



## Fiber Transceiver Accessories

The Zyxel transceiver family follows industry standards to assure compatibility with switches from other manufacturers without barrier set by proprietary technologies. The comprehensive product range including Gigabit and 10 Gigabit transceiver, also Direct Attached Cable 1 M/3 M allows users to plug the proper model onto the network to extend the physical coverage easily.

### Benefits

#### Hot-swappable design facilitates network maintenance

Independent transceiver design provides the highest network maintenance flexibility. Transceivers can be freely added when required, and infrastructure upgrades or transceiver repairs can be done easily by just replacing the transceiver instead of the whole device.

#### Bi-directional transceivers maximizes usage of existing fiber plant

Traditional fiber optic networking requires two strands of fiber to accomplish communications, in which one strand is reserved for sending signals, while the other is for receiving. On the other hand, bi-directional, dual-wavelength transceivers can establish communications over just one strand of fiber by using two separate optical wavelengths: one receives and the other transmits signals. Transmission capacity can be expanded immediately without additional cost laying new fiber.



Hot-Pluggable with maximum flexibility



Low power dissipation, high network stability



Industry standard compliance



802.3z SFP Multi-Source Agreement (MSA) compliance



Compact size, high port density

## Supporting Digital Diagnostics Monitoring Interface (DDMI) SFP enhances management capability

The enhanced digital interface enables a real time link to be established between the switch and the SFP transceiver. This enables the switch to access operating parameters within the fiber link. This includes digital features such as soft control and monitoring of SFP I/O signals. In addition, the DDMI functionality enables the capability to implement digital alarms and warnings.

This feature ensures that the business can be proactive in preventative maintenance of the network and ensure business continuity.

### DDMI Monitors:

- Temperature
- Transmitted power
- Supply voltage
- Received power
- Transmitted bias current

All features listed above include alarm and warning thresholds.

## Specifications and Features

Transceiver Class	10GbE Transceiver Modules			
	10 Gigabit SFP+			
	SFP10G-SR	SFP10G-SR-E	SFP10G-LR	SFP10G-LR-E
Connector	Duplex LC	LC	Duplex LC	LC
Wavelength (nm)	850	850	1310	1310
Max transmission distance (km/yd)	0.3/328	0.3/328	10/10936	10/10936
Optical fiber type	Multi mode	Multi mode	Single mode	Single mode
With DDMI features	Yes	Yes	Yes	Yes
<b>Optical Characteristics</b>				
Transmit power range (dBm)	-1 to -5	-1 to -8.2	+0.5 to -8.2	+0.5 to -8
Receive power range (dBm)	+0.5 to -11.1	0 to -11.1	+0.5 to -12.6	+1 to -14.4
<b>Operational Ranges</b>				
Supply voltage	3.14 - 3.46 V	3.14 - 3.46 V	3.14 - 3.46 V	3.14 - 3.46 V
Max current (mA)	250	300	285	300
<b>Physical Specifications</b>				
Dimensions (WxDxH)(mm/in.)	14.8 x 56.5 x 11.85/0.58 x 2.22 x 0.47			
Weight (g/lb.)	20/0.04	20/0.04	20/0.04	20/0.04
Pack quantity	Single pack	10-pack	Single pack	10-pack
<b>Environmental Specifications</b>				
MTBF (hr)	5,160,000	798,275	3,390,000	2,183,835

Transceiver Class	GbE Transceiver Modules				
	Gigabit SFP				
	SFP-1000T	SFP-SX-D	SFP-SX-E	SFP-LX-10-D	SFP-LX-10-E
Connector	RJ-45	LC	LC	LC	LC
Wavelength (nm)	-	850	850	1310	1310
Max transmission distance (km/yd)	0.1/109	0.55/601	0.55/601	10/10936	10/10936
Optical fiber type	Multi mode	Multi mode	Multi mode	Single mode	Single mode
With DDMI features	-	Yes	Yes	Yes	Yes
<b>Optical Characteristics</b>					
Transmit power range (dBm)	-	-4 to -9.5	-3 to -9.5	-3 to -9.5	-3 to -9
Receive power range (dBm)	-	-3 to -17	-3 to -17	-3 to -20	-3 to -20
<b>Operational Ranges</b>					
Supply voltage	3.1 - 3.45 V	3.1 - 3.5 V	3.1 - 3.5 V	3.1 - 3.5 V	3.1 - 3.5 V
Max current (mA)	300	250	300	300	300
<b>Physical Specifications</b>					
Dimensions (WxDxH)(mm/in.)	13.40 x 56.00 x 12.40/0.53 x 2.20 x 0.49				
Weight (g/lb.)	24/0.05	24/0.05	20/0.04	16/0.04	20/0.04
Pack quantity	Single pack	Single pack	10-pack	Single pack	10-pack
<b>Environmental Specifications</b>					
MTBF (hr)	277,657	83,030	40,850,123	83,030	47,966,232

Transceiver Class	GbE Transceiver Modules					
	Gigabit SFP					
	SFP-BX1310-10-D*	SFP-BX1310-E*	SFP-BX1490-10-D*	SFP-BX1550-E*	SFP-LHX1310-40-D	SFP-ZX-80-D
<b>Connector</b>	LC	LC	LC	LC/SC	LC	LC
<b>Wavelength (nm)</b>	1310 (TX) 1490 (RX)	1310 (TX) 1550 (RX)	1490 (TX) 1310 (RX)	1550 (TX) 1310 (RX)	1310	1550
<b>Max transmission distance (km/yd)</b>	10/10936	20/21872	10/10936	20/21872	40/43744	80/87488
<b>Optical fiber type</b>	Single mode	Single mode	Single mode	Single mode	Single mode	Single mode
<b>With DDMI features</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Optical Characteristics</b>						
<b>Transmit power range (dBm)</b>	-3 to -9	0 to -9	-3 to -9	0 to -9	+3 to -2	+5 to 0
<b>Receive power range (dBm)</b>	-2 to -20	-3 to -23	-2 to -20	-3 to -24	-2 to -23	-1 to -24
<b>Operational Ranges</b>						
<b>Supply voltage</b>	3.1 - 3.5 V	3.1 - 3.5 V	3.1 - 3.5 V	3.1 - 3.5 V	3.1 - 3.5 V	3.1 - 3.5 V
<b>Max current (mA)</b>	-	300	300	300	300	300
<b>Physical Specifications</b>						
<b>Dimensions (WxDxH) (mm/in.)</b>	13.40 x 56.00 x 12.40/0.53 x 2.20 x 0.49					
<b>Weight (g/lb.)</b>	17/0.04	20/0.04	17/0.04	20/0.04	17/0.04	18/0.04
<b>Pack quantity</b>	Single pack	10-pack	Single pack	10-pack	Single pack	Single pack
<b>Environmental Specifications</b>						
<b>MTBF (hr)</b>	137,682	47,966,231	137,682	47,966,231	83,030	83,030

\* SFP-BX1310-10-D & SFP-BX1490-10-D, SFP-BX1310-E & SFP-BX1550-E must be used in pairs.

Transceiver Class	Direct Attached Cable 10G Series	
	DAC10G	
	DAC10G-1M	DAC10G-3M
<b>Connector</b>	SFP+ to SFP+	SFP+ to SFP+
<b>Max transmission distance (m/ft)</b>	1/3.28	3/9.84
<b>Operational Ranges</b>		
<b>Supply voltage</b>	3.14 - 3.46 V	3.14 - 3.46 V
<b>Max current (mA)</b>	150	150
<b>Physical Specifications</b>		
<b>Dimensions (WxDxH)(mm/in.)</b>	14 x 58 x 11/0.55 x 2.30 x 0.43	14 x 58 x 11/0.55 x 2.30 x 0.43
<b>Weight (g/lb.)</b>	70/0.15	120/0.26

#### Environmental Specifications

- Operating temperature: 0°C to 70°C (32°F to 158°F)
- Storage temperature: -40°C to 85°C (-40°F to 185°F)

#### Safety Certifications

- Class 1 Laser
- 21 CFR 1040.10 and 1040.11 compliant
- CSA\* (10 Gigabit XFP, Gigabit SFP and Fast Ethernet SFP Series)

- TUV\*
- CE\* (10 Gigabit SFP+ Series, DAC10G Series)
- FDA\* (10 Gigabit SFP+ Series)

\* Applies to certain models

## Switch Compatibility List

Model		XGS4600 Series	XS3800-28	XGS3700 Series	XGS2210 Series	GS2220 Series	XS1930 Series
DAC10G	DAC10G-1M	Yes	Yes	Yes	Yes	-	Yes
	DAC10G-3M	Yes	Yes	Yes	Yes	-	Yes
10 Gigabit SFP+	SFP10G-SR	Yes	Yes	Yes	Yes	-	Yes
	SFP10G-SR-E	Yes	Yes	Yes	Yes	-	Yes
	SFP10G-LR	Yes	Yes	Yes	Yes	-	Yes
	SFP10G-LR-E	Yes	Yes	Yes	Yes	-	Yes
Gigabit SFP	SFP-1000T	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-SX-D	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-SX-E	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-LX-10-D	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-LX-10-E	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-BX1310-10-D	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-BX1310-E	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-BX1490-10-D	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-BX1550-E	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-LHX1310-40-D	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-ZX-80-D	Yes	Yes	Yes	Yes	Yes	Yes

Model		XGS1930 Series	GS1920v2 Series	GS1900 Series	GS1350 Series	GS1300 Series	GS1100-24
DAC10G	DAC10G-1M	Yes	-	-	-	-	-
	DAC10G-3M	Yes	-	-	-	-	-
10 Gigabit SFP+	SFP10G-SR	Yes	-	-	-	-	-
	SFP10G-SR-E	Yes	-	-	-	-	-
	SFP10G-LR	Yes	-	-	-	-	-
	SFP10G-LR-E	Yes	-	-	-	-	-
Gigabit SFP	SFP-1000T	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-SX-D	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-SX-E	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-LX-10-D	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-LX-10-E	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-BX1310-10-D	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-BX1310-E	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-BX1490-10-D	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-BX1550-E	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-LHX1310-40-D	Yes	Yes	Yes	Yes	Yes	Yes
	SFP-ZX-80-D	Yes	Yes	Yes	Yes	Yes	Yes

For more product information, visit us on the web at [www.zyxel.com](http://www.zyxel.com)

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