

### Overview

#### Models

HP 1410-8G Switch	J9559A
HP 1410-16G Switch	J9560A
HP 1410-24G Switch	J9561A
HP 1410-8 Switch	J9661A
HP 1410-16 Switch	J9662A
HP 1410-24 Switch	J9663A
HP 1410-24-R Switch	JD986B
HP 1410-24-2G Switch	J9664A

#### Key features

- Unmanaged Gigabit Ethernet and Fast Ethernet switches
- Green features for low power consumption
- Fanless for silent operation
- Quality of service (QoS) support
- Lifetime warranty

#### Product overview

HP 1410 series switches are unmanaged Gigabit Ethernet and Fast Ethernet switches designed for small businesses looking for entry-level, low-cost networking solutions that come with a lifetime warranty. The HP 1410 Switch Series consists of eight models with flexible mounting options that allow you to choose the best switch to meet your network switching needs. All models have QoS support and IEEE 802.3x flow control features that provide outstanding data efficiency. Simplified plug-and-play operation is enabled by features like Auto-MDIX and auto-speed negotiation. HP has innovated and combined the latest advances in silicon technology to provide some of the most power-efficient switches: 16- and 24-port Fast Ethernet models are the industry's first IEEE 802.3az-compliant unmanaged Fast Ethernet switches. The available green features, along with lifetime warranty, make the HP 1410 Switch Series ideal for customers seeking low-cost and reliable networking solutions.

#### Features and benefits

##### Quality of Service (QoS)

- **IEEE 802.1p prioritisation**  
delivers data to devices based on the priority and type of traffic
- **DiffServ Code Point (DSCP) support**  
allows real-time traffic prioritisation based on Layer 3 TOS/DSCP parameters

##### Connectivity

- **Auto-MDIX**  
provides automatic adjustments for straight-through or crossover cables on all 10/100 and 10/100/1000 ports

##### Performance

- **NEW Energy-efficient Ethernet support**  
supports new IEEE 802.3az standard; allows lower power consumption when operated with IEEE-compliant client devices in

### Overview

100 Mb/s mode only (J9662A and J9663A switches only) • Half-/full-duplex auto-negotiating capability on every port doubles the throughput of every port

- **Jumbo frame support**  
allows frames up to 9216 bytes to be switched through the network (Gigabit Ethernet models only)
- **Mini jumbo frame support**  
allows frames up to 2048 bytes to be switched through the network, which supports large data transfers (J9662A and J9663A switches only)

### Ease of use

- **Unmanaged**  
provides plug-and-play simplicity
- **Comprehensive LED display with per-port indicators**  
provides an at-a-glance view of status, activity, speed and full-duplex operation
- **Flow control**  
helps ensure reliable communications during full-duplex operation
- **Auto-speed negotiation**  
selects individual port speed automatically depending on client capabilities without the need for manual intervention, allowing for simple plug-and-play operation

### Flexibility

- **Fanless design**  
enables quiet operation for deployment in open spaces
- **NEW Internal power supply**  
provides operation convenience and a neat operation environment (JD986B and J9561A switches only)

### Warranty and support

- **Lifetime Warranty 2.0**  
advance hardware replacement for as long as you own the product with next-business-day delivery (available in most countries)†
- **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 complete warranty period; to reach our support centres, refer to [www.hp.com/networking/contact-support](http://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](http://www.hp.com/networking/warrantysummary)

\* 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 z1 Modules, HP Threat Management Services z1 Module, HP AllianceOne Extended z1 Module with Riverbed Steelhead, HP MSM765 z1 Mobility Controller and HP Survivable Branch Communication z1 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](http://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 1410-8G Switch	J9559A
<ul style="list-style-type: none"><li>• 8 autosensing 10/100/1000 ports</li></ul>	<a href="#">See Configuration Note:2</a>
HP 1410-16G Switch	J9560A
<ul style="list-style-type: none"><li>• 16 autosensing 10/100/1000 ports</li><li>• 1U - Height</li></ul>	<a href="#">See Configuration Note:2</a>
HP 1410-24G Switch	J9561A
<ul style="list-style-type: none"><li>• 22 autosensing 10/100/1000 ports</li><li>• 2 dual-personality ports; either an RJ-45 10/100/1000 port or an open mini-GBIC slot</li><li>• 1U - Height</li></ul>	<a href="#">See Configuration Note:1, 2</a>
HP 1410-8 Switch	J9661A
<ul style="list-style-type: none"><li>• 8 autosensing 10/100 ports</li></ul>	<a href="#">See Configuration Note:2</a>
HP 1410-16 Switch	J9662A
<ul style="list-style-type: none"><li>• 16 autosensing 10/100 ports</li><li>• 1U - Height</li></ul>	<a href="#">See Configuration Note:2</a>
HP 1410-24 Switch	J9663A
<ul style="list-style-type: none"><li>• 24 autosensing 10/100 ports</li><li>• 1U - Height</li></ul>	<a href="#">See Configuration Note:2</a>
HP 1410-24-R Switch	JD986B
<ul style="list-style-type: none"><li>• 24 autosensing 10/100 ports</li><li>• 1U - Height</li></ul>	<a href="#">See Configuration Note:2</a>
HP 1410-24-2G Switch	J9664A
<ul style="list-style-type: none"><li>• 24 autosensing 10/100ports</li><li>• 2 autosensing 10/100/1000 ports</li><li>• 1U - Height</li></ul>	<a href="#">See Configuration Note:2</a>

### Configuration

#### Configuration Rules:

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
Note 2	Localization required. (See Localization Menu for list.)	

### 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

### 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

### Technical Specifications

#### HP 1410-8G Switch (J9559A)

<b>Ports</b>	8 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
<b>Physical characteristics</b>	<b>Dimensions</b>	3.8(d) x 6.14(w) x 0.96(h) in. (9.65 x 15.6 x 2.45 cm) (.5U height)
	<b>Weight</b>	.74 lb. (0.34 kg)
<b>Memory and processor</b>	4 Kb EEPROM capacity; packet buffer size: 192 KB	
<b>Mounting</b>	Wall, desktop, and under-table mounting	
<b>Performance</b>	<b>100 Mb Latency</b>	< 3.6 $\mu$ s (LIFO 64-byte packets)
	<b>1000 Mb Latency</b>	< 1.2 $\mu$ s (LIFO 64-byte packets)
	<b>Throughput</b>	up to 11.9 million pps (64-byte packets)
	<b>Switching capacity</b>	16 Gbps
	<b>MAC address table size</b>	4096 entries
	<b>Environment</b>	<b>Operating temperature</b>
<b>Operating relative humidity</b>		15% to 95% @ 104°F (40°C), noncondensing
<b>Nonoperating/Storage temperature</b>		-40°F to 158°F (-40°C to 70°C)
<b>Nonoperating/Storage relative humidity</b>		15% to 90% @ 149°F (65°C), noncondensing
<b>Altitude</b>		up to 10,000 ft. (3 km)
<b>Acoustic</b>		Power: 0 dB No fan
<b>Electrical characteristics</b>		<b>Maximum heat dissipation</b>
	<b>Voltage</b>	100-240 VAC
	<b>Current</b>	1.0 A
	<b>Maximum power rating</b>	12 W
	<b>Frequency</b>	50/60 Hz
	<b>Notes</b>	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. The exact input voltage and frequency rating are determined by the specific power adapter part number ordered. Please select the correct power adapter country option.
<b>Safety</b>	CSA 22.2 No. 60950; EN 60950/IEC 60950; UL 60950-1	
<b>Emissions</b>	FCC Rules Part 15, Subpart B Class A	
<b>Immunity</b>	<b>Generic</b>	EN 55022 CISPR 22
	<b>EN</b>	EN 55024, CISPR 24
	<b>ESD</b>	IEC 61000-4-2
	<b>Radiated</b>	IEC 61000-4-3

### Technical Specifications

<b>EFT/Burst</b>	IEC 61000-4-4
<b>Surge</b>	IEC 61000-4-5
<b>Conducted</b>	IEC 61000-4-6
<b>Power frequency magnetic field</b>	IEC 61000-4-8
<b>Voltage dips and interruptions</b>	IEC 61000-4-11
<b>Harmonics</b>	IEC 61000-3-2
<b>Flicker</b>	IEC 61000-3-3

### Services

3-year, 4-hour onsite, 13x5 coverage for hardware (UF795E)  
 3-year, 4-hour onsite, 24x7 coverage for hardware (UF796E)  
 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR843E)  
 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR844E)  
 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 (UR816E)  
 4-year, 4-hour onsite, 24x7 coverage for hardware (UR817E)  
 5-year, 4-hour onsite, 13x5 coverage for hardware (UR818E)  
 5-year, 4-hour onsite, 24x7 coverage for hardware (UR819E)  
 3 Yr 6 hr Call-to-Repair Onsite (UW386E)  
 4 Yr 6 hr Call-to-Repair Onsite (UW387E)  
 5 Yr 6 hr Call-to-Repair Onsite (UW388E)  
 1-year, 6 hour Call-To-Repair Onsite for hardware (HR845E)

Refer to the HP website at: [www.hp.com/networking/services](http://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 1410-16G Switch (J9560A)

<b>Ports</b>	16 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
<b>Physical characteristics</b>	<b>Dimensions</b>	4.41(d) x 8.21(w) x 1.73(h) in. (11.2 x 20.85 x 4.4 cm) (1U height)
	<b>Weight</b>	1.43 lb. (0.65 kg)
<b>Memory and processor</b>	512 KB flash; packet buffer size: 512 KB	
<b>Mounting</b>	Mounts in an EIA-standard 19 in. telco rack (hardware included); wall, desktop, and under-table mounting	
<b>Performance</b>	<b>100 Mb Latency</b>	< 8.0 $\mu$ s (LIFO 64-byte packets)
	<b>1000 Mb Latency</b>	< 3.6 $\mu$ s (LIFO 64-byte packets)
	<b>Throughput</b>	up to 23.8 million pps (64-byte packets)
	<b>Switching capacity</b>	32 Gbps
	<b>MAC address table size</b>	8000 entries
<b>Environment</b>	<b>Operating temperature</b>	32°F to 104°F (0°C to 40°C)
	<b>Operating relative humidity</b>	15% to 95% @ 104°F (40°C), noncondensing

### Technical Specifications

	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C), noncondensing
	<b>Altitude</b>	up to 10,000 ft. (3 km)
	<b>Acoustic</b>	Power: 0 dB No fan
<b>Electrical characteristics</b>	<b>Maximum heat dissipation</b>	44 BTU/hr (46.42 kJ/hr)
	<b>Voltage</b>	100-240 VAC
	<b>Current</b>	1.1 A
	<b>Maximum power rating</b>	13 W
	<b>Frequency</b>	50/60 Hz
	<b>Notes</b>	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. The exact input voltage and frequency rating are determined by the specific power adapter part number ordered. Please select the correct power adapter country option.
<b>Safety</b>		CSA 22.2 No. 60950; UL 60950-1; IEC 60950-1; EN 60950-1
<b>Emissions</b>		FCC Rules Part 15, Subpart B Class A
<b>Immunity</b>	<b>Generic</b>	EN 55022 CISPR 22
	<b>EN</b>	EN 55024, CISPR 24
	<b>ESD</b>	IEC 61000-4-2
	<b>Radiated</b>	IEC 61000-4-3
	<b>EFT/Burst</b>	IEC 61000-4-4
	<b>Surge</b>	IEC 61000-4-5
	<b>Conducted</b>	IEC 61000-4-6
	<b>Power frequency magnetic field</b>	IEC 61000-4-8
	<b>Voltage dips and interruptions</b>	IEC 61000-4-11
	<b>Harmonics</b>	IEC 61000-3-2
	<b>Flicker</b>	IEC 61000-3-3
<b>Services</b>		3-year, 4-hour onsite, 13x5 coverage for hardware (UF797E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UF798E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR846E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR847E) 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 (UR820E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR821E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR822E)

### Technical Specifications

5-year, 4-hour onsite, 24x7 coverage for hardware (UR823E)  
 3 Yr 6 hr Call-to-Repair Onsite (UW389E)  
 4 Yr 6 hr Call-to-Repair Onsite (UW390E)  
 5 Yr 6 hr Call-to-Repair Onsite (UW391E)  
 1-year, 6 hour Call-To-Repair Onsite for hardware (HR848E)

Refer to the HP website at: [www.hp.com/networking/services](http://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 1410-24G Switch (J9561A)

<b>Ports</b>	22 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only  2 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T; IEEE 802.3u Type 100Base-TX; IEEE 802.3ab 1000Base-T Gigabit Ethernet) or an open mini-GBIC slot (for use with mini-GBIC transceivers)												
<b>Physical characteristics</b>	<table border="0"> <tr> <td style="vertical-align: top;"><b>Dimensions</b></td> <td>6.65(d) x 13.23(w) x 1.73(h) in. (16.9 x 33.6 x 4.4 cm) (1U height)</td> </tr> <tr> <td style="vertical-align: top;"><b>Weight</b></td> <td>2.98 lb. (1.35 kg)</td> </tr> </table>	<b>Dimensions</b>	6.65(d) x 13.23(w) x 1.73(h) in. (16.9 x 33.6 x 4.4 cm) (1U height)	<b>Weight</b>	2.98 lb. (1.35 kg)								
<b>Dimensions</b>	6.65(d) x 13.23(w) x 1.73(h) in. (16.9 x 33.6 x 4.4 cm) (1U height)												
<b>Weight</b>	2.98 lb. (1.35 kg)												
<b>Memory and processor</b>	512 KB flash; packet buffer size: 512 KB												
<b>Mounting</b>	Mounts in an EIA-standard 19 in. telco rack (hardware included); wall, desktop, and under-table mounting												
<b>Performance</b>	<table border="0"> <tr> <td style="vertical-align: top;"><b>100 Mb Latency</b></td> <td>&lt; 8.0 μs (LIFO 64-byte packets)</td> </tr> <tr> <td style="vertical-align: top;"><b>1000 Mb Latency</b></td> <td>&lt; 3.6 μs (LIFO 64-byte packets)</td> </tr> <tr> <td style="vertical-align: top;"><b>Throughput</b></td> <td>up to 35.7 million pps (64-byte packets)</td> </tr> <tr> <td style="vertical-align: top;"><b>Switching capacity</b></td> <td>48 Gbps</td> </tr> <tr> <td style="vertical-align: top;"><b>MAC address table size</b></td> <td>8000 entries</td> </tr> </table>	<b>100 Mb Latency</b>	< 8.0 μs (LIFO 64-byte packets)	<b>1000 Mb Latency</b>	< 3.6 μs (LIFO 64-byte packets)	<b>Throughput</b>	up to 35.7 million pps (64-byte packets)	<b>Switching capacity</b>	48 Gbps	<b>MAC address table size</b>	8000 entries		
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<b>Acoustic</b>	Power: 0 dB No fan												
<b>Electrical characteristics</b>	<table border="0"> <tr> <td style="vertical-align: top;"><b>Maximum heat dissipation</b></td> <td>75 BTU/hr (79.13 kJ/hr)</td> </tr> <tr> <td style="vertical-align: top;"><b>Voltage</b></td> <td>100-127/200-240 VAC</td> </tr> <tr> <td style="vertical-align: top;"><b>Current</b></td> <td>0.3/0.2 A</td> </tr> <tr> <td style="vertical-align: top;"><b>Maximum power rating</b></td> <td>22 W</td> </tr> <tr> <td style="vertical-align: top;"><b>Frequency</b></td> <td>50/60 Hz</td> </tr> </table>	<b>Maximum heat dissipation</b>	75 BTU/hr (79.13 kJ/hr)	<b>Voltage</b>	100-127/200-240 VAC	<b>Current</b>	0.3/0.2 A	<b>Maximum power rating</b>	22 W	<b>Frequency</b>	50/60 Hz		
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### Technical Specifications

	<b>Notes</b>	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.
<b>Safety</b>	CSA 22.2 No. 60950; UL 60950-1; IEC 60950-1; EN 60950-1	
<b>Emissions</b>	FCC Rules Part 15, Subpart B Class A	
<b>Immunity</b>	<b>Generic</b>	EN 55022 CISPR 22
	<b>EN</b>	EN 55024, CISPR 24
	<b>ESD</b>	IEC 61000-4-2
	<b>Radiated</b>	IEC 61000-4-3
	<b>EFT/Burst</b>	IEC 61000-4-4
	<b>Surge</b>	IEC 61000-4-5
	<b>Conducted</b>	IEC 61000-4-6
	<b>Power frequency magnetic field</b>	IEC 61000-4-8
	<b>Voltage dips and interruptions</b>	IEC 61000-4-11
	<b>Harmonics</b>	IEC 61000-3-2
	<b>Flicker</b>	IEC 61000-3-3
<b>Notes</b>	Use only supported genuine HP mini-GBICs with your switch.	
<b>Services</b>	3-year, 4-hour onsite, 13x5 coverage for hardware (UF797E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UF798E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR846E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR847E) 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 (UR820E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR821E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR822E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR823E) 3 Yr 6 hr Call-to-Repair Onsite (UW389E) 4 Yr 6 hr Call-to-Repair Onsite (UW390E) 5 Yr 6 hr Call-to-Repair Onsite (UW391E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HR848E)	
	Refer to the HP website at: <a href="http://www.hp.com/networking/services">www.hp.com/networking/services</a> 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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#### HP 1410-8 Switch (J9661A)

<b>Ports</b>	Supports a maximum of 8 autosensing 10/100 ports	
<b>Physical characteristics</b>	<b>Dimensions</b>	3.74(d) x 6.14(w) x 0.97(h) in. (9.5 x 15.6 x 2.46 cm)
	<b>Weight</b>	0.74 lb. (0.34 kg)
<b>Memory and processor</b>	96 KB	



### Technical Specifications

<b>Mounting</b>	Wall, desktop, and under-table mounting	
<b>Performance</b>	<b>100 Mb Latency</b>	< 3.7µs (LIFO 64-byte packets)
	<b>Throughput</b>	up to 1.1 million pps (64-byte packets)
	<b>Switching capacity</b>	1.6 Gbps
	<b>MAC address table size</b>	1040 entries
<b>Environment</b>	<b>Operating temperature</b>	32°F to 104°F (0°C to 40°C)
	<b>Operating relative humidity</b>	15% to 95% @ 104°F (40°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C), noncondensing
	<b>Altitude</b>	up to 10,000 ft. (3 km)
	<b>Acoustic</b>	Power: 0 dB
<b>Electrical characteristics</b>	<b>Maximum heat dissipation</b>	13 BTU/hr (13.72 kJ/hr)
	<b>Voltage</b>	100-240 VAC
	<b>DC voltage</b>	12 V
	<b>Current</b>	0.3 A
	<b>Maximum power rating</b>	3.6 W
	<b>Frequency</b>	50/60 Hz
	<b>Notes</b>	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. The exact input voltage and frequency rating are determined by the specific power adapter part number ordered. Please select the correct power adapter country option.
	<b>Safety</b>	UL 60950-1; CSA 22.2 60950-1; IEC 60950-1:2005; EN 60950-1:2006 + A11:2009
<b>Emissions</b>	FCC Rules Part 15, Subpart B Class A	
<b>Immunity</b>	<b>Generic</b>	EN 55022 CISPR 22
	<b>EN</b>	EN 55024, CISPR 24
	<b>ESD</b>	IEC 61000-4-2
	<b>Radiated</b>	IEC 61000-4-3
	<b>EFT/Burst</b>	IEC 61000-4-4
	<b>Surge</b>	IEC 61000-4-5
	<b>Conducted</b>	IEC 61000-4-6
	<b>Power frequency magnetic field</b>	IEC 61000-4-8
	<b>Voltage dips and interruptions</b>	IEC 61000-4-11

### Technical Specifications

	<b>Harmonics</b>	IEC 61000-3-2
	<b>Flicker</b>	IEC 61000-3-3
<b>Services</b>	3-year, 4-hour onsite, 13x5 coverage for hardware (UF795E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UF796E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR843E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR844E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR817E) 3 Yr 6 hr Call-to-Repair Onsite (UW386E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HR845E)	
	Refer to the HP website at: <a href="http://www.hp.com/networking/services">www.hp.com/networking/services</a> 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 1410-16 Switch (J9662A)

<b>Ports</b>	Supports a maximum of 16 autosensing 10/100 ports	
<b>Physical characteristics</b>	<b>Dimensions</b>	4.21(d) x 8.21(w) x 1.73(h) in. (10.7 x 20.85 x 4.4 cm)
	<b>Weight</b>	1.43 lb. (0.65 kg)
<b>Memory and processor</b>	16 Kb EEPROM; packet buffer size: 2 Mb	
<b>Mounting</b>	Mounts in an EIA-standard 19 in. telco rack (hardware included); wall, desktop, and under-table mounting	
<b>Performance</b>	<b>100 Mb Latency</b>	< 10.6 $\mu$ s (LIFO 64-byte packets)
	<b>Throughput</b>	up to 2.3 million pps (64-byte packets)
	<b>Switching capacity</b>	3.2 Gbps
	<b>MAC address table size</b>	8192 entries
<b>Environment</b>	<b>Operating temperature</b>	32°F to 104°F (0°C to 40°C)
	<b>Operating relative humidity</b>	15% to 95% @ 104°F (40°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C), noncondensing
	<b>Altitude</b>	up to 10,000 ft. (3 km)
	<b>Acoustic</b>	Power: 0 dB
<b>Electrical characteristics</b>	<b>Maximum heat dissipation</b>	13 BTU/hr (13.72 kJ/hr)
	<b>Voltage</b>	100-240 VAC
	<b>DC voltage</b>	12 V
	<b>Current</b>	0.3 A
	<b>Maximum power rating</b>	3.6 W
	<b>Frequency</b>	50/60 Hz
	<b>Notes</b>	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with

### Technical Specifications

fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.

The exact input voltage and frequency rating are determined by the specific power adapter part number ordered. Please select the correct power adapter country option.

<b>Safety</b>	UL 60950-1; CSA C22.2 60950-1; IEC 60950-1:2005; EN 60950-1:2006 + A11:2009
<b>Emissions</b>	FCC Rules Part 15, Subpart B Class A
<b>Immunity</b>	<b>Generic</b> EN 55022 CISPR 22 <b>EN</b> EN 55024, CISPR 24 <b>ESD</b> IEC 61000-4-2 <b>Radiated</b> IEC 61000-4-3 <b>EFT/Burst</b> IEC 61000-4-4 <b>Surge</b> IEC 61000-4-5 <b>Conducted</b> IEC 61000-4-6 <b>Power frequency magnetic field</b> IEC 61000-4-8 <b>Voltage dips and interruptions</b> IEC 61000-4-11 <b>Harmonics</b> IEC 61000-3-2 <b>Flicker</b> IEC 61000-3-3
<b>Notes</b>	IEEE 802.3az Energy Efficient Ethernet protocol is supported by the HP 1410-16 (J9662A) and HP 1410-24 (J9663A) Switches only
<b>Services</b>	3-year, 4-hour onsite, 13x5 coverage for hardware (UF797E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UF798E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR846E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR847E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR820E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR821E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR822E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR823E) 3 Yr 6 hr Call-to-Repair Onsite (UW389E) 4 Yr 6 hr Call-to-Repair Onsite (UW390E) 5 Yr 6 hr Call-to-Repair Onsite (UW391E)
	Refer to the HP website at: <a href="http://www.hp.com/networking/services">www.hp.com/networking/services</a> 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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#### HP 1410-24 Switch (J9663A)

<b>Ports</b>	Supports a maximum of 24 autosensing 10/100 ports
<b>Physical characteristics</b>	<b>Dimensions</b> 6.65(d) x 13.23(w) x 1.73(h) in. (16.9 x 33.6 x 4.4 cm) <b>Weight</b> 2.98 lb. (1.35 kg)
<b>Memory and processor</b>	16 Kb EEPROM; packet buffer size: 2 Mb
<b>Mounting</b>	Mounts in an EIA-standard 19 in. telco rack (hardware included); wall, desktop, and under-table mounting

### Technical Specifications

<b>Performance</b>	<b>100 Mb Latency</b>	< 11 $\mu$ s (LIFO 64-byte packets)
	<b>Throughput</b>	up to 3.5 million pps (64-byte packets)
	<b>Switching capacity</b>	4.8 Gbps
	<b>MAC address table size</b>	8192 entries
<b>Environment</b>	<b>Operating temperature</b>	32°F to 104°F (0°C to 40°C)
	<b>Operating relative humidity</b>	15% to 95% @ 104°F (40°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C), noncondensing
	<b>Altitude</b>	up to 10,000 ft. (3 km)
	<b>Acoustic</b>	Power: 0 dB
<b>Electrical characteristics</b>	<b>Maximum heat dissipation</b>	17 BTU/hr (17.93 kJ/hr)
	<b>Voltage</b>	100-240 VAC
	<b>DC voltage</b>	12 V
	<b>Current</b>	0.4 A
	<b>Maximum power rating</b>	4.8 W
	<b>Frequency</b>	50/60 Hz
	<b>Notes</b>	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. The exact input voltage and frequency rating are determined by the specific power adapter part number ordered. Please select the correct power adapter country option.
	<b>Safety</b>	UL 60950-1; CSA 22.2 60950-1; IEC 60950-1:2005; EN 60950-1:2006 + A11:2009
<b>Emissions</b>	FCC Rules Part 15, Subpart B Class A	
<b>Immunity</b>	<b>Generic</b>	EN 55022 CISPR 22
	<b>EN</b>	EN 55024, CISPR 24
	<b>ESD</b>	IEC 61000-4-2
	<b>Radiated</b>	IEC 61000-4-3
	<b>EFT/Burst</b>	IEC 61000-4-4
	<b>Surge</b>	IEC 61000-4-5
	<b>Conducted</b>	IEC 61000-4-6
	<b>Power frequency magnetic field</b>	IEC 61000-4-8
	<b>Voltage dips and interruptions</b>	IEC 61000-4-11
	<b>Harmonics</b>	IEC 61000-3-2

### Technical Specifications

	<b>Flicker</b>	IEC 61000-3-3
<b>Notes</b>	IEEE 802.3az Energy Efficient Ethernet protocol is supported by the HP 1410-16 (J9662A) and HP 1410-24 (J9663A) Switches only	
<b>Services</b>	3-year, 4-hour onsite, 13x5 coverage for hardware (UF797E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UF798E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR846E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR847E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR820E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR821E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR822E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR823E) 3 Yr 6 hr Call-to-Repair Onsite (UW389E) 4 Yr 6 hr Call-to-Repair Onsite (UW390E) 5 Yr 6 hr Call-to-Repair Onsite (UW391E)	
	Refer to the HP website at: <a href="http://www.hp.com/networking/services">www.hp.com/networking/services</a> 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 1410-24-R Switch (JD986B)

<b>Ports</b>	24 RJ-45 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 Supports a maximum of 24 autosensing 10/100 ports	
<b>Physical characteristics</b>	<b>Dimensions</b>	17.32(w) x 6.81(d) x 1.73(h) in (44 x 17.3 x 4.4 cm)
	<b>Weight</b>	4.41 lb (2.0 kg)
<b>Memory and processor</b>	1kb EEPROM; packet buffer size: 2 Mb	
<b>Mounting</b>	Mounts in an EIA standard 19-inch telco rack (hardware included); desktop mounting	
<b>Performance</b>	<b>100 Mb Latency</b>	< 11 is (LIFO 64-byte packets)
	<b>Throughput</b>	up to 3.5 Kpps (64-byte packets)
	<b>Switching capacity</b>	4.8 Gbps
	<b>MAC address table size</b>	8192 entries
<b>Environment</b>	<b>Operating temperature</b>	32°F to 104°F (0°C to 40°C)
	<b>Operating relative humidity</b>	15% to 95% @ 104°F (40°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	5% to 90% @ 149°F (65°C), noncondensing
	<b>Altitude</b>	up to 16,404 ft (5 km)
	<b>Acoustic</b>	Power: 0 dB
<b>Electrical characteristics</b>	<b>Frequency</b>	50/60 Hz
	<b>Maximum heat dissipation</b>	21 BTU/hr (22 kJ/hr)

### Technical Specifications

<b>Voltage</b>	100-240 VAC
<b>DC voltage</b>	3.3 V
<b>Current</b>	1.1 A
<b>Maximum power rating</b>	3.6 W
<b>Notes</b>	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. This model provides an internal power supply. Please select the correct power cord country option.

**Safety** UL 60950-1; CSA 22.2 60950-1; IEC 60950-1:2005; EN 60950-1:2006 + A11:2009

**Emissions** FCC Rules Part 15, Subpart B Class A

<b>Immunity</b>	<b>Generic</b>	EN 55022 CISPR 22
	<b>EN</b>	EN 55024, CISPR 24
	<b>ESD</b>	IEC 61000-4-2
	<b>Radiated</b>	IEC 61000-4-3
	<b>EFT/Burst</b>	IEC 61000-4-4
	<b>Surge</b>	IEC 61000-4-5
	<b>Conducted</b>	IEC 61000-4-6
	<b>Power frequency magnetic field</b>	IEC 61000-4-8
	<b>Voltage dips and interruptions</b>	IEC 61000-4-11
	<b>Harmonics</b>	IEC 61000-3-2
	<b>Flicker</b>	IEC 61000-3-3

**Services** 3-year, 4-hour onsite, 13x5 coverage for hardware (UF797E)  
3-year, 4-hour onsite, 24x7 coverage for hardware (UF798E)  
1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR846E)  
1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR847E)  
4-year, 4-hour onsite, 13x5 coverage for hardware (UR820E)  
4-year, 4-hour onsite, 24x7 coverage for hardware (UR821E)  
5-year, 4-hour onsite, 13x5 coverage for hardware (UR822E)  
5-year, 4-hour onsite, 24x7 coverage for hardware (UR823E)  
3 Yr 6 hr Call-to-Repair Onsite (UW389E)  
4 Yr 6 hr Call-to-Repair Onsite (UW390E)  
5 Yr 6 hr Call-to-Repair Onsite (UW391E)

Refer to the HP website at: [www.hp.com/networking/services](http://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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### HP 1410-24-2G Switch (J9664A)

**Ports** Supports a maximum of 24 autosensing 10/100 ports plus 2 autosensing 10/100/1000 ports, or a combination

### Technical Specifications

<b>Physical characteristics</b>	<b>Dimensions</b>	6.65(d) x 13.23(w) x 1.73(h) in. (16.9 x 33.6 x 4.4 cm)
	<b>Weight</b>	2.98 lb. (1.35 kg)
<b>Memory and processor</b>	2 KB EEPROM; packet buffer size: 2.5 Mb	
<b>Mounting</b>	Mounts in an EIA-standard 19 in. telco rack (hardware included); wall, desktop, and under-table mounting	
<b>Performance</b>	<b>100 Mb Latency</b>	< 5.6 $\mu$ s (LIFO 64-byte packets)
	<b>1000 Mb Latency</b>	< 2.2 $\mu$ s (LIFO 64-byte packets)
	<b>Throughput</b>	up to 6.5 million pps (64-byte packets)
	<b>Switching capacity</b>	8.8 Gbps
	<b>MAC address table size</b>	8192 entries
<b>Environment</b>	<b>Operating temperature</b>	32°F to 104°F (0°C to 40°C)
	<b>Operating relative humidity</b>	15% to 95% @ 104°F (40°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C), noncondensing
	<b>Altitude</b>	up to 10,000 ft. (3 km)
<b>Electrical characteristics</b>	<b>Acoustic</b>	Power: 0 dB
	<b>Maximum heat dissipation</b>	37 BTU/hr (39.03 kJ/hr)
	<b>Voltage</b>	100-240 VAC
	<b>DC voltage</b>	12 V
	<b>Current</b>	0.9 A
	<b>Maximum power rating</b>	10.8 W
	<b>Frequency</b>	50/60 Hz
	<b>Notes</b>	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. The exact input voltage and frequency rating are determined by the specific power adapter part number ordered. Please select the correct power adapter country option.
<b>Safety</b>	UL 60950-1; CSA 22.2 60950-1; IEC 60950-1:2005; EN 60950-1:2006 + A11:2009	
<b>Emissions</b>	FCC Rules Part 15, Subpart B Class A	
<b>Immunity</b>	<b>Generic</b>	EN 55022 CISPR 22
	<b>EN</b>	EN 55024, CISPR 24
	<b>ESD</b>	IEC 61000-4-2
	<b>Radiated</b>	IEC 61000-4-3
	<b>EFT/Burst</b>	IEC 61000-4-4
	<b>Surge</b>	IEC 61000-4-5
	<b>Conducted</b>	IEC 61000-4-6



### Technical Specifications

<b>Power frequency magnetic field</b>	IEC 61000-4-8
<b>Voltage dips and interruptions</b>	IEC 61000-4-11
<b>Harmonics</b>	IEC 61000-3-2
<b>Flicker</b>	IEC 61000-3-3

### Services

3-year, 4-hour onsite, 13x5 coverage for hardware (UF797E)  
3-year, 4-hour onsite, 24x7 coverage for hardware (UF798E)  
1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR846E)  
1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR847E)  
4-year, 4-hour onsite, 13x5 coverage for hardware (UR820E)  
4-year, 4-hour onsite, 24x7 coverage for hardware (UR821E)  
5-year, 4-hour onsite, 13x5 coverage for hardware (UR822E)  
5-year, 4-hour onsite, 24x7 coverage for hardware (UR823E)  
3 Yr 6 hr Call-to-Repair Onsite (UW389E)  
4 Yr 6 hr Call-to-Repair Onsite (UW390E)  
5 Yr 6 hr Call-to-Repair Onsite (UW391E)

Refer to the HP website at: [www.hp.com/networking/services](http://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)

#### General protocols

IEEE 802.1p Priority  
IEEE 802.3ab 1000BASE-T  
IEEE 802.3i 10BASE-T  
IEEE 802.3u 100BASE-X  
IEEE 802.3x Flow Control  
IEEE 802.3z 1000BASE-X

### Accessories

#### HP 1410 Switch series accessories

#### Cables

<a href="#">HP 0.5 m Multimode OM3 LC/LC Optical Cable</a>	AJ833A
<a href="#">HP 1 m Multimode OM3 LC/LC Optical Cable</a>	AJ834A
<a href="#">HP 2 m Multimode OM3 LC/LC Optical Cable</a>	AJ835A
<a href="#">HP 5 m Multimode OM3 LC/LC Optical Cable</a>	AJ836A
<a href="#">HP 15 m Multimode OM3 LC/LC Optical Cable</a>	AJ837A
<a href="#">HP 30 m Multimode OM3 LC/LC Optical Cable</a>	AJ838A
<a href="#">HP 50 m Multimode OM3 LC/LC Optical Cable</a>	AJ839A
<b>HP V1410-24G Switch (J9561A)</b>	
<a href="#">HP X121 1G SFP LC SX Transceiver</a>	J4858C
<a href="#">HP X121 1G SFP LC LX Transceiver</a>	J4859C
<a href="#">HP X111 100M SFP LC FX Transceiver</a>	J9054C

### Accessory Product Details

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

**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 50/125µm 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](http://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 ± 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](http://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**    **Cabling**  
(AJ835A)

**Cable type:**

50/125  $\mu\text{m}$  (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  $\mu\text{m}$  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 50/125 $\mu\text{m}$  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](http://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**     **Cabling**  
(AJ836A)

**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 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](http://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 Cabling**  
**LC/LC Optical Cable**  
(AJ837A)

**Cable type:**

50/125  $\mu\text{m}$  (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  $\mu\text{m}$  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 50/125 $\mu\text{m}$  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](http://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 Cabling**  
**LC/LC Optical Cable**  
(AJ838A)

**Cable type:**

50/125  $\mu\text{m}$  (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  $\mu\text{m}$  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 50/125 $\mu\text{m}$  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](http://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 Cabling**  
**LC/LC Optical Cable**  
(AJ839A)

**Cable type:**

50/125  $\mu\text{m}$  (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  $\mu\text{m}$  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 50/125 $\mu\text{m}$  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](http://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](http://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](http://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](http://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](http://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  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  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](http://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  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  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](http://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

<p><b>HP X121 1G SFP LC SX Transceiver (J4858C)</b></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><b>Ports</b></p> <p><b>Physical characteristics</b></p> <p><b>Environment</b></p> <p><b>Electrical characteristics</b></p> <p><b>Cabling</b></p>	<p>1 LC 1000BASE-SX port; Duplex: full only</p> <p>Dimensions: 2.24(d) x 0.54(w) x 0.48(h) in. (5.69 x 1.37 x 1.22 cm)</p> <p>Weight: 0.04 lb. (0.02 kg)</p> <p>Transceiver form factor: SFP</p> <p>Operating temperature: 32°F to 158°F (0°C to 70°C)</p> <p>Operating relative humidity: 5% to 85%, noncondensing</p> <p>Nonoperating/Storage temperature: -40°F to 203°F (-40°C to 85°C)</p> <p>Altitude: up to 10,000 ft. (3 km)</p> <p>Power consumption typical: 0.4 W</p> <p>Power consumption maximum: 0.7 W</p> <p>Type:</p> <ul style="list-style-type: none"> <li>● 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;</li> </ul> <p>Maximum distance:</p> <ul style="list-style-type: none"> <li>● 2-220 m (62.5 µm core diameter, 160 MHz*km bandwidth)</li> <li>● 2-275 m (62.5 µm core diameter, 200 MHz*km bandwidth)</li> <li>● 2-500 m (50 µm core diameter, 400 MHz*km bandwidth)</li> <li>● 2-550 m (50 µm core diameter, 500 MHz*km bandwidth)</li> </ul> <p>Cable length: 2-550m</p> <p>Fiber type: Multi Mode</p>
<p><b>HP X121 1G SFP LC LX Transceiver (J4859C)</b></p> <p>HP X121 1G SFP LC LX Transceiver: An SFP format gigabit transceiver with LC connectors using LX technology.</p>	<p><b>Ports</b></p> <p><b>Physical characteristics</b></p> <p><b>Environment</b></p> <p><b>Cabling</b></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"> <li>● 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;</li> </ul> <p>Maximum distance:</p> <ul style="list-style-type: none"> <li>● 2-550 m (multimode 62.5 µm core diameter, 500 MHz*km bandwidth)</li> <li>● 2-550 m (multimode 50 µm core diameter, 400 MHz*km bandwidth)</li> <li>● 2-550 m (multimode 50 µm core diameter, 500 MHz*km bandwidth)</li> <li>● 2-10,000 m (single-mode fiber)</li> </ul>
	<p><b>Services</b></p>	<p>Refer to the HP website at <a href="http://www.hp.com/networking/services">www.hp.com/networking/services</a> 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

<b>Notes</b>	A mode conditioning patch cord may be needed in some multimode fiber installations. Wavelength: 1310nm Power Consumption: < 500mW Typical
<b>Services</b>	Refer to the HP website at <a href="http://www.hp.com/networking/services">www.hp.com/networking/services</a> 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.

<b>HP X111 100M SFP LC FX Transceiver (J9054C)</b>	<b>Ports</b>	1 LC 100BASE-FX port (IEEE 802.3u Type 100BASE-FX); Duplex: half or full	
	<b>Physical characteristics</b>	<b>Dimensions</b>	2.7(d) x 0.54(w) x 0.48(h) in. (6.86 x 1.38 x 1.22 cm)
		<b>Weight</b>	0.06 lb. (0.03 kg)
		<b>Environment</b>	<b>Operating temperature</b> 32°F to 158°F (0°C to 70°C) <b>Operating relative humidity</b> 5% to 95% <b>Nonoperating/Storage temperature</b> -40°F to 185°F (-40°C to 85°C) <b>Nonoperating/Storage relative humidity</b> 5% to 85%
	<b>Cabling</b>	<b>Altitude</b>	up to 10,000 ft. (3 km)
		<b>Cable type:</b>	62.5/125 $\mu$ m or 50/125 $\mu$ m (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)
		<b>Notes</b>	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 J9054B 100-FX SFP-LC Transceiver" on the "ProCurve Mini-GBICs and SFPs" Manuals Web page.
	<b>Services</b>	Refer to the HP website at: <a href="http://www.hp.com/networking/services">www.hp.com/networking/services</a> 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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