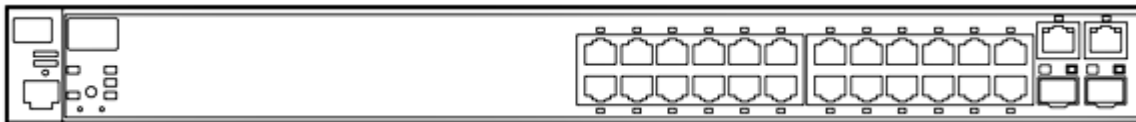


Overview



Models

HP 2610-48 Switch*	J9088A
HP 2610-24 Switch*	J9085A
HP 2610-24-PoE Switch*	J9087A
HP 2610-48-PoE Switch*	J9089A
HP 2610-24-PPoE Switch	J9086A

* These skus are End-of-Sale, and are no longer available.

Key features

- Access layer cost-effective switch
- Layer 2 plus static IP routing
- Scalable 10/100 connectivity
- Gigabit fiber uplinks
- Enterprise-class features

Product overview

The HP 2610 Switch Series consists of five switches. The HP 2610-24 and 2610-48 Switches provide 24 and 48 ports of 10/100 connectivity. The HP 2610-24 Switch is a fanless switch with quiet operation, making it ideal for deployments in open spaces. The HP 2610-24-PPoE, 2610-24-PoE, and 2610-48-PoE Switches are IEEE 802.3af compliant for Power over Ethernet (PoE) and provide up to 15.4 W for 12, 24, and 48 ports. The 2610-24-PPoE switch has 24 10/100 ports and provides 12 ports of PoE. All series switches include two 10/100/1000BASE-T ports and two mini-GBIC slots for Gigabit Ethernet uplink connectivity. An optional redundant external power supply is also available to provide redundancy in the event of a power supply failure. With static routing, robust security and management features, free lifetime warranty, and free software updates, the HP 2610 Switch Series is a cost-effective solution for customers who are building converged enterprise edge networks.

Features and Benefits

Quality of Service (QoS)

- **Class of service (CoS)**—sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ
- **Layer 4 prioritization**—enables prioritization based on TCP/UDP port numbers
- **Traffic prioritization (IEEE 802.1p)**—allows real-time traffic classification into eight priority levels mapped to four queues

Overview

Connectivity

- **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
- **Pre-standard PoE support**—detects and provides power to pre-standard PoE devices—see list of supported devices in the product FAQ at www.hp.com/networking/support
- **Gigabit uplink connectivity**—two 10/100/1000BASE-T ports and two mini-GBIC ports for connectivity such as Gigabit (SX, LX, LH, 1000BASE-T) and 100BASE-FX
- **Auto-MDIX**—automatically adjusts for straight-through or crossover cables on all 10/100 ports
- **Jumbo packet support**—supports up to 9216 byte frame size to improve performance of large data transfers
- **Pre-standard PoE support**—detects and provides power to most of Cisco's pre-standard PoE devices—see list of support devices in product's FAQ on www.hp.com/networking

Resiliency and high availability

- **IEEE 802.3ad Link Aggregation Protocol (LACP) and HP port trunking**—support up to 24 trunks, each with up to 8 links (ports) per trunk
- **IEEE 802.1s Multiple Spanning Tree**—provides high link availability in multiple VLAN environments by allowing multiple spanning trees—provides legacy support for IEEE 802.1d and IEEE 802.1w
- **Optional redundant power supply**—provides uninterrupted power (provided by HP 600 RPS/EPS)

Manageability

- **RMON, XRMON, and sFlow**—provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **Uni-Directional Link Detection (UDLD)**—monitors a link between two switches and blocks the ports on both ends of the link if the link goes down at any point between the two devices
- **Command authorization**—leverages RADIUS to link a custom list of CLI commands to individual network administrator's login—also provides an audit trail
- **Multiple configuration files**—allow multiple configuration files to be stored to flash image
- **Dual flash images**—provides independent primary and secondary operating system files for backup while upgrading
- **Single IP Address Management**—single IP address management for a virtual stack of up to 16 switches
- **Friendly port names**—allow assignment of descriptive names to ports
- **Find-Fix-Inform**—finds and fixes common network problems automatically, then informs administrator
- **Software updates**—free downloads from the Web
- **Troubleshooting**—ingress and egress port monitoring enable network problem solving

Layer 2 switching

- **VLAN support and tagging**—supports IEEE 802.1Q (4,094 VLAN IDs) and 256 VLANs simultaneously
- **GARP VLAN Registration Protocol (GVRP)**—allows automatic learning and dynamic assignment of VLANs
- **IEEE 802.1v protocol VLANs**—isolate select non-IPv4 protocols automatically into their own VLANs

Layer 3 routing

- **Basic IP routing**—enables automatic routing to the connected VLANs and up to 16 static routes, including one default route, in IP networks

Security



Overview

- **Multiple user authentication methods**
 - IEEE 802.1X—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—client is authenticated with the RADIUS server based on the client's MAC address
- **Authentication flexibility**
 - Multiple IEEE 802.1X users per port—provides authentication of up to eight IEEE 802.1X users per port—prevents user piggybacking on another user's IEEE 802.1X authentication
 - Concurrent IEEE 802.1X and Web or MAC authentication schemes per port—switch port will accept any of IEEE 802.1X and either Web or MAC authentications
- **Access control lists (ACLs)**—provide IP Layer 3 filtering based on source/destination IP address/subnet and source/destination TCP/UDP port number
- **Identity-driven ACL**—enables implementation of a highly granular and flexible access security policy and VLAN assignment specific to each authenticated network user
- **Dynamic ARP protection**—blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **Port security**—allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **MAC address lockout**—prevents particular configured MAC addresses from connecting to the network
- **Source-port filtering**—allows only specified ports to communicate with each other
- **RADIUS/TACACS+**—eases switch management security administration by using a password authentication server
- **Secure Shell (SSHv2)**—encrypts all transmitted data for secure, remote command-line interface (CLI) access over IP networks
- **Port monitoring for network threats**—Provides sampled port traffic using sFlow technology to the HP Network Immunity Manager application for Network Behavior Anomaly Detection (NBAD) analysis to detect threats and mitigate threats at the port where the threat originated
- **Secure Sockets Layer (SSL)**—encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- **Secure File Transfer Protocol (FTP)**—allows secure file transfer to and from the switch—protects against unwanted file downloads or unauthorized copying of switch configuration file
- **Switch management logon security**—can require either RADIUS or TACACS+ authentication for secure switch CLI logon
- **DHCP protection**—blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **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

Convergence

- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**—is an automated device discovery protocol for easy mapping by network management applications
- **LLDP-MED (Media Endpoint Discovery)**—is a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones
- **IP multicast snooping and data-driven IGMP**—automatically prevents flooding of IP multicast traffic

Monitor and diagnostics

- **Port mirroring**—enables traffic on a port to be simultaneously sent to a network analyzer for monitoring

Warranty and support



Overview

- **Lifetime warranty**—for as long as you own the product with advance replacement and next-business-day delivery (available in most countries)†
- **Electronic and telephone support**—limited electronic and telephone support is available from HP—refer to—www.hp.com/networking/warranty for details on the support provided and the period during which support is available
- **Software releases**—refer to—www.hp.com/networking/warranty for details on the software releases provided and the period during which software releases are available for your product(s)

† Hardware warranty replacement for as long as you own the product, with next business day advance replacement (available in most countries) with a five-year hardware warranty replacement for the disk drive included with HP AllianceONE Services zI Module, HP Threat Management Services zI Module, HP PCM+ Agent with AllianceONE Services zI Module, and HP MSM765 zI Mobility Controller. For details, refer to the HP Software License, Warranty, and Support booklet at—www.hp.com/networking/warranty.

Configuration

Build To Order²

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

HP E2615-8-PoE Switch

- 8 autosensing 10/100 ports
- 2 dual-personality ports RJ-45 10/100/1000 port ¹or an SFP slot
- 1 - J9701A -
- 1U - Height

J9565A

See Configuration
Note^{1, 2}

HP 2610-24-PPoE Switch

- 24 autosensing 10/100 ports
- 2 dual-personality ports RJ-45 10/100/1000 port ¹or an SFP slot
- 2 open mini-GBIC (SFP) slots
- 1U - Height

J9086A

See Configuration
Note^{1, 2}

Configuration Rules²

Note 1

The following Transceivers install into this switch²

HP X121 1G SFP LC SX Transceiver	J4858C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X111 100M SFP LC FX Transceiver	J9054C
HP X122 1G SFP LC BX-D Transceiver	J8177C
HP X112 100M SFP LC BX-D Transceiver	J9099B
HP X112 100M SFP LC BX-U Transceiver	J9100B
HP X121 1G SFP LC LH Transceiver	J4860C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143A
HP X111 100M SFP LC FX Transceiver	J9054C

Note 2

Localization required. (See Localization Menu for list.)

CTO Models

HP 2610-24-PPoE Switch

- 24 autosensing 10/100 ports
- 2 dual-personality ports RJ-45 10/100/1000 port ¹or an SFP slot
- 2 open mini-GBIC (SFP) slots
- 1U - Height

J9086A

See Configuration
Note^{1, 2}

Configuration Rules²



Configuration

Note 1	The following Transceivers install into this switch-	
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X111 100M SFP LC FX Transceiver	J9054C
	HP X122 1G SFP LC BX-D Transceiver	J8177C
	HP X112 100M SFP LC BX-D Transceiver	J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143A
	HP X111 100M SFP LC FX Transceiver	J9054C

Note 2 If this switch is factory installed in HP Universal Racks, Then the J9583A#0D1 is required.
AMS then J9583A#0D1 is required.
EMEA then J9583A#0D1 is required.
APD, Japan and China then J9583A#0D1 is required.

CLIC Only - Allow the J9583AZ in all regions.

Internal Power Supplies

No Power supplies

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

Transceivers

SFP Transceivers

HP X121 1G SFP LC SX Transceiver	J4858C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X111 100M SFP LC FX Transceiver	J9054C
HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP RJ45 T Transceiver	J8177C
HP X122 1G SFP LC BX-D Transceiver	J9142B

Configuration

HP X122 1G SFP LC BX-U Transceiver	J9143B
HP X112 100M SFP LC BX-D Transceiver	J9099B
HP X112 100M SFP LC BX-U Transceiver	J9100B

Cables

Multi-Mode Cables

HP .5m Multi-mode OM3 LC/LC FC Cable	AJ833A
HP 1m Multi-mode OM3 LC/LC FC Cable	AJ834A
HP 2 m Multimode OM3 LC/LC FC Cable	AJ835A
HP 5 m Multimode OM3 LC/LC FC Cable	AJ836A
HP 15 m Multimode OM3 LC/LC FC Cable	AJ837A
HP 30 m Multimode OM3 LC/LC FC Cable	AJ838A
HP 50 m Multimode OM3 LC/LC FC Cable	AJ839A
HP Premier Flex LC/LC OM4 2f 1m Cbl	QK732A
HP Premier Flex LC/LC OM4 2f 2m Cbl	QK733A
HP Premier Flex LC/LC OM4 2f 5m Cbl	QK734A
HP Premier Flex LC/LC OM4 2f 15m Cbl	QK735A
HP Premier Flex LC/LC OM4 2f 30m Cbl	QK736A
HP Premier Flex LC/LC OM4 2f 50m Cbl	QK737A

Switch Enclosure Options

Rack Mount Kit



Configuration

HP X410 1U Univ 4-post Rack Mnt Kit

J9583A

[See Configuration Note](#)

[Configuration Rules](#)

Note 1 If this Mounting Kit is order with #0D1 then it integrates to the HP Rack. (not the switch)

External Redundant Power Supplies

HP 600 Redundant and Extrnl Power Supply

J8168A

- [Height = 1U](#)

[See Configuration Note](#)

[Configuration Rules](#)

Note 1 Localization required. (See Localization Menu for list.)

Option Mounting Kit

HP X510 1U Cable Guard

J9700A

[See Configuration Note](#)

HP X520 1U Power Adapter Shelf

J9701A

[See Configuration Note](#)

Technical Specifications

HP 2610-48 Switch (J9088A)*	Ports	<p>48 autosensing 10/100 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX)±Media Type±Auto-MDIX±Duplex±half or full</p> <p>1 RJ-45 serial console port</p> <p>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</p> <p>2 open mini-GBIC (SFP) slots</p>
	Physical characteristics	<p>Dimensions 9.3(d) x 17.4(w) x 1.73(h) in. (23.62 x 44.2 x 4.39 cm) (1U height)</p> <p>Weight 10.75 lb. (4.88 kg), Fully loaded</p>
	Memory and processor	<p>Processor MIPS @ 300 MHz, 16 MB flash, 128 MB SDRAM± packet buffer size±2 MB</p>
	Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included)±horizontal surface mounting only
	Performance	<p>100 Mb Latency < 6.2 µs (LIFO)</p> <p>1000 Mb Latency < 4.4 µs (LIFO)</p> <p>Throughput up to 13.0 million pps</p> <p>Routing/Switching capacity 17.6 Gbps</p> <p>Routing table size 8000 entries</p>
	Environment	<p>Operating temperature 32°F to 122°F (0°C to 50°C)</p> <p>Operating relative humidity 15% to 95% @ 104°F (40°C), noncondensing</p> <p>Nonoperating/Storage temperature -40°F to 158°F (-40°C to 70°C)</p> <p>Nonoperating/Storage relative humidity 15% to 90% @ 149°F (65°C), noncondensing</p> <p>Altitude up to 10,000 ft. (3 km)</p> <p>Acoustic Power±45 dB, Pressure±36.2 dB±DIN 45635T.19 per ISO 7779</p>
	Electrical characteristics	<p>Achieved Miercom Certified Green Award</p> <p>* Products within this series have achieved sufficient scores in each of the rated criteria to achieve the Miercom Certified Green distinction Award. See the Specifications section of this series for more information.</p> <p>Maximum heat dissipation 285 BTU/hr (300.67 kJ/hr)</p> <p>Voltage 100-127/200-240 VAC</p> <p>Current 1.3/0.8 A</p> <p>Maximum power rating 66 W</p>

Technical Specifications

	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		CSA 22.2 No. 60950+UL 60950+IEC 60950+EN 60950
Emissions		FCC Class A+VCCI Class A+EN 55022/CISPR 22 Class A
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2+4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3+3V/m
	EFT/Burst	IEC 61000-4-4+1.0 kV (power line), 0.5kV (signal line)
	Surge	IEC 61000-4-5+1 kV/2 kV AC
	Conducted	IEC 61000-4-6+3V
	Power frequency magnetic field	IEC 61000-4-8+1A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11+>95% reduction, 0.5 period+30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management		HP PCM+HP PCM (included)+command-line interface+Web browser+configuration menu+out-of-band management (Serial RS-232C)
Notes		When using mini-GBICs with this product, mini-GBICs with revision 888 or later (product ends with the letter 888 or later, e.g., J4858B, J4859C) are required.
Services		3-year, 4-hour onsite, 13x5 coverage for hardware (U4683E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U6321E) 3-year, 24x7 SW phone support, software updates (UF792E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR849E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR850E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR851E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR948E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR949E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR950E) 4-year, 24x7 SW phone support, software updates (UR951E)

Technical Specifications

- 5-year, 4-hour onsite, 13x5 coverage for hardware (UR952E)
- 5-year, 4-hour onsite, 24x7 coverage for hardware (UR953E)
- 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR954E)
- 5-year, 24x7 SW phone support, software updates (UR955E)
- 3 Yr 6 hr Call-to-Repair Onsite (UW368E)
- 4 Yr 6 hr Call-to-Repair Onsite (UW369E)
- 5 Yr 6 hr Call-to-Repair Onsite (UW370E)
- 1-year, 6 hour Call-To-Repair Onsite for hardware (HR853E)
- 1-year, 24x7 software phone support, software updates (HR852E)
- 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS554E)
- 1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS555E)
- 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS556E)
- 3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS557E)
- 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS558E)
- 4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS559E)
- 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS560E)
- 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS561E)

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.

* This sku is End-of-Sale, and is no longer available.

HP 2610-24 Switch (J9085A)*	Ports	<p>24 autosensing 10/100 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX)†Media Type=Auto-MDIX†Duplex=half or full</p> <p>1 RJ-45 serial console port</p> <p>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</p> <p>2 open mini-GBIC (SFP) slots</p>
	Physical characteristics	<p>Dimensions 9.3(d) x 17.4(w) x 1.73(h) in. (23.62 x 44.2 x 4.39 cm) (1U height)</p> <p>Weight 10.21 lb. (4.63 kg), Fully loaded</p>

Technical Specifications

Memory and processor	Processor	MIPS @ 300 MHz, 16 MB flash, 128 MB SDRAM [†] packet buffer size [†] 1 MB
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included) [†] horizontal surface mounting only	
Performance	100 Mb Latency	< 4.1 μs (LIFO)
	1000 Mb Latency	< 2.9 μs (LIFO)
	Throughput	up to 9.5 million pps
	Routing/Switching capacity	12.8 Gbps
	Routing table size	8000 entries
Environment	Operating temperature	32°F to 122°F (0°C to 50°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power [†] 0 dB, Pressure [†] 0 dB No Fan
Electrical characteristics	Maximum heat dissipation	142 BTU/hr (149.81 kJ/hr)
	Voltage	100-127/200-240 VAC
	Current	0.8/0.4 A
	Maximum power rating	41 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	CSA 22.2 No. 60950 [†] UL 60950 [†] IEC 60950 [†] EN 60950	
Emissions	FCC Class A [†] VCCI Class A [†] EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2 [†] 4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3 [†] 3V/m
	EFT/Burst	IEC 61000-4-4 [†] 1.0 kV (power line), 0.5kV (signal line)
	Surge	IEC 61000-4-5 [†] 1 kV/2 kV AC

Technical Specifications

	Conducted	IEC 61000-4-6 \pm 3V
	Power frequency magnetic field	IEC 61000-4-8 \pm 1A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11 \pm >95% reduction, 0.5 period \pm 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	HP PCM \pm HP PCM (included) \pm command-line interface \pm Web browser \pm configuration menu \pm out-of-band management (serial RS-232C)	
Notes	When using mini-GBICs with this product, mini-GBICs with revision B8 or later (product ends with the letter B8 or later, e.g., J4858B, J4859C) are required.	
Services	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U4683E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U6321E)</p> <p>3-year, 24x7 SW phone support, software updates (UF792E)</p> <p>1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR849E)</p> <p>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR850E)</p> <p>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR851E)</p> <p>Installation with minimum configuration, system-based pricing (U4826E)</p> <p>Installation with HP-provided configuration, system-based pricing (U4830E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (UR948E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (UR949E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR950E)</p> <p>4-year, 24x7 SW phone support, software updates (UR951E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (UR952E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (UR953E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR954E)</p> <p>5-year, 24x7 SW phone support, software updates (UR955E)</p> <p>3 Yr 6 hr Call-to-Repair Onsite (UW368E)</p> <p>4 Yr 6 hr Call-to-Repair Onsite (UW369E)</p> <p>5 Yr 6 hr Call-to-Repair Onsite (UW370E)</p> <p>1-year, 6 hour Call-To-Repair Onsite for hardware (HR853E)</p> <p>1-year, 24x7 software phone support, software updates (HR852E)</p> <p>1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS554E)</p> <p>1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS555E)</p> <p>3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS556E)</p> <p>3-year, 24x7 software phone support, software updates + 4 hour Hardware</p>	

Technical Specifications

Exchange (HS557E)
 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS558E)
 4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS559E)
 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS560E)
 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS561E)

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.

* This sku is End-of-Sale, and is no longer available.

HP 2610-24-PoE Switch (J9087A)*	Ports	<p>24 autosensing 10/100 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX)†Media Type=Auto-MDIX†Duplex=half or full</p> <p>1 RJ-45 serial console port</p> <p>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</p> <p>2 open mini-GBIC (SFP) slots</p>
	Physical characteristics	<p>Dimensions 12.5(d) x 17.4(w) x 1.73(h) in. (31.75 x 44.2 x 4.39 cm) (1U height)</p> <p>Weight 15.05 lb. (6.83 kg), Fully loaded</p>
	Memory and processor	<p>Processor MIPS @ 300 MHz, 16 MB flash, 128 MB SDRAM† packet buffer size=1 MB</p>
	Mounting	<p>Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included)†horizontal surface mounting only</p>
	Performance	<p>100 Mb Latency < 4.1 µs (LIFO)</p> <p>1000 Mb Latency < 2.9 µs (LIFO)</p> <p>Throughput up to 9.5 million pps</p> <p>Routing/Switching capacity 12.8 Gbps</p> <p>Routing table size 8000 entries</p>
	Environment	<p>Operating temperature 32°F to 122°F (0°C to 50°C)</p> <p>Operating relative humidity 15% to 95% @ 104°F (40°C), noncondensing</p> <p>Nonoperating/Storage temperature -40°F to 158°F (-40°C to 70°C)</p>

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	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power=64 dB, Pressure=57 dB+DIN 45635T.19 per ISO 7779
Electrical characteristics	Maximum heat dissipation	410 BTU/hr (432.55 kJ/hr), (switch-only BTU/hr=410+combined switch + max. PoE devices at 15.4 W=2281 BTU/hr)
	Voltage	100-127/200-240 VAC
	Current	7.0/3.5 A
	Maximum power rating	77 W
	PoE power	406 W
	Frequency	50/60 Hz
	Notes	<p>Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.</p> <p>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 a External Power Supply (EPS).</p> <p>Power consumption=77 W without PoE+527 W with PoE.</p>
	Safety	CSA 22.2 No. 60950+UL 60950+IEC 60950+EN 60950
Emissions	FCC Class A+VCCI Class A+EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2+4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3+3V/m
	EFT/Burst	IEC 61000-4-4+1.0 kV (power line), 0.5kV (signal line)
	Surge	IEC 61000-4-5+1 kV/2 kV AC
	Conducted	IEC 61000-4-6+3V
	Power frequency magnetic field	IEC 61000-4-8+1A/m,50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11+>95% reduction, 0.5 period+30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3

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Management	HP PCM+ HP PCM (included) command-line interface Web browser configuration menu out-of-band management (serial RS-232C)
Notes	When using mini-GBICs with this product, mini-GBICs with revision 88 or later (product ends with the letter 88 or later, e.g., J4858B, J4859C) are required.
Services	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U4683E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U6321E)</p> <p>3-year, 24x7 SW phone support, software updates (UF792E)</p> <p>1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR849E)</p> <p>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR850E)</p> <p>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR851E)</p> <p>Installation with minimum configuration, system-based pricing (U4826E)</p> <p>Installation with HP-provided configuration, system-based pricing (U4830E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (UR948E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (UR949E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR950E)</p> <p>4-year, 24x7 SW phone support, software updates (UR951E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (UR952E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (UR953E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR954E)</p> <p>5-year, 24x7 SW phone support, software updates (UR955E)</p> <p>3 Yr 6 hr Call-to-Repair Onsite (UW368E)</p> <p>4 Yr 6 hr Call-to-Repair Onsite (UW369E)</p> <p>5 Yr 6 hr Call-to-Repair Onsite (UW370E)</p> <p>1-year, 6 hour Call-To-Repair Onsite for hardware (HR853E)</p> <p>1-year, 24x7 software phone support, software updates (HR852E)</p> <p>1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS554E)</p> <p>1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS555E)</p> <p>3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS556E)</p> <p>3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS557E)</p> <p>4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS558E)</p> <p>4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS559E)</p> <p>5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS560E)</p> <p>5-year, 24x7 software phone support, software updates + 4 hour Hardware</p>

Technical Specifications

Exchange (HS561E)

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.

* This sku is End-of-Sale, and is no longer available.

HP 2610-48-PoE Switch (J9089A)*	Ports	<p>48 autosensing 10/100 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX)†Media Type=Auto-MDIX†Duplex=half or full</p> <p>1 RJ-45 serial console port</p> <p>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</p> <p>2 open mini-GBIC (SFP) slots</p>
	Physical characteristics	<p>Dimensions 13.5(d) x 17.4(w) x 1.73(h) in. (34.29 x 44.2 x 4.39 cm) (1U height)</p> <p>Weight 16.7 lb. (7.58 kg), Fully loaded</p>
	Memory and processor	<p>Processor MIPS @ 300 MHz, 16 MB flash, 128 MB SDRAM† packet buffer size=2 MB</p>
	Mounting	<p>Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included)†horizontal surface mounting only</p>
	Performance	<p>100 Mb Latency < 6.2 µs (LIFO)</p> <p>1000 Mb Latency < 4.4 µs (LIFO)</p> <p>Throughput up to 13.0 million pps</p> <p>Routing/Switching capacity 17.6 Gbps</p> <p>Routing table size 8000 entries</p>
	Environment	<p>Operating temperature 32°F to 122°F (0°C to 50°C)</p> <p>Operating relative humidity 15% to 95% @ 104°F (40°C), noncondensing</p> <p>Nonoperating/Storage temperature -40°F to 158°F (-40°C to 70°C)</p> <p>Nonoperating/Storage relative humidity 15% to 90% @ 149°F (65°C), noncondensing</p> <p>Altitude up to 10,000 ft. (3 km)</p> <p>Acoustic Power=63.6 dB, Pressure=56.6 dB†DIN 45635T.19 per ISO 7779</p>
	Electrical characteristics	<p>Maximum heat dissipation 410 BTU/hr (432.55 kJ/hr), (switch-only BTU/hr=410†combined switch + max. PoE devices at 15.4 W=2281 BTU/hr)</p>

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	Voltage	100-127/200-240 VAC
	Current	7.0/3.5 A
	Maximum power rating	96 W
	PoE power	406 W
	Frequency	50/60 Hz
	Notes	<p>Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.</p> <p>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 a External Power Supply (EPS).</p> <p>Power consumption=96 W without PoE=590 W with PoE.</p>
Safety		CSA 22.2 No. 60950=UL 60950=IEC 60950=EN 60950
Emissions		FCC Class A=VCCI Class A=EN 55022/CISPR 22 Class A
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2=4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3=3V/m
	EFT/Burst	IEC 61000-4-4=1.0 kV (power line), 0.5kV (signal line)
	Surge	IEC 61000-4-5=1 kV/2 kV AC
	Conducted	IEC 61000-4-6=3V
	Power frequency magnetic field	IEC 61000-4-8=1A/m,50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11=>95% reduction, 0.5 period=30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management		HP PCM+=HP PCM (included)=command-line interface=Web browser=configuration menu=out-of-band management (serial RS-232C)
Notes		When using mini-GBICs with this product, mini-GBICs with revision B8 or later (product ends with the letter B8 or later, e.g., J4858B, J4859C) are required.
Services		<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U4683E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U6321E)</p>

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3-year, 24x7 SW phone support, software updates (UF792E)
1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR849E)
1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR850E)
1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR851E)
Installation with minimum configuration, system-based pricing (U4826E)
Installation with HP-provided configuration, system-based pricing (U4830E)
4-year, 4-hour onsite, 13x5 coverage for hardware (UR948E)
4-year, 4-hour onsite, 24x7 coverage for hardware (UR949E)
4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR950E)
4-year, 24x7 SW phone support, software updates (UR951E)
5-year, 4-hour onsite, 13x5 coverage for hardware (UR952E)
5-year, 4-hour onsite, 24x7 coverage for hardware (UR953E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR954E)
5-year, 24x7 SW phone support, software updates (UR955E)
3 Yr 6 hr Call-to-Repair Onsite (UW368E)
4 Yr 6 hr Call-to-Repair Onsite (UW369E)
5 Yr 6 hr Call-to-Repair Onsite (UW370E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HR853E)
1-year, 24x7 software phone support, software updates (HR852E)
1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS554E)
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS555E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS556E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS557E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS558E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS559E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS560E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS561E)

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.

* This sku is End-of-Sale, and is no longer available.

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HP 2610-24-PPoE Switch Ports (J9086A) (EOL)

		24 autosensing 10/100 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX)±Media Type±Auto-MDIX±Duplex±half or full
		1 RJ-45 serial console port
		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
		2 open mini-GBIC (SFP) slots
Physical characteristics	Dimensions	9.3(d) x 17.4(w) x 1.73(h) in. (23.62 x 44.2 x 4.39 cm) (1U height)
	Weight	7.5 lb. (3.4 kg)
Memory and processor	Processor	MIPS @ 300 MHz, 16 MB flash, 128 MB SDRAM± packet buffer size±1 MB
Mounting		Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included)±horizontal surface mounting only
Performance	100 Mb Latency	< 4.1 µs (LIFO)
	1000 Mb Latency	< 2.9 µs (LIFO)
	Throughput	up to 9.5 million pps
	Routing/Switching capacity	12.8 Gbps
	Routing table size	8000 entries
Environment	Operating temperature	32°F to 122°F (0°C to 50°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power±46 dB, Pressure±38.4 dB±DIN 45635T.19 per ISO 7779
Electrical characteristics	Maximum heat dissipation	181 BTU/hr (190.96 kJ/hr), (switch-only BTU/hr± 181±combined switch + max. PoE devices at 15.4 W±827 BTU/hr)
	Voltage	100-127/200-240 VAC
	Current	2.5/1.3 A
	Maximum power rating	62 W
	PoE power	126 W
	Frequency	50/60 Hz
	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical

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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 a External Power Supply (EPS).

Power consumption=62 W without PoE=189 W with PoE.

Safety	CSA 22.2 No. 60950=UL 60950=IEC 60950=EN 60950
Emissions	FCC Class A=VCCI Class A=EN 55022/CISPR 22 Class A
Immunity	<p>EN EN 55024, CISPR 24</p> <p>ESD IEC 61000-4-2=4 kV CD, 8 kV AD</p> <p>Radiated IEC 61000-4-3=3V/m</p> <p>EFT/Burst IEC 61000-4-4=1.0 kV (power line), 0.5kV (signal line)</p> <p>Surge IEC 61000-4-5=1 kV/2 kV AC</p> <p>Conducted IEC 61000-4-6=3V</p> <p>Power frequency magnetic field IEC 61000-4-8=1A/m, 50 or 60 Hz</p> <p>Voltage dips and interruptions IEC 61000-4-11=>95% reduction, 0.5 period=30% reduction, 25 periods</p> <p>Harmonics EN 61000-3-2, IEC 61000-3-2</p> <p>Flicker EN 61000-3-3, IEC 61000-3-3</p>
Management	HP PCM+=HP PCM (included)=command-line interface=Web browser=configuration menu=out-of-band management (serial RS-232C)
Notes	When using mini-GBICs with this product, mini-GBICs with revision 88 or later (product ends with the letter 88 or later, e.g., J4858B, J4859C) are required.
Services	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U4683E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U4835E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U6321E)</p> <p>3-year, 24x7 SW phone support, software updates (UF792E)</p> <p>1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR849E)</p> <p>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR850E)</p> <p>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR851E)</p> <p>Installation with minimum configuration, system-based pricing (U4826E)</p> <p>Installation with HP-provided configuration, system-based pricing (U4830E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (UR948E)</p>

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4-year, 4-hour onsite, 24x7 coverage for hardware (UR949E)
4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR950E)
4-year, 24x7 SW phone support, software updates (UR951E)
5-year, 4-hour onsite, 13x5 coverage for hardware (UR952E)
5-year, 4-hour onsite, 24x7 coverage for hardware (UR953E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR954E)
5-year, 24x7 SW phone support, software updates (UR955E)
3 Yr 6 hr Call-to-Repair Onsite (UW368E)
4 Yr 6 hr Call-to-Repair Onsite (UW369E)
5 Yr 6 hr Call-to-Repair Onsite (UW370E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HR853E)
1-year, 24x7 software phone support, software updates (HR852E)
1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS554E)
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS555E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS556E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS557E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS558E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS559E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS560E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS561E)

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 **Device management**

(applies to all products in series) HTML and telnet management

General protocols

IEEE 802.1D MAC Bridges
IEEE 802.1p Priority
IEEE 802.1Q VLANs
IEEE 802.1v VLAN classification by Protocol and Port
IEEE 802.1w Rapid Reconfiguration of Spanning Tree
IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3af Power over Ethernet

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- IEEE 802.3x Flow Control
- RFC 768 UDP
- RFC 783 TFTP Protocol (revision 2)
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 854 TELNET
- RFC 951 BOOTP
- RFC 1542 BOOTP Extensions
- RFC 2030 Simple Network Time Protocol (SNTP) v4
- RFC 2131 DHCP
- RFC 3046 DHCP Relay Agent Information Option

IP multicast

- RFC 3376 IGMPv3

MIBs

- RFC 1213 MIB II
- RFC 1493 Bridge MIB
- RFC 1573 SNMP MIB II
- RFC 2021 RMONv2 MIB
- RFC 2096 IP Forwarding Table MIB
- RFC 2613 SMON MIB
- RFC 2618 RADIUS Client MIB
- RFC 2665 Ethernet-Like-MIB
- RFC 2668 802.3 MAU MIB
- RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
- RFC 2737 Entity MIB (Version 2)
- RFC 2863 The Interfaces Group MIB

Network management

- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
- RFC 3164 BSD syslog Protocol
- RFC 3176 sFlow
- ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
- SNMPv1/v2c/v3

Security

- IEEE 802.1X Port Based Network Access Control
- RFC 1492 TACACS+
- Secure Sockets Layer (SSL)
- SSHv1/SSHv2 Secure Shell

Accessories

HP E2610 Switch Series accessories	<p>Transceivers</p> <p>HP X111 100M SFP LC FX Transceiver J9054C</p> <p>HP X112 100M SFP LC BX-D Transceiver J9099B</p> <p>HP X112 100M SFP LC BX-U Transceiver J9100B</p> <p>HP X121 1G SFP LC LH Transceiver J4860C</p> <p>HP X121 1G SFP LC SX Transceiver J4858C</p> <p>HP X121 1G SFP LC LX Transceiver J4859C</p> <p>HP X121 1G SFP RJ45 T Transceiver J8177C</p> <p>HP X122 1G SFP LC BX-D Transceiver J9142B</p> <p>HP X122 1G SFP LC BX-U Transceiver J9143B</p> <p>Cables</p> <p>HP 0.5 m Multimode OM3 LC/LC Optical Cable AJ833A</p> <p>HP 1 m Multimode OM3 LC/LC Optical Cable AJ834A</p> <p>HP 2 m Multimode OM3 LC/LC Optical Cable AJ835A</p> <p>HP 5 m Multimode OM3 LC/LC Optical Cable AJ836A</p> <p>HP 15 m Multimode OM3 LC/LC Optical Cable AJ837A</p> <p>HP 30 m Multimode OM3 LC/LC Optical Cable AJ838A</p> <p>HP 50 m Multimode OM3 LC/LC Optical Cable AJ839A</p> <p>NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable QK732A</p> <p>NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable QK733A</p> <p>NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable QK734A</p> <p>NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable QK735A</p> <p>NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable QK736A</p> <p>NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable QK737A</p> <p>EPS/RPS</p> <p>HP 600 Redundant and External Power Supply J8168A</p> <p>HP 610 External Power Supply J8169A</p> <p>Mounting Kit</p> <p>NEW HP X410 1U Universal 4-Post Rack Mounting Kit J9583A</p>
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Accessory Product Details

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

<p>HP X111 100M SFP LC FX Transceiver (J9054C)</p> <p>HP X111 100M SFP LC FX Transceiver—An SFP format 100-megabit transceiver with LC connectors using FX technology.</p>	<p>Ports</p>	<p>1 LC 100BASE-FX port (IEEE 802.3u Type 100BASE-FX)†Duplex—half or full</p>
	<p>Physical characteristics</p>	<p>Dimensions—2.7(d) x 0.54(w) x 0.48(h) in. (6.86 x 1.38 x 1.22 cm) Weight—0.06 lb. (0.03 kg)</p>
	<p>Environment</p>	<p>Operating temperature—32°F to 158°F (0°C to 70°C) Operating relative humidity—5% to 95% Nonoperating/Storage temperature—-40°F to 185°F (-40°C to 85°C) Nonoperating/Storage relative humidity—5% to 85% Altitude—up to 10,000 ft. (3 km)</p>
	<p>Cabling</p>	<p>Cable type— 62.5/125 μm or 50/125 μm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively†Maximum distance— • 2 km (full duplex) or 412 m (half duplex)</p>
	<p>Notes</p>	<p>Transmitter wavelength—1310nm Power consumption is 1.1 watt maximum. For supported platforms and minimum software requirements to support this product, see the document titled Support for the J9054C 100-FX SFP-LC Transceiver on the ProCurve Mini-GBICs and SFPs Manuals Web page.</p>
<p>Services</p>	<p>Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>	

<p>HP X112 100M SFP LC BX-D Transceiver (J9099B)</p> <p>A small form-factor pluggable (SFP) 100-Megabit BX (bi-directional) downstream transceiver that provides 100 Mbps full-duplex connectivity up to 10 km on one strand of singlemode fiber. The J9099B connects to the J9100B upstream transceiver, or to any IEEE-standard 100BASE-BX10-U (upstream) device.</p>	<p>Ports</p>	<p>1 LC 100BASE-BX10 port (IEEE 802.3ah Type 100BASE-BX10-D)†Duplex—full only</p>
	<p>Physical characteristics</p>	<p>Dimensions</p> <p>2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm)</p>
	<p>Environment</p>	<p>Weight</p> <p>0.04 lb. (0.03 kg)</p> <p>Operating temperature</p> <p>32°F to 158°F (0°C to 70°C)</p> <p>Operating relative humidity</p> <p>0% to 95%, noncondensing</p> <p>Nonoperating/Storage temperature</p> <p>-40°F to 185°F (-40°C to 85°C)</p>
	<p>Cabling</p>	<p>Type— Single-mode fiber optic, complying with ITU-T G.652† Maximum distance— • 0.5-10,000 m (single-mode fiber)</p>

Accessory Product Details

Notes	<p>Transmit wavelength=1550 nm. Receive wavelength=1310 nm. Power consumption is 1.1 watt maximum.</p> <p>For supported platforms and minimum software requirements to support this product, see the document titled Support for the HP BX Transceivers on the HP Mini-GBICs and SFPs Manuals Web page.</p> <p>The J9099B connects to the J9100B Upstream transceiver, or to any IEEE-standard 100BASE-BX10-U (Upstream device. (A 100-BX-D transceiver can only connect to a 100-BX-U product. You cannot connect two 100-BX-D transceivers together.)</p>
Services	<p>Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>

HP X112 100M SFP LC BX-U Ports Transceiver (J9100B)

A small form-factor pluggable (SFP) 100-Megabit BX (bi-directional) [Upstream](#) transceiver that provides 100 Mbps full-duplex connectivity up to 10 km on one strand of singlemode fiber. The J9100B connects to the J9099B [Downstream](#) transceiver, or to any IEEE-standard 100BASE-BX10-D ([Downstream](#) device.

Physical characteristics	Dimensions	2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm)
Environment	Weight	0.07 lb. (.03 kg)
Cabling	Operating temperature	32°F to 158°F (0°C to 70°C)
Notes	Operating relative humidity	0% to 95%, noncondensing
Services	Nonoperating/Storage temperature	-40°F to 185°F (-40°C to 85°C)
	Type	Type=
		Single-mode fiber optic, complying with ITU-T G.652 ⁺
	Maximum distance	<p>Maximum distance=</p> <ul style="list-style-type: none"> • 0.5-10,000 m (single-mode fiber)

Accessory Product Details

<p>HP X121 1G SFP LC LH Transceiver (J4860C)</p> <p>A small form-factor pluggable (SFP) Gigabit LH transceiver that provides a full-duplex Gigabit solution up to 70 km on single-mode fiber.</p>	<p>Ports</p> <p>1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics)[†]Duplex[‡] full only</p> <p>Physical characteristics</p> <p>Dimensions[‡]2.17(d) x 0.60(w) x 0.46(h) in. (5.5 x 1.53 x 1.18 cm) Weight[‡]0.04 lb. (0.02 kg)</p> <p>Environment</p> <p>Operating temperature[‡]-40°F to 185°F (-40°C to 85°C) Operating relative humidity[‡]0% to 95% @ 77°F (25°C), noncondensing Nonoperating/Storage temperature[‡]-40°F to 185°F (-40°C to 85°C) Altitude[‡]up to 10,000 ft. (3 km)</p> <p>Cabling</p> <p>Cable type[‡]</p> <ul style="list-style-type: none"> • Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1[‡] <p>Maximum distance[‡]</p> <ul style="list-style-type: none"> • 10-70,000 m (single-mode fiber) <p>Notes</p> <p>Power consumption is 0.8 watts typical with 1 watt maximum at 100% utilization. For distances less than 20 km, a 10 dB attenuator must be used. For distances between 20 km and 40 km, a 5 dB attenuator must be used. Attenuators can be purchased from most cable vendors.</p> <p>Services</p> <p>Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>
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<p>HP X121 1G SFP LC SX Transceiver (J4858C)</p> <p>A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550 m on multimode fiber.</p>	<p>Ports</p> <p>1 LC 1000BASE-SX port[†]Duplex[‡] full only</p> <p>Physical characteristics</p> <p>Dimensions[‡]2.24(d) x 0.54(w) x 0.48(h) in. (5.69 x 1.37 x 1.22 cm) Weight[‡]0.04 lb. (0.02 kg) Transceiver form factor[‡]SFP</p> <p>Environment</p> <p>Operating temperature[‡]32°F to 158°F (0°C to 70°C) Operating relative humidity[‡]5% to 85%, noncondensing Nonoperating/Storage temperature[‡]-40°F to 203°F (-40°C to 85°C) Altitude[‡]up to 10,000 ft. (3 km)</p> <p>Electrical characteristics</p> <p>Power consumption typical[‡]0.4 W Power consumption maximum[‡]0.7 W</p> <p>Cabling</p> <p>Type[‡]</p> <ul style="list-style-type: none"> • 62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively[‡] <p>Maximum distance[‡]</p> <ul style="list-style-type: none"> • 2-220 m (62.5 µm core diameter, 160 MHz*km bandwidth)
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Accessory Product Details

	<p>Services</p>	<ul style="list-style-type: none"> • 2-275 m (62.5 µm core diameter, 200 MHz*km bandwidth) • 2-500 m (50 µm core diameter, 400 MHz*km bandwidth) • 2-550 m (50 µm core diameter, 500 MHz*km bandwidth) <p>Cable length=2-550m Fiber type=Multi Mode</p> <p>Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>
<p>HP X121 1G SFP LC LX Transceiver (J4859C)</p> <p>HP X121 1G SFP LC LX Transceiver=An SFP format gigabit transceiver with LC connectors using LX technology.</p>	<p>Ports</p> <p>Physical characteristics</p> <p>Environment</p> <p>Cabling</p> <p>Notes</p> <p>Services</p>	<p>1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX)†Duplex=full only</p> <p>Dimensions=2.24(d) x 0.54(w) x 0.486(h) in. (5.69 x 1.37 x 1.23 cm)</p> <p>Weight=0.04 lb. (0.02 kg)</p> <p>Operating temperature=32°F to 158°F (0°C to 70°C)</p> <p>Operating relative humidity=0% to 85%, noncondensing</p> <p>Nonoperating/Storage temperature=-40°F to 212°F (-40°C to 100°C)</p> <p>Altitude=up to 10,000 ft. (3 km)</p> <p>Type=</p> <ul style="list-style-type: none"> • Either single mode or multimode†62.5/125 µm or 50/125 µm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively†Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1† <p>Maximum distance=</p> <ul style="list-style-type: none"> • 2-550 m (multimode 62.5 µm core diameter, 500 MHz*km bandwidth) • 2-550 m (multimode 50 µm core diameter, 400 MHz*km bandwidth) • 2-550 m (multimode 50 µm core diameter, 500 MHz*km bandwidth) • 2-10,000 m (single-mode fiber) <p>A mode conditioning patch cord may be needed in some multimode fiber installations.</p> <p>Wavelength=1310nm</p> <p>Power Consumption=< 500mW Typical</p> <p>Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>

Accessory Product Details

<p>HP X121 1G SFP RJ45 T Transceiver (J8177C)</p>	<p>Ports</p> <p>Physical characteristics</p>	<p>1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T) Duplex=full only</p> <p>Dimensions=2.71(d) x 0.54(w) x 0.55(h) in. (6.88 x 1.37 x 1.4 cm)</p> <p>Weight=0.06 lb. (0.03 kg)</p>
<p>HP X121 1G SFP RJ45 T Transceiver=An SFP format gigabit transceiver with RJ45 connectors using 1000BaseT technology.</p>	<p>Environment</p>	<p>Operating temperature=32°F to 158°F (0°C to 70°C) with 100 LFM airflow over the SFP module)</p> <p>Operating relative humidity=0% to 95% @ 75°F (25°C), noncondensing</p> <p>Nonoperating/Storage temperature=-40°F to 185°F (-40°C to 85°C)</p> <p>Nonoperating/Storage relative humidity=0% to 95% @ 77°F (25°C), noncondensing</p>
	<p>Cabling</p>	<p>Altitude=up to 10,000 ft. (3000 km)</p> <p>Cable type=</p> <p>1000BASE-T=Category 5 (5E or better recommended), 100 T differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T</p> <p>Maximum distance=</p> <ul style="list-style-type: none"> • 100 m
	<p>Notes</p>	<p>Power consumption is nominally 1 watt.</p> <p>For supported platforms and minimum software requirements to support this product, see the document titled Support for the J8177C 1000Base-T Mini-GBIC on the ProCurve Mini-GBICs and SFPs Manuals Web page.</p> <p>The J8177C Gigabit copper mini-GBIC is not supported on dual-personality ports. The J8177C is capable of 100 Mb operation. This is supported on only the HP ProCurve Switch 8200zl, 5400zl, and 6200yl Series using software version K.12.21 or later. Use the Auto-100 port setting to enable 100 Mb operation. Important=The earlier J8177B does not support 100 Mb operation.</p> <p>When used in the ProCurve Switch gl 20-Port 10/100/1000 Module (J4908A), the J8177C mini-GBIC can be installed in either the upper or lower mini-GBIC port, but will block access to the other port.</p>
	<p>Services</p>	<p>Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>

Accessory Product Details

HP X122 1G SFP LC BX-D Transceiver (J9142B)

A small form-factor pluggable (SFP) Gigabit-BX (bi-directional)

downstream transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand of single-mode fiber. The J9142B connects to the J9143B upstream transceiver, or to any IEEE-standard 1000BASE-BX10-U (upstream) device.

Ports	1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-D) Full-Duplex full only
Physical characteristics	Dimensions 2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)
Environment	Weight 0.04 lb. (0.02 kg)
Cabling	Operating temperature 32°F to 158°F (0°C to 70°C)
Notes	Operating relative humidity 0% to 95%, non-condensing
Services	Non-operating/Storage temperature -40°F to 185°F (-40°C to 85°C)
	Type Single-mode fiber optic, complying with ITU-T G.652
	Maximum distance
	<ul style="list-style-type: none"> 0.5-10,000 m (single-mode fiber)
	Transmit wavelength=1490 nm. Receive wavelength=1310 nm. Power consumption is 1 watt maximum.
	For supported platforms and minimum software requirements to support this product, see the document titled Support for the HP BX Transceivers on the HP Mini-GBICs and SFPs Manuals Web page .
	The J9142B connects to the J9143B upstream transceiver, or to any IEEE-standard 1000BASE-BX10-U (upstream) device. (A 1000-BX-D transceiver can only connect to a 1000-BX-U product. You cannot connect two 1000-BX-D transceivers together.)
	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 X122 1G SFP LC BX-U Transceiver (J9143B)

A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) upstream transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand of single-mode fiber. The J9143B connects to the J9142B downstream transceiver, or to any IEEE-standard 1000BASE-BX10-D (downstream) device.

Physical characteristics

Environment

Cabling

Notes

Services

1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-U) Full Duplex only

Dimensions

2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)

Weight

0.04 lb. (0.02 kg)

Operating temperature

32°F to 158°F (0°C to 70°C)

Operating relative humidity

0% to 95%, non-condensing

Non-operating/Storage temperature

-40°F to 185°F (-40°C to 85°C)

Type

Single-mode fiber optic, complying with ITU-T G.652

Maximum distance

- 0.5-10,000 m (single-mode fiber)

Transmit wavelength=1310 nm. Receive wavelength=1490 nm.

For supported platforms and minimum software requirements to support this product, see the document titled Support for the HP BX Transceivers on the HP Mini-GBICs and SFPs Manuals Web page.

The J9143B connects to the J9142B downstream transceiver, or to any IEEE-standard 1000BASE-BX10-D (downstream) device. (A 1000-BX-U transceiver can only connect to a 1000-BX-D product. You cannot connect two 1000-BX-U transceivers together.)

Power consumption is 1 watt maximum.

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 Cabling
LC/LC Optical Cable
(AJ833A)

Cable type

50/125 μm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m

Maximum distance

10Gbps Transfer Rate (Ethernet) = 300m

Notes

Cable Specs = Tight buffered duplex fiber optic multimode OM3 50/125 μm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions = Core diameter = $50 \pm 3.0\mu\text{m}$ Cladding diameter = $125 \pm 2.0\mu\text{m}$ Coating diameter = $245 \pm 10\mu\text{m}$
- Optical glass = Bandwidth = For LED sources = 1500/500 MHz-km @850/1300nm.
- 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.
- CABLE = The cable is duplex zipcord graded index 50/125 μm multimode optical fiber and designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION =
- Jacket Material = Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color = Aqua for OM3 multimode per TIA 598
- Boot Color = White
- Insertion Loss = less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- 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.
- 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-

50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m

Maximum distance-

10Gbps Transfer Rate (Ethernet)-300m

Notes

Cable Specs-Tight buffered duplex fiber optic multimode OM3 50/125 µm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions-Core diameter- $50 \pm 3.0\mu\text{m}$ Cladding diameter- $125 \pm 2.0\mu\text{m}$ Coating diameter- $245 \pm 10\mu\text{m}$
- Optical Glass Bandwidth-For LED sources-1500/500 MHz-km @850/1300nm.
- 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.
- CABLE-The cable is duplex zipcord graded index 50/125µm multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION-
- Jacket Material-Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color-Aqua for OM3 multimode per TIA 598
- Boot Color-White
- Insertion Loss-less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- 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.
- 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-

50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m⁺

Maximum distance-

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.

- Dimensions-Core diameter-50 ± 3.0um Cladding diameter-125 ± 2.0um Coating diameter-245 ± 10um
- Optical Glass Bandwidth-For LED sources-1500/500 MHz-km @850/1300nm.
- 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.
- 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.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION-
- Jacket Material-Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color-Aqua for OM3 multimode per TIA 598
- Boot Color-White
- Insertion Loss-less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- 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.
- 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⁻

50/125 µm core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m⁻

Maximum distance⁻

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 µm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions⁻Core diameter⁻50 ± 3.0µm Cladding diameter⁻125 ± 2.0µm Coating diameter⁻245 ± 10µm
- Optical Glass Bandwidth⁻For LED sources⁻1500/500 MHz-km @850/1300nm.
- 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.
- CABLE⁻The cable is duplex zipcord graded index 50/125µm multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION⁻
- Jacket Material⁻Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color⁻Aqua for OM3 multimode per TIA 598
- Boot Color⁻White
- Insertion Loss⁻less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- 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.
- 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)

Notes

Cable type

50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m

Maximum distance

10Gbps Transfer Rate (Ethernet) = 300m

Cable Specs = Tight buffered duplex fiber optic multimode OM3 50/125 µm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions = Core diameter = $50 \pm 3.0 \mu\text{m}$ Cladding diameter = $125 \pm 2.0 \mu\text{m}$ Coating diameter = $245 \pm 10 \mu\text{m}$
- Optical Glass Bandwidth = For LED sources = 1500/500 MHz-km @850/1300nm.
- 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.
- CABLE = The cable is duplex zipcord graded index 50/125µm multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION =
- Jacket Material = Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color = Aqua for OM3 multimode per TIA 598
- Boot Color = White
- Insertion Loss = less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- 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.
- 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 **Cabling**
(AJ838A)

Cable type

50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m

Maximum distance

10Gbps Transfer Rate (Ethernet) = 300m

Notes

Cable Specs = Tight buffered duplex fiber optic multimode OM3 50/125 µm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions = Core diameter = 50 ± 3.0µm Cladding diameter = 125 ± 2.0µm Coating diameter = 245 ± 10µm
- Optical Glass Bandwidth = For LED sources = 1500/500 MHz-km @850/1300nm.
- 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.
- CABLE = The cable is duplex zipcord graded index 50/125µm multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION =
- Jacket Material = Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color = Aqua for OM3 multimode per TIA 598
- Boot Color = White
- Insertion Loss = less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- 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.
- 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)

Notes

Cable type

50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m

Maximum distance

10Gbps Transfer Rate (Ethernet) = 300m

Cable Specs = Tight buffered duplex fiber optic multimode OM3 50/125 µm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions = Core diameter = 50 ± 3.0µm Cladding diameter = 125 ± 2.0µm Coating diameter = 245 ± 10µm
- Optical Glass Bandwidth = For LED sources = 1500/500 MHz-km @850/1300nm.
- 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.
- CABLE = The cable is duplex zipcord graded index 50/125µm multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION =
- Jacket Material = Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color = Aqua for OM3 multimode per TIA 598
- Boot Color = White
- Insertion Loss = less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- 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.
- 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.

- Core Diameter=50um ±3um, Cladding diameter=125um ±2um Coating diameter=245 ± 10um
- Bandwidth=3000 MHz-km @ 850nm (Laser)
- Jacket Color=Blue
- Jacket Material=Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color=White
- 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.
- Insertion Loss=Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- 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.

- Core diameter=50um ±3um, Cladding diameter=125um ±2um Coating diameter=245 ± 10um
- Bandwidth=3000 MHz-km @ 850nm (Laser)
- Jacket Color=Blue
- Jacket Material=Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color=White
- 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.
- Insertion Loss=Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- 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.

- Core diameter=50um ±3um, Cladding diameter=125um ±2um, Coating diameter=245 ± 10um
- Bandwidth=3000 MHz-km @ 850nm (Laser)
- Jacket Color=Blue
- Jacket Material=Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color=White
- 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.
- Insertion Loss=Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- 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.

- Core diameter=50um ±3um, Cladding diameter=125um ±2um, Coating diameter=245 ± 10um
- Bandwidth=3000 MHz-km @ 850nm (Laser)
- Jacket Color=Blue
- Jacket Material=Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color=White
- 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.
- Insertion Loss=Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- 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.

- Core diameter=50um ±3um, Cladding diameter=125um ±2um Coating diameter=245 ± 10um
- Bandwidth=3000 MHz-km @ 850nm (Laser)
- Jacket Color=Blue
- Jacket Material=Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color=White
- 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.
- Insertion Loss=Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- 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.

- Core diameter=50um ±3um, Cladding diameter=125um ±2um Coating diameter=245 ± 10um
- Bandwidth=3000 MHz-km @ 850nm (Laser)
- Jacket Color=Blue
- Jacket Material=Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color=White
- 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.
- Insertion Loss=Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- 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 600 Redundant and
External Power Supply
(J8168A)**

Ports

6 redundant power supply ports
Restrictions=Each port can provide redundant +12 V power to a connected switch only one port can provide power at a given time

Accessory Product Details

		2 external power supply ports Restrictions=Provides 50 VDC external PoE to up to two switch devices [†] provides max. of 408 W full power to one device, and half power (204 W each) if connected to two devices
Physical characteristics	Dimensions	12.83(d) x 17.44(w) x 1.73(h) in. (32.59 x 44.3 x 4.39 cm) (1U height)
	Weight	11.78 lb. (5.34 kg), Fully loaded
Mounting		1U rack-mountable and wall-mountable enclosure using standard mounting hardware
Environment	Operating temperature	32°F to 131°F (0°C to 55°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
	Altitude	up to 15,000 ft. (4.6 km)
	Acoustic	Noise emission LwA=59.2 dB at virtual workspace, according to DIN 45635 T.19
Electrical characteristics	Description	The unit automatically adjusts to any voltage between 100-240 V and either 50 or 60 Hz
	Voltage	100-240 VAC
	Current	9/5 A
	Maximum power rating	800 W
	RPS power	180 W
	PoE power	408 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		CSA 22.2 No. 60950 [†] EN 60950/IEC 60950 [†] UL 60950
Emissions		FCC Class A [†] VCCI Class A [†] EN 55022/CISPR 22 Class A
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2 [†] 4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3 [†] 3 V/m
	EFT/Burst	IEC 61000-4-4 [†] 1.0 kV (power line), 0.05 kV (signal line)

Accessory Product Details

Surge	IEC 61000-4-5 \pm 1 kV/2 kV AC
Conducted	IEC 61000-4-6 \pm 3 V
Power frequency magnetic field	IEC 61000-4-8 \pm 1 A/m, 50 or 60 Hz
Voltage dips and interruptions	IEC 61000-4-11 \pm >95% reduction, 0.5 period \pm 30% reduction, 25 periods
Harmonics	EN 61000-3-2, IEC 61000-3-2
Flicker	EN 61000-3-3, IEC 61000-3-3

Management

Provides information via port interfaces of attached devices

Notes

Supported devices

- HP Switch 2600-PWR Series, Switch 2610 Series, Switch 2610-PWR Series, Switch 2800 Series, Switch 2810 Series, Switch 5300xl Series, Switch 3400cl Series, Switch 6400cl Series, and Secure Router 7000dl Series

Services

3-year, 4-hour onsite, 13x5 coverage for hardware (U9270E)
 3-year, 4-hour onsite, 24x7 coverage for hardware (U9271E)
 4-year, 4-hour onsite, 13x5 coverage for hardware (UR854E)
 4-year, 4-hour onsite, 24x7 coverage for hardware (UR855E)
 5-year, 4-hour onsite, 13x5 coverage for hardware (UR857E)
 5-year, 4-hour onsite, 24x7 coverage for hardware (UR858E)
 3 Yr 6 hr Call-to-Repair Onsite (UW371E)
 4 Yr 6 hr Call-to-Repair Onsite (UW372E)
 5 Yr 6 hr Call-to-Repair Onsite (UW373E)

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 610 External Power Supply (J8169A)

Ports

4 external power supply ports
 Restrictions—Provides 50 VDC external PoE power to up to four switches—each pair of EPS ports provides max. of 408 W full power to one device, or half power (204 W each) if connected to two devices

Physical characteristics

Dimensions 19.02(d) x 17.3(w) x 1.73(h) in. (48.31 x 43.94 x 4.39 cm) (1U height)

Weight 16.44 lb. (7.46 kg), Fully loaded

Mounting

1U rack-mountable and wall-mountable enclosure using standard mounting hardware

Environment

Operating temperature 32°F to 122°F (0°C to 50°C)

Operating relative humidity 15% to 95% @ 104°F (40°C), noncondensing

Accessory Product Details

	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
	Altitude	up to 15,000 ft. (4.6 km)
	Acoustic	Noise emission LwA=58 dB at virtual workspace, according to DIN 45635 T.19
Electrical characteristics	Description	The unit automatically adjusts to any voltage between 110-240 V and either 50 or 60 Hz
	Voltage	110-240 VAC
	Current	11/6 A
	Maximum power rating	1000 W
	PoE power	816 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. For Japan, the unit only operates at 200 V, 50 Hz, and 6 A.
Safety		CSA 22.2 No. 60950 EN 60950/IEC 60950 UL 60950
Emissions		FCC Class A VCCI Class A EN 55022/CISPR 22 Class A
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2 4 kV CD, 8 kV AD
	Radiated	IEC 61000-4-3 3 V/m
	EFT/Burst	IEC 61000-4-4 1.0 kV (power line), 0.5 kV (signal line)
	Surge	IEC 61000-4-5 1 kV/2 kV AC
	Conducted	IEC 61000-4-6 3 V
	Power frequency magnetic field	IEC 61000-4-8 1 A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11 >95% reduction, 0.5 period 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management		Unmanaged power supply provides information via LEDs or through port interfaces of attached devices

Accessory Product Details

Notes	Supported devices=HP Switch 2600-PWR Series, Switch 2610-PWR Series, and Switch 5300xl Series
Services	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (U9270E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (U9271E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (UR854E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (UR855E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (UR857E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (UR858E)</p> <p>3 Yr 6 hr Call-to-Repair Onsite (UW371E)</p> <p>4 Yr 6 hr Call-to-Repair Onsite (UW372E)</p> <p>5 Yr 6 hr Call-to-Repair Onsite (UW373E)</p>

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

HP X410 1U Universal 4-post Rack Mounting Kit (J9583A)

Notes	<p>The rack mounting kit supports the 1U, full width switches in the following switch series and the power supply=V1810 Series, E2510 Series, E2520 Series, E2610 Series, E2810 Series, E2910 Series, E3500 Series, and the E620 Power Supply</p> <p>This universal rack mounting kit is design to fit the following racks=HP 10K 10642, HP 10K 10842, Panduit CN, Panduit CS, Wrightline Vantage S2, APC Netshelter 600mm, and APC Netshelter 800mm. It may well fit many other brands and models too.</p>
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.

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