

SFP-EXD-I

1GBASE, SFP, EX, SMF TRANSCEIVER

1310nm, 40 km REACH, DUPLEX LC CONNECTOR

Features

- Up to 1.25Gb/s Data Links
- Hot-Pluggable
- Duplex LC connector
- Up to 40km on 9/125µm SMF
- 1310nm DFB laser transmitter
- Single +3.3V Power Supply
- Low power dissipation <1W typically
- Industrial operating temperature: -40°C to 85°C
- RoHS compliant and Lead Free



Applications

- Metro/Access Networks
- 1.25 Gb/s 1000Base-EX Ethernet
- 1×Fibre Channel
- Other Optical Links

1. Absolute Maximum Ratings

Operation in excess of any absolute maximum ratings might cause permanent damage to this module.

Parameter	Symbol	Min	Typ	Max	Units
Storage Temperature	TS	-40		+85	°C
Power Supply Voltage	VCC	-0.5		4	V
Relative Humidity	RH	0		85	%

2. Recommended Operating Environment

Parameter	Symbol	Min	Typ	Max	Unit
Case Operating Temperature	TC	-40		85	°C
Supply Voltage	VCC	3.135		3.465	V
Supply Current	Icc			300	mA
Inrush Current	Isurge			Icc+30	mA
Maximum Power	Pmax			1	W

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3. Electrical Characteristics

(TOP = -40 to 85°C, VCC = 3.135 to 3.465 Volts)

Parameter	Symbol	Min	Typ	Max	Unit	Note
Transmitter						
Input differential impedance	Rin	90	100	110		1
Single ended data input swing	Vin PP	250		1200	mVpp	
Transmit Disable Voltage	VD	Vcc -1.3		Vcc	V	2
Transmit Enable Voltage	VEN	Vee		Vee+0.8	V	
Transmit Disable Assert Time	Tdessert			10	us	
Receiver						
Single ended data output swing	Vout,pp	250		800	mv	3
LOS Fault	Vlosfault	Vcc -0.5		VCC_host	V	5
LOS Normal	Vlos-norm	Vee		Vee+0.5	V	5
Power Supply Rejection	PSR	100			mVpp	6

Notes:

1. AC coupled.
2. Or open circuit.
3. Into 100 ohm differential termination.
4. 20 – 80 %
5. LOS is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal
6. All transceiver specifications are compliant with a power supply sinusoidal modulation of 20 Hz to 1.5MHz up to specified value applied through the power supply filtering network shown on page 23 of the Small Form-factor Pluggable (SFP) Transceiver Multi-Source Agreement (MSA), September 14, 2000.

4. Optical Parameters

(TOP = -40 to 85°C, VCC = 3.135 to 3.465 Volts)

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Transmitter						
Center Wavelength	λ_c	1270	1310	1360	nm	
Spectral Width	σ			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Optical Output Power	Pout	-2		+3	dBm	1

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Extinction Ratio	ER	9			dB	
Optical Rise/Fall Time	tr / tf			260	ps	2
Relative Intensity Noise	RIN			-120	dB/Hz	
Output Eye Mask	Compliant with IEEE802.3 z (class 1 laser safety)					
Receiver						
Optical Input Wavelength	λ_c	1260		1360	nm	
Receiver Overload	Pol	-3			dBm	4
RX Sensitivity	Sen			-24	dBm	4
RX_LOS Assert	LOS A	-40			dBm	
RX_LOS De-assert	LOS D			-25	dBm	
RX_LOS Hysteresis	LOS H	0.5			dB	
General Specifications						
Data Rate	BR		1.25		Gb/s	
Bit Error Rate	BER			10-12		
Max. Supported Link Length on 9/125 μ m SMF@1.25Gb/s	LMAX		40		km	
Total System Budget	LB	22			dB	

Notes:

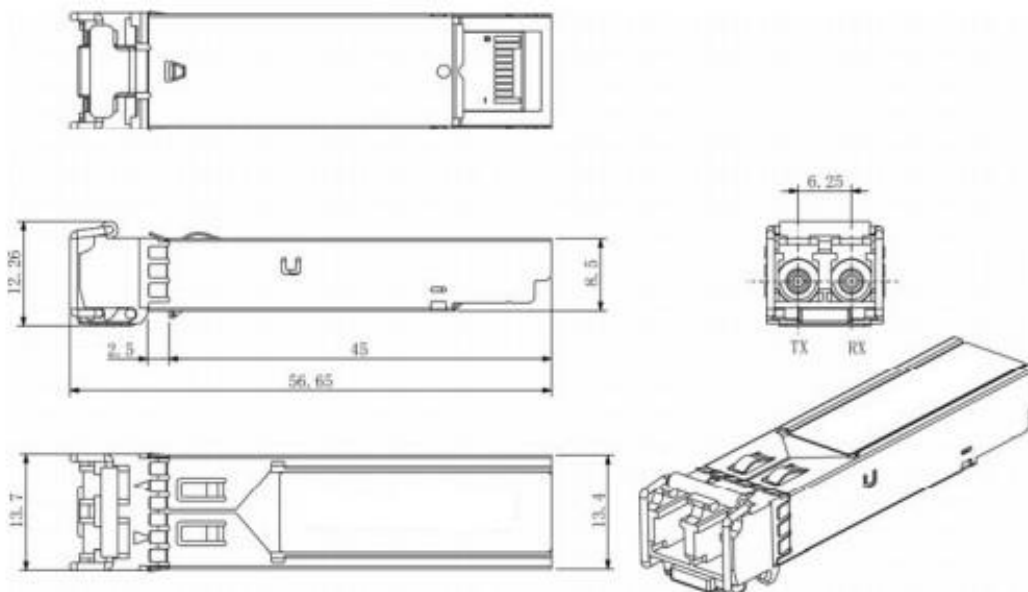
1. The optical power is launched into SMF. 20-80%.
2. Jitter measurements taken using Agilent OMNIBERT 718 in accordance with GR-253.
3. Measured with PRBS 27-1 at 10-12 BER

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5. Mechanical Diagram



Note: External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.

6. Ordering Information

OEM	Part Number	OEM	Part Number
Adtran	1200481E1-40K-L	Juniper	SFP-GE40KM-L
Alcatel	3HE00867AA-L	Linksys	MGBLH1-L
Alcatel-Lucent	SFP-GIG-LH40-L	MRV	SFP-GD-ELX-L
Allied Telesis	SPLX40-L	MRV	SFP-GD-XD-L
Brocade	E1MG-EX-OM-40KM-L	MRV	SFPFC408-L
Ciena	XCVR-A40Y31-L	MSA	L- SFP-EX
Cisco	GLC-EX-SMD-L	Occam	105005-L
Cisco	ONS-SI-GE-EX-L	OnePort	OP-SFP-EXD-L
Comtrend	3192712-L	Palo Alto	PAN-SFP-EX-L
Cyan	280-0331-00-L	Pannaway	SFP-XLX-RT-L
Cyan	280-0194-00-L	Red Lion	NTSFP-LX-40-L
D-Link	DEM-310GT-40-L	Sixnet	GSFIBER-SFP-30K-L
Finisar	FTRJ1419P1BCL-L	Telco	BTI-MGBIC-GEX-LC-L
Fortinet	FG-TRAN-EX-L	Transition Networks	TN-SFP-LX3-L

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H3C	0231A089-L	TRENDnet	TEG-MGBS40-L
Huawei	LS-SFP-LH-1310-L	Zhone	SFP-SMF40H-L
IBM	45W4741-L	ZTE	SFP-GE-S40K-L
Juniper	EX-SFP-1GE-LX40K-L		