Overview

## Models

| | |
|---|---|
| HP 3600-24 v2 EI Switch | JG299A |
| HP 3600-48 v2 EI Switch | JG300A |
| HP 3600-24-PoE+ v2 EI Switch | JG301B |
| HP 3600-48-PoE+ v2 EI Switch | JG302B |
| HP 3600-24-SFP v2 EI Switch | JG303A |

## Key features

- Robust switching at the enterprise network edge
- Advanced Layer 3 and multicast routing
- IRF-automated stack and switching fabric setup
- Integrated and distributed security enforcement
- Enterprise-level nonblocking performance

## Product overview

The HP 3600 EI Switch Series delivers premium levels of intelligent and resilient performance, security, and reliability for robust switching at the enterprise network edge. The series consists of Layer 3 Fast Ethernet and PoE/PoE+ switches, with advanced features that can accommodate the most demanding applications. Secure, resilient connectivity and the latest traffic-prioritization technologies enhance converged networks. Designed for increased flexibility and scalability, HP 3600 EI series switches come with 24 or 48 10/100 ports, four active SFP-based Gigabit Ethernet ports for stacking and uplinks, and a 24-port 100BASE-FX switch with two or four Gigabit Ethernet SFP slots.

## Features and benefits

**Quality of Service** (QoS)

- **Broadcast control**
  allows limitation of broadcast traffic rate to cut down on unwanted network broadcast traffic
- **Advanced classifier-based QoS**
  classifies traffic using multiple match criteria based on Layer 2, 3, and 4 information; applies QoS policies such as setting priority level and rate limit to selected traffic on a per-port or per-VLAN basis
- **Powerful QoS feature**
  supports the following congestion actions: strict priority (SP) queuing, weighted round robin (WRR), weighted fair queuing (WFQ), and WRED
- **Traffic policing**
  supports Committed Access Rate (CAR) and line rate
- **RRPP**
  enables ultra high levels of network resiliency, with failover times of less than 50 ms

**Management**

- **Friendly port names**
  allow assignment of descriptive names to ports
- **Remote configuration and management**
  is available through a secure Web browser or a command-line interface (CLI)

## Overview

- **Manager and operator privilege levels**
  enable read-only (operator) and read/write (manager) access on CLI and Web browser management interfaces
- **Command authorization**
  leverages HWTACACS to link a custom list of CLI commands to an individual network administrator's login; also provides an audit trail
- **Secure Web GUI**
  provides a secure, easy-to-use graphical interface for configuring the module via HTTPS
- **Multiple configuration files**
  can be stored to the flash image
- **Complete session logging**
  provides detailed information for problem identification and resolution
- **SNMPv1, v2c, and v3**
  facilitate centralized discovery, monitoring, and secure management of networking devices
- **Remote monitoring (RMON)**
  uses standard SNMP to monitor essential network functions; supports events, alarm, history, and statistics group plus a private alarm extension group
- **Local and Remote Intelligent Mirroring**
  mirrors traffic from a switch port or to a remote switch port anywhere on the network, or mirrors ACL-selected traffic to a local switch port
- **Management VLAN**
  segments traffic to and from management interfaces, including CLI/telnet, a Web browser interface, and SNMP
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**
  advertises and receives management information from adjacent devices on a network, facilitating easy mapping by network management applications
- **Device Link Detection Protocol (DLDP)**
  monitors a cable between two switches and shuts down the ports on both ends if the cable is broken, preventing network problems such as loops
- **sFlow (RFC 3176)**
  provides scalable ASIC-based wirespeed network monitoring and accounting with no impact on network performance; this allows network operators to gather a variety of sophisticated network statistics and information for capacity planning and real-time network monitoring purposes
- **IPv6 management**
  future-proofs networking, as the switch is capable of being managed whether the attached network is running IPv4 or IPv6; supports pingv6, tracertv6, Telnetv6, TFTPv6, DNSv6, syslogv6, FTPv6, SNMPv6, DHCPv6, and RADIUS for IPv6
- **Troubleshooting**
  ingress and egress port monitoring enable network problem solving; virtual cable tests provide visibility into cable problems

**Connectivity**

- **IPv6**
  - **Telnet**
    for allowing CLI access via IPv6
  - **SNMP**
    for IPv6 switch management
  - **DNS**
    for IPv6 host management
  - **DHCP**
    for auto IPv6 address configuration of a switch
- **Auto-MDIX**
  provides automatic adjustments for straight-through or crossover cables on all 10/100 and 10/100/1000 ports

## Overview

- **Jumbo packet support**
  supports up to 9216-byte frame size to improve the performance of large data transfers
- **Gigabit Ethernet uplinks**
  are dual-personality ports for either 10/100/1000 or mini-GBIC SFP connectivity for increased connectivity flexibility
- **High-density access**
  provides up to 48 fixed 10/100BASE-T PoE or non-PoE ports or 24 SFP 100BASE-X ports in a Layer 2/Layer 3 switch
- **Ethernet operations, administration and maintenance (OAM)**
  detects data link layer problems that occurred in the "last mile" using the IEEE 802.3ah OAM standard; monitors the status of the link between two devices
- **IEEE 802.3af Power over Ethernet (PoE)**
  provides up to 15.4 W per port to IEEE 802.3af-compliant PoE-powered devices such as IP phones, wireless access points, and security cameras
- **IEEE 802.3at Power over Ethernet (PoE+) support**
  simplifies deployment and dramatically reduces installation costs by helping to eliminate the time and cost involved in supplying local power at each access point location

**Performance**

- **Nonblocking performance**
  up to 17.6 Gbps nonblocking switching fabric provides wire-speed switching with up to 13.1 million pps throughput
- **Gigabit Ethernet interface**
  provides a connection to the network that eliminates the network as a bottleneck
- **Hardware-based wire-speed access control lists**
  feature-rich ACL implementation helps ensure high levels of security and ease of administration without impacting network performance

**Resiliency and high availability**

- **Separate data and control paths**
  keeps control separated from services and keeps service processing isolated; increases security and performance
- **External redundant power supply**
  provides high reliability
- **Smart link**
  allows 50 ms failover between links
- **Spanning Tree/MSTP, RSTP**
  provides redundant links while preventing network loops
- **Intelligent Resilient Framework (IRF)**
  creates virtual resilient switching fabrics, where two or more switches perform as a single L2 switch and L3 router; switches do not have to be co-located and can be part of a disaster recovery system; servers or switches can be attached using standard LACP for automatic load balancing and high availability; can eliminate the need for complex protocols like Spanning Tree Protocol, Equal-Cost Multipath (ECMP), or VRRP, thereby simplifying network operation
- **IEEE 802.3ad Link Aggregation Control Protocol (LACP)**
  supports up to 24 trunks, each with 8 links per trunk; supports static or dynamic groups
- **Virtual Router Redundancy Protocol (VRRP)**
  allows a group of routers to dynamically back each other up to create highly available routed environments
- **IRF capability**
  provides single IP address management for a resilient virtual switching fabric of up to nine switches

**Manageability**

- **RMON (remote monitoring)**

## Overview

provides advanced monitoring and reporting capabilities for statistics, history, alarms, and events

**Layer 2 switching**

- **16/32K MAC address table**
  provides access to many Layer 2 devices
- **VLAN support and tagging**
  support IEEE 802.1Q with 4,094 simultaneous VLAN IDs
- **GARP VLAN Registration Protocol**
  allows automatic learning and dynamic assignment of VLANs
- **IEEE 802.1ad QinQ and Selective QinQ**
  increase the scalability of an Ethernet network by providing a hierarchical structure; connect multiple LANs on a high-speed campus or metro network
- **Gigabit Ethernet port aggregation**
  allows grouping of ports to increase overall data throughput to a remote device
- **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

**Layer 3 services**

- **Address Resolution Protocol (ARP)**
  determines the MAC address of another IP host in the same subnet
- **Dynamic Host Configuration Protocol (DHCP)**
  simplifies the management of large IP networks and supports client and server; DHCP Relay enables DHCP operation across subnets
- **Loopback interface address**
  defines an address in Routing Information Protocol (RIP) and OSPF, improving diagnostic capability
- **User Datagram Protocol (UDP) helper function**
  allows UDP broadcasts to be directed across router interfaces to specific IP unicast or subnet broadcast addresses and prevents server spoofing for UDP services such as DHCP
- **Route maps**
  provide more control during route redistribution; allow filtering and altering of route metrics

**Layer 3 routing**

- **IPv4 routing protocols**
  support static routes, RIP, OSPF, ISIS, and BGP
- **IPv6 routing protocols for v2 switches**
  provide routing of IPv6 at wire speed; support static routes, RIPng, OSPFv3, ISIS for IPv6, and BGP4+ for IPv6
- **IPv6 tunneling**
  allows a smooth transition from IPv4 to IPv6 by encapsulating IPv6 traffic over an existing IPv4 infrastructure
- **Equal-Cost Multipath (ECMP)**
  enables multiple equal-cost links in a routing environment to increase link redundancy and scale bandwidth
- **Bidirectional Forwarding Detection (BFD)**
  enables link connectivity monitoring and reduces network convergence time for RIP, OSPF, BGP, IS-IS, VRRP, and IRF
- **PIM-SSM, PIM-DM, and PIM-SM (for IPv4 and IPv6)**
  support IP Multicast address management and inhibition of DoS attacks
- **Multicast Source Discovery Protocol (MSDP)**
  is used for inter-domain multicast applications, allowing multiple PIM-SM domains to interoperate
- **IGMPv1, v2, and v3**

## Overview

allow individual hosts to be registered on a particular VLAN

**Security**

- **Access control lists (ACLs)**
  provides IP Layer 2 to Layer 4 traffic filtering; supports VLAN ACL and port ACL
- **Multiple user authentication methods**
  - **IEEE 802.1X**
    is an industry-standard method of user authentication using an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server
  - **Web-based authentication**
    similar to IEEE 802.1X, it provides a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant
  - **MAC-based authentication**
    authenticates the client with the RADIUS server based on the client's MAC address
- **Identity-driven security and access control**
  - **Per-user ACLs**
    permits or denies user access to specific network resources based on user identity and time of day, allowing multiple types of users on the same network to access specific network services without risking network security or allowing unauthorized access to sensitive data
  - **Automatic VLAN assignment**
    automatically assigns users to the appropriate VLAN based on their identities
- **Secure management access**
  securely encrypts all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3
- **Secure FTP**
  allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a switch configuration file
- **Guest VLAN**
  similar to IEEE 802.1X, it provides a browser-based environment to authenticated clients
- **Endpoint Admission Defense (EAD)**
  provides security policies to users accessing a network
- **Port security**
  allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **Port isolation**
  secures and adds privacy, and prevents malicious attackers from obtaining user information
- **STP BPDU port protection**
  blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- **STP Root Guard**
  protects the root bridge from malicious attacks or configuration mistakes
- **DHCP protection**
  blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **Dynamic ARP protection**
  blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **IP Source Guard**
  helps prevent IP spoofing attacks
- **RADIUS/HWTACACS**
  eases switch management security administration by using a password authentication server
- **Multiple Customer Edge (MCE)**
  facilitates MPLS VPN network integration with support for up to 63 VPNs
- **ICMP throttling**

## Overview

defeats ICMP denial-of-service attacks by enabling any switch port to automatically throttle ICMP traffic

**Convergence**

- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**
  is an automated device discovery protocol that provides easy mapping of network management applications
- **LLDP-MED**
  is a standard extension that automatically configures network devices, including LLDP-capable IP phones
- **LLDP-CDP compatibility**
  receives and recognizes CDP packets from Cisco's IP phones for seamless interoperation
- **PoE allocations**
  support multiple methods (automatic, IEEE 802.3af class, LLDP-MED, or user specified) to allocate PoE power for more efficient energy savings
- **Voice VLAN**
  automatically assigns VLAN and priority for IP phones, simplifying network configuration and maintenance
- **IP multicast snooping and data-driven IGMP**
  automatically prevent flooding of IP multicast traffic
- **Multicast VLAN**
  allows multiple VLANs to receive the same multicast traffic, reducing network bandwidth demand by eliminating multiple streams to each VLAN
- **Protocol Independent Multicast (PIM)**
  is used for multicast applications; supports PIM Dense Mode (PIM-DM) and Sparse Mode (PIM-SM)
- **Multicast Source Discovery Protocol (MSDP)**
  is used for inter-domain multicast applications, allowing multiple PIM-SM domains to interoperate

**Device support**

- **Cisco prestandard PoE support**
  detects and provides power to Cisco's prestandard PoE devices such as wireless LAN access points and IP phones

**Additional information**

- **Green initiative support**
  provides support for RoHS and WEEE regulations
- **Green IT and power**
  uses the latest advances in silicon development and shuts off unused ports to improve power efficiency provides support for RoHS and WEEE regulations

**Warranty and support**

- **NEW Lifetime Warranty 2.0**
  advance hardware replacement for as long as you own the product with next-business-day delivery (available in most countries)†
- **NEW Electronic and telephone support (for Lifetime Warranty 2.0)**
  limited 24x7 telephone support is available from HP for the first 3 years; limited electronic and business hours telephone support is available from HP for the entire warranty period; to reach our support centers, refer to www.hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to www.hp.com/networking/warrantysummary
- **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

## Overview

† HP warranty includes repair or replacement of hardware for as long as you own the product, with next business day advance replacement (available in most countries). The disk drive included with HP AllianceOne Advanced Services and Services zl Modules, HP Threat Management Services zl Module, HP AllianceOne Extended zl Module with Riverbed Steelhead, HP MSM765zl Mobility Controller and HP Survivable Branch Communication zl Module powered by Microsoft Lync has a five-year hardware warranty. For details, refer to the Software license and hardware warranty statements at www.hp.com/networking/warranty.

Configuration

## Build To Order:

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

HP 3600-24 v2 EI Switch — JG299A
- 24 RJ-45 autosensing 10/100 ports
- 2 dual-personality 10/100/1000 ports/ SFP 1000 Mbps ports
- 2 SFP 1000 Mbps ports
- min=0 \ max=4 SFP 1000 Transceivers
- 1U - Height

See Configuration Note:1, 2

HP 3600-24-SFP v2 EI Switch — JG303A
- 24 SFP 100 Mbps ports
- min=0 \ max=24 SFP 100 Transceivers
- 2 dual-personality 10/100/1000 ports/ SFP 1000 Mbps ports
- 2 SFP 1000 Mbps ports
- min=0 \ max=4 SFP 1000 Transceivers
- 1U - Height

See Configuration Note:1, 2, 3

HP 3600-24-PoE+ v2 EI Switch — JG301B
- 24 RJ-45 autosensing 10/100 PoE+ ports
- 2 dual-personality 10/100/1000 ports/ SFP 1000 Mbps ports
- 2 SFP 1000 Mbps ports
- min=0 \ max=4 SFP 1000 Transceivers
- 1U - Height

See Configuration Note:1, 4,5,6

PDU Cable NA/MEX/TW/JP — JG301B#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW — JG301B#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch/Router to Wall Power Cord — JG301B#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 3600-48 v2 EI Switch — JG300A
- 48 RJ-45 autosensing 10/100 PoE ports
- 2 dual-personality 10/100/1000 ports/ SFP 1000 Mbps ports
- 2 SFP 1000 Mbps ports
- min=0 \ max=4 SFP 1000 Transceivers
- 1U - Height

See Configuration Note:1, 2

HP 3600-48-PoE+ v2 EI Switch — JG302B
- 48 RJ-45 autosensing 10/100 PoE ports
- 2 dual-personality 10/100/1000 ports/ SFP 1000 Mbps ports
- 2 SFP 1000 Mbps ports
- min=0 \ max=4 SFP 1000 Transceivers
- 1U - Height

See Configuration Note:1, 4,5,6

## Configuration

PDU Cable NA/MEX/TW/JP — JG302B#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW — JG302B#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch/Router to Wall Power Cord — JG302B#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

Configuration Rules:

| | | |
|---|---|---|
| Note 1 | The following Transceivers install into this switch: (SFP 1000 Mbps ports only) | |
| | HP X125 1G SFP LC SX Transceiver | JD118B |
| | HP X120 1G SFP LC LX Transceiver | JD119B |
| | HP X125 1G SFP LC LH70 Transceiver | JD063B |
| | HP X125 1G SFP RJ45 T Transceiver | JD089B |
| | HP X120 1G SFP LC BX 10-D Transceiver | JD098B |
| | HP X120 1G SFP LC BX 10-D Transceiver | JD099B |
| | HP X124 1G SFP LC LH40 1310nm Transceiver | JD061A |
| | HP X120 1G SFP LC LH40 1550nm Transceiver | JD062A |
| Note 2 | Localization required. (See Localization Menu for list.) | |
| Note 3 | The following Transceivers install into this switch: (SFP 100 Mbps ports only) | |
| | HP X110 100M SFP LC BX 10-U Transceiver | JD100A |
| | HP X110 100M SFP LC BX 10-D Transceiver | JD101A |
| | HP X115 100M SFP LC FX Transceiver | JD102B |
| | HP X110 100M SFP LC LH40 Transceiver | JD090A |
| | HP X110 100M SFP LC LH80 Transceiver | JD091A |
| | HP X110 100M SFP LC LX Transceiver | JD120B |
| Note 4 | When Switches are Not Factory Racked, Then Switch to Wall Power Cord should be the Defaulted Power Cable option on the Switches. | |
| Note 5 | Localization (Wall Power Cord) required on orders without #B2B, #B2C (PDU Power Cord) or #B2E. (See Localization Menu) | |
| Note 6 | #B2E is Offered only in NA, Mexico, Taiwan and Japan. | |
| Remarks | Drop down under power supply should offer the following options and results:<br>Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO)<br>Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO)<br>High Volt Switch/Router/Power Supply to Wall Power Cord - #B2E Option. (Offered only in North | |

Configuration

America, Mexico, Taiwan, and Japan)

## Rack Level Integration CTO Models

HP 3600-24-PoE+ v2 EI Switch — JG301B

- 24 RJ-45 autosensing 10/100 PoE+ ports
- 2 dual-personality 10/100/1000 ports/ SFP 1000 Mbps ports
- 2 SFP 1000 Mbps ports
- min=0 \ max=4 SFP 1000 Transceivers
- 1U - Height

See Configuration Note:1, 3, 4, 5

PDU Cable NA/MEX/TW/JP — JG301B#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW — JG301B#B2C

- C15 PDU Jumper Cord (ROW)

HP 3600-48-PoE+ v2 EI Switch — JG302B

- 48 RJ-45 autosensing 10/100 PoE ports
- 2 dual-personality 10/100/1000 ports/ SFP 1000 Mbps ports
- 2 SFP 1000 Mbps ports
- min=0 \ max=4 SFP 1000 Transceivers
- 1U - Height

See Configuration Note:1, 3, 4, 5

PDU Cable NA/MEX/TW/JP — JG302B#B2B

- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW — JG302B#B2C

- C15 PDU Jumper Cord (ROW)

Configuration Rules:

Note 1 — The following Transceivers install into this switch: (SFP 1000 Mbps ports only)

| | |
|---|---|
| HP X125 1G SFP LC SX Transceiver | JD118B |
| HP X120 1G SFP LC LX Transceiver | JD119B |
| HP X125 1G SFP LC LH70 Transceiver | JD063B |
| HP X125 1G SFP RJ45 T Transceiver | JD089B |
| HP X120 1G SFP LC BX 10-D Transceiver | JD098B |
| HP X120 1G SFP LC BX 10-D Transceiver | JD099B |
| HP X124 1G SFP LC LH40 1310nm Transceiver | JD061A |
| HP X120 1G SFP LC LH40 1550nm Transceiver | JD062A |

Note 3 — When Switches are Factory Racked, Then #B2B, or #B2C should be the Defaulted Power Cable option on the Switches.

Note 4 — Localization (Wall Power Cord) required on orders without #B2B, #B2C (PDU Power Cord). (See Localization Menu)

| | |
|---|---|
| Note 5 | If the CTO Switch Chassis needs to be racked, Then the CTO Base Model needs to integrate (with #0D1) to the HP Network Rack. |
| Remarks | Drop down under power supply should offer the following options and results:<br>Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO)<br>Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO) |

## Internal Power Supplies

Power Supplies included

## Transceivers

### SFP Transceivers

| | |
|---|---|
| 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 SX Transceiver | JD118B |
| HP X120 1G SFP LC LX Transceiver | JD119B |
| HP X125 1G SFP LC LH40 1310nm XCVR | JD061A |
| HP X120 1G SFP LC LH40 1550nm XCVR | JD062A |
| HP X125 1G SFP LC LH70 Transceiver | JD063B |
| HP X120 1G SFP RJ45 T Transceiver | JD089B |
| HP X110 100M SFP LC LH40 Transceiver | JD090A |
| HP X110 100M SFP LC LH80 Transceiver | JD091A |
| HP X110 100M SFP LC BX 10-U Transceiver | JD100A |
| HP X110 100M SFP LC BX 10-D Transceiver | JD101A |
| HP X115 100M SFP LC FX Transceiver | JD102B |
| HP X110 100M SFP LC LX Transceiver | JD120B |

## Switch Enclosure Options

### Stacking Cable kit

| | |
|---|---|
| HP 3600 Switch SFP Stacking Kit | JD324B |

### External Redundant Power Supplies

| | |
|---|---|
| HP RPS 800 Redundant Power Supply<br>• Height = 1U<br>• includes 1 x c13, 800w | JD183A<br>See Configuration Note:2 |

## Configuration

| | |
|---|---|
| HP RPS1600 Redundant Power System<br>• Height = 1U<br>• includes 1 x c13, 1600w and Power Supply port | JG136A<br>See Configuration Note:2 |
| HP RPS1600 1600W AC Power Supply<br>• Installs into JG136A only | JG137A<br>See Configuration Note:1 |

Configuration Rules:

| | |
|---|---|
| Note 1 | If this power supply is selected, The JG136A - HP A-RPS1600 Redundant Power System must be on order or onsite. |
| Note 2 | Localization required. (See Localization Menu for list.) |

**External Redundant Power Cables**

| | |
|---|---|
| HP X290 500 V 1m RPS Cable | JD186A |
| HP X290 1000 A JD5 2m RPS Cable | JD187A |
| HP X290 1000 A JD5 Non-PoE 2m RPS Cable | JD188A |
| HP X290 1000 B JD5 2m RPS Cable | JD189A |

Technical Specifications

**HP 3600-24 v2 EI Switch (JG299A)**

| | | |
|---|---|---|
| **Ports** | 24 RJ-45 autosensing 10/100 ports; Duplex: half or full (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX) | |
| | 4 SFP 1000 Mbps ports | |
| | 2 dual-personality 1000 Mbps ports (IEEE 802.3ab Type 1000BASE-T) | |
| | 1 RJ-45 serial console port | |
| **Physical characteristics** | **Dimensions** | 17.32(w) x 10.24(d) x 1.72(h) in (43.99 x 26.01 x 4.37 cm) (1U height) |
| | **Weight** | 11.02 lb (5 kg) |
| **Memory and processor** | 256 MB SDRAM, 128 MB flash; packet buffer size: 2 MB | |
| **Mounting** | Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included) | |
| **Performance** | **100 Mb Latency** | < 6 µs |
| | **1000 Mb Latency** | < 5 µs |
| | **Throughput** | 9.5 million pps |
| | **Routing/Switching capacity** | 12.8 Gb/s |
| | **Routing table size** | 12000 entries (IPv4) |
| | **MAC address table size** | 32000 entries |
| **Environment** | **Operating temperature** | 32°F to 122°F (0°C to 50°C) |
| | **Operating relative humidity** | 5% to 95%, noncondensing |
| | **Nonoperating/Storage temperature** | -40ºF to 158ºF (-40ºC to 70ºC) |
| | **Nonoperating/Storage relative humidity** | 5% to 95%, noncondensing |
| | **Acoustic** | Low-speed fan: 42.8 dB, High-speed fan: 49.9 dB |
| **Electrical characteristics** | **Frequency** | 50/60 Hz |
| | **Maximum heat dissipation** | 106 BTU/hr (111.83 kJ/hr) |
| | **AC Voltage** | 100-240 VAC |
| | **Maximum power rating** | 31 W |
| **Safety** | UL 60950-1; 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; EN 60950-1/A11; FDA 21 CFR Subchapter J; ROHS Compliance | |
| **Emissions** | FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; 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 | |
| **Management** | IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager | |
| **Services** | 3-year, 4-hour onsite, 13x5 coverage for hardware (UV822E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware (UV825E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UV828E)<br>3-year, 24x7 SW phone support, software updates (UV831E)<br>1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR589E) | |

1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR590E)
1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR591E)
4-year, 4-hour onsite, 13x5 coverage for hardware (UV823E)
4-year, 4-hour onsite, 24x7 coverage for hardware (UV826E)
4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV829E)
4-year, 24x7 SW phone support, software updates (UV832E)
5-year, 4-hour onsite, 13x5 coverage for hardware (UV824E)
5-year, 4-hour onsite, 24x7 coverage for hardware (UV827E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV830E)
5-year, 24x7 SW phone support, software updates (UV833E)
3 Yr 6 hr Call-to-Repair Onsite (UW431E)
4 Yr 6 hr Call-to-Repair Onsite (UW432E)
5 Yr 6 hr Call-to-Repair Onsite (UW433E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HR593E)
1-year, 24x7 software phone support, software updates (HR592E)
1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS690E)
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS691E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS692E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS693E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS694E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS695E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS696E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS697E)

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 3600-48 v2 EI Switch (JG300A)**

| | | |
|---|---|---|
| **Ports** | 48 RJ-45 autosensing 10/100 ports; Duplex: half or full (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX) | |
| | 4 SFP 1000 Mbps ports | |
| | 2 dual-personality 1000 Mbps ports (IEEE 802.3ab Type 1000BASE-T) | |
| | 1 RJ-45 serial console port | |
| **Physical characteristics** | **Dimensions** | 17.32(w) x 10.24(d) x 1.72(h) in (43.99 x 26.01 x 4.37 cm) (1U height) |
| | **Weight** | 11.02 lb (5 kg) |
| **Memory and processor** | 256 MB SDRAM, 128 MB flash; packet buffer size: 2 MB | |
| **Mounting** | Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included) | |
| **Performance** | **100 Mb Latency** | < 6 µs |
| | **1000 Mb Latency** | < 5 µs |
| | **Throughput** | 13.1 million pps |

## Technical Specifications

| | | |
|---|---|---|
| | **Routing/Switching capacity** | 17.6 Gb/s |
| | **Routing table size** | 12000 entries (IPv4) |
| | **MAC address table size** | 32000 entries |
| **Environment** | **Operating temperature** | 32°F to 122°F (0°C to 50°C) |
| | **Operating relative humidity** | 5% to 95%, noncondensing |
| | **Nonoperating/Storage temperature** | -40ºF to 158ºF (-40ºC to 70ºC) |
| | **Nonoperating/Storage relative humidity** | 5% to 95%, noncondensing |
| | **Acoustic** | Low-speed fan: 43.5 dB, High-speed fan: 55.0 dB |
| **Electrical characteristics** | **Frequency** | 50/60 Hz |
| | **Maximum heat dissipation** | 147 BTU/hr (155.08 kJ/hr) |
| | **AC Voltage** | 100-240 VAC |
| | **Maximum power rating** | 43 W |
| **Safety** | UL 60950-1; 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; EN 60950-1/A11; FDA 21 CFR Subchapter J; ROHS Compliance | |
| **Emissions** | FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; 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 | |
| **Management** | IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager | |
| **Services** | 3-year, 4-hour onsite, 13x5 coverage for hardware (UV822E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware (UV825E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UV828E)<br>3-year, 24x7 SW phone support, software updates (UV831E)<br>1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR589E)<br>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR590E)<br>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR591E)<br>4-year, 4-hour onsite, 13x5 coverage for hardware (UV823E)<br>4-year, 4-hour onsite, 24x7 coverage for hardware (UV826E)<br>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV829E)<br>4-year, 24x7 SW phone support, software updates (UV832E)<br>5-year, 4-hour onsite, 13x5 coverage for hardware (UV824E)<br>5-year, 4-hour onsite, 24x7 coverage for hardware (UV827E)<br>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV830E)<br>5-year, 24x7 SW phone support, software updates (UV833E)<br>3 Yr 6 hr Call-to-Repair Onsite (UW431E)<br>4 Yr 6 hr Call-to-Repair Onsite (UW432E)<br>5 Yr 6 hr Call-to-Repair Onsite (UW433E)<br>1-year, 6 hour Call-To-Repair Onsite for hardware (HR593E)<br>1-year, 24x7 software phone support, software updates (HR592E)<br>1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange | |

(HS690E)
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS691E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS692E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS693E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS694E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS695E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS696E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS697E)

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 3600-24-PoE+ v2 EI Switch** (JG301B)

| | | |
|---|---|---|
| **Ports** | 24 RJ-45 autosensing 10/100 PoE+ ports; Duplex: half or full (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3at PoE+) | |
| | 4 SFP 1000 Mbps ports | |
| | 2 dual-personality 1000 Mbps ports (IEEE 802.3ab Type 1000BASE-T) | |
| | 1 RJ-45 serial console port | |
| **Physical characteristics** | **Dimensions** | 17.32(w) x 16.54(d) x 1.72(h) in (43.99 x 42.01 x 4.37 cm) (1U height) |
| | **Weight** | 22.05 lb (10 kg) |
| **Memory and processor** | 256 MB SDRAM, 128 MB flash; packet buffer size: 2 MB | |
| **Mounting** | Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included) | |
| **Performance** | **100 Mb Latency** | < 6 µs |
| | **1000 Mb Latency** | < 5 µs |
| | **Throughput** | 9.5 million pps |
| | **Routing/Switching capacity** | 12.8 Gb/s |
| | **Routing table size** | 12000 entries (IPv4) |
| | **MAC address table size** | 32000 entries |
| **Environment** | **Operating temperature** | 32°F to 122°F (0°C to 50°C) |
| | **Operating relative humidity** | 5% to 95%, noncondensing |
| | **Nonoperating/Storage temperature** | -40ºF to 158ºF (-40ºC to 70ºC) |
| | **Nonoperating/Storage relative humidity** | 5% to 95%, noncondensing |
| | **Acoustic** | Low-speed fan: 44.7 dB, High-speed fan: 53.8 dB |
| **Electrical characteristics** | **Frequency** | 50/60 Hz |

Technical Specifications

| | | |
|---|---|---|
| | **Maximum heat dissipation** | 143 BTU/hr (150.86 kJ/hr) |
| | **AC Voltage** | 100-240 VAC |
| | **Maximum power rating** | 795 W |
| | **PoE power** | 720 W |
| **Safety** | | UL 60950-1; 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; EN 60950-1/A11; FDA 21 CFR Subchapter J; ROHS Compliance |
| **Emissions** | | FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; 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 |
| **Management** | | IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager |
| **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 3600-48-PoE+ v2 EI Switch (JG302B)**

| | | |
|---|---|---|
| **Ports** | | 48 RJ-45 autosensing 10/100 PoE+ ports; Duplex: half or full (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3at PoE+) |
| | | 4 SFP 1000 Mbps ports |
| | | 2 dual-personality 1000 Mbps ports (IEEE 802.3ab Type 1000BASE-T) |
| | | 1 RJ-45 serial console port |
| **Physical characteristics** | **Dimensions** | 17.32(w) x 16.54(d) x 1.72(h) in (44 x 42 x 4.36 cm) (1U height) |
| | **Weight** | 22.05 lb (10 kg) |
| **Memory and processor** | | 256 MB SDRAM, 128 MB flash; packet buffer size: 4 MB |
| **Mounting** | | Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included) |
| **Performance** | **100 Mb Latency** | < 6 µs |
| | **1000 Mb Latency** | < 5 µs |
| | **Throughput** | up to 13.1 million pps |
| | **Routing/Switching capacity** | 17.6 Gb/s |
| | **Routing table size** | 12000 entries (IPv4) |
| | **MAC address table size** | 32000 entries |
| **Environment** | **Operating temperature** | 32°F to 122°F (0°C to 50°C) |
| | **Operating relative humidity** | 5% to 95%, noncondensing |
| | **Nonoperating/Storage temperature** | -40ºF to 158ºF (-40ºC to 70ºC) |
| | **Nonoperating/Storage relative humidity** | 5% to 95%, noncondensing |
| | **Acoustic** | Low-speed fan: 43.5 dB, High-speed fan: 55 dB |

## Technical Specifications

| | | |
|---|---|---|
| **Electrical characteristics** | **Frequency** | 50/60 Hz |
| | **Maximum heat dissipation** | 198 BTU/hr (208.89 kJ/hr) |
| | **AC Voltage** | 100-240 VAC |
| | **Maximum power rating** | 440 W |
| | **PoE power** | 320 W |
| **Safety** | UL 60950-1; 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; EN 60950-1/A11; FDA 21 CFR Subchapter J; ROHS Compliance | |
| **Emissions** | FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; 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 | |
| **Management** | IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager | |
| **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 3600-24-SFP v2 EI Switch (JG303A)**

| | | |
|---|---|---|
| **Ports** | 24 SFP 100 Mbps ports | |
| | 4 SFP 1000 Mbps ports | |
| | 2 dual-personality 1000 Mbps ports; Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only (IEEE 802.3ab Type 1000BASE-T) | |
| | 1 RJ-45 serial console port | |
| **Physical characteristics** | **Dimensions** | 17.32(w) x 10.24(d) x 1.72(h) in (43.99 x 26.01 x 4.37 cm) (1U height) |
| | **Weight** | 11.02 lb (5 kg) |
| **Memory and processor** | 256 MB SDRAM, 128 MB flash; packet buffer size: 2 MB | |
| **Mounting** | Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included) | |
| **Performance** | **100 Mb Latency** | < 6 µs |
| | **1000 Mb Latency** | < 5 µs |
| | **Throughput** | 9.5 million pps |
| | **Routing/Switching capacity** | 12.8 Gb/s |
| | **Routing table size** | 12000 entries (IPv4) |
| | **MAC address table size** | 32000 entries |
| **Environment** | **Operating temperature** | 32°F to 122°F (0°C to 50°C) |
| | **Operating relative humidity** | 5% to 95%, noncondensing |
| | **Nonoperating/Storage temperature** | -40ºF to 158ºF (-40ºC to 70ºC) |
| | **Nonoperating/Storage relative humidity** | 5% to 95%, noncondensing |

## Technical Specifications

| | | |
|---|---|---|
| | **Acoustic** | Low-speed fan: 43.5 dB, High-speed fan: 50.1 dB |
| **Electrical characteristics** | **Frequency** | 50/60 Hz |
| | **Maximum heat dissipation** | 205 BTU/hr (216.27 kJ/hr) |
| | **AC Voltage** | 100-240 VAC |
| | **Maximum power rating** | 60 W |
| **Safety** | UL 60950-1; 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; EN 60950-1/A11; FDA 21 CFR Subchapter J; ROHS Compliance | |
| **Emissions** | FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003 Class A; ANSI C63.4 2003; ETSI EN 300 386 V1.3.3; AS/NZS CISPR22 Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-11; 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 | |
| **Management** | IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager | |
| **Services** | 3-year, 4-hour onsite, 13x5 coverage for hardware (UV822E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware (UV825E)<br>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UV828E)<br>3-year, 24x7 SW phone support, software updates (UV831E)<br>1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR589E)<br>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR590E)<br>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR591E)<br>4-year, 4-hour onsite, 13x5 coverage for hardware (UV823E)<br>4-year, 4-hour onsite, 24x7 coverage for hardware (UV826E)<br>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV829E)<br>4-year, 24x7 SW phone support, software updates (UV832E)<br>5-year, 4-hour onsite, 13x5 coverage for hardware (UV824E)<br>5-year, 4-hour onsite, 24x7 coverage for hardware (UV827E)<br>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV830E)<br>5-year, 24x7 SW phone support, software updates (UV833E)<br>3 Yr 6 hr Call-to-Repair Onsite (UW431E)<br>4 Yr 6 hr Call-to-Repair Onsite (UW432E)<br>5 Yr 6 hr Call-to-Repair Onsite (UW433E)<br>1-year, 6 hour Call-To-Repair Onsite for hardware (HR593E)<br>1-year, 24x7 software phone support, software updates (HR592E)<br>1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS690E)<br>1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS691E)<br>3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS692E)<br>3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS693E)<br>4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS694E)<br>4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS695E)<br>5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS696E)<br>5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS697E)<br><br>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)

**Device management**
RFC 1157 SNMPv1/v2c
RFC 1901-1907 SNMPv2c, SMIv2 and Revised MIB-II
RFC 2573 (SNMPv3 Applications)
RFC 2578-2580 SMIv2
RFC 2819 (RMON groups Alarm, Event, History and Statistics only)
RFC 3410 (Management Framework)
RFC 3416 (SNMP Protocol Operations v2)
RFC 3417 (SNMP Transport Mappings)
HTML and telnet management
Multiple Configuration Files
SNMP v3 and RMON RFC support
SSHv1/SSHv2 Secure Shell

**General protocols**
IEEE 802.1ad Q-in-Q
IEEE 802.1D MAC Bridges
IEEE 802.1p Priority
IEEE 802.1Q VLANs
IEEE 802.1s (MSTP)
IEEE 802.1v VLAN classification by Protocol and Port
IEEE 802.1w Rapid Reconfiguration of Spanning Tree
IEEE 802.1X PAE
IEEE 802.3 Type 10BASE-T
IEEE 802.3ab 1000BASE-T
IEEE 802.3ac (VLAN Tagging Extension)
IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3af Power over Ethernet
IEEE 802.3at Power over Ethernet Plus
IEEE 802.3i 10BASE-T
IEEE 802.3u 100BASE-X
IEEE 802.3x Flow Control
IEEE 802.3z 1000BASE-X
RFC 768 UDP
RFC 783 TFTP Protocol (revision 2)
RFC 791 IP
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 1058 RIPv1
RFC 1213 Management Information Base for Network Management of TCP/IP-based internets
RFC 1812 IPv4 Routing
RFC 2131 DHCP
RFC 2236 IGMP Snooping
RFC 2338 VRRP

**MIBs**
RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 1724 RIPv2 MIB
RFC 1757 Remote Network Monitoring MIB
RFC 1850 OSPFv2 MIB
RFC 1907 SNMPv2 MIB
RFC 2233 Interfaces MIB
RFC 2571 SNMP Framework MIB
RFC 2572 SNMP-MPD MIB
RFC 2573 SNMP-Notification MIB
RFC 2573 SNMP-Target MIB
RFC 2574 SNMP USM MIB
RFC 2618 RADIUS Authentication Client MIB
RFC 2620 RADIUS Accounting Client MIB
RFC 2665 Ethernet-Like-MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2819 RMON MIB
RFC 3414 SNMP-User based-SM MIB
RFC 3415 SNMP-View based-ACM MIB

**Network management**
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 1157 SNMPv1
RFC 1757 RMON 4 groups: Stats, History, Alarms and Events
RFC 1901 Introduction to Community-based SNMPv2
RFC 1902 Structure of Management Information for Version 2 of the Simple Network Management Protocol (SNMPv2)
RFC 1903 SNMPv2 Textual Conventions
RFC 1904 SNMPv2 Conformance
RFC 1905 SNMPv2 Protocol Operations
RFC 1906 SNMPv2 Transport Mappings
RFC 2570 SNMPv3 Overview
RFC 2571 An Architecture for Describing SNMP Management Frameworks
RFC 2572 Message Processing and Dispatching for the
Simple Network Management Protocol (SNMP)
RFC 2573 SNMP Applications
RFC 2574 SNMPv3 User-based Security Model (USM)
RFC 2575 SNMPv3 View-based Access Control Model (VACM)
RFC 2578 Structure of Management Information Version
2 (SMIv2)
RFC 2579 Textual Conventions for SMIv2

RFC 2453 RIPv2
RFC 2644 Directed Broadcast Control
RFC 2665 Definitions of Managed Objects for the Ethernet-like Interface Types
RFC 2711 IPv6 Router Alert Option
RFC 3410 Applicability Statements for SNMP
RFC 3414 User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
RFC 3415 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
RFC 3416 Protocol Operations for SNMP
RFC 3417 Transport Mappings for the Simple Network Management Protocol (SNMP)
RFC 4594 Configuration Guidelines for DiffServ Service Classes

**IP multicast**
RFC 1112 IGMP
RFC 2236 IGMPv2
RFC 2362 PIM Sparse Mode
RFC 3618 Multicast Source Discovery Protocol (MSDP)
RFC 3973 PIM Dense Mode

**IPv6**
RFC 1881 IPv6 Address Allocation Management
RFC 1887 IPv6 Unicast Address Allocation Architecture
RFC 1981 IPv6 Path MTU Discovery
RFC 2080 RIPng for IPv6
RFC 2373 IPv6 Addressing Architecture
RFC 2375 IPv6 Multicast Address Assignments
RFC 2460 IPv6 Specification
RFC 2461 IPv6 Neighbor Discovery
RFC 2462 IPv6 Stateless Address Auto-configuration
RFC 2463 ICMPv6
RFC 2464 Transmission of IPv6 over Ethernet Networks
RFC 2475 IPv6 DiffServ Architecture
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2711 IPv6 Router Alert Option
RFC 2740 OSPFv3 for IPv6
RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers
RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only)
RFC 2925 Remote Operations MIB (Ping only)
RFC 3056 Connection of IPv6 Domains via IPv4

RFC 2580 Conformance Statements for SMIv2
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)
RFC 3410 Introduction to Version 3 of the Internet-standard Network Management Framework
RFC 3414 SNMPv3 User-based Security Model (USM)
RFC 3415 SNMPv3 View-based Access Control Model VACM)
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2c/v3

**OSPF**
RFC 1583 OSPFv2
RFC 1587 OSPF NSSA
RFC 1850 OSPFv2 Management Information Base (MIB), traps
RFC 2328 OSPFv2

**QoS/CoS**
RFC 4594 Configuration Guidelines for DiffServ Service Classes

Clouds
RFC 3162 RADIUS and IPv6
RFC 3306 Unicast-Prefix-based IPv6 Multicast Addresses
RFC 3307 IPv6 Multicast Address Allocation
RFC 3315 DHCPv6 (client and relay)
RFC 3484 Default Address Selection for IPv6
RFC 3493 Basic Socket Interface Extensions for IPv6
RFC 3513 IPv6 Addressing Architecture
RFC 3542 Advanced Sockets API for IPv6
RFC 3587 IPv6 Global Unicast Address Format
RFC 3596 DNS Extension for IPv6
RFC 3810 MLDv2 (host joins only)
RFC 4113 MIB for UDP
RFC 4443 ICMPv6
RFC 5340 OSPFv3 for IPv6

Accessories

| | | |
|---|---|---|
| **HP 3600 EI Switch Series accessories** | **Transceivers** | |
| | 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 X125 1G SFP RJ45 T Transceiver | JD089B |
| | HP X110 100M SFP LC LH40 Transceiver | JD090A |
| | HP X110 100M SFP LC LH80 Transceiver | JD091A |
| | HP X120 1G SFP LC BX 10-U Transceiver | JD098B |
| | HP X120 1G SFP LC BX 10-D Transceiver | JD099B |
| | HP X115 100M SFP LC BX 10-U Transceiver | JD100A |
| | HP X115 100M SFP LC BX 10-D Transceiver | JD101A |
| | HP X110 100M SFP LC FX Transceiver | JD102B |
| | HP X120 1G SFP LC LH100 Transceiver | JD103A |
| | HP X170 1G SFP LC LH70 1550 Transceiver | JD109A |
| | HP X170 1G SFP LC LH70 1570 Transceiver | JD110A |
| | HP X170 1G SFP LC LH70 1590 Transceiver | JD111A |
| | HP X170 1G SFP LC LH70 1610 Transceiver | JD112A |
| | HP X170 1G SFP LC LH70 1470 Transceiver | JD113A |
| | HP X170 1G SFP LC LH70 1490 Transceiver | JD114A |
| | HP X170 1G SFP LC LH70 1510 Transceiver | JD115A |
| | HP X170 1G SFP LC LH70 1530 Transceiver | JD116A |
| | HP X120 1G SFP LC SX Transceiver | JD118B |
| | HP X120 1G SFP LC LX Transceiver | JD119B |
| | **Cables** | |
| | HP 3600 Switch SFP Stacking Kit | JD324B |
| | HP 0.5 m Multimode OM3 LC/LC Optical Cable | AJ833A |
| | HP 1 m Multimode OM3 LC/LC Optical Cable | AJ834A |
| | HP 2 m Multimode OM3 LC/LC Optical Cable | AJ835A |
| | HP 5 m Multimode OM3 LC/LC Optical Cable | AJ836A |
| | HP 15 m Multimode OM3 LC/LC Optical Cable | AJ837A |
| | HP 30 m Multimode OM3 LC/LC Optical Cable | AJ838A |
| | HP 50 m Multimode OM3 LC/LC Optical Cable | AJ839A |
| | HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable | QK732A |
| | HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable | QK733A |
| | HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable | QK734A |
| | HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable | QK735A |
| | HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable | QK736A |
| | HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable | QK737A |
| | **Power Supply** | |
| | HP RPS800 Redundant Power System | JD183A |
| | HP RPS1600 Redundant Power System | JG136A |
| | HP RPS1600 1600W AC Power Supply | JG137A |
| | **Power cords** | |
| | HP X290 H2.7 JD5-A 1m RPS800 Cable | JD186A |

## Accessories

| | |
|---|---|
| HP X290 JD5 JD5 2m RPS1600 Cable | JD187A |
| HP X290 JD5-A JD5-A 2m RPS1600 Cable | JD188A |
| HP X290 JD5 JD5-A 2m RPS1600 Cable | JD189A |
| **HP 3600-24-SFP v2 EI Switch (JG303A)** | |
| HP X110 100M SFP LC LX Transceiver | JD120B |
| HP X110 100M SFP LC FX Transceiver | JD102B |
| HP gl/xl/vl Switch Redundant Power Supply | J4839A |

Accessory Product Details

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

| | | | |
|---|---|---|---|
| **HP X124 1G SFP LC LH40 1310nm Transceiver** (JD061A)<br><br>A small form-factor pluggable SFP Gigabit LH40 transceiver that provides a full duplex Gigabit solution up to 40km on a single-mode fiber. | **Ports** | 1 LC 1000Base-LH port (no IEEE standard exists for 1550 nm optics) | |
| | **Connectivity** | Connector type | LC |
| | | 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:<br>Single-mode fiber optic, complying with ITU-T G.652;<br><br>Maximum distance:<br><br>• 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)<br><br>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. | **Ports** | 1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics) | |
| | **Connectivity** | Connector type | LC |
| | | 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:<br>Single-mode fiber optic, complying with ITU-T G.652;<br><br>Maximum distance:<br><br>• 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)<br><br>A small form-factor pluggable (SFP) Gigabit LH70 transceiver that provides a full-duplex Gigabit solution up to 70km on a single-mode fiber. | **Ports** | 1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics) | |
| | **Connectivity** | **Connector type** | LC |
| | | **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:<br>Single-mode fiber optic, complying with ITU-T G.652;<br><br>Maximum distance:<br>• 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 X125 1G SFP RJ45 T Transceiver** (JD089B)<br><br>A small form factor pluggable (SFP) Gigabit 1000Base-T transceiver that provides a full duplex Gigabit solution up to 100m on a Cat-5+ cable. | **Ports** | 1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T) | |
| | **Connectivity** | **Connector type** | RJ-45 |
| | **Physical characteristics** | **Dimensions** | 2.71(d) x 0.54(w) x 0.55(h) in. (6.88 x 1.37 x 1.4 cm) |
| | | **Full configuration weight** | 0.07 lb. (0.03 kg) |
| | **Electrical characteristics** | **Power consumption typical** | 0.8 W |
| | | **Power consumption maximum** | 1.0 W |
| | **Cabling** | Cable type:<br>1000BASE-T: Category 5 (5E or better recommended), 100 Ù differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;<br><br>Maximum distance:<br>• 100m | |
| | **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 X120 1G SFP LC BX 10-U Transceiver** (JD098B)<br><br>A small form-factor pluggable (SFP) Gigabit LX-BX10-U transceiver that provides a full duplex Gigabit solution up to 10km on a single mode cable. | **Ports** | 1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-U); Duplex: full only | |
| | **Connectivity** | **Connector type** | LC |
| | **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:<br>• 10km | |
| | | Fiber type | Single Mode |
| | **Notes** | TX 1310nm RX 1490nm | |
| | **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 BX 10-D Transceiver** (JD099B)<br><br>A small form-factor pluggable (SFP) Gigabit LX-BX10-D transceiver that provides a full duplex Gigabit solution up to 10km on a single mode cable. | **Ports** | 1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-D); Duplex: full only | |
| | **Connectivity** | **Connector type** | LC |
| | **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:<br>• Up to 10km | |
| | | Fiber type | Single Mode |
| | **Notes** | TX 1490nm RX 1310nm | |
| | **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 X120 1G SFP LC SX Transceiver** (JD118B)<br><br>A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550m on a Multimode fiber. | **Ports** | 1 LC 1000BASE-SX port | |
| | **Connectivity** | **Connector type** | LC |
| | | **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:<br>• FDDI Grade distance = 220m<br>• OM1 = 275m<br>• OM2 = 500m<br>• 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)<br><br>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 | **Ports** | 1 SFP 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX) | |
| | **Connectivity** | **Connector type** | LC |
| | | **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:<br>Either single mode or multimode;<br><br>Maximum distance:<br>• 550m for Multimode<br>• 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 0.5 m Multimode OM3 LC/LC Optical Cable** (AJ833A) | **Cabling** | **Cable type**:<br>50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m<br><br>**Maximum distance**:<br>10Gbps Transfer Rate (Ethernet): 300m |
| | **Notes** | Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.<br><br>● Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um<br>● Optical glass: Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.<br>● Optical glass: Bandwidth: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.<br>● CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber and designed to work in both the 850 and 1300 nm wavelength windows.<br>● BULK CABLE & CABLE ASSEMBLY CONFIGURATION:<br>● Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.<br>● Jacket Color: Aqua for OM3 multimode per TIA 598<br>● Boot Color: White<br>● Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.<br>● Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.<br>● Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg |
| | **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 1 m Multimode OM3 LC/LC Optical Cable** (AJ834A) | **Cabling** | **Cable type**:<br>50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m<br><br>**Maximum distance**:<br>10Gbps Transfer Rate (Ethernet): 300m |
| | **Notes** | Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.<br><br>● Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um<br>● Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.<br>● Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.<br>● CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.<br>● BULK CABLE & CABLE ASSEMBLY CONFIGURATION:<br>● Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.<br>● Jacket Color: Aqua for OM3 multimode per TIA 598<br>● Boot Color: White<br>● Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.<br>● Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.<br>● Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg |
| | **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 2 m Multimode OM3 LC/LC Optical Cable** (AJ835A) | **Cabling** | **Cable type**:<br>50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;<br><br>**Maximum distance**:<br>10Gbps Transfer Rate (Ethernet): 300m |
| | **Notes** | Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.<br><br>● Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um<br>● Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.<br>● Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.<br>● CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.<br>● BULK CABLE & CABLE ASSEMBLY CONFIGURATION:<br>● Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.<br>● Jacket Color: Aqua for OM3 multimode per TIA 598<br>● Boot Color: White<br>● Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.<br>● Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.<br>● Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg |
| | **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 5 m Multimode OM3 LC/LC Optical Cable** (AJ836A) | **Cabling** | **Cable type**:<br>50/125 µm core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;<br><br>**Maximum distance**:<br>10Gbps Transfer Rate (Ethernet): 300m |
| | **Notes** | Cable Specs: This specification defines the detail requirements for a tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.<br><br>● Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um<br>● Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.<br>● Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.<br>● CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.<br>● BULK CABLE & CABLE ASSEMBLY CONFIGURATION:<br>● Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.<br>● Jacket Color: Aqua for OM3 multimode per TIA 598<br>● Boot Color: White<br>● Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.<br>● Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.<br>● Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg |
| | **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 15 m Multimode OM3 LC/LC Optical Cable** (AJ837A) | **Cabling** | **Cable type**:<br>50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;<br><br>**Maximum distance**:<br>10Gbps Transfer Rate (Ethernet): 300m |
| | **Notes** | Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.<br><br>● Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um<br>● Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.<br>● Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.<br>● CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.<br>● BULK CABLE & CABLE ASSEMBLY CONFIGURATION:<br>● Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.<br>● Jacket Color: Aqua for OM3 multimode per TIA 598<br>● Boot Color: White<br>● Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.<br>● Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.<br>● Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg |
| | **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 30 m Multimode OM3 LC/LC Optical Cable** (AJ838A) | **Cabling** | **Cable type**:<br>50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;<br><br>**Maximum distance**:<br>10Gbps Transfer Rate (Ethernet): 300m |
| | **Notes** | Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.<br><br>● Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um<br>● Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.<br>● Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.<br>● CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.<br>● BULK CABLE & CABLE ASSEMBLY CONFIGURATION:<br>● Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.<br>● Jacket Color: Aqua for OM3 multimode per TIA 598<br>● Boot Color: White<br>● Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.<br>● Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.<br>● Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg |
| | **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 50 m Multimode OM3 LC/LC Optical Cable** (AJ839A) | **Cabling** | **Cable type**:<br>50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;<br><br>**Maximum distance**:<br>10Gbps Transfer Rate (Ethernet): 300m |
| | **Notes** | Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.<br><br>● Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um<br>● Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.<br>● Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.<br>● CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.<br>● BULK CABLE & CABLE ASSEMBLY CONFIGURATION:<br>● Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.<br>● Jacket Color: Aqua for OM3 multimode per TIA 598<br>● Boot Color: White<br>● Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.<br>● Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.<br>● Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg |
| | **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 Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable** (QK732A) | **Notes** | Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.<br><br>• Core Diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 |
| | **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 Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable** (QK733A) | **Notes** | Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 |
| | **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 Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable** (QK734A) | **Notes** | Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 |
| | **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 Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable** (QK735A) | **Notes** | Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 |
| | **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 Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable** (QK736A) | **Notes** | Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 |
| | **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 Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable** (QK737A) | **Notes** | Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.<br><br>• Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um<br>• Bandwidth: 3000 MHz-km @ 850nm (Laser)<br>• Jacket Color: Blue<br>• Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic<br>• Boot Color: White<br>• Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.<br>• Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m<br>• Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45 |
| | **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 RPS1600 Redundant Power System** (JG136A) | **Ports** | 8 redundant power supply ports<br>Restrictions: two -56V/25A DC(PoE); six -56V/8A DC(non-PoE) | |
| | **Physical characteristics** | **Dimensions** | 15.63(d) x 17.32(w) x 1.74(h) in. (39.7 x 44 x 4.42 cm) |
| | | **Weight** | 14.11 lb. (6.4 kg) |
| | | **Full configuration weight** | 16.75 lb. (7.6 kg) |
| | **Environment** | **Operating temperature** | 14°F to 122°F (-10°C to 50°C) |
| | | **Operating relative humidity** | 5% to 95% |
| | | **Nonoperating/Storage temperature** | -40°F to 158°F (-40°C to 70°C) |
| | | **Nonoperating/Storage relative humidity** | 5% to 95% |
| | | **Altitude** | up to 13,123 ft. (4 km) |
| | | **Acoustic** | Pressure: 53 dB; ISO 7779, ISO 9296 |
| | **Electrical characteristics** | **Voltage** | 100-120/200-240 VAC |
| | | **Current** | 30/60 A |
| | | **Idle power** | 38 W |
| | | **Maximum power rating** | 3550 W |
| | | **RPS power** | 3200 W |
| | | **PoE power** | 2800 W |
| | | **RPS** | -55 V |
| | | **PoE** | -55 V |
| | | **Frequency** | 50/60 Hz |
| | | **Notes** | Idle power is the actual power consumption of the device with no ports connected.<br>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.<br>With one RPS1600 Power Supply, the PRS1600 Redundant Power System can provide 1600W power output; With two PRS1600 Power Supplies, the output power is 3200W. |
| | **Safety** | CE Labeled; UL 60950-1; IEC 60950-1; ICES-003; FCC Part 15, Subpart B; EU RoHS Compliant; EN 60950-1/A11; C-Tick; VCCI Class A; ROHS Compliance; EN 300386 | |
| | **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 RPS1600 1600W AC Power Supply** (JG137A) | **Physical characteristics** | **Dimensions** | 8.19(d) x 4.96(w) x 1.63(h) in. (20.8 x 12.6 x 4.15 cm) |
| | | **Weight** | 3.02 lb. (1.37 kg) |
| | **Environment** | **Operating temperature** | 14°F to 122°F (-10°C to 50°C) |
| | | **Operating relative humidity** | 5% to 95% |
| | | **Nonoperating/Storage temperature** | -40°F to 158°F (-40°C to 70°C) |
| | | **Nonoperating/Storage relative humidity** | 5% to 95% |
| | **Electrical characteristics** | **Voltage** | 100-120/200-240 VAC |
| | | **Current** | 15/30 A |
| | | **Maximum power rating** | 1600 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. |
| | **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**