ArubaOS-Switch Transceiver Guide

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The transceivers listed in this document represent the currently available and End of Sale products at the time of this publication. Not all transceiver products are supported in every switch available from HPE Aruba. Consult the **QuickSpecs** for the applicable switch product for a list of supported transceiver products. QuickSpecs can be found at **www.hpe.com/networking/library**

Types of transceiver modules and network cables

Table 1: *Types of transceiver modules and network cables*

Transceiver module type		Connector head
QSFP28 module (transceiver)	QSFP28 optical transceiver module	MPO 12 or 2-strand LC
	QSFP28 DAC (copper cable for interconnecting devices) 1 - 5m reaches	N/A
QSFP+ module (transceiver)	QSFP+ optical transceiver module	MPO 12 or 2-strand LC
	QSFP+ DAC (copper cable for interconnecting devices) 1 - 5m reaches	N/A
SFP+ module (transceiver)	SFP+ optical transceiver module	LC: 2 or 1 strand (for BiDi)
	SFP+ DAC (copper cable for interconnecting devices)	N/A
Small form-factor pluggable (SFP) module (transceiver)	100-Megabit SFP optical transceiver module	LC
	Gigabit SFP optical transceiver module	
	Gigabit SFP copper transceiver module	RJ-45

- The available transceiver modules and network cables vary by device models and are subject to change over time. For the most up-to-date list of transceiver modules and network cables, contact your HPE Aruba sales representative or technical support engineer.
- For information about the transceiver modules and network cables available for each device model, see the QuickSpecs for the applicable switch product.

Data rate

Data rate is the number of bits transmitted per second. The unit of measure for data rate is Megabits per second (Mbps) or Gigabits per second (Gbps). Optical transceiver modules available for products provide the following levels of data rates:

- 40 Gbps
- 10 Gbps
- 100 Gbps
- 1000 Mbps (also known as Gigabit)
- 100 Mbps

Transmission distance

The transmission distance of optical transceiver modules is divided into short and long-range types. A distance of 2 km (1.24 miles) and below is considered a short-range type. A distance of 10 km (6.21 miles) is considered a long-range type. Transmission distances provided by optical transceiver modules are limited by certain loss and dispersion suffered during the transmission of fiber signals over fibers.

- Loss is the optical energy loss due to the absorption, dispersion, and leakage over the media when light travels through optical fibers. This loss increases in direct ratio to transmission distance.
- Dispersion occurs mainly because light waves of different wavelengths travel at different rates over the same medium. This causes different wave components of optical signals to reach the receiving end early or late as the transmission distance increases causing impulse broadening. Impulse broadening makes the signal values indistinguishable (data loss). Different wavelengths traveling down the same fiber are called modes, and this data loss is known as intermodal dispersion.

To meet different transmission distance requirements, choose suitable optical transceiver modules according to actual networking conditions.

Central wavelength

Central wavelength represents the wave band used for optical signal transmission. The following central wavelengths are available for common optical transceiver modules representing three wavebands:

- 850 nm waveband: Used for short-reach transmission.
- 1310 nm waveband: Used for middle-reach and long-haul transmission.
- 1550 nm waveband: Used for middle-reach and long-haul transmission.

Fiber

Fiber types

Fibers are classified as multimode fibers and single-mode fibers.

- Multimode fibers

  Multimode fibers (MMFs) have thicker fiber cores and can transport light in multiple modes. However, the intermodal dispersion is greater and worsens as the transmission distance increases.

  Multimode fibers can be classified into multiple grades according to their diameters and modal bandwidth. For more information, see Table 2. The modal bandwidth of a multimode fiber is determined by the expression the modulation frequency of the maximum modulation frequency pulse that can pass a fiber × the fiber length. The modal bandwidth is a comprehensive index reflecting the optical characteristics of a multimode fiber.

  International Telecommunication Union (ITU) defines multimode fiber types in its G series standards. The commonly used multimode fiber is defined in the ITU G.651 standard. The G.651-compliant fiber transmits light at the wavelength range 800 nm to 900 nm or 1200 nm to 1350 nm.

Table 2: *Multimode fiber grades*

Fiber mode	Fiber grade	Fiber diameter (µm)	Modal bandwidth at 850 nm (MHz*km)
Multimode fiber	OM1	62.5/125	200
	OM2	50/125	500
	OM3	50/125	2000
	OM4	50/125	4700

Other factors that influence the transmission distance of multimode fibers include interface type, central wavelength, and fiber grade. The modal bandwidth values shown above are for the fiber grades listed. There are multimode fibers that have different modal bandwidth characteristics and do not necessarily match the OM1 - OM4 grades.

Table 3: *Multimode fiber specifications*

Interface types	Central wavelength (µm)	Fiber grade	Transmission distance
1000BASE-SX	850	OM1	< 275 m (902.23 ft)
		OM2	< 550 m (1804.46 ft)
10GBASE-SR	850	OM1	< 33 m (108.27 ft)
		OM2	< 82 m (269.03 ft)
		OM3	< 300 m (984.25 ft)
		OM4	< 400m (1312.34 ft)
10GBASE-LRM	1310	OM1	< 220 m (721.78 ft)
		OM2	< 220 m (721.78 ft)
		OM3	< 220 m (721.78 ft)
		OM4	< 220 m (721.78 ft)
		SMF	<300m (987.25 ft)

- Single-mode fibers

  Single-mode fibers (SMFs) have a small core size, typically 9 µm or 10 µm, and can transmit light in only one mode. Single-mode fibers suffer little intermodal dispersion and are suitable for long-haul communication. Single-mode fibers transmit light at the central wavelength of 1310 nm or 1550 nm.

  Telecommunication Industries Alliance (TIA)/Electronic Industries Alliance (EIA) defines that single-mode fibers use yellow outer jackets with the mark "SM".

  ITU defines single-mode fiber types in its G series standards. The most commonly used single-mode fibers are defined in ITU G.652 and G.655 standards. The following table describes features of the G.652 and G.655-compliant fibers.

Table 4: *Features of G.652- and G.655-compliant fibers*

Single-mode fiber type	Wavelength (µm)	Features	Applications
G.652-compliant fiber (standard single-mode fiber)	1260 to 1360 1530 to 1565	Zero dispersion at 1310 nm	Connecting transceiver modules with a central wavelength of 1310 nm or 1550 nm.
G.655-compliant fiber (non-zero dispersion shifted fiber)	1530 to 1565	Near-zero dispersion around 1550 nm	For 1550 nm wavelength-division multiplexing (WDM) transmissions.Scooba.izGr8

Fiber diameter

Fiber diameter is expressed as core diameter/cladding diameter, in µm. For example, 9/125 µm means that the fiber core diameter is 9 µm and the fiber cladding diameter is 125 µm.

For the HPE devices, the following fiber diameters are recommended:

- **G.652 standard single-mode fiber:** 9/125 µm
- **G.655 single-mode fiber:** 9/125 µm
- **G.651 standard multimode fiber:** 50/125 µm or 62.5/125 µm

Connector

Cover the connector with a dust cap when it is not connected to any optical fibers.

Connectors connect transceiver modules to the corresponding transmission media. The transceiver modules available for the HPE ArubaOS-Switch products use the following types of connectors:

- Lucent connector or local connector (LC).

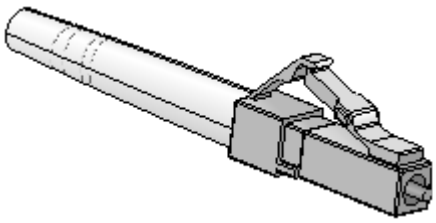
  Single LC connectors (also known as Simplex) are typically used for 1G & 10G BiDi (Bidirectional) optics.

  Dual LC connectors (Duplex) are typically used in normal optical types.

NOTE

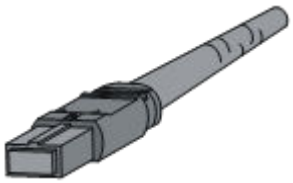
40G BiDi uses only Duplex fiber versus MPO (see below) for 40G SR4 applications.

Figure 1: *LC connector*



- Multifiber Push On (MPO) connector.

  Figure 2: *MPO connector*



  The 40G QSFP+ MPO transceiver modules use only female MPO connectors, which have guide holes in the end face (the transceiver has guide pins within the MPO receptacle).

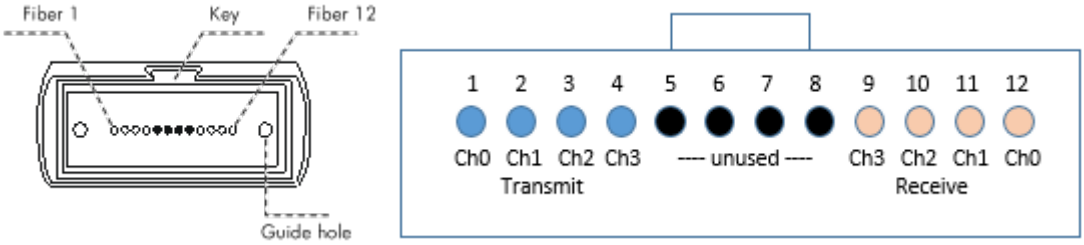
  MPO connectors are classified as the following types based on the polish type:

  - **Physical contact (PC):** End face polished flat.
  - **Angle-polished contact (APC):** End face polished with an angle, typically 8°.

  MPO connectors are available with 12 fibers or 24 fibers:

  - 12-fiber MPO connector (used for 40G SR4 transceivers)

    Figure 3: *End face of a 12-fiber connector and channel assignment*



    MPO transceivers typically use four channels to communicate. These channels are assigned using the outer eight fibers (the center four are unused).

    Transmit channels are one set of four fibers, and the receive channels are on the other set of four fibers. Because of this, the cables used and fiber cable connections from endpoint to endpoint effectively create a crossover connection.

    Be aware that using two crossover cables in series cancels this effect and no connection will be established. An odd number of crossovers combined with straight-thru fiber connections will effect a crossover connection.

    The channel layout indicates that the left four fibers are Transmit, and must reach the opposite transceiver Receive channels (and in proper channel order).

Optical parameters

This guide provides average transmit and receive power ranges for transceiver modules.

Transmit power

Transmit power is the power at which the transmitter of an optical transceiver module transmits optical signals, in dBm.

Receive power

Receive power is the power at which the receiver of an optical transceiver module receives optical signals, in dBm.

Copper transceiver modules

Copper transceiver modules transmit signals over Category-5 unshielded twisted pair (UTP). UTP transmission cover shorter distances than fiber transmission and can be used in small-sized networks only.

HPE Aruba products support the HPE X121 1G SFP RJ45 T Transceiver (J8177C) copper transceiver module.

Transmission distance

Through UTP cables, signals can be transmitted over a distance of 100 m (328.08 ft.) only. This behavior occurs because signals attenuate during transmission through the UTP cables.

Attenuation refers to the dissipation of the power of a transmitted signal as it travels over a cable. Attenuation occurs because signal transmission suffers certain resistance from the cable, which weakens the signals as they travel over the cable. When signals are transmitted over a long distance, signal strength decreases significantly, causing the signal-to-noise ratio to drop below the accepted level. This decrease makes it impossible to distinguish between signals and noise, which results in data loss.

When signals are to be transmitted over a short distance, use copper transceiver modules only.

Connector

Registered Jack-45 (RJ-45) twisted-pair connectors are used as connectors for copper transceiver modules.

Figure 4: *RJ-45 connector*

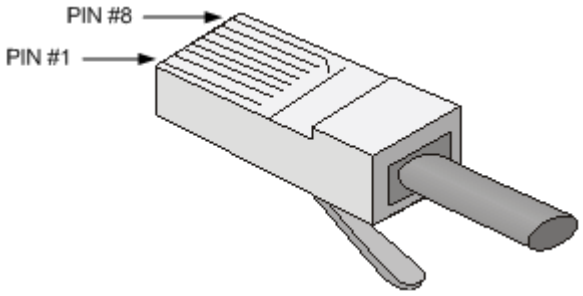


Table 5: *RJ-45 GE connector pin assignment for Gigabit connections*

Pin	Signal	Function
1	MX_0+	Data transmit/receive
2	MX_0-	Data transmit/receive

Table Continued

Pin	Signal	Function
3	MX_1+	Data transmit/receive
4	MX_2+	Data transmit/receive
5	MX_2-	Data transmit/receive
6	MX_1-	Data transmit/receive
7	MX_3+	Data transmit/receive
8	MX_3-	Data transmit/receive

Note on product images

Product images in this guide may differ from actual product.

QSFP+ optical transceiver modules that use MPO connectors

Figure 5: *QSFP+ optical transceiver module that uses MPO connectors*

Models, specifications, and compatibility

QSFP+ optical transceiver modules provide a transmission rate of 40 Gbps and use MPO connectors.

Table 6: *Specifications for QSFP+ optical transceiver modules that use MPO connectors (1)*

Product name	SKU	DOM - Digital Optical Monitoring (4x4 part #)	Central wavelength (nm)	Fiber mode	Fiber diameter (µm)	Modal bandwidth (MHz*km)	Transmission distance
HPE X142 40G QSFP+ MPO SR4 Transceiver	JH231A	YES (1990-4554)	850	MMF	50/125	2000 (OM3)	100 m (328.08 ft)
						4700 (OM4)	150 m (492.12 ft)
HPE X142 40G QSFP+ MPO eSR4 300M XCVR	JH233A	YES (1990-4555)	850	MMF	50/125	2000 (OM3)	300 m (984.25 ft)
						4700 (OM4)	400 m (1312.33 ft)

Table 7: *Specifications for QSFP+ optical transceiver modules that use MPO connectors (2)*

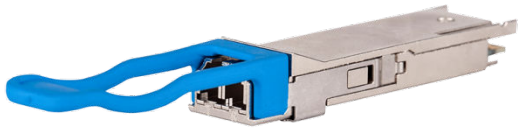
Product name	SKU	Connector	Optical parameters (dBm)	
			Transmit power	Receive power
HPE X142 40G QSFP+ MPO SR4 Transceiver	JH231A	MPO (PC polished, 12-fiber)	–7.6 to 0	–9.5 to +2.4
HPE X142 40G QSFP+ MPO eSR4 300M XCVR	JH233A	MPO (PC polished, 12-fiber)	–7.6 to 0	–9.9 to +2.4

Table 8: *Compatibility for the QSFP+ optical transceiver modules that use MPO connectors*

Product name	SKU	Minimum software required	Comments
Aruba 3810M/2930M 1QSFP + 40GbE Module	JL078A	All	
Aruba 3810M 2QSFP+ 40GbE Module	JL079A	All	
20p PoE+ / 1p 40GbE QSFP+ v3 zl2 Module	J9992A	KB.15.17	
2p 40GbE QSFP+ v3 zl2 Module	J9996A	KB.15.17	

QSFP+ optical transceiver modules that use LC connectors

Figure 6: *QSFP+optical transceiver module that uses LC connectors*



Models, specifications, and compatibility

QSFP+ optical transceiver modules provide a transmission rate of 40 Gbps and use LC connectors.

Table 9: *Specifications for QSFP+ transceiver modules that use LC connectors (1)*

Product name	SKU	DOM - Digital Optical Monitoring (4x4)	Central wavelength (nm)	Fiber mode	Fiber diameter (µm)	Modal bandwidth (MHz*km)	Transmission distance
HPE X142 40G QSFP + LC LR4 SM Transceiver	JH232A	YES (1990-4556)	Four lanes: • 1271 • 1291 • 1311 • 1331	SMF	9/125	N/A	10 km (6.21 miles)
HPE X140 40G QSFP + LC BiDi 150m MM Transceiver	JL308A	YES (1990-4679)	Dual 20Gb/s: • 850 • 900	MMF	50/125	2000	100 m (328.08 ft)
						4700	150 m (492.12 ft)

Table 10: *Specifications for QSFP+ transceiver modules that use LC connectors (2)*

Product name	SKU	Optical parameters (dBm)	
		Transmit power	Receive power
HPE X142 40G QSFP+ LC LR4 SM Transceiver	JH232A	–7 to +2.3 per lane	–13.7 to +2.3 per lane

Table 11: *Compatibility for the QSFP+ optical transceiver modules that use LC connectors*

Product name	SKU	Minimum software required	Comments
Aruba 3810M/2930M 1QSFP + 40GbE Module	JL078A	For JH232A: all For JL308A: KB or WC KB. 16.04.0008	
Aruba 3810M 2QSFP+ 40GbE Module	JL079A	For JH232A: all For JL308A: KB or WC KB. 16.04.0008	
20p PoE+ / 1p 40GbE QSFP+ v3 zl2 Module	J9992A	For JH232A: KB.15.17 For JL308A: KB or WC KB. 16.04.0008	
2p 40GbE QSFP+ v3 zl2 Module	J9996A	For JH232A: KB.15.17 For JL308A: KB or WC KB. 16.04.0008	

Table 12: *Specifications for QSFP+ BiDi transceiver modules (1)*

Product name	SKU	DOM - Digital Optical Monitoring (4x4)	Central wavelength (nm)	Fiber mode	Fiber diameter (µm)	Modal bandwidth (MHz*km)	Transmission distance
HPE X140 40G QSFP + LC BiDi 150m MM Transceiver	JL308A	YES (1990-4679)	Dual 20Gb/s: • 850 • 900	MMF	50/125	2000	100 m (328.08 ft)
						4700	150 m (492.12 ft)

Table 13: *Specifications for QSFP+ BiDi transceiver modules (2)*

Product name	SKU	Optical parameters (dBm)	
		Transmit power	Receive power
Aruba 40G QSFP+ LC BiDi 150m MMF Transceiver	JL308A	–4 to +5	–6 to +5

QSFP+ DAC (copper cables)

Figure 7: *QSFP+ DAC copper cables*

Direct Attach over Copper (DAC) cables have a minimum bend radius of typically 4x the diameter of the cable (approximately a 1" bend radius). Handle DAC cables carefully to ensure that you do not crimp or bend the cable beyond a 1" radius. Otherwise, you risk damaging the cable.

Models, specifications, and compatibility

Table 14: *Specifications for QSFP+ copper cables*

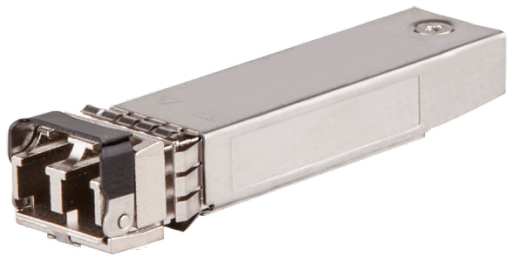
Product name	SKU	Cable length	Data rate	Description
HPE X242 40G QSFP+ to QSFP+ 1m DAC Cable	JH234A	1 m (3.28 ft)	40 Gbps	Used for interconnecting 40-Gigabit QSFP+ ports
HPE X242 40G QSFP+ to QSFP+ 3m DAC Cable	JH235A	3 m (9.84 ft)		
HPE X242 40G QSFP+ to QSFP+ 5m DAC Cable	JH236A	5 m (16.40 ft)		

Table 15: *Compatibility for the QSFP+ copper cables*

Product name	SKU	Minimum software required	Comments
Aruba 3810M/2930M 1QSFP + 40GbE Module	JL078A	All	
Aruba 3810M 2QSFP+ 40GbE Module	JL079A	All	
20p PoE+ / 1p 40GbE QSFP+ v3 zl2 Module	J9992A	KB.15.17	
2p 40GbE QSFP+ v3 zl2 Module	J9996A	KB.15.17	

SFP+ optical transceiver modules

Figure 8: *SFP+ optical transceiver modules*



NOTE

- Although a 10G SFP+ transceiver module is the same physical dimensions of a 1G SFP transceiver, a 10G transceiver will NOT operate in a 1G SFP port.
- Many, although not all, 10G SFP+ ports have support to use a 1G SFP transceiver (or even a 100Mbps FX SFP transceiver).

  See the QuickSpec for the Switch product and verify if the 1G or 100Mbps SFP transceiver is supported in the 10G SFP+ port.

Models, specifications, and compatibility

SFP+ optical transceiver modules provide a transmission rate of 10.31 Gbps and use LC connectors.

Table 16: *Specifications for SFP+ optical transceiver modules (1)*

Product name	SKU	DOM - Digital Optical Monitoring (4x4 part #)	Central wavelength (nm)	Fiber mode	Fiber diameter (µm)	Bandwidth (MHz*km)	Transmission distance
HPE X132 10G SFP+ LC SR Transceiver	J9150A	Yes (1990-4391 1990-4175)	850	MMF	50/125	2000 (OM3)	300 m (984.25 ft)
						500 (OM2)	82 m (269.03 ft)
						400	66 m (216.54 ft)
						4700 (OM4)	400 m (1312.34 ft)
					62.5/125	200 (OM1)	33 m (108.27 ft)

Table Continued

Product name	SKU	DOM - Digital Optical Monitoring (4x4 part #)	Central wavelength (nm)	Fiber mode	Fiber diameter (µm)	Bandwidth (MHz*km)	Transmission distance
						160	26 m (85.30 ft)
HPE X132 10G SFP+ LC LRM Transceiver	J9152A	Yes (1990-4485)	1310	MMF	50/125	1500	220 m (721.78 ft)
						500 (OM2)	220 m (721.78 ft)
						400	100 m (328.08 ft)
					62.5/125	200 (OM1)	220 m (721.78 ft)
						160	220 m (721.78 ft)
				SMF	9/125	N/A	300m (987.25 ft)
HPE X132 10G SFP+ LC LR Transceiver	J9151A	Yes (1990-3883)	1310	SMF	9/125	N/A	10 km (6.21 miles)
HPE X132 10G SFP+ LC ER Transceiver	J9153A	Yes (1990-4365)	1550	SMF	9/125	N/A	40 km (24.86 miles)

NOTE

A mode conditioning patch cord is required when you use OM1 or OM2 fiber types on an HPE X132 10G SFP+ LC LRM Transceiver (J9152A). Never use mode conditioning patch cords for OM3 fiber types. For more information about mode conditioning patch cords, see related parts in the IEEE 802.3 standard.

Table 17: *Specifications for SFP+ optical transceiver modules (2)*

Product name	SKU	Optical parameters (dBm)	
		Transmit power	Receive power
HPE X132 10G SFP+ LC SR Transceiver	J9150A	–7.3 to –1	–9.9 to +0.5
HPE X132 10G SFP+ LC LRM Transceiver	J9152A	–6.5 to +0.5	–6.5 to +1.5

Table Continued

Product name	SKU	Optical parameters (dBm)	
		Transmit power	Receive power
HPE X132 10G SFP+ LC LR Transceiver	J9151A	–8.2 to +0.5	–14.4 to +0.5
HPE X132 10G SFP+ LC ER Transceiver	J9153A	–4.7 to +4	–15.8 to –1

Table 18: *Compatibility for the SFP+ optical transceiver module*

Product name	SKU	Minimum software required		Comments
		10G-SR, LR, LRM (J9150A, J9151A, J9152A)	10G-ER (J9153A)	
2530 Switch Series	J9853A J9854A J9855A J9856A	Any software version	Any software version	Other models not listed do not have SFP+ ports
2540 Switch Series	JL354A JL355A JL356A JL357A	All (J9150A and J9151A only) J9152A (LRM) is not supported in any 2540 model	Any software version	
2910al Switch Series	J9008A	Any software version	W.15.07.0002	Other models not listed do not have SFP+ ports
2920 Switch Series	J9726A J9727A J9728A J9729A J9836A	Any software version		For use in an installed J9731A Aruba 2920 2-port 10GbE SFP+ Module
2930F Switch Series	JL253A JL254A JL255A JL256A JL258A JL263A JL264A	All (J9150A and J9151A only) J9152A (LRM) is not supported in any 2930F model	Any software version	Other models not listed do not have SFP+ ports

Table Continued

Product name	SKU	Minimum software required		Comments
		10G-SR, LR, LRM (J9150A, J9151A, J9152A)	10G-ER (J9153A)	
2930M Switch Series	JL319A JL320A JL321A JL322A	Any software version J9152A (LRM) is supported for use in the JL083A module for all 2930M models	Any software version	For use in an installed JL083A Aruba 3810M/ 2930M 4SFP+ MACsec Module
3500yl Switch Series	J8692A J8693A J9310A J9311A	K.14.50 and later	K.15.02.0004 and later	For use in an installed J9312A 10GbE 2-port SFP+/2-port CX4 yl Module
3800 Switch Series	J9575A J9576A J9573A J9574A J9584A	Any software version	Any software version	Other models not listed do not have SFP+ ports
3810M Switch Series	JL071A JL072A JL073A JL074A JL076A	Any software version	Any software version	For use in an installed JL083A Aruba 3810M/ 2930M 4SFP+ MACsec Module
	JL075A	Any software version	Any software version	For use in the JL075A SFP+ ports or used in an installed JL083A Aruba 3810M/2930M 4SFP+ MACsec Module
5400zl Switch Series `	J9309A	K.14.39	K.15.02.0004	
	J9538A J9548A J9536A	K.15.02.0004	K.15.02.0004	
5400R Switch Series	J9538A J9548A J9536A	Any software version	Any software version	

Table Continued

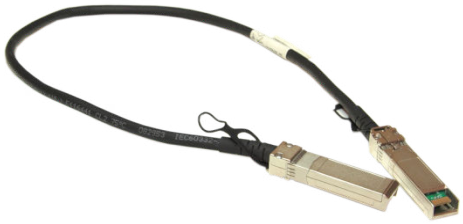
Product name	SKU	Minimum software required		Comments
		10G-SR, LR, LRM (J9150A, J9151A, J9152A)	10G-ER (J9153A)	
	J9990A J9993A	KB.15.17	KB.15.17	
6120 Switch Series	516733-B21 (6120XG)	Any software version	(not supported)	498358-B21 (6120G/XG) has 1GB SFP and 10G XFP or CX4 ports and does not support these SFP+ transceivers
6200yl Switch Series	J8992A	K.14.50	K.15.02.0004	J8992A fixed SFP ports are 1GB and do not support these SFP+ transceiversFor use in an installed J9312A 10GbE 2-port SFP+/2-port CX4 yl Module
6600 Switch Series	J9264A J9265A	K.14.03	K.15.02.0004	
	J9452A	K.14.24	K.15.02.0004	
8200zl Switch Series	J9309A	K.14.39	K.15.02.0004	
	J9538A J9548A J9536A	K.15.02.0004	K.15.02.0004	

NOTE

A mode conditioning patch cord is required when you use OM1 or OM2 fiber types on an HPE X132 10G SFP+ LC LRM Transceiver (J9152A). Never use mode conditioning patch cords for OM3 fiber types. For more information about mode conditioning patch cords, see related parts in the IEEE 802.3 standard.

SFP+ DAC cables

Figure 9: *SFP+ DAC cable*



Direct Attach over Copper (DAC) cables have a minimum bend radius of typically 4x the diameter of the cable (approximately a 1" bend radius). Handle DAC cables carefully to ensure that you do not crimp or bend the cable beyond a 1" radius. Otherwise, you risk damaging the cable.

Models, specifications, and compatibility

Table 19: *Specifications for SFP+ DAC cables*

Product name	SKU	Cable length	Data rate	Type
HPE X242 10G SFP+ to SFP+ 1m DAC Cable	J9281B	1 m (3.28 ft)	10.31 Gbps	SFP+ cable
HPE X242 10G SFP+ to SFP+ 3m DAC Cable	J9283B	3 m (9.84 ft)		
HPE X242 10G SFP+ to SFP+ 7m DAC Cable	J9285B	7 m (22.97 ft)		

Table 20: *Compatibility for the SFP+ copper cables*

Product name	SKU	Minimum software required (J9281B, J9283B, J9285B)	Comments
2530 Switch Series	J9853A J9854A J9855A J9856A	All	Other models not listed do not have SFP+ ports.
2540 Switch Series	JL354A JL355A JL356A JL357A	All	J9285B (7m) not supported.
2910al Switch Series	J9145A J9146A J9147A J9148A	W.14.28	For use in the J9008A 2-port 10GbE SFP+ al module.
2920 Switch Series	J9726A J9727A J9728A J9729A J9836A	All	The SFP ports on the models listed do not support these 10G SFP+ cables. For use in an installed J9731A Aruba 2920 2-port 10GbE SFP+ .

Table Continued

Product name	SKU	Minimum software required (J9281B, J9283B, J9285B)	Comments
2930F Switch Series	JL253A JL254A JL255A JL256A JL258A JL263A JL264A	All	Other models not listed do not have SFP+ ports. J9285B (7m) not supported.
2930M Switch Series	JL319A JL320A JL321A JL322A	All	For use in an installed JL083A Aruba 3810M/2930M 4SFP+ MACsec Module J9285B (7m) is supported in all 2930M models
3500yl Switch Series	J8692A J8693A J9310A J9311A	K.14.50	For use in an installed J9312A 10GbE 2-port SFP +/2-port CX4 yl Module
3800 Switch Series	J9575A J9576A J9573A J9574A J9584A	All	Other models not listed do not have SFP+ ports.
3810M Switch Series	JL071A JL072A JL073A JL074A JL076A	All	For use in an installed JL083A Aruba 3810M/2930M 4SFP+ MACsec Module.
	JL075A	All	For use in the JL075A SFP+ ports or used in an installed JL083A Aruba 3810M/2930M 4SFP+ MACsec Module.
5400zl Switch Series `	J9309A	K.14.39	

Table Continued

Product name	SKU	Minimum software required (J9281B, J9283B, J9285B)	Comments
	J9538A J9548A J9536A	K.15.02.0004	
5400R Switch Series	J9538A J9548A J9536A	All	
	J9990A J9993A	KB.15.17	
6120 Switch Series	516733-B21	All	
6200yl Switch Series	J8992A	K.14.50	J8992A fixed SFP ports are 1GB and do not support these SFP+ copper cables.For use in an installed J9312A 10GbE 2-port SFP +/2-port CX4 yl Module.
6600 Switch Series	J9264A J9265A J9452A	K.14.32	
8200zl Switch Series	J9309A	K.14.39	
	J9538A J9548A J9536A	K.15.02.0004	

Gigabit SFP optical transceiver modules

Figure 10: *Gigabit or 100-Megabit SFP optical transceiver module*

NOTE

- Although a 10G SFP+ transceiver module has the same physical dimensions of a 1G SFP transceiver, a 10G transceiver will NOT operate in a 1G SFP port.
- Many, although not all, 10G SFP+ ports have support to use a 1G SFP transceiver (or even a 100Mbps FX SFP transceiver). See the QuickSpec for the Switch product and verify if the 1G or 100Mbps SFP transceiver is supported in the 10G SFP+ port.

Models, specifications, and compatibility

2.5-Gigabit SFP optical transceiver modules use LC connectors.

Table 21: *Specifications for Gigabit SFP optical transceiver modules (1)*

Product name	SKU	DOM - Digital Optical Monitoring (4x4 part #)	Central wavelength (nm)	Fiber mode	Fiber diameter (µm)	Modal bandwidth (MHz*km)	Transmission distance
HPE X121 1G SFP LC SX Transceiver	J4858C	Yes (1990-4395 & 1990-4415)	850	MMF	50/125	500 (OM2)	550 m (1804.46 ft)
						400	500 m (1640.42 ft)
					62.5/125	200 (OM1)	275 m (902.23 ft)
						160	220 m (721.78 ft)
HPE X121 1G SFP LC LX Transceiver	J4859C	Yes (1990-4116) (1990-4414 & 1990-4608)	1310	SMF	9/125	N/A	10 km (6.21 miles)
				MMF	50/125	500 (OM2) or 400	550 m (1804.46 ft)

Table Continued

Product name	SKU	DOM - Digital Optical Monitoring (4x4 part #)	Central wavelength (nm)	Fiber mode	Fiber diameter (µm)	Modal bandwidth (MHz*km)	Transmission distance
				MMF	62.5/125	500 (OM2)	550 m (1804.46 ft)
HPE X121 1G SFP LC LH Transceiver	J4860C	Yes (1990-4363)	1550	SMF	9/125	N/A	70 km (43.49 miles)

Table 22: *Specifications for Gigabit SFP optical transceiver modules (2)*

Product name	SKU	Optical parameters (dBm)	
		Transmit power	Receive power
HPE X121 1G SFP LC SX Transceiver	J4858C	–9.5 to 0	–17 to –3
HPE X121 1G SFP LC LX Transceiver	J4859C	–9.5 to –3	–20 to –3
HPE X121 1G SFP LC LH Transceiver	J4860C	0 to +5	–22 to –3

Table 23: *Compatibility for Gigabit SFP optical transceiver modules*

Product name	SKU	Minimum software required (J4858C, J4859C, J4860C)	Comments
1400 Switch Series	J9078A	All software versions	
1410 Switch Series	J9561A	All software versions	
1700 Switch Series	J9080A	VB.01.09	
1800 Switch Series	J9028A/B	PB.02.09	
1810 Switch Series	J9450A J9660A	All software versions	Gig-LH in J9450A only
	J9801A J9803A J9834A	All software versions	Gig-LH not supported

Table Continued

Product name	SKU	Minimum software required (J4858C, J4859C, J4860C)	Comments
1820 Switch Series	J9980A J9981A J9983A J9984A	All software versions	J4860C not supported
2510 Switch Series	J9019A/B J9020A J9279A J9280A	All software versions	
2520 Switch Series	J9137A J9138A J9298A J9299A	All software versions	
2530 Switch Series	J9772A J9773A J9774A J9775A J9776A J9777A J9778A J9779A J9780A J9781A J9782A J9783A J9853A J9854A J9855A J9856A	All software versions	
2540 Switch Series	JL354A JL355A JL356A JL357A	All software versions	

Table Continued

Product name	SKU	Minimum software required (J4858C, J4859C, J4860C)	Comments
2600 Switch Series	J4899A/B/C J4900A/B/C J8164A J8165A J8762A	H.08.98	
2610 Switch Series	J9085A J9086A J9087A J9088A J9089A	All software versions	
2615-8-PoE Switch	J9565A	All software versions	
2620 Switch Series	J9623A J9624A J9625A J9626A J9627A	All software versions	
2800 Switch Series	J4903A J4904A	i.08.103	
2810 Switch Series	J9021A J9022A	All software versions	
2900 Switch Series	J9049A J9050A	T.13.45	
2910al Switch Series	J9145A J9146A J9147A J9148A	All software versions	For use in the SFP ports on the models listed, and in the J9008A 2-port 10GbE SFP+ al module.
2915-8G-PoE Switch	J9562A	All software versions	

Table Continued

Product name	SKU	Minimum software required (J4858C, J4859C, J4860C)	Comments
2920 Series Switches	J9726A J9727A J9728A J9729A J9836A	All software versions	For use in the SFP ports on the models listed, and for use in the dual-speed SFP+ ports of the J9731A 2-Port 10GbE SFP+ Module.
2930F Series Switches	JL253A JL254A JL255A JL256A JL258A JL259A JL260A JL261A JL262A JL263A JL264A	All software versions	
2930M Switch Series	JL319A JL320A JL321A JL322A	All software versions	For use in SFP ports on switch and an installed JL083A Aruba 3810M/ 2930M 4SFP+ MACsec Module.
3400cl Switch Series	J4905A J4906A	All software versions	
3500 Series Switches	J9470A J9471A J9472A J9473A	K.14.31	
3500yl Switch Series	J8692A J8693A	All software versions	For use in the SFP ports on the models listed, and in an installed J9312A 10GbE 2-port SFP+/2-port CX4 yl Model
	J9310A J9311A	K.14.50	

Table Continued

Product name	SKU	Minimum software required (J4858C, J4859C, J4860C)	Comments
3800 Switch Series	J9573A J9574A J9575A J9576A J9584A	All software versions	
3810M Switch Series	JL071A JL072A JL073A JL074A JL076A JL075A	All software versions	For use in the JL075A 3810M switch or in any 3810M switch with a JL083A Aruba 3810M/ 2930M 4SFP+ MACsec Module installed.
4200gl Switch Series	J4893A J4908A	G.07.103	
4200vl Switch Series	J8776A J9033A	All software versions	
5300xl Switch Series	J4878A/B J4907A	E.10.36	
5400zl Switch Series	J8705A J8706A	All software versions	
	J9308A	K.14.34	
	J9537A J9549A J9535A J9637A J9538A J9548A J9536A	K.15.02.0004	

Table Continued

Product name	SKU	Minimum software required (J4858C, J4859C, J4860C)	Comments
5400R Switch Series	J9537A J9549A J9535A J9637A J9538A J9548A J9536A	All software versions	
	J9988A J9989A J9990A J9993A	KB.15.17	
6108 Switch	J4902A	H.07.88	
6120 Switch Series	498358-B21 516733-B21	SX, LX: all versionsLH: not supported	
6200yl-24G-mGBIC Switch	J8992A	All software versions	
6600 Switch Series	J9263A J9264A	K.14.03	
	J9451A	K.14.24	
8100fl Switch	J8735A	All software versions	
8200zl Switch Series	J8705A J8706A	All software versions	
	J9308A	K.14.34	
	J9537A J9549A J9535A J9637A J9538A J9548A J9536A	K.15.02.0004	

Table Continued

Product name	SKU	Minimum software required (J4858C, J4859C, J4860C)	Comments
9300m Switch Series	J4885A J4894A	All software versions	
9408sl Switch	J8684A	All software versions	

100-Megabit SFP optical transceiver modules

Figure 11: *Gigabit or 100-Megabit SFP optical transceiver module*

Models, specifications, and compatibility

100 Megabit SFP optical transceiver modules use LC connectors.

Table 24: *Specifications for 100-Megabit SFP optical transceiver modules (1)*

Product name	SKU	DOM - Digital Optical Monitoring (4x4 part #)	Central wavelength (nm)	Fiber mode	Fiber diameter (µm)	Transmission distance
HPE X111 100M SFP LC FX Transceiver	J9054C	Yes (1990-4483, 1990-4360)	1310	MMF	50/125 62.5/125	2 km (1.24 miles)

Table 25: *Specifications for 100–Megabit SFP optical transceiver modules (2)*

Product name	SKU	Optical parameters (dBm)	
		Transmit power	Receive power
HPE X111 100M SFP LC FX Transceiver	J9054C	–19 to –14	–30 to –14

Table 26: *Compatibility for the 100-Megabit SFP optical transceiver module*

Product name	SKU	Minimum software required	Comments
1410G Switch Series	J9559A J9560A J9561A	J9559A, J9560A: Not supported (no SFP ports) J9561A: Any software version	For use in the SFP ports of the J9561A 1410-24G Switch
1810G Series Switches	J9449A J9450A J9660A	For J9449A: Not supported. For J9450A, J9660A: Any software version	For use in the SFP ports of the J9450A 1810G-24 Switch and J9660A V1810-48G Switch (The J9449A 1810G-8 Switch does not have SFP ports)
1810G v2 Switch Series	J9801A J9803A	Any software version	For use in the SFP ports of the J9801A 1810-24 v2 and J9803A 1810-24G v2 Switches
PS1810 Switch	J9834A	Any software version	For use in the SFP ports of the J9834A PS1810-24G Switch
1820G Switch Series	J9980A J9981A J9983A J9984A	Any software version	The J9054B 100-FX SFP-LC transceiver is not supported in the 1820G switches The J9054C part number 1990-4483 is not supported in these products
2510-24 Switch	J9019A/B	Q.10.04	
2510-48 Switch	J9020A	Any software version	
2510G Switch Series	J9279A J9280A	Any software version	
2520 Switch Series	J9137A J9138A	Any software version	
2520G Switch Series	J9298A J9299A	J9054B: Any software version J9054C: J.14.32	

Table Continued

Product name	SKU	Minimum software required	Comments
2530 Switch Series	J9772A J9773A J9774A J9775A J9776A J9777A J9778A J9779A J9780A J9781A J9782A J9783A J9853A J9854A J9855A J9856A	For J9853A, J9854A, J9855A, and J9856A: Not supported For all other switches: Any software version	For use in the SFP ports of the 2530 Series Switches (The J9853A, J9854A, J9855A, and J9856A models have 1G/10G SFP+ ports that do not support these 100Mbps transceiver modules)
2540 Switch Series	JL354A JL355A JL356A JL357A	Any software version	
2610 Switch Series	J9085A J9086A J9087A J9088A J9089A	Any software version	
2615-8-PoE Switch	J9565A	J9054B: Any software version J9054C: A.14.07	
2620 Switch Series	J9623A J9624A J9625A J9626A J9627A	Any software version	

Table Continued

Product name	SKU	Minimum software required	Comments
2800 Switch Series	J4903A J4904A	J9054B/C 1990-3613 and J9054C 1990-4112: i.10.30J9054C 1990-4483: Not supported	J9054C part number 1990-4483 is not supported
2810 Switch Series	J9021A J9022A	N.10.07	
2900 Switch Series	J9049A J9050A	T.12.01	
2910al Switch Series	J9145A J9146A J9147A J9148A	Any software version	
2915-8G-PoE Switch	J9562A	J9054B: Any software version J9054C: A.14.07	
2920 Series Switches	J9726A J9727A J9728A J9729A J9836A	Any software version	For use in the SFP ports of the 2920 Series Switches100-FX is not supported in the SFP+ ports of the J9731A 2-Port 10GbE SFP + Module
2930F Switch Series	JL253A JL254A JL255A JL256A JL258A JL263A JL264A JL259A JL260A JL261A JL262A	J9054B: is not supported in the 2930F Series Switches For J9054C: Any software version	The 2930F Switch Series models with 1G/10G SFP+ ports added support for this J9054C100FX transceiver module. The J9054C is supported in models with 1G SFP ports.
2930M Switch Series	JL319A JL320A JL321A JL322A	J9054B is not supported in the 2930M Series Switches. For J9054C: Any software version	For use in SFP ports on switch and an installed JL083A Aruba 3810M/2930M 4SFP+ MACsec Module.

Table Continued

Product name	SKU	Minimum software required	Comments
3500 Series Switches	J9470A J9471A J9472A J9473A	J9054B/C 1990-3613: K.14.31 J9054C 1990-4112 and 1990-4483: K.15.08.0007	
3500yl Switch Series	J8692A J8693A J9310A J9311A	For J8692A, J8693A: K.12.01 (for J9054B/C 1990-3613); K.15.08.0007 (for J9054C 1990-4112 and 1990-4483)For J9310A, J9311A: K. 14.50 (for J9054B/C 1990-3613); K. 15.08.0007 (for J9054C 1990-4112 and 1990-4483)	
3800 Switch Series	J9573A J9574A J9575A J9576A J9584A	For J9573A, J9574A, J9575A, J9576A: Not supported For J9584A: Any software version	For use in the SFP ports of the J9584A 3800-24SFP-2SFP+ Switch (The J9573A 3800-24G-PoE +-2SFP+ Switch, J9574A 3800-48G-PoE+-4SFP+ Switch, J9575A 3800-24G-2SFP+ Switch, and J9576A 3800-48G-4SFP+ Switch do not have SFP ports)
3810M Switch Series	JL071A JL072A JL073A JL074A JL076A	All	For use in an installed JL083A Aruba 3810M/2930M 4SFP+ MACsec Module.
	JL075A	All	For use in the JL075A SFP+ ports or used in an installed JL083A Aruba 3810M/2930M 4SFP+ MACsec Module.
4100gl Switch Series	J4865A J4887A	n/a	100-FX is not supported
4200vl Switch Series	J8770A J8771A J8772A/B J8773A	L.10.24	Supported: J9033A Switch vl 20-Port Gig-T + 4-Port SFP Module Not supported: J8776A Switch vl 4-Port Mini-GBIC Module
5300xl Switch Series J4819A J4850A	J4819A J4850A	n/a	100-FX is not supported

Table Continued

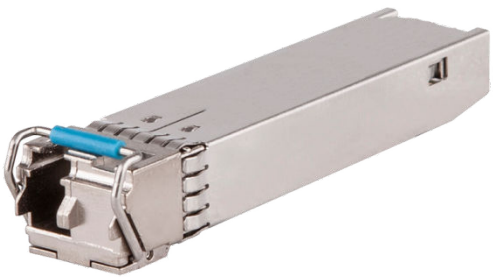
Product name	SKU	Minimum software required	Comments
5400zl Switch Series	J8697A J8698A J9642A J9643A	For J8705A and J8706A modules: K. 12.01 (for J9054B/C 1990-3613); K. 15.08.0007 (for J9054C 1990-4112 and 1990-4483)For the J9308A module:K.14.34 (for J9054B/C 1990-3613);K.15.08.0007 (for J9054C 1990-4112 and 1990-4483)For J9537A, J9549A, J9535A, and J9637A modules:K. 15.02.0004 (for J9054B/C 1990-3613); K.15.08.0007 (for J9054C 1990-4112 and 1990-4483)	For use in: J8705A Switch zl 20-Port 10/100/1000 + 4-Port Mini-GBIC Module J8706A Switch zl 24-Port Mini-GBIC Module J9308A 20-Port 10/100/1000 PoE + and 4-Port SFP zl Module J9537A 24-Port SFP v2 zl Module J9549A 20- Port Gig-T / 4-Port SFP v2 zl Module J9535A 20-Port Gig-T PoE+ / 4-Port SFP v2 zl Module J9637A 12-Port Gig- T PoE+ / 12-Port SFP v2 zl Module
5400R Switch Series	J9821A J9822A J9823A J9824A J9825A J9826A J9868A	For J9535A, J9537A, J9549A, and J9637A modules: Any software version For the J9988A, J9989A, J9990A, and J9993A modules: KB. 15.17 and later	For use in: J9537A 24-Port SFP v2 zl Module J9549A 20-Port Gig-T / 4-Port SFP v2 zl Module J9535A 20-Port Gig-T PoE+ / 4-Port SFP v2 zl Module J9637A 12-Port Gig-T PoE+ / 12-Port SFP v2 zl Module J9988A 24p 1GbE SFP v3 zl2 Module J9989A 12p PoE+ / 12p 1GbE SFP v3 zl2 Module J9990A 20p PoE+ / 4p SFP+ v3 zl2 Module J9993A 8p 1G/10GbE SFP+ v3 zl2 Module
6108 Switch	J4902A	n/a	100-FX is not supported
6120 Blade Switch Series	498358-B21 516733-B21	n/a	100-FX is not supported
6200yl-24G-mGBIC Switch	J8992A	K.12.01 (for J9054B/C 1990-3613); K.15.08.0007 (for J9054C 1990-4112 and 1990-4483)	For use in all 24 ports of the J8992A Switch 6200yl- 24G-mGBIC

Table Continued

Product name	SKU	Minimum software required	Comments
6600 Switch Series	J9263A J9264A J9265A J9451A J9452A	For J9263A, J9264A: K.14.03 (for J9054B/C 1990-3613); K.15.08.0007 (for J9054C 1990-4112 and 1990-4483)For J9451A: K.14.24 (for J9054B/C 1990-3613); K.15.08.0007 (for J9054C 1990-4112 and 1990-4483)	For use in the SFP ports of the J9263A 6600-24G Switch, the J9264A 6600-24G-4XG Switch, and the J9451A 6600-48G Switch (The J9265A 6600-24XG Switch and J9452A 6600- 48G-4XG Switch do not have SFP ports)
8100fl Switch Series	J8727A J8728A	n/a	100-FX is not supported
8200zl Switch Series	J8715A/B J9475A J9640A J9641A	For J8705A and J8706A modules: Any software version (for J9054B/C 1990-3613); K.15.08.0007 (for J9054C 1990-4112 and 1990-4483)For the J9308A module: K.14.34 (for J9054B/C 1990-3613); K.15.08.0007 (for J9054C 1990-4112 and 1990-4483)For J9537A, J9549A, J9535A, and J9637A modules: K. 15.02.0004 (for J9054B/C 1990-3613); K.15.08.0007 (for J9054C 1990-4112 and 1990-4483)	For use in: J8705A Switch zl 20-Port 10/100/1000 + 4-Port Mini-GBIC Module J8706A Switch zl 24-Port Mini-GBIC Module J9308A 20-Port 10/100/1000 PoE + and 4-Port SFP zl Module J9537A 24-Port SFP v2 zl Module J9549A 20- Port Gig-T / 4-Port SFP v2 zl Module J9535A 20-Port Gig-T PoE+ / 4-Port SFP v2 zl Module J9637A 12-Port Gig- T PoE+ / 12-Port SFP v2 zl Module
9300m Switch Series	J4138A J4139A J4874A	n/a	100-FX is not supported
9408sl Switch	J8680A	n/a	100-FX is not supported

Gigabit BIDI optical transceiver modules

Figure 12: *Gigabit BIDI optical transceiver module*



Models, specifications, and compatibility

Gigabit BIDI optical transceiver modules provide a transmission rate of 1250 Mbps and use LC connectors.

- BIDI optical transceiver modules use different central wavelengths in transmit and receive directions to implement bidirectional transmission of fiber signals over the same fiber.
- You must use the HPE X122 1G SFP LC BX 10-D Transceiver (J9142B) and HPE X122 1G SFP LC BX 10-U Transceiver (J9143B) in pairs.
- The J9142B/J9143B were End of Sale in April 2016 and are no longer available. Contact your HPE Aruba Sales team for alternative solutions. The information presented here is for compatibility use.

As of April 2016, the J9142B and J9143B 1G BX transceivers have been End of Sale. Contact your HPE Aruba representative for alternative solutions.

Table 27: *Specifications for Gigabit BIDI optical transceiver modules (1)*

Product name	SKU	DOM - Digital Optical Monitoring (4x4 part #)	Central wavelength (nm)		Fiber mode	Fiber diameter (µm)	Transmission distance
			Transmit end (TX)	Receive end (RX)			
HPE X122 1G SFP LC BX-D Transceiver	J9142B	No	1490	1310	SMF	9/125	10 km (6.21 miles)
HPE X122 1G SFP LC BX-U Transceiver	J9143B	No	1310	1490			

Table 28: *Specifications for Gigabit BIDI transceiver modules (2)*

Product name	SKU	Optical parameters (dBm)	
		Transmit power	Receive power
HPE X122 1G SFP LC BX-D Transceiver	J9142B	–9 to –3	–18.7 to –3
HPE X122 1G SFP LC BX-U Transceiver	J9143B		

Table 29: *Compatibility for Gigabit BIDI transceiver modules*

Product name	SKU	Minimum software required (J9142B, J9143B)	Comments
1400 Switch Series	J9078A	All software versions	
1410 Switch Series	J9561A	All software versions	
1700 Switch Series	J9080A	VB.02.00	
1800 Switch Series	J9028A/B	PB.03.00	
2510-24 Switch	J9019A/B	Q.11.16	
2510-48 Switch	J9020A	U.11.10	
2510G–24 Switch	J9279A	Y.11.03	
2510G–48 Switch	J9280A	Y.11.03	
2520 Switch Series	J9137A J9138A J9298A J9299A	All software versions	
2530 Switch Series	J9772A J9773A J9774A J9775A J9776A J9777A J9778A J9779A J9780A J9781A J9782A J9783A J9853A J9854A J9855A J9856A	All software versions	

Table Continued

Product name	SKU	Minimum software required (J9142B, J9143B)	Comments
2540 Switch Series	JL354A JL355A JL356A JL357A	All software versions	
2600 Switch Series	J4899A/B/C 4900A/B/C J8164A J8165A J8762A	H.10.72	
2610 Switch Series	J9085A J9086A J9087A J9088A J9089A	R.11.22	
2615-8-PoE Switch	J9565A	All software versions	
2620 Switch Series	J9623A J9624A J9625A J9626A J9627A	All software versions	
2800 Switch Series	J4903A J4904A	i.10.69	
2810 Switch Series	J9021A J9022A	N.11.14	
2900 Switch Series	J9049A J9050A	T.13.45	
2910al Switch Series	J9145A J9146A J9147A J9148A	All software versions	
2915-8G-PoE Switch	J9562A	All software versions	

Table Continued

Product name	SKU	Minimum software required (J9142B, J9143B)	Comments
2920 Series Switches	J9726A J9727A J9728A J9729A J9836A	All software versions	
2930F Series Switches	JL253A JL254A JL255A JL256A JL258A JL259A JL260A JL261A JL262A JL263A JL264A		As of April 2016, the J9142B and J9143B 1G BX transceivers have been End of Sale. Contact your HPE Aruba representative for alternative solutions.
2930M Switch Series	JL319A JL320A JL321A JL322A	See comments	As of April 2016, the J9142B and J9143B 1G BX transceivers have been End of Sale. Contact your HPE Aruba representative for alternative solutions.
3500 Series Switches	J9470A J9471A J9472A J9473A	K.14.31	
3500yl Switch Series	J8692A J8693A	K.14.31	
	J9310A J9311A	K.14.50	

Table Continued

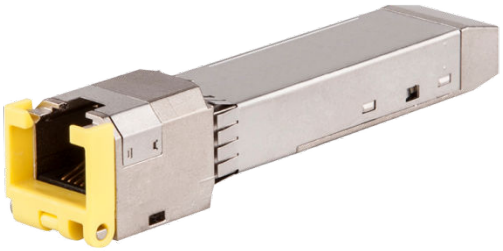
Product name	SKU	Minimum software required (J9142B, J9143B)	Comments
3800 Switch Series	J9573A J9574A J9575A J9576A J9584A	All software versions	
3810M Switch Series	JL071A JL072A JL073A JL074A JL076A	All software versions	For use in the JL075A 3810M switch or in any 3810M switch with a JL083A Aruba 3810M/ 2930M 4SFP+ MACsec Module installed.
	JL075A	All	
4200vl Switch Series	J8776A J9033A	L.11.16	
5300xl Switch Series	J4878A/B J4907A	E.11.08	
5400zl Switch Series	J8705A J8706A	K.13.45	
	J9308A	K.14.34	
	J9537A J9549A J9535A J9637A J9538A J9548A J9536A	K.15.02.0004	

Table Continued

Product name	SKU	Minimum software required (J9142B, J9143B)	Comments
5400R Switch Series	J9537A J9549A J9535A J9637A J9538A J9548A J9536A	All software versions	
	J9988A J9989A J9990A J9993A	KB.15.17	
6200yl-24G-mGBIC Switch	J8992A	K.13.45	
6600 Switch Series	J9263A J9264A	K.14.03	
	J9451A	K.14.24	
8200zl Switch Series	J8705A J8706A	K.13.45	
	J9308A	K.14.34	
	J9537A J9549A J9535A J9637A J9538A J9548A J9536A	K.15.02.0004	

Gigabit SFP copper transceiver modules

Figure 13: *Gigabit SFP copper transceiver module*



Models, specifications, and compatibility

Table 30: *Specifications for SFP copper transceiver modules*

Product name	SKU	Transmission distance	Data rate	Cable type	Connector type
HPE X121 1G SFP RJ45 T Transceiver	J8177C	100 m (328.08 ft)	1250 Mbps	UTP/STP	RJ-45

Table 31: *Compatibility for SFP copper transceiver modules*

Product name	SKU	Minimum software required	Comments
1810 Series Switches	J9660A J9801A J9803A J9834A	All software versions	
1820 Switch Series	J9980A J9981A J9983A J9984A	All software versions	
2510 Switch	J9020A	Any software version	

Table Continued

Product name	SKU	Minimum software required	Comments
2530 Switch Series	J9782A J9781A J9776A J9775A J9779A J9778A J9773A J9772A J9856A J9855A J9854A J9853A	All software versions	
2540 Switch Series	JL354A JL355A JL356A JL357A	Any software version	
2610 Switch Series	J9085A J9086A J9087A J9088A J9089A	All software versions	
2620 Switch Series	J9623A J9624A J9625A J9626A J9627A	All software versions	
2920 Series Switches	J9731A	All software versions	

Table Continued

Product name	SKU	Minimum software required	Comments
2930F Series Switches	JL253A, JL254A JL255A JL256A JL258A JL259A JL260A JL261A JL262A JL263A JL264A	All software versions	
2930M Switch Series	JL319A JL320A JL321A JL322A	All software versions	J8177C is not supported for use in the Dual-Personality ports of the 2930M Series Switches. For use in an installed JL083A Aruba 3810M/2930M 4SFP+ MACsec Module.
3800 Switch Series	J9573A J9574A J9575A J9576A J9584A	All software versions	
3810M Switch Series	JL071A JL072A JL073A JL074A JL076A	All software versions	For use in the JL075A 3810M switch or in any 3810M switch with a JL083A Aruba 3810M/ 2930M 4SFP+ MACsec Module installed.
	JL075A	All software versions	
4100gl Switch Series	J4893A J4908A	G.07.69	
4200vl Switch Series	J8776A J9033A	All software versions	
5300xl Switch Series	J4878A/B	E.09.22	

Table Continued

Product name	SKU	Minimum software required	Comments
5400zl Switch Series	J8705A J8706A	All software versions	
	J9308A	K.14.34	
	J9537A J9549A J9535A J9637A	K.15.02.0004	
5400R Switch Series	J9537A J9549A J9535A J9637A	All software versions	
	J9988A J9989A J9990A J9993A	KB.15.17	
6120 Blade Switch Series	498358-B21 516733-B21	All software versions	
6200yl-24G-mGBIC Switch	J8992A	All software versions	
8100fl Switch Series	J8735A	CY.01.02.0050	
8200zl Switch Series	J8705A J8706A	All software versions	
	J9308A	K.14.34	
	J9537A J9549A J9535A J9637A	K.15.02.0004	

Conventions

This section describes the conventions used in the documentation.

Port numbering in examples

The port numbers in this document are for illustration only and might be unavailable on your device.

Symbols

Table 32: *Symbols*

Convention	Description
	An alert that calls attention to important information that if not understood or followed can result in personal injury.
	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.
	An alert that calls attention to essential information.
NOTE:	An alert that contains additional or supplementary information.
	An alert that provides helpful information.

Networking Websites

Hewlett Packard Enterprise Networking Information Library

www.hpe.com/networking/resourcefinder

Hewlett Packard Enterprise Networking Software

www.hpe.com/networking/software

Hewlett Packard Enterprise Networking website

www.hpe.com/info/networking

Hewlett Packard Enterprise My Networking website

www.hpe.com/networking/support

Hewlett Packard Enterprise My Networking Portal

www.hpe.com/networking/mynetworking

Hewlett Packard Enterprise Networking Warranty

www.hpe.com/networking/warranty

General websites

Hewlett Packard Enterprise Information Library

www.hpe.com/info/EIL

For additional websites, see **Support and other resources**.

Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:

  http://www.hpe.com/assistance
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

  http://www.hpe.com/support/hpesc

Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components
- Third-party products or components

Accessing updates

- Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.
- To download product updates:

  Hewlett Packard Enterprise Support Center

  www.hpe.com/support/hpesc

  Hewlett Packard Enterprise Support Center: Software downloads

  www.hpe.com/support/downloads

  Software Depot

  www.hpe.com/support/softwaredepot
- To subscribe to eNewsletters and alerts:

  www.hpe.com/support/e-updates
- To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center **More Information on Access to Support Materials** page:

  www.hpe.com/support/AccessToSupportMaterials

Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HPE Passport set up with relevant entitlements.

Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your convenience. Some parts

do not qualify for CSR. Your Hewlett Packard Enterprise authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider or go to the CSR website:

http://www.hpe.com/support/selfrepair

Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which will initiate a fast and accurate resolution based on your product's service level. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

If your product includes additional remote support details, use search to locate that information.

Remote support and Proactive Care information

HPE Get Connected

www.hpe.com/services/getconnected

HPE Proactive Care services

www.hpe.com/services/proactivecare

HPE Proactive Care service: Supported products list

www.hpe.com/services/proactivecaresupportedproducts

HPE Proactive Care advanced service: Supported products list

www.hpe.com/services/proactivecareadvancedsupportedproducts

Proactive Care customer information

Proactive Care central

www.hpe.com/services/proactivecarecentral

Proactive Care service activation

www.hpe.com/services/proactivecarecentralgetstarted

Warranty information

To view the warranty for your product, see the *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products* document, available at the Hewlett Packard Enterprise Support Center:

www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Additional warranty information

HPE ProLiant and x86 Servers and Options

www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise Servers

www.hpe.com/support/EnterpriseServers-Warranties

HPE Storage Products

www.hpe.com/support/Storage-Warranties

HPE Networking Products

www.hpe.com/support/Networking-Warranties

Regulatory information

To view the regulatory information for your product, view the *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products*, available at the Hewlett Packard Enterprise Support Center:

www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Additional regulatory information

Hewlett Packard Enterprise is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at:

www.hpe.com/info/reach

For Hewlett Packard Enterprise product environmental and safety information and compliance data, including RoHS and REACH, see:

www.hpe.com/info/ecodata

For Hewlett Packard Enterprise environmental information, including company programs, product recycling, and energy efficiency, see:

www.hpe.com/info/environment

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