Configuration

	HP A-MSR30-40 DC Router	JF287A
	HP A-MSR30-40 PoE Router	JF803A
	HP A-MSR30-60 Router	JF230A
	HP A-MSR30-60 DC Router	JF801A
	HP A-MSR30-60 PoE Router	JF804A
Note 3	If these Modules are installed on the following routers Then the Max =2:	
	HP MSR30-40 Router	JF229A
	HP MSR30-40 DC Router	JF287A
	HP MSR30-40 PoE Router	JF803A
Note 4	If these Modules are installed on the following routers Then the Max =3:	
	HP MSR30-60 Router	JF230A
	HP MSR30-60 DC Router	JF801A
	HP MSR30-60 PoE Router	JF804A
Note 5	This Module takes up two slots.	
Note 6	The following Cables install into this Module:	
	V.24 Serial Port Cable, DTE, 3m	JD519A
	V.24 Serial Port Cable, DCE, 3m	JD521A
	V.35 Serial Port Cable, DTE, 3m	JD523A
	V.35 Serial Port Cable, DCE, 3m	JD525A
	X.21 Serial Port Cable, DTE, 3m	JD527A
	X.21 Serial Port Cable, DCE, 3m	JD529A
	RS449 Serial Port Cable, DTE, 3m	JF825A
	RS449 Serial Port Cable, DCE, 3m	JF826A
	RS530 Serial Port Cable, DTE, 3m	JF827A
	RS530 Serial Port Cable, DCE, 3m	JF828A
Note 7	The following AUX Cables and Transit Cables install into this Module:	
	Aux Cable-3m (D25 Male)	JD508A
	Single Cable, Transit Plug, D25F, MP8(S)-?	JD636A
	Single Cable, Transit Cable, 0.5m (RJ45)	JD641A
Note 8	The following T1 Cable and Connector install into this Module:	
	T1 Cable RJ45/RJ45-3m	JD518A
Note 9	The following Cable install into this Module:	
	8-port E1 Cable, 16 BNC, 3m, 75ohm	JD512A
	The following Cable install into this Module:	
	8-port T1 Cable, 8 RJ45, 3m	JD639A
Note 10	The following Cable install into this Module:	
	8-port T1 Cable, 8 RJ45, 3m	JD639A
Note 11	The following E3/T3 Cable and Connector install into this Module:	
	HP X260 E3-30 E3/T3 Router Cable	JD533A
	HP X260 T3/E3 Router Cable	JD531A
Note 12	The following Transceivers install into this Module: (Use #0D1 if router is CTO) - if applicable	
	HP X110 100M SFP LC LH80 Transceiver	JD091A
	HP X110 100M SFP LC FX Transceiver	JD102B
	HP X110 100M SFP LC LX Transceiver	JD120B

Configuration

Note 13	The following Transceivers install into this Module: (Use #0D1 if router is CTO) - if applicable		
	HP X125 1G SFP LC LH70 Transceiver		JD063B
	HP X120 1G SFP LC LH40 1550nm Transceiver		JD062A
	HP X125 1G SFP LC LH40 1310nm Transceiver		JD061A
	HP X120 1G SFP LC BX 10-U Transceiver		JD098B
	HP X120 1G SFP LC BX 10-D Transceiver		JD099B
	HP X120 1G SFP LC LH100 Transceiver		JD103A
	HP X120 1G SFP LC SX Transceiver		JD118B
	HP X120 1G SFP LC LX Transceiver		JD119B
Note 14	The following E1 Cables install into this Module:		
	HP X260 E1 (2) BNC 75 ohm 3m Rtr Cable		JD175A
	HP X260 E1 BNC 20m Router Cable		JD514A
	HP X260 E1/2 BNC 75 ohm 40m Router Cable		JD516A
	HP X260 E1 RJ45 3m Router Cable		JD509A
	HP X260 E1 RJ45 20m Router Cable		JD517A
Note 15	These Modules are ONLY supported on the following routers: System (std 0 // max 1) User Selection (min 0 // max 1)		
	HP MSR30-16 Router		JF233A
	HP MSR30-16 PoE Router		JF234A
Note 16	These Modules are ONLY supported on the following routers: System (std 0 // max 2) User Selection (min 0 // max 2)		
	HP MSR30-20 Router		JF284A
	HP MSR30-20 PoE Router		JF802A
	HP MSR30-20 DC Router		JF235A
	HP MSR30-40 Router		JF229A
	HP MSR30-40 PoE Router		JF803A
	HP MSR30-40 DC Router		JF287A
	HP MSR30-60 Router		JF230A
	HP MSR30-60 PoE Router		JF804A
	HP MSR30-60 DC Router		JF801A
Note 17	These Modules are ONLY supported on the following routers: System (std 0 // max 1) User Selection (min 0 // max 1)		
	HP MSR30-10 2 FE/2 SIC/1 MIM MS Rtr		JF816A
	HP MSR30-10 DC Router		JG184A
	HP MSR30-11E Router		JG182A
	HP MSR30-11F Router		JG183A
ESM Modules	**JF816A, JG184A, JG182A, and JG183A Only System (std 0 // max 1) User Selection (min 0 // max 1) per enclosure**		
	Rest of routers Only System (std 0 // max 4) User Selection (min 0 // max 2) per enclosure		
	HP MSR Encryption Accelerator Adv Mod		JD608A
	HP MSR Std Encryption Accelerator Mod		JD609A
Voice Co-Processing Modules	**JF816A, JG184A, JG182A, and JG183A Only - Not Supported**		
	JF233A, JF234A, JF284A, JF802A, JF235A, JF229A, JF803A, JF287A, JF230A, JF804A, JF801A Only - System (std 0 // max 1) User Selection (min 0 // max 1) per enclosure		
	HP MSR Voice Co-processor Module		JD610A

Configuration

Voice Processing Modules	**JF816A and JG184A Only - System (std 0 // max 1) User Selection (min 0 // max 1) per enclosure**	
	JG182A, and JG183A Only - Not Supported	
	JF233A, JF234A, JF284A, JF235A, and JF802A System (std 0 // max 2) User Selection (min 0 // max 2) per enclosure	
	JF229A, JF230A, JF287A, JF801A, JF234A, JF803A, JF801A, and JF804A System (std 0 // max 3) User Selection (min 0 // max 3) per enclosure	
	HP MSR 32-channel Voice Processor Module	JD598A
	HP MSR 24-channel Voice Processor Module	JD599A
	HP MSR 16-channel Voice Processor Module	JD600A
	HP MSR 8-channel Voice Processor Module	JD601A

Transceivers

HP X115 100M SFP LC FX Transceiver	JD102B
HP X110 100M SFP LC LX Transceiver	JD120B
HP X110 100M SFP LC LH80 Transceiver	JD091A
HP X120 1G SFP LC SX Transceiver	JD118B
HP X120 1G SFP LC LX Transceiver	JD119B
HP X120 1G SFP LC LH40 1550nm XCVR	JD062A
HP X110 100M SFP LC LH40 Transceiver	JD090A
HP X125 1G SFP LC LH40 1310nm XCVR	JD061A
HP X125 1G SFP LC LH70 Transceiver	JD063B
HP X120 1G SFP LC BX 10-D Transceiver	JD099B
HP X120 1G SFP LC BX 10-U Transceiver	JD098B

Cables

HP X260 mini D-28/4-RJ45 0.3m Rtr Cable	JG263A
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
HP X260 Auxiliary Router Cable	JD508A
HP X260 E1 RJ45 3m Router Cable	JD509A
HP X260 E1 RJ45 20m Router Cable	JD517A
HP X260 E1 (2) BNC 75 ohm 3m Rtr Cable	JD175A
HP X260 E1 BNC 20m Router Cable	JD514A
HP X260 E1/2 BNC 75 ohm 40m Router Cable	JD516A
HP X260 E1 RJ45 BNC 75-120 ohm Conversion Router Cable	JD511A
HP X260 2E1 BNC 3m Router Cable	JD643A
HP X260 T1 Router Cable	JD518A

Configuration

HP X260 T1 Voice Router Cable	JD535A
HP X260 T3/E3 Router Cable	JD531A
HP X260 E3-30 E3/T3 Router Cable	JD533A
HP X260 E1 4-port IMA Router Cable	JD638A
HP X260 8E1 BNC 75 ohm 3m Router Cable	JD512A
HP X260 SIC-8AS RJ45 0.28m Router Cable	JD642A
HP X200 Transit Plug D25F MP8(S) Single Cable	JD636A
HP X200 Transit Cable RJ45 0.5m Single Cable	JD641A
HP X260 8T1 RJ45 3m Router Cable	JD639A
HP X260 8T1 RJ45 3m Router Cable	JD639A

Remarks   The following cable is used for RJ45 BNC Conversion:

HP X260 E1 RJ45 BNC 75-120 ohm Conversion Router Cable   JD511A

The following Connector is used to extend E1/T1 Cables:

HP X500 T1/E1 Voice RJ45 Interface Connector   JD535A

Router Specific Options

System (std 1 // max 2) User Selection (min 0 // max 1)

SDRAM	HP MSR 256MB SDRAM	JD647A
	HP MSR 512MB SDRAM	JD648A

Configuration Rules

These Memory Modules are supported on the following routers only:

Note 1	HP A-MSR30-20 Router	JF284A
	HP A-MSR30-40 Router	JF229A
	HP A-MSR30-60 Router	JF230A
	HP A-MSR30-20 DC Router	JF235A
	HP A-MSR30-40 DC Router	JF287A
	HP A-MSR30-60 DC Router	JF801A
	HP A-MSR30-20 PoE Router	JF802A
	HP A-MSR30-40 PoE Router	JF803A
	HP A-MSR30-60 PoE Router	JF804A

Compact Flash cards	**System (std 0 // max 1) User Selection (min 0 // max 1)**	
	HP X600 1G Compact Flash Card	JC684A
	HP X600 512M Compact Flash Card	JC685A
	HP X600 256M Compact Flash Card	JC686A

Configuration Rules

These CF Cards are supported on the following routers only:

Note 1	HP A-MSR30-20 Router	JF284A
	HP A-MSR30-40 Router	JF229A
	HP A-MSR30-60 Router	JF230A
	HP A-MSR30-20 DC Router	JF235A
	HP A-MSR30-40 DC Router	JF287A
	HP A-MSR30-60 DC Router	JF801A
	HP A-MSR30-16 PoE Router	JF234A

Configuration

	HP A-MSR30-20 PoE Router	JF802A
	HP A-MSR30-40 PoE Router	JF803A
	HP A-MSR30-60 PoE Router	JF804A

External Redundant Power Supplies	**System (std 0 // max 1) User Selection (min 0 // max 1)**	
	HP RPS 800 Redundant Power Supply	JD183A
	Note 1 These power supplies are supported on the following routers only:	
	HP A-MSR30-20 Router	JF284A
	HP A-MSR30-40 Router	JF229A
	HP A-MSR30-60 Router	JF230A
	HP A-MSR30-20 DC Router	JF235A
	HP A-MSR30-40 DC Router	JF287A
	HP A-MSR30-60 DC Router	JF801A
	HP A-MSR30-16 PoE Router	JF234A
	HP A-MSR30-20 PoE Router	JF802A
	HP A-MSR30-40 PoE Router	JF803A
	HP A-MSR30-60 PoE Router	JF804A
	Note 2 Localization required. (See Localization Menu for list.)	
	Note 3 JD637 - HP X290 MSR30 1m RPS Cable is required if power supply is selected.	

Power Cables	**System (std 0 // max 1) User Selection (min 0 // max 1)**	
	HP X290 MSR30 1m RPS Cable	JD637A

Technical Specifications

HP MSR30-10 Router (JF816A)

Ports	2 SIC slots 1 MIM slot 2 autosensing 10/100 WAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
Physical characteristics	**Dimensions**	17.4(w) x 14.17(d) x 1.74(h) in (44.2 x 36 x 4.42 cm) (1U height)
	Weight	10.58 lb (4.8 kg)
Memory and processor	**Processor**	RISC @ 333 MHz, 256 MB DDR SDRAM, 256 MB flash
Mounting	Mounts in an EIA-standard 19 in. telco rack	
Performance	**Throughput**	220 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 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
Electrical characteristics	**Maximum heat dissipation**	113 BTU/hr (119.21 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	54 W
	Frequency	50/60 Hz
	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; 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	EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A EN 55024:1998+ A1:2001 + A2:2003	

Technical Specifications

	EN 61000-4-11:2004
	EN 61000-4-8:2001
Telecom	FCC part 68
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services	3-year, parts only, global next-day advance exchange (UX150E)
	3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E)
	3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E)
	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E)
	3-year, 24x7 SW phone support, software updates (UX160E)
	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR549E)
	4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E)
	4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E)
	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E)
	4-year, 24x7 SW phone support, software updates (UX161E)
	5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E)
	5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E)
	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E)
	5-year, 24x7 SW phone support, software updates (UX162E)
	3 Yr 6 hr Call-to-Repair Onsite (UX163E)
	4 Yr 6 hr Call-to-Repair Onsite (UX164E)
	5 Yr 6 hr Call-to-Repair Onsite (UX165E)
	1-year, 4-hour onsite, 24x7 coverage for hardware (HR550E)
	1-year, 6 hour Call-To-Repair Onsite for hardware (HR553E)
	1-year, 24x7 software phone support, software updates (HR552E)
	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR551E)
	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 MSR30-10 DC Router (JG184A)

Ports	2 SIC slots 1 MIM slot 2 autosensing 10/100 WAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
Physical characteristics	**Dimensions**	17.4(w) x 14.17(d) x 1.74(h) in (44.2 x 35.99 x 4.42 cm) (1U height)
	Weight	10.58 lb (4.8 kg)
Memory and processor	**Processor**	RISC @ 333 MHz, 256 MB DDR SDRAM, 256 MB flash
Mounting	Mounts in an EIA-standard 19 in. telco rack	
Performance	**Throughput**	220 Kpps (64-byte packets)
	Routing table size	30000 entries
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
Electrical characteristics	**Maximum heat dissipation**	113 BTU/hr (119.21 kJ/hr)
	DC Voltage	-48 to -60 VDC, rated
	Maximum power rating	54 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; 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		EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A EN 55024:1998+ A1:2001 + A2:2003 EN 61000-4-11:2004 EN 61000-4-8:2001
Telecom		FCC part 68
Management		IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes		The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services		3-year, parts only, global next-day advance exchange (UX150E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E) 3-year, 24x7 SW phone support, software updates (UX160E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR549E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E)

Technical Specifications

4-year, 24x7 SW phone support, software updates (UX161E)
5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E)
5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E)
5-year, 24x7 SW phone support, software updates (UX162E)
3 Yr 6 hr Call-to-Repair Onsite (UX163E)
4 Yr 6 hr Call-to-Repair Onsite (UX164E)
5 Yr 6 hr Call-to-Repair Onsite (UX165E)
1-year, 4-hour onsite, 24x7 coverage for hardware (HR550E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HR553E)
1-year, 24x7 software phone support, software updates (HR552E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR551E)

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 MSR30-11E Router (JG182A)

Ports	2 SIC slots 1 MIM slot 2 autosensing 10/100 WAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full 24 RJ-45 autosensing 10/100 LAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
Physical characteristics	**Dimensions**	17.4(w) x 14.17(d) x 1.74(h) in (44.2 x 35.99 x 4.42 cm) (1U height)
	Weight	9.92 lb (4.5 kg)
Memory and processor	**Processor**	RISC @ 333 MHz, 256 MB DDR SDRAM, 256 MB flash
Mounting	Mounts in an EIA-standard 19 in. telco rack	
Performance	**Throughput**	220 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 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
Electrical characteristics	**Maximum heat dissipation**	113 BTU/hr (119.21 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	54 W
	Frequency	50/60 Hz

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; 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	EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A EN 55024:1998+ A1:2001 + A2:2003 EN 61000-4-11:2004 EN 61000-4-8:2001
Telecom	FCC part 68
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services	3-year, parts only, global next-day advance exchange (UX150E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E) 3-year, 24x7 SW phone support, software updates (UX160E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E) 4-year, 24x7 SW phone support, software updates (UX161E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E) 5-year, 24x7 SW phone support, software updates (UX162E) 3 Yr 6 hr Call-to-Repair Onsite (UX163E) 4 Yr 6 hr Call-to-Repair Onsite (UX164E) 5 Yr 6 hr Call-to-Repair Onsite (UX165E) 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 MSR30-11F Router (JG183A)

Ports	2 SIC slots 1 MIM slot 2 autosensing 10/100 WAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full 48 RJ-45 autosensing 10/100 LAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
Physical characteristics	**Dimensions**	17.4(w) x 14.17(d) x 1.74(h) in (44.2 x 35.99 x 4.42 cm) (1U height)
	Weight	10.58 lb (4.8 kg)
Memory and processor	**Processor**	RISC @ 333 MHz, 256 MB DDR SDRAM, 256 MB flash
Mounting	Mounts in an EIA-standard 19 in. telco rack	
Performance	**Throughput**	220 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 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
Electrical characteristics	**Maximum heat dissipation**	113 BTU/hr (119.21 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	54 W
	Frequency	50/60 Hz
	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; 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	EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A	

Technical Specifications

	EN 55024:1998+ A1:2001 + A2:2003
	EN 61000-4-11:2004
	EN 61000-4-8:2001
Telecom	FCC part 68
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services	3-year, parts only, global next-day advance exchange (UX150E)
	3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E)
	3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E)
	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E)
	3-year, 24x7 SW phone support, software updates (UX160E)
	4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E)
	4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E)
	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E)
	4-year, 24x7 SW phone support, software updates (UX161E)
	5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E)
	5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E)
	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E)
	5-year, 24x7 SW phone support, software updates (UX162E)
	3 Yr 6 hr Call-to-Repair Onsite (UX163E)
	4 Yr 6 hr Call-to-Repair Onsite (UX164E)
	5 Yr 6 hr Call-to-Repair Onsite (UX165E)

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 MSR30-16 Router (JF233A)

Ports	4 SIC slots	
	1 MIM slot	
	2 autosensing 10/100 WAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
Physical characteristics	**Dimensions**	17.4(w) x 17.39(d) x 1.74(h) in (44.2 x 44.18 x 4.42 cm) (1U height)
	Weight	13.23 lb. (6 kg)
Memory and processor	**Processor**	RISC @ 400 MHz, 256 MB DDR SDRAM, 256 MB compact flash
Mounting	Mounts in an EIA-standard 19 in. telco rack	
Performance	**Throughput**	220 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 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
Electrical characteristics	**Maximum heat dissipation**	341 BTU/hr (359.76 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	100 W
	Frequency	50/60 Hz
	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; 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		EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A EN 55024:1998+ A1:2001 + A2:2003 EN 61000-4-11:2004 EN 61000-4-8:2001
Telecom		FCC part 68
Management		IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes		The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services		3-year, parts only, global next-day advance exchange (UX150E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E) 3-year, 24x7 SW phone support, software updates (UX160E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR549E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E) 4-year, 24x7 SW phone support, software updates (UX161E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E)

Technical Specifications

5-year, 24x7 SW phone support, software updates (UX162E)
3 Yr 6 hr Call-to-Repair Onsite (UX163E)
4 Yr 6 hr Call-to-Repair Onsite (UX164E)
5 Yr 6 hr Call-to-Repair Onsite (UX165E)
1-year, 4-hour onsite, 24x7 coverage for hardware (HR550E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HR553E)
1-year, 24x7 software phone support, software updates (HR552E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR551E)

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 MSR30-16 PoE Router (JF234A)

Ports	4 SIC slots 1 MIM slot 2 autosensing 10/100 WAN ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX); Duplex: half or full	
Physical characteristics	**Dimensions**	17.4(w) x 17.39(d) x 1.74(h) in (44.2 x 44.18 x 4.42 cm) (1U height)
	Weight	13.23 lb. (6 kg)
Memory and processor	**Processor**	RISC @ 400 MHz, 256 MB DDR SDRAM, 256 MB compact flash
Mounting	Mounts in an EIA-standard 19 in. telco rack	
Performance	**Throughput**	240 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 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
Electrical characteristics	**Maximum heat dissipation**	341 BTU/hr (359.76 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	100 W
	PoE power	150 W
	Frequency	50/60 Hz
	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. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS).

Technical Specifications

Safety	UL 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	EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A EN 55024:1998+ A1:2001 + A2:2003 EN 61000-4-11:2004 EN 61000-4-8:2001
Telecom	FCC part 68
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services	3-year, parts only, global next-day advance exchange (UX150E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E) 3-year, 24x7 SW phone support, software updates (UX160E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR549E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E) 4-year, 24x7 SW phone support, software updates (UX161E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E) 5-year, 24x7 SW phone support, software updates (UX162E) 3 Yr 6 hr Call-to-Repair Onsite (UX163E) 4 Yr 6 hr Call-to-Repair Onsite (UX164E) 5 Yr 6 hr Call-to-Repair Onsite (UX165E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HR550E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HR553E) 1-year, 24x7 software phone support, software updates (HR552E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR551E) 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 MSR30-20 Router (JF284A)

Ports		4 SIC slots 2 MIM slots 2 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
Physical characteristics	**Dimensions**	17.4(w) x 17.39(d) x 1.74(h) in (44.2 x 44.18 x 4.42 cm) (1U height)
	Weight	15.21 lb (6.9 kg)
Memory and processor	**Processor**	RISC @ 533 MHz, 512 MB DDR SDRAM, 256 MB compact flash
Mounting		Mounts in an EIA-standard 19 in. telco rack
Performance	**Throughput**	300 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 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
Electrical characteristics	**Maximum heat dissipation**	426 BTU/hr (449.43 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	125 W
	Frequency	50/60 Hz
	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; 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		EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A

Technical Specifications

	EN 55024:1998+ A1:2001 + A2:2003
	EN 61000-4-11:2004
	EN 61000-4-8:2001
Telecom	FCC part 68
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services	3-year, parts only, global next-day advance exchange (UX150E)
	3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E)
	3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E)
	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E)
	3-year, 24x7 SW phone support, software updates (UX160E)
	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR549E)
	4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E)
	4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E)
	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E)
	4-year, 24x7 SW phone support, software updates (UX161E)
	5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E)
	5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E)
	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E)
	5-year, 24x7 SW phone support, software updates (UX162E)
	3 Yr 6 hr Call-to-Repair Onsite (UX163E)
	4 Yr 6 hr Call-to-Repair Onsite (UX164E)
	5 Yr 6 hr Call-to-Repair Onsite (UX165E)
	1-year, 4-hour onsite, 24x7 coverage for hardware (HR550E)
	1-year, 6 hour Call-To-Repair Onsite for hardware (HR553E)
	1-year, 24x7 software phone support, software updates (HR552E)
	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR551E)
	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 MSR30-20 PoE Router (JF802A)

Ports		4 SIC slots
		2 MIM slots
		2 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
Physical characteristics	**Dimensions**	17.4(w) x 17.39(d) x 1.74(h) in (44.2 x 44.18 x 4.42 cm) (1U height)
	Weight	15.21 lb (6.9 kg)
Memory and processor	**Processor**	RISC @ 533 MHz, 512 MB DDR SDRAM, 256 MB compact flash
Mounting		Mounts in an EIA-standard 19 in. telco rack
Performance	**Throughput**	300 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 entries (IPv6)

Technical Specifications

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
Electrical characteristics	**Maximum heat dissipation**	426 BTU/hr (449.43 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	125 W
	PoE power	150 W
	Frequency	50/60 Hz
	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. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS).
Safety		UL 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		EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A EN 55024:1998+ A1:2001 + A2:2003 EN 61000-4-11:2004 EN 61000-4-8:2001
Telecom		FCC part 68
Management		IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes		The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services		3-year, parts only, global next-day advance exchange (UX150E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E)

Technical Specifications

3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E)
3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E)
3-year, 24x7 SW phone support, software updates (UX160E)
1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR549E)
4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E)
4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E)
4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E)
4-year, 24x7 SW phone support, software updates (UX161E)
5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E)
5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E)
5-year, 24x7 SW phone support, software updates (UX162E)
3 Yr 6 hr Call-to-Repair Onsite (UX163E)
4 Yr 6 hr Call-to-Repair Onsite (UX164E)
5 Yr 6 hr Call-to-Repair Onsite (UX165E)
1-year, 4-hour onsite, 24x7 coverage for hardware (HR550E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HR553E)
1-year, 24x7 software phone support, software updates (HR552E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR551E)

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 MSR30-20 DC Router (JF235A)

Ports	4 SIC slots	
	2 MIM slots	
	2 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
Physical characteristics	**Dimensions**	17.4(w) x 17.39(d) x 1.74(h) in (44.2 x 44.18 x 4.42 cm) (1U height)
	Weight	15.21 lb (6.9 kg)
Memory and processor	**Processor**	RISC @ 533 MHz, 512 MB DDR SDRAM, 256 MB compact flash
Mounting	Mounts in an EIA-standard 19 in. telco rack	
Performance	**Throughput**	300 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 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
Electrical characteristics	**Maximum heat dissipation**	426 BTU/hr (449.43 kJ/hr)

Technical Specifications

DC Voltage	-48 to -60 VDC, rated
Maximum power rating	125 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; 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	EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A EN 55024:1998+ A1:2001 + A2:2003 EN 61000-4-11:2004 EN 61000-4-8:2001
Telecom	FCC part 68
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services	3-year, parts only, global next-day advance exchange (UX150E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E) 3-year, 24x7 SW phone support, software updates (UX160E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR549E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E) 4-year, 24x7 SW phone support, software updates (UX161E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E) 5-year, 24x7 SW phone support, software updates (UX162E) 3 Yr 6 hr Call-to-Repair Onsite (UX163E) 4 Yr 6 hr Call-to-Repair Onsite (UX164E) 5 Yr 6 hr Call-to-Repair Onsite (UX165E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HR550E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HR553E)

Technical Specifications

1-year, 24x7 software phone support, software updates (HR552E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR551E)

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 MSR30-40 Router (JF229A)

Ports	4 SIC slots 4 MIM slots 2 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T) 2 fixed Gigabit Ethernet SFP ports	
Physical characteristics	**Dimensions**	17.4(w) x 16.63(d) x 3.47(h) in (44.2 x 42.23 x 8.82 cm) (2U height)
	Weight	26.23 lb (11.9 kg)
Memory and processor	**Processor**	RISC @ 533 MHz, 512 MB DDR SDRAM, 256 MB compact flash
Mounting	Mounts in an EIA-standard 19 in. telco rack	
Performance	**Throughput**	360 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 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
Electrical characteristics	**Maximum heat dissipation**	717 BTU/hr (756.44 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	210 W
	Frequency	50/60 Hz
	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; 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	EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A EN 61000-4-2 EN 61000-4-3	

Technical Specifications

	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 FCC (CFR 47, Part 15) Class A EN 55024:1998+ A1:2001 + A2:2003 EN 61000-4-11:2004 EN 61000-4-8:2001
Telecom	FCC part 68
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services	3-year, parts only, global next-day advance exchange (UX150E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E) 3-year, 24x7 SW phone support, software updates (UX160E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E) 4-year, 24x7 SW phone support, software updates (UX161E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E) 5-year, 24x7 SW phone support, software updates (UX162E) 3 Yr 6 hr Call-to-Repair Onsite (UX163E) 4 Yr 6 hr Call-to-Repair Onsite (UX164E) 5 Yr 6 hr Call-to-Repair Onsite (UX165E) 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 MSR30-40 PoE Router (JF803A)

Ports	4 SIC slots 4 MIM slots 2 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T) 2 fixed Gigabit Ethernet SFP ports	
Physical characteristics	**Dimensions**	17.4(w) x 16.63(d) x 3.47(h) in (44.2 x 42.23 x 8.82 cm) (2U height)
	Weight	26.23 lb (11.9 kg)
Memory and processor	**Processor**	RISC @ 533 MHz, 512 MB DDR SDRAM, 256 MB compact flash
Mounting	Mounts in an EIA-standard 19 in. telco rack	

Technical Specifications

Performance	**Throughput**	360 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 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
Electrical characteristics	**Maximum heat dissipation**	717 BTU/hr (756.44 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	210 W
	PoE power	375 W
	Frequency	50/60 Hz
	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. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS).
Safety		UL 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		EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A EN 55024:1998+ A1:2001 + A2:2003 EN 61000-4-11:2004 EN 61000-4-8:2001
Telecom		FCC part 68
Management		IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes		The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.

Technical Specifications

Services	
	3-year, parts only, global next-day advance exchange (UX150E)
	3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E)
	3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E)
	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E)
	3-year, 24x7 SW phone support, software updates (UX160E)
	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR549E)
	4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E)
	4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E)
	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E)
	4-year, 24x7 SW phone support, software updates (UX161E)
	5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E)
	5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E)
	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E)
	5-year, 24x7 SW phone support, software updates (UX162E)
	3 Yr 6 hr Call-to-Repair Onsite (UX163E)
	4 Yr 6 hr Call-to-Repair Onsite (UX164E)
	5 Yr 6 hr Call-to-Repair Onsite (UX165E)
	1-year, 4-hour onsite, 24x7 coverage for hardware (HR550E)
	1-year, 6 hour Call-To-Repair Onsite for hardware (HR553E)
	1-year, 24x7 software phone support, software updates (HR552E)
	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR551E)

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 MSR30-40 DC Router (JF287A)

Ports		4 SIC slots
		4 MIM slots
		2 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T)
		2 fixed Gigabit Ethernet SFP ports
Physical characteristics	**Dimensions**	17.4(w) x 16.63(d) x 3.47(h) in (44.2 x 42.23 x 8.82 cm) (2U height)
	Weight	26.23 lb (11.9 kg)
Memory and processor	**Processor**	RISC @ 533 MHz, 512 MB DDR SDRAM, 256 MB compact flash
Mounting		Mounts in an EIA-standard 19 in. telco rack
Performance	**Throughput**	360 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 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
Electrical characteristics	**Maximum heat**	717 BTU/hr (756.44 kJ/hr)

Technical Specifications

dissipation	
DC Voltage	–48 to -60 VDC, rated
Maximum power rating	210 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; 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	EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A EN 55024:1998+ A1:2001 + A2:2003 EN 61000-4-11:2004 EN 61000-4-8:2001
Telecom	FCC part 68
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services	3-year, parts only, global next-day advance exchange (UX150E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E) 3-year, 24x7 SW phone support, software updates (UX160E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR549E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E) 4-year, 24x7 SW phone support, software updates (UX161E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E) 5-year, 24x7 SW phone support, software updates (UX162E) 3 Yr 6 hr Call-to-Repair Onsite (UX163E) 4 Yr 6 hr Call-to-Repair Onsite (UX164E) 5 Yr 6 hr Call-to-Repair Onsite (UX165E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HR550E)

Technical Specifications

1-year, 6 hour Call-To-Repair Onsite for hardware (HR553E)
1-year, 24x7 software phone support, software updates (HR552E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR551E)

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 MSR30-60 Router (JF230A)

Ports	4 SIC slots 6 MIM slots 2 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T) 2 fixed Gigabit Ethernet SFP ports	
Physical characteristics	**Dimensions**	17.4(w) x 16.61(d) x 5.2(h) in (44.2 x 42.18 x 13.2 cm) (3U height)
	Weight	29.98 lb (13.6 kg)
Memory and processor	**Processor**	RISC @ 533 MHz, 512 MB DDR SDRAM, 256 MB compact flash
Mounting	Mounts in an EIA-standard 19 in. telco rack	
Performance	**Throughput**	360 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 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
Electrical characteristics	**Maximum heat dissipation**	717 BTU/hr (756.44 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	210 W
	Frequency	50/60 Hz
	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; 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	EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A EN 61000-4-2	

Technical Specifications

	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
	FCC (CFR 47, Part 15) Class A
	EN 55024:1998+ A1:2001 + A2:2003
	EN 61000-4-11:2004
	EN 61000-4-8:2001
Telecom	FCC part 68
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services	3-year, parts only, global next-day advance exchange (UX150E)
	3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E)
	3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E)
	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E)
	3-year, 24x7 SW phone support, software updates (UX160E)
	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR549E)
	4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E)
	4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E)
	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E)
	4-year, 24x7 SW phone support, software updates (UX161E)
	5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E)
	5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E)
	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E)
	5-year, 24x7 SW phone support, software updates (UX162E)
	3 Yr 6 hr Call-to-Repair Onsite (UX163E)
	4 Yr 6 hr Call-to-Repair Onsite (UX164E)
	5 Yr 6 hr Call-to-Repair Onsite (UX165E)
	1-year, 4-hour onsite, 24x7 coverage for hardware (HR550E)
	1-year, 6 hour Call-To-Repair Onsite for hardware (HR553E)
	1-year, 24x7 software phone support, software updates (HR552E)
	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR551E)
	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 MSR30-60 PoE Router (JF804A)

Ports	4 SIC slots
	6 MIM slots
	2 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T)
	2 fixed Gigabit Ethernet SFP ports

Technical Specifications

Physical characteristics	**Dimensions**	17.4(w) x 16.61(d) x 5.2(h) in (44.2 x 42.18 x 13.2 cm) (3U height)
	Weight	29.98 lb (13.6 kg)
Memory and processor	**Processor**	RISC @ 533 MHz, 512 MB DDR SDRAM, 256 MB compact flash
Mounting	Mounts in an EIA-standard 19 in. telco rack	
Performance	**Throughput**	360 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 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
Electrical characteristics	**Maximum heat dissipation**	717 BTU/hr (756.44 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	210 W
	PoE power	375 W
	Frequency	50/60 Hz
	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. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS).
Safety	UL 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	EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A EN 55024:1998+ A1:2001 + A2:2003 EN 61000-4-11:2004 EN 61000-4-8:2001	

Technical Specifications

Telecom	FCC part 68
Management	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes	The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services	3-year, parts only, global next-day advance exchange (UX150E)
	3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E)
	3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E)
	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E)
	3-year, 24x7 SW phone support, software updates (UX160E)
	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR549E)
	4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E)
	4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E)
	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E)
	4-year, 24x7 SW phone support, software updates (UX161E)
	5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E)
	5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E)
	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E)
	5-year, 24x7 SW phone support, software updates (UX162E)
	3 Yr 6 hr Call-to-Repair Onsite (UX163E)
	4 Yr 6 hr Call-to-Repair Onsite (UX164E)
	5 Yr 6 hr Call-to-Repair Onsite (UX165E)
	1-year, 4-hour onsite, 24x7 coverage for hardware (HR550E)
	1-year, 6 hour Call-To-Repair Onsite for hardware (HR553E)
	1-year, 24x7 software phone support, software updates (HR552E)
	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR551E)
	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 MSR30-60 DC Router (JF801A)

Ports	4 SIC slots	
	6 MIM slots	
	2 1000BASE-T ports (IEEE 802.3ab Type 1000BASE-T)	
	2 fixed Gigabit Ethernet SFP ports	
Physical characteristics	**Dimensions**	17.4(w) x 16.61(d) x 5.2(h) in (44.2 x 42.18 x 13.2 cm) (3U height)
	Weight	29.98 lb (13.6 kg)
Memory and processor	**Processor**	RISC @ 533 MHz, 512 MB DDR SDRAM, 256 MB compact flash
Mounting	Mounts in an EIA-standard 19 in. telco rack	
Performance	**Throughput**	360 Kpps (64-byte packets)
	Routing table size	30000 entries (IPv4), 30000 entries (IPv6)
Environment	**Operating temperature**	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 90%, noncondensing

Technical Specifications

	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 90%, noncondensing
Electrical characteristics	**Maximum heat dissipation**	717 BTU/hr (756.44 kJ/hr)
	DC Voltage	-48 to -60 VDC, rated
	Maximum power rating	210 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; 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		EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 ETSI EN 300 386 V1.3.3 AS/NZS CISPR 22 Class A 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 FCC (CFR 47, Part 15) Class A EN 55024:1998+ A1:2001 + A2:2003 EN 61000-4-11:2004 EN 61000-4-8:2001
Telecom		FCC part 68
Management		IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; RMON1; FTP; IEEE 802.3 Ethernet MIB
Notes		The HP 3G Wireless GSM/WCDMA WAN SIC Module (JF820A) is not approved for use in the same chassis as a Wi-Fi interface (802.11b/g, 802.11b/g/n, etc.) in the European Union.
Services		3-year, parts only, global next-day advance exchange (UX150E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UX151E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UX154E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UX157E) 3-year, 24x7 SW phone support, software updates (UX160E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR549E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UX152E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UX155E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX158E) 4-year, 24x7 SW phone support, software updates (UX161E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UX153E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UX156E)

Technical Specifications

5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX159E)

5-year, 24x7 SW phone support, software updates (UX162E)

3 Yr 6 hr Call-to-Repair Onsite (UX163E)

4 Yr 6 hr Call-to-Repair Onsite (UX164E)

5 Yr 6 hr Call-to-Repair Onsite (UX165E)

1-year, 4-hour onsite, 24x7 coverage for hardware (HR550E)

1-year, 6 hour Call-To-Repair Onsite for hardware (HR553E)

1-year, 24x7 software phone support, software updates (HR552E)

1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR551E)

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
(applies to all products in series)

BGP

RFC 1163 Border Gateway Protocol (BGP)

RFC 1267 Border Gateway Protocol 3 (BGP-3)

RFC 1657 Definitions of Managed Objects for BGPv4

RFC 1771 BGPv4

RFC 1772 Application of the BGP

RFC 1773 Experience with the BGP-4 Protocol

RFC 1774 BGP-4 Protocol Analysis

RFC 1965 BGP4 confederations

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 2271 FrameWork

RFC 2452 MIB for TCP6

RFC 2454 MIB for UDP6

General protocols

IEEE 802.1D MAC Bridges

IEEE 802.1p Priority

IEEE 802.1Q VLANs

IEEE 802.1s Multiple Spanning Trees

IEEE 802.1w Rapid Reconfiguration of Spanning Tree

RFC 768 UDP

RFC 783 TFTP Protocol (revision 2)

RFC 791 IP

RFC 792 ICMP

RFC 3215 LDP State Machine

RFC 3246 Expedited Forwarding PHB

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 3479 Fault Tolerance for the Label Distribution Protocol (LDP)

RFC 3564 Requirements for Support of Differentiated Services-aware MPLS Traffic Engineering

RFC 3602 The AES-CBC Cipher Algorithm and Its Use with IPsec

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 3811 Definitions of Textual Conventions (TCs) for Multiprotocol Label Switching (MPLS) Management

RFC 3812 Multiprotocol Label Switching (MPLS) Traffic Engineering (TE) Management Information Base (MIB)

RFC 3847 Restart signaling for IS-IS

FRF.1.2 PVC User-to-Network Interface (UNI) Implementation Agreement - July 2000

FRF.11.1 Voice over Frame Relay Implementation Agreement - May 1997 - Annex J added March 1999

FRF.12 Frame Relay Fragmentation Implementation

Technical Specifications

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
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)

Agreement - December 1997
FRF.16.1 Multilink Frame Relay UNI/NNI Implementation Agreement - May 2002
FRF.2.2 Frame Relay Network-to-Network Interface (NNI) Implementation Agreement - March 2002
FRF.20 Frame Relay IP Header Compression Implementation Agreement - June 2001
FRF.3.2 Frame Relay Multiprotocol Encapsulation Implementation Agreement - April 2000
FRF.7 Frame Relay PVC Multicast Service and Protocol Description - October 1994
FRF.9 Data Compression Over Frame Relay Implementation Agreement - January 1996

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
RFC 3376 IGMPv3

IPv6
RFC 1981 IPv6 Path MTU Discovery
RFC 2080 RIPng for IPv6
RFC 2292 Advanced Sockets API for IPv6
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

Technical Specifications

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 SMIv2
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
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 RIPv2
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

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
RFC 2933 IGMP MIB
RFC 3813 MPLS LSR MIB

Network management
IEEE 802.1D (STP)
RFC 1155 Structure of Management Information
RFC 1157 SNMPv1
RFC 1905 SNMPv2 Protocol Operations
RFC 2272 SNMPv3 Management Protocol
RFC 2273 SNMPv3 Applications
RFC 2274 USM for SNMPv3
RFC 2275 VACM for SNMPv3
RFC 2575 SNMPv3 View-based Access Control
Model (VACM)
RFC 3164 BSD syslog Protocol

OSPF
RFC 1245 OSPF protocol analysis
RFC 1246 Experience with OSPF
RFC 1587 OSPF NSSA
RFC 1765 OSPF Database Overflow
RFC 1850 OSPFv2 Management Information Base
(MIB), traps
RFC 2328 OSPFv2
RFC 2370 OSPF Opaque LSA Option
RFC 3101 OSPF NSSA

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)
RFC 3168 The Addition of Explicit Congestion
Notification (ECN) to IP

Technical Specifications

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 2702 Requirements for Traffic Engineering Over MPLS
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 3032 MPLS Label Stack Encoding
RFC 3036 LDP Specification
RFC 3046 DHCP Relay Agent Information Option
RFC 3063 MPLS Loop Prevention Mechanism
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

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
RFC 3567 Intermediate System (IS) to IS Cryptographic Authentication

VPN

RFC 2403 - HMAC-MD5-96
RFC 2404 - HMAC-SHA1-96
RFC 2405 - DES-CBC Cipher algorithm
RFC 2547 BGP/MPLS VPNs
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
RFC 3107 Carrying Label Information in 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)

Accessories

HP MSR30 Series accessories	**Transceivers**	
	HP X110 100M SFP LC FX Transceiver	JD102B
	HP X110 100M SFP LC LX Transceiver	JD120B
	HP X110 100M SFP LC LH40 Transceiver	JD090A
	HP X110 100M SFP LC LH80 Transceiver	JD091A
	HP X120 1G SFP LC SX Transceiver	JD118B
	HP X120 1G SFP LC LX Transceiver	JD119B
	HP X124 1G SFP LC LH40 1310nm Transceiver	JD061A
	HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
	HP X125 1G SFP LC LH70 Transceiver	JD063B
	HP X120 1G SFP LC LH100 Transceiver	JD103A
	HP X120 1G SFP LC BX 10-U Transceiver	JD098B
	HP X120 1G SFP LC BX 10-D Transceiver	JD099B
	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
	HP X260 Auxiliary Router Cable	JD508A
	HP X260 E1 RJ45 3m Router Cable	JD509A
	HP X260 E1 RJ45 20m Router Cable	JD517A
	HP X260 E1 BNC 75 ohm 3m Router Cable	JD175A
	HP X260 E1 BNC 20m Router Cable	JD514A
	HP X260 E1 BNC 75 ohm 40m Router Cable	JD516A
	HP X260 E1 RJ45 BNC 75-120 ohm Conversion Router Cable	JD511A
	HP X260 2E1 BNC 3m Router Cable	JD643A
	HP X260 T1 Router Cable	JD518A
	HP X260 T1 Voice Router Cable	JD535A
	HP X260 8T1 RJ45 3m Router Cable	JD639A
	HP X260 T3/E3 Router Cable	JD531A
	HP X260 E3-30 E3/T3 Router Cable	JD533A
	HP X260 E1 4-port IMA Router Cable	JD638A
	HP CAB-75ohm 8E1-3m-BNC-IMA	JD927A
	HP X260 8E1 BNC 75 ohm 3m Router Cable	JD512A

Accessories

HP X260 SIC-8AS RJ45 0.28m Router Cable	JD642A
HP X200 Transit Plug D25F MP8(S) Single Cable	JD636A
HP X200 Transit Cable RJ45 0.5m Single Cable	JD641A
HP X260 mini D-28 to 4-RJ45 0.3m Router Cable	JG263A
Power Supply	
HP RPS 800 Redundant Power Supply	JD183A
Router Modules	
HP MSR Encryption Accelerator Advanced Module	JD608A
HP MSR Standard Encryption Accelerator Module	JD609A
HP MSR Voice Co-processor Module	JD610A
HP MSR 32-channel Voice Processor Module	JD598A
HP MSR 24-channel Voice Processor Module	JD599A
HP MSR 16-channel Voice Processor Module	JD600A
HP MSR 8-channel Voice Processor Module	JD601A
HP MSR 9-port 10/100Base-T PoE Switch DSIC Module	JD574B
HP MSR 9-port 10/100Base-T PoE Switch DSIC Module	JD621A
HP MSR 4-port 10/100Base-T Switch SIC Module	JD573B
HP MSR 4-port 10/100Base-T PoE Switch SIC Module	JD620A
HP MSR 1-port 10/100Base-T SIC Module	JD545B
HP MSR 1-port 100Mbt SFP SIC Router Module	JF280A
HP MSR 1-port 10/100/1000 SIC MSR Module	JD572A
HP MSR 2-port FXO SIC MSR Module	JD558A
HP MSR 1-port FXO SIC MSR Module	JD559A
HP MSR 2-port FXS SIC MSR Module	JD560A
HP MSR 1-port FXS SIC MSR Module	JD561A
HP MSR 2-port ISDN-S/T Voice Interface SIC Module	JF821A
HP MSR 2FXS+1FXO Voice Interface SIC MSR Module	JD632A
HP MSR 1-port E1-Voice SIC MSR Module	JD575A
HP MSR 1-port T1-Voice SIC MSR Module	JD576A
HP MSR 1-Port Fractional E1 SIC MSR Module	JD634B
HP MSR 2-port E1/Fractional E1 (75ohm) SIC Module	JF842A
HP MSR 1-port Fractional SIC MSR Module	JD538A
HP MSR 1-port Analog Modem SIC MSR Module	JD536A
HP MSR 1-port ADSL2+ SIC MSR Module	JD537A
HP MSR 1-port ADSL over ISDN SIC Module	JG056B
HP MSR 1-port 8-wire G.SHDSL (RJ45) DSIC Module	JG191A
HP MSR 1-port Enhanced Serial SIC MSR Module	JD557A
HP MSR 1-port ISDN-S/T SIC MSR Module	JD571A
HP MSR 8-port Asynchronous Serial SIC Module	JF281A
HP MSR 16-port Async Serial SIC Module	JG186A
HP MSR 802.11b/g/n Wireless Access Point SIC Module	JF819A

Accessories

HP MSR 802.11b/g/n Wireless Access Point SIC Module (NA)	JG211A
HP MSR 2-port 10/100 MIM MSR Module	JD613A
HP MSR 4-Port 10/100Base-TX MSR Module	JD551A
HP MSR 2-port 10/100/1000BASE-T MIM MSR Module	JD548A
HP MSR 16-port 10/100 MIM MSR Module	JD569A
HP MSR 16-port 10/100 PoE MIM MSR Module	JD618A
HP MSR 24-Port 10/100 DMIM MSR Module	JD564A
HP MSR 24-port 10/100 PoE DMIM MSR Module	JD619A
HP MSR 2-port Enhanced Serial MIM MSR Module	JD540A
HP MSR 4-port Enhanced Serial MIM MSR Module	JD541A
HP MSR 8-port Enhanced Sync/Async Interface MSR Module	JD552A
HP MSR 8p Async Serial Intrfc MIM MSR Module	JF840A
HP MSR 16p Async Serial Intrfc MIM MSR Module	JF841A
HP MSR 4-port FXO MIM MSR Module	JD542A
HP MSR 2-port FXO MIM MSR Module	JD543A
HP MSR 4-port FXS MIM MSR Module	JD553A
HP MSR 16-port FXS Voice Interface MIM Module	JF822A
HP MSR 4-port ISDN BRI S/T Voice Interface MIM Module	JF837A
HP MSR 4-port Voice E/M MIM MSR Module	JD539A
HP MSR 1-Port E1 Voice MIM MSR Module	JD565A
HP MSR 2-port E1-Voice MIM MSR Module	JD567A
HP MSR 1-port T1 Voice MIM MSR Module	JD566A
HP MSR 2-port T1-Voice MIM MSR Module	JD568A
HP MSR 2-port CE1/PRI MIM MSR Module	JD544A
HP MSR 2-port T1/CT1/PRI MIM Module	JD549A
HP MSR 4-port E1/CE1/PRI MIM Module	JD550A
HP MSR 8-port E1/CE1/PRI (75ohm) MIM Module	JD563A
HP MSR 8-port E1/Fractional E1 (75ohm) MIM Module	JF255A
HP MSR 4-port T1 IMA MIM Module	JD556A
HP MSR 1-port T3/CT3/FT3 MIM Module	JD628A
HP MSR 1-port E3/CE3/FE3 MIM Module	JD630A
HP MSR 1-port 4-Wire G.SHDSL MIM Module	JD547A
HP MSR 1-port OC-3c/STM-1c ATM SFP MIM Module	JD624A
HP MSR 1-port OC-3c/STM-1c POS MIM Module	JG193A
HP MSR 4-port T1/Fractional T1 MIM Module	JF254B
HP MSR 8-port E1 IMA (75ohm) MIM Module	JD555B
HP MSR 1-port E1/CE1/PRI SIC Module	JF253B
HP MSR 4-port E1/Fractional E1 MIM Module	JF257B
HP MSR 4-port FXS/1-port FXO DSIC Module	JG189A
HP MSR HSPA/WCDMA SIC Module	JG187A
NEW HP MSR Open Application Platform (OAP) with VMware vSphere MIM Module	JG532A

Accessories

Power cords	
HP X290 MSR30 1m RPS Cable	JD637A
Memory	
HP MSR 256MB SDRAM	JD647A
HP MSR 512MB SDRAM	JD648A
Telephony modules	
NEW HP MSR Small Survivable Branch Communication MIM Module pwrd by Microsoft Lync	JG587A
NEW HP MSR Medium Survivable Branch Communication MIM Module pwrd by Microsoft Lync	JG588A
HP MSR30-10 Router (JF816A)	
HP MSR 16-port 10/100Base-T Switch XMIM Module	JF279A
HP MSR 24-port 10/100Base-T Switch XMIM Module	JF276A
HP MSR30-10 DC Router (JG184A)	
HP MSR 16-port 10/100Base-T Switch XMIM Module	JF279A
HP MSR 24-port 10/100Base-T Switch XMIM Module	JF276A
HP MSR30-16 Router (JF233A)	
HP X600 1G Compact Flash Card	JC684A
HP X600 512M Compact Flash Card	JC685A
HP X600 256M Compact Flash Card	JC686A
HP MSR30-16 PoE Router (JF234A)	
HP X600 1G Compact Flash Card	JC684A
HP X600 512M Compact Flash Card	JC685A
HP X600 256M Compact Flash Card	JC686A
HP MSR30-20 Router (JF284A)	
HP X600 1G Compact Flash Card	JC684A
HP X600 512M Compact Flash Card	JC685A
HP X600 256M Compact Flash Card	JC686A
HP MSR30-20 PoE Router (JF802A)	
HP X600 1G Compact Flash Card	JC684A
HP X600 512M Compact Flash Card	JC685A
HP X600 256M Compact Flash Card	JC686A
HP MSR30-20 DC Router (JF235A)	
HP X600 1G Compact Flash Card	JC684A
HP X600 512M Compact Flash Card	JC685A
HP X600 256M Compact Flash Card	JC686A
HP MSR30-40 Router (JF229A)	
HP X600 1G Compact Flash Card	JC684A
HP X600 512M Compact Flash Card	JC685A
HP X600 256M Compact Flash Card	JC686A

Accessories

HP MSR30-40 PoE Router (JF803A)

HP X600 1G Compact Flash Card	JC684A
HP X600 512M Compact Flash Card	JC685A
HP X600 256M Compact Flash Card	JC686A

HP MSR30-40 DC Router (JF287A)

HP X600 1G Compact Flash Card	JC684A
HP X600 512M Compact Flash Card	JC685A
HP X600 256M Compact Flash Card	JC686A

HP MSR30-60 Router (JF230A)

HP X600 1G Compact Flash Card	JC684A
HP X600 512M Compact Flash Card	JC685A
HP X600 256M Compact Flash Card	JC686A

HP MSR30-60 PoE Router (JF804A)

HP X600 1G Compact Flash Card	JC684A
HP X600 512M Compact Flash Card	JC685A
HP X600 256M Compact Flash Card	JC686A

HP MSR30-60 DC Router (JF801A)

HP X600 1G Compact Flash Card	JC684A
HP X600 512M Compact Flash Card	JC685A
HP X600 256M Compact Flash Card	JC686A

Accessory Product Details

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

HP X120 1G SFP LC SX Transceiver (JD118B)	**Ports**	1 LC 1000BASE-SX port	
	Connectivity	**Connector type**	LC
A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550m on a Multimode fiber.		**Wavelength**	850 nm
	Physical characteristics	**Dimensions**	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	**Power consumption typical**	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Maximum distance: • FDDI Grade distance = 220m • OM1 = 275m • OM2 = 500m • OM3 = Not Specified by standard	
		Cable length	up to 550m
		Fiber type	Multi Mode
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP X120 1G SFP LC LX Transceiver (JD119B)	**Ports**	1 SFP 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX)	
	Connectivity	**Connector type**	LC
A small form-factor pluggable (SFP) Gigabig LX transceiver that provides a full duplex Gigabit solution up to 550m on MMF or 10Km on SMF		**Wavelength**	1300 nm
	Physical characteristics	**Dimensions**	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	**Power consumption typical**	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: Either single mode or multimode; Maximum distance: • 550m for Multimode • 10km for Singlemode	
		Fiber type	Both
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Accessory Product Details

HP X125 1G SFP LC LH40 1310nm Transceiver (JD061A)	**Ports**	1 LC 1000Base-LH port (no IEEE standard exists for 1550 nm optics)	
	Connectivity	Connector type	LC
A small form-factor pluggable SFP Gigabit LH40 transceiver that provides a full duplex Gigabit solution up to 40km on a single-mode fiber.		Wavelength	1310 nm
	Physical characteristics	Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	Power consumption typical	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: ● 40km distance	
		Fiber type	Single Mode
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP X120 1G SFP LC LH40 1550nm Transceiver (JD062A)	**Ports**	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics)	
	Connectivity	Connector type	LC
A small form-factor pluggable (SFP) Gigabit LH40 transceiver that provides a full-duplex Gigabit solution up to 40 km on a single mode fiber.		Wavelength	1550 nm
	Physical characteristics	Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	Power consumption typical	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: ● 40km distance	
		Fiber type	Single Mode
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Accessory Product Details

HP X125 1G SFP LC LH70 Transceiver (JD063B)	Ports		1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics)
	Connectivity	**Connector type**	LC
A small form-factor pluggable (SFP) Gigabit LH70 transceiver that provides a full-duplex Gigabit solution up to 70km on a single-mode fiber.		**Wavelength**	1550 nm
	Physical characteristics	**Dimensions**	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	**Power consumption typical**	0.8 W
		Power consumption maximum	1.0 W
	Cabling		Cable type: Single-mode fiber optic, complying with ITU-T G.652;
			Maximum distance: • 70km
		Fiber type	Single Mode
	Services		Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP MSR 1-port ADSL over ISDN SIC Module (JG056B)	**Physical characteristics**	**Dimensions**	12.8(d) x 8.3(w) x 4.2(h) in. (32.51 x 21.08 x 10.67 cm)
		Weight	1.41 lb. (0.64 kg)
	Notes		this module only provide ISDN U interface
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP MSR 1-port 8-wire G.SHDSL (RJ45) DSIC Module (JG191A)	**Physical characteristics**	**Dimensions**	12.8(d) x 8.3(w) x 4.2(h) in. (32.51 x 21.08 x 10.67 cm)
		Weight	0.99 lb. (0.45 kg)
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP MSR 8-port Async Serial SIC Module (JF281A)	**Connectivity**	**Bit rate**	115.2Kbps
		Interface	RS232
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Accessory Product Details

HP MSR 16-port Async Serial SIC Module (JG186A)	**Physical characteristics**	**Dimensions**	12.8(d) x 8.3(w) x 4.2(h) in. (32.51 x 21.08 x 10.67 cm)
		Weight	0.99 lb. (0.45 kg)
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP MSR 802.11b/g/n Wireless Access Point SIC Module (NA) (JG211A)	**Physical characteristics**	**Dimensions**	12.8(d) x 8.3(w) x 4.2(h) in. (32.51 x 21.08 x 10.67 cm)
		Weight	1.1 lb. (0.5 kg)
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP MSR 4-port T1/Fractional T1 MIM Module (JF254B)	**Connectivity**	**Interface**	4*RJ45
	Physical characteristics	**Dimensions**	13.4(d) x 9.4(w) x 4.5(h) in. (34.04 x 23.88 x 11.43 cm)
		Weight	1.7 lb. (0.77 kg)
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP MSR 8-port E1 IMA (75ohm) MIM Module (JD555B)	**Connectivity**		E1: 2.048 Mbps
		Interface	D68, ITU-G.703, ITU-G.704
	Physical characteristics	**Dimensions**	13.4(d) x 9.4(w) x 4.5(h) in. (34.04 x 23.88 x 11.43 cm)
		Weight	2.91 lb. (1.32 kg)
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP MSR 1-port E1/CE1/PRI SIC Module (JF253B)	**Connectivity**		E1: 2.048 Mbps
		Interface	D15
	Physical characteristics	**Dimensions**	12.8(d) x 8.3(w) x 4.2(h) in. (32.51 x 21.08 x 10.67 cm)
		Weight	1.1 lb. (0.5 kg)
	Notes		support 75ohm cable direct connection, can support 120ohm connection but need to JD511A (75-120 ohm convertor)
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Accessory Product Details

HP MSR 4-port E1/Fractional E1 MIM Module (JF257B)	**Connectivity**		E1: 2.048 Mbps
		Interface	one D25 connector
	Physical characteristics	**Dimensions**	13.4(d) x 9.4(w) x 4.5(h) in. (34.04 x 23.88 x 11.43 cm)
		Weight	2.91 lb. (1.32 kg)
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP MSR 4-port FXS / 1-port FXO DSIC Module (JG189A)	**Connectivity**	**Interface**	5*RJ11
	Physical characteristics	**Dimensions**	12.8(d) x 8.3(w) x 4.2(h) in. (32.51 x 21.08 x 10.67 cm)
		Weight	1.19 lb. (0.54 kg)
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP MSR HSPA/WCDMA SIC Module (JG187A)	**Connectivity**	**Interface**	2*TNC RF, 1*RJ45
	Physical characteristics	**Dimensions**	12.8(d) x 8.3(w) x 4.2(h) in. (32.51 x 21.08 x 10.67 cm)
		Weight	1.41 lb. (0.64 kg)
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP X600 1G Compact Flash Card (JC684A)	**Physical characteristics**	**Dimensions**	4.96(d) x 8.82(w) x 2.56(h) in. (12.6 x 22.4 x 6.5 cm)
		Weight	0.33 lb. (0.15 kg)
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP X600 512M Compact Flash Card (JC685A)	**Physical characteristics**	**Dimensions**	4.96(d) x 8.82(w) x 2.56(h) in. (12.6 x 22.4 x 6.5 cm)
		Weight	0.33 lb. (0.15 kg)
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Accessory Product Details

HP X600 256M Compact Flash Card (JC686A)	**Physical characteristics**	**Dimensions**	4.96(d) x 8.82(w) x 2.56(h) in. (12.6 x 22.4 x 6.5 cm)
		Weight	0.33 lb. (0.15 kg)
	Services		Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

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