

Features

- Up to 1.25Gb/s Data Links
- Hot-Pluggable
- Single LC connector
- Up to 10 km on 9/125µm SMF
- 1310nm DFB laser transmitter
- 1490nm PIN photo-detector
- Single +3.3V Power Supply
- Monitoring Interface Compliant with SFF-8472
- Maximum Power <1W
- Industrial operating temperature range: -40°C to 85°C
- RoHS compliant and Lead Free



Applications

- 1000Base-LX Ethernet
- Metro/Access Networks
- 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 (Industrial)	TC	-40		85	°C
Supply Voltage	VCC	3.135		3.465	V
Supply Current	Icc			300	mA
Inrush Current	I _{surge}			I _{cc} +30	mA
Maximum Power	P _{max}			1	W

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	300		800	mv	3
Los Fault	Vlosfault	Vcc -0.5		VCC_host	V	5
Los Normal	Vlosnorm	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 detected.
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)

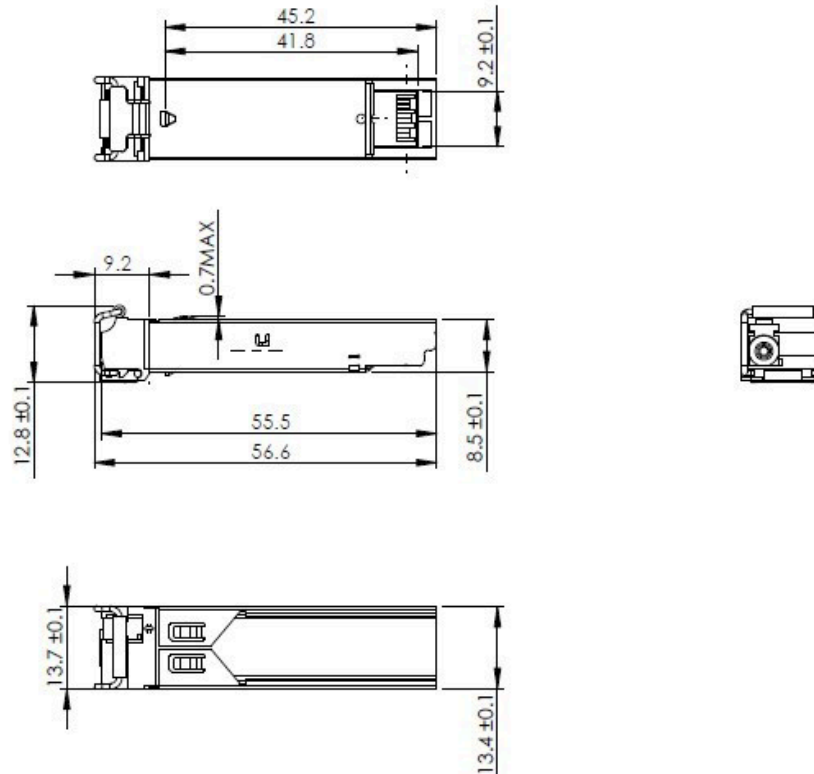
Parameter	Symbol	Min	Typ	Max	Unit	Notes
Transmitter						
Center Wavelength	λ_c	1270	1310	1600	nm	
Spectral Width	σ			1	nm	
Sidemode Supression Ratio	SSRmin	30			dB	
Optical Output Power	Pout	-8		-4	dBm	1
Extinction Ratio	ER	9			dB	
Optical Rise/Fall Time	tr / tf			260	ps	2

Relative Intensity Noise	RIN			-120	dB/Hz	
Total Jitter Contribution	TX Δ TJ			0.284	UI	3
Output Eye Mask	Compliant with IEEE802.3 z (class 1 laser safety)					
Receiver						
Optical Input Wavelength	λc	1440	1490	1510	nm	
Receiver Overload	Pol	-3			dBm	4
RX Sensitivity	Sen			-21	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						
Data Rate	BR		1.25		Gb/s	
Bit Error Rate	BER			10 ⁻¹²		
Max. Supported Link Length on 9/125μm SMF@1.25Gb/s	LMAX		20		km	
Total System Budget	LB	14			dB	

Notes:

1. The optical power is launched into SMF.
2. 20-80%.
3. Contributed total jitter is calculated from DJ and RJ measurements using $TJ = RJ + DJ$. Contributed RJ is calculated for 1×10^{-12} BER by multiplying the RMS jitter (measured on a single rise or fall edge) from the oscilloscope by 14. Per FC-PI (Table 9 - SM jitter output, note 1), the actual contributed RJ is allowed to increase above its limit if the actual contributed DJ decreases below its limits, as long as the component output DJ and TJ remain within their specified FC-PI maximum limits with the worst case specified component jitter input.
4. Measured with PRBS 2⁷⁻¹ at 10⁻¹² BER

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 Numbers	OEM	Part Numbers
Accedian	7SU-003-A	Enterasys	MGBIC-BX10-D-A
Accedian	7SU-000-A	Extreme	GESFP-B31-20-EXN
Adtran	1442110G1-A	Extreme	10056-20K-A
Adtran	1442120G1-A	Extreme	10056-A
Adva	61003015-A	Extreme	MGBIC-BX20-D-A
Alcatel	SFP-GIG-BX-D-A	Fortinet	FG-TRAN-BXD-20-A
Alcatel	3HE00868CB-A	Fortinet	FG-TRAN-BXD-10-A
Alcatel	3HE00869CB-A	Foundry-Brocade	GESFP-B31-20-FBR
Alcatel	3HE00868AB-A	HP	GESFP-B31-20-HP
Alcatel	3FE25772AB-A	Juniper	QFX-SFP-GE10KT14R13-A
Alcatel	ISFP-GIG-BX-D-A	Juniper	SRX-SFP-GE20KT14R13-A
Alcatel	SFP-1G-BX-D-A	Juniper	SFP-GE10KT14R13-A
Alcatel	3HE00868CB-20-A	Juniper	SFP-GE20KT14R13-A

Alcatel	3HE00868AB-20-A	Juniper	EX-SFP-GE20KT14R13-A
Alcatel	SFP-GIG-BX-D-20-A	Juniper	EX-SFP-GE10KT14R13-A
Alcatel	1000SFP31B20L-A	Juniper	QFX-SFP-GE20KT14R13-A
Allied Telesis	AT-SPBD20-14-A	Juniper	EX-SFP-GE20KT13R14-C1
Avaya	AA1419070-E6-A	Meraki	MA-SFP-1GB-BXD-A
Avaya	GESFP-B31-20-AVC	MRV	SFP-GD-BX43SC-A
Brocade	E1MG-BXD-A	MSA	XX-SFP-BX43-20-I
BTI	BP3AM1MS-BXD-20-A	MSA	XX-SFP-BX43-20-I
Calix	100-01667-43-A	MSA Champion ONE	1000SFP31B20L
Calix	100-01669-A	MSA Champion ONE	1000SFP31B20L-H
Calix	100-01668-C1	MSA Champion ONE	1000SFP31B20LH-A
Ciena	XCVR-010U49-A	Netgear	AGM732F-BX-D-A
Ciena	NTTP59BD-A	OnePort	OP-SFP-BX43-20-I-A
Ciena	XCVR-010U49-20-A	Palo Alto	PAN-SFP-BX-D-A
Ciena	GESFP-B31-20-CIE	RAD	SFP-17B-A
Ciena	GESFP-B31-20I-CIE	RAD	SFP17B-A
Ciena	XCVR-010U31-C1	Source Photonics	SPXX-43-GB-BX-IDFM-A
Cisco	GLC-BX-D-A	Telco	BTI-SFP-GBD10XX-DD-49/31S-20K-A
Cisco	GLC-BX-D-20-I-A	Telco	BTI-SFP-GBD20XX-DD-49/31S-A
Cisco	GLC-BX-D-I-A	Telco	BTI-SFP-GBD10XX-DD-49/31S-A
Cisco	GESFP-B31-20-CSC	Transition Networks	TN-GLC-BX-D-A
Cisco	GLC-BX-U-C1	Transition Networks	TN-SFP-AXB12T-43-A
Comtrend	3192430-A	Ubiquiti Networks	UF-SM-1G-S-D34-10K-A
Corning	1LAN-SFP-4305BC-A	Ubiquiti Networks	UF-SM-1G-S-D-20K-A
Cyan	280-0105-00-A	Zhone	SFP-GE-BX-1490-SLC-A
Dell	407-BBOO-43-20-A	Zhone	SFP-GE-BX20-43-SLC-A
Dell	407-BBOO-43-10-A	ZTE	SFP-SDB-GE-S10K-A
Dell	GESFP-B31-20-DLL		

7. Contact Information

Tel: 800.590.9535

Web: <http://www.approvednetworks.com>