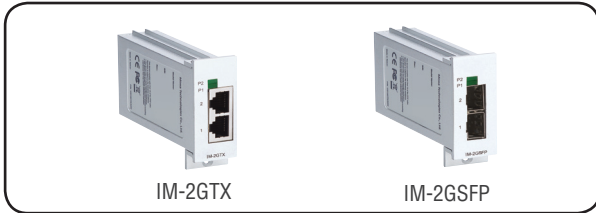


# IM Series

## 2-port Gigabit Ethernet and 4-port Fast Ethernet interface modules for EDS-728/828 series Ethernet switches

### Specifications

#### Gigabit Ethernet Interface Modules, IM-2G Series



IM-2GTX

IM-2GSFP

#### Interface

**Fiber Ports:** 1000BaseSFP slot

**RJ45 Ports:** 10/100/1000BaseT(X) auto negotiation speed and auto MDI/MDI-X connection

**LED Indicators:** Port status

**Note:** See the SFP-1G datasheet for Gigabit Ethernet SFP module product information.

#### Power Requirements

**Power Consumption (@ 24 V):**

IM-2GTX: 2.96 W

IM-2GSFP: 3.04 W

#### Physical Characteristics

**Dimensions:** 24 x 65.9 x 101.1 mm (0.94 x 2.59 x 3.98 in)

**Weight:**

IM-2GTX: 150 g (0.33 lb)

IM-2GSFP: 148 g (0.33 lb)

**MTBF (mean time between failures)**

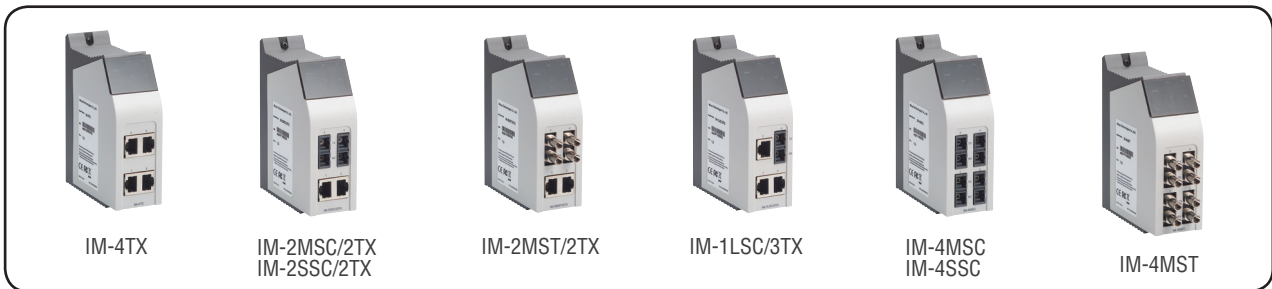
**Time:**

IM-2GTX: 417,521 hrs

IM-2GSFP: 424,955 hrs

**Database:** Telcordia (Bellcore), GB

#### Fast Ethernet Interface Modules, IM Series



IM-4TX

IM-2MSC/2TX  
IM-2SSC/2TX

IM-2MST/2TX

IM-1LSC/3TX

IM-4MSC  
IM-4SSC

IM-4MST

#### Interface

**Fiber Ports:** 100BaseFX ports (SC/ST connector)

**RJ45 Ports:** 10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection

**LED Indicators:** PWR, P1, P2, P3, P4 port status

#### Optical Fiber

		100BaseFX		
		Multi-Mode		Single-Mode
Fiber Cable Type		OM1	50/125 μm	G.652
			800 MHz*km	
Typical Distance		4 km	5 km	40 km
Wave-length	Typical (nm)	1300		1310
	TX Range (nm)	1260 to 1360		1280 to 1340
	RX Range (nm)	1100 to 1600		1100 to 1600
Optical Power	TX Range (dBm)	-10 to -20		0 to -5
	RX Range (dBm)	-3 to -32		-3 to -34
	Link Budget (dB)	12		29
	Dispersion Penalty (dB)	3		1

**Note:** When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power.

**Note:** Compute the "typical distance" of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).

#### Power Requirements

**Power Consumption (@ 24 V):**

IM-4TX: 1.29 W

IM-2MSC/2TX: 2.06 W

IM-2MST/2TX: 2.06 W

IM-2SSC/2TX: 2.06 W

IM-1LSC/3TX: 2.12 W

IM-4MSC: 6.6 W

IM-4MST: 6.6 W

IM-4SSC: 6.6 W

#### Physical Characteristics

**Housing:** IP30 protection

**Dimensions:** 40 x 127.8 x 100 mm (1.57 x 5.03 x 3.94 in)

**Weight:**

IM-4TX: 215 g (0.48 lb)

IM-2MSC/2TX: 245 g (0.54 lb)

IM-2MST/2TX: 250 g (0.56 lb)

IM-2SSC/2TX: 245 g (0.54 lb)

IM-1LSC/3TX: 235 g (0.52 lb)

IM-4MSC: 250 g (0.56 lb)

IM-4MST: 270 g (0.60 lb)

IM-4SSC: 270 g (0.60 lb)

**MTBF** (mean time between failures)

**Time:**

IM-4TX: 4,403,579 hrs  
 IM-2MSC/2TX, IM-2MST/2TX, IM-2SSC/2TX: 1,011,453 hrs  
 IM-1LSC/3TX: 3,924,924 hrs  
 IM-4MSC, IM-4MST, IM-4SSC: 696,138 hrs  
**Standard:** Telcordia (Bellcore), GB

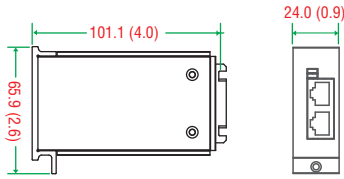
**Warranty**

**Warranty Period:** 5 years  
**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

**Dimensions**

Unit: mm (inch)

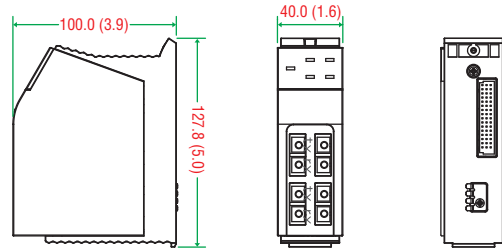
**Gigabit Ethernet Interface Modules**



Side View

Front View

**Fast Ethernet Interface Modules**



Side View

Front View

Rear View

**: Ordering Information**

Available Models (0 to 60°C)	Port Interface						
	Gigabit Ethernet		Fast Ethernet				
	10/100/1000BaseT(X)	1000BaseSFP*	10/100BaseT(X)	100BaseFX			
Multi-Mode, SC Connector				Multi-Mode, ST Connector	Single-Mode, SC Connector	Single-Mode, SC Connector, 80 km	
<b>IM-2G Series</b>							
IM-2GTX	2	–	–	–	–	–	–
IM-2GSFP	–	2	–	–	–	–	–
<b>IM Series</b>							
IM-4TX	–	–	4	–	–	–	–
IM-4MSC	–	–	–	4	–	–	–
IM-4MST	–	–	–	–	4	–	–
IM-2MSC/2TX	–	–	2	2	–	–	–
IM-2MST/2TX	–	–	2	–	2	–	–
IM-4SSC	–	–	–	–	–	4	–
IM-2SSC/2TX	–	–	2	–	–	2	–
IM-1LSC/3TX	–	–	3	–	–	–	1

\*See the SFP-1G datasheet for Gigabit Ethernet SFP module product information.

**Package Checklist**

- IM series interface modules
- Warranty card

# SFP-1G Series

## 1-port Gigabit Ethernet SFP modules



- > Digital Diagnostic Monitor Function
- > -40 to 85°C operating temperature range (T models)
- > IEEE 802.3z compliant
- > Differential LVPECL inputs and outputs
- > TTL signal detect indicator
- > Hot pluggable LC duplex connector
- > Class 1 laser product, complies with EN 60825-1



### Specifications

#### Interface

Ethernet Ports: 1

Connectors: Duplex LC Connector or Simplex LC Connector (WDM-type only)

#### Optical Fiber

		Gigabit Ethernet SFP									
		SFP-SX		SFP-LSX		SFP-LX	SFP-LH	SFP-LHX	SFP-ZX	SFP-EZX	SFP-EZX-120
Transceiver Type		Multi-Mode		Multi-Mode		Single-Mode	Single-Mode	Single-Mode	Single-Mode	Single-Mode	Single-Mode
Fiber Cable Type		OM1	OM2	OM2	OM1	G.652	G.652	G.652	G.652	G.652	G.652
Typical Distance		300 m	550 m	1 km	2 km	10 km	30 km	40 km	80 km	110 km	120 km
Wave-length	Typical (nm)	850		1310		1310	1310	1310	1550	1550	1550
	TX Range (nm)	830 to 860		1270 to 1355		1280 to 1355	1280 to 1355	1280 to 1340	1530 to 1570	1530 to 1570	1530 to 1570
	RX Range (nm)	770 to 860		1260 to 1610		1260 to 1610	1260 to 1610	1260 to 1610	1260 to 1610	1260 to 1610	1100 to 1600
Optical Power	TX Range (dBm)	-4 to -9.5		-1 to -9		-3 to -9	-3 to -8	+3 to -4	+5 to 0	+5 to 0	+3 to -2
	RX Range (dBm)	0 to -18		-1 to -19		-3 to -21	-3 to -23	-1 to -24	-1 to -24	-9 to -30	-8 to -33
	Link Budget (dB)	8.5		10		12	15	20	24	30	31
	Dispersion Penalty (dB)	4.3	3.6	5	5	1	1	1	1	1	2

Note: When connecting the SFP-LHX, ZX, EZX, or EZX-120, we recommended using an attenuator to prevent the transceiver from being damaged by excessive optical power.

		WDM Gigabit Ethernet SFP							
		SFP-10A		SFP-10B	SFP-20A		SFP-20B	SFP-40A	SFP-40B
Transceiver Type		Single-Mode		Single-Mode		Single-Mode		Single-Mode	
Fiber Cable Type		G.652		G.652		G.652		G.652	
Typical Distance		10 km		20 km		40 km		40 km	
Wave-length	Typical (nm)	TX 1310, RX 1550	TX 1550, RX 1310	TX 1310, RX 1550	TX 1550, RX 1310	TX 1310, RX 1550	TX 1550, RX 1310	TX 1310, RX 1550	TX 1550, RX 1310
	TX Range (nm)	1270 to 1355		1530 to 1570		1270 to 1355		1530 to 1570	
	RX Range (nm)	1480 to 1580		1260 to 1360		1480 to 1580		1260 to 1360	
Optical Power	TX Range (dBm)	-3 to -9		-2 to -8		-2 to -8		+2 to -3	
	RX Range (dBm)	-3 to -21		-2 to -23		-2 to -23		-1 to -23	
	Link Budget (dB)	12		15		15		20	
	Dispersion Penalty (dB)	2		3		3		1	

Note: WDM-type SFP modules must be used in pairs (e.g., SFP-1G10ALC and SFP-1G10BLC)

Note: When connecting the SFP-40A and 40B, we recommend using an attenuator to prevent damage caused by excessive optical power.

**Typical Distance:** To reach the typical distance of specified fiber transceiver, please refer to formula: Link budget(dB) > dispersion penalty(dB) + total link loss(dB).

### Power Requirements

Power Consumption: Max. 1 W

### Environmental Limits

#### Operating Temperature:

Standard Models: 0 to 60°C (32 to 140°F)

Wide Temp. Models: -40 to 85°C (-40 to 185°F)

Storage Temperature: -40 to 85°C (-40 to 185°F)

Ambient Relative Humidity: 5 to 95% (non-condensing)

### Standards and Certifications

Safety: CE, FCC, TÜV (EN 60825), UL 60950-1

Marine: DNV, GL

### Warranty

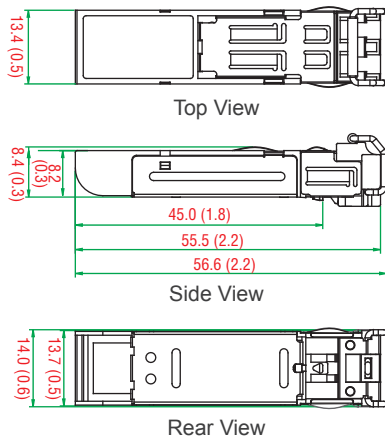
Warranty Period: 5 years

Details: See [www.moxa.com/warranty](http://www.moxa.com/warranty)

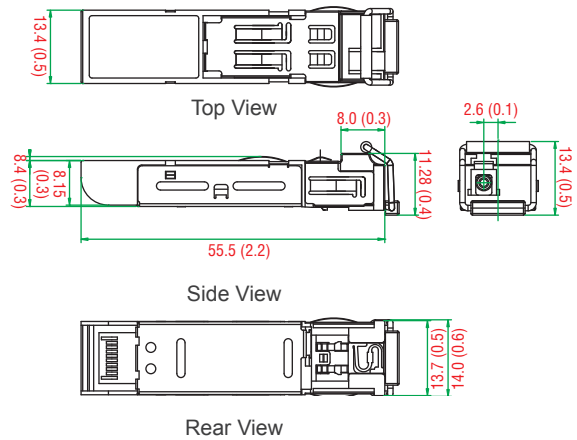
### Dimensions

Unit: mm (inch)

#### SFP-1G Series



#### SFP-1G Series (WDM Type)



## Ordering Information

Gigabit Ethernet SFP Models				WDM Gigabit Ethernet SFP Models			
Standard Temperature Models (0 to 60°C)	Wide Temperature Models (-40 to 85°C)	Transceiver Type	Typical Distance	Standard Temperature (0 to 60°C)	Wide Temperature (-40 to 85°C)	Transceiver Type	Typical Distance
SFP-1GSXLC	SFP-1GSXLC-T*	Multi-Mode	300/550 m	SFP-1G10ALC	SFP-1G10ALC-T	Single-Mode	10 km
SFP-1GLSXLC	SFP-1GLSXLC-T	Multi-Mode	1/2 km	SFP-1G10BLC	SFP-1G10BLC-T	Single-Mode	10 km
SFP-1GLXLC	SFP-1GLXLC-T	Single-Mode	10 km	SFP-1G20ALC	SFP-1G20ALC-T	Single-Mode	20 km
SFP-1GLHLC	SFP-1GLHLC-T	Single-Mode	30 km	SFP-1G20BLC	SFP-1G20BLC-T	Single-Mode	20 km
SFP-1GLHXL	SFP-1GLHXL-T	Single-Mode	40 km	SFP-1G40ALC	SFP-1G40ALC-T	Single-Mode	40 km
SFP-1GZXL	SFP-1GZXL-T	Single-Mode	80 km	SFP-1G40BLC	SFP-1G40BLC-T	Single-Mode	40 km
SFP-1GEZXL	-	Single-Mode	110 km	-	-	-	-
SFP-1GEZXL-120	-	Single-Mode	120 km	-	-	-	-

\*SFP-1GSXLC-T: -20 to 75°C operating temperature

### Package Checklist

- SFP-1G module
- Warranty card