SFP-GIG-EZX-COM
1000BASE-EZX SFP, 1550nm, SMF
120Km Dual LC DOM for Alcatel

SFP-GIG-EZX-COM

1.25Gb/s 120KM SFP Transceiver

Hot Pluggable, Duplex LC, +3.3V, 1550nm, DFB-LD, SMF 120KM 0~70C

Features

- Up to 1.25Gb/s Data Links
- Hot-Pluggable
- Duplex LC connector
- Up to 120km on 9/125µm SMF
- 1550nm DFB laser transmitter
- APD Receiver
- Single +3.3V Power Supply
- Low power dissipation <1W typically
- Industrial operating temperature range: 0°C to 70°C Version available
- RoHS compliant and Lead Free

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Applications

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

Description

ARPERS' **SFP-GIG-EZX-COM** Transceiver is a high performance, cost effective module which have a duplex LC optics interface. Standard AC coupled CML for high speed signal and LVTTL control and monitor signals. The receiver section uses an APD receiver and the transmitter uses a 1550 nm DFB laser, up to 32dB link budge ensure this module 1000Base Ethernet 120km application.

Absolute Maximum Ratings

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

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Recommended Operating Environment

Parameter		Symbol	Min.	Typical	Max.	Unit
Case operating Temperature	Industrial	TC	-40		85	°C
	Extended		-20		80	°C
	Commercial		-5		70	°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

Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Transmitter Section:						
Input differential impedance	Rin	90	100	110		
Single ended data input swing	Vin PP	250		1200	mVp-p	
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 Section:						
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

Note:

1. AC coupled.
2. Or open circuit.
3. Into 100 ohm differential termination.

4. 20 – 80%

5. LOS is LVTTL. 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.

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Optical Parameters

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Transmitter Section:						
Center Wavelength	λc	1530	1550	1570	nm	
Spectral Width	σ			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Optical Output Power	Pout	0		5	dBm	1
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 Section:						
Optical Input Wavelength	λc	1270		1610	nm	
Receiver Overload	Pol	-7			dBm	4
RX Sensitivity	Sen			-32	dBm	4
RX_LOS Assert	LOS A	-45			dBm	
RX_LOS De-assert	LOS D			-33	dBm	
RX_LOS Hysteresis	LOS H	0.5			dB	

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General Specifications:						
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		120		km	
Total System Budget	LB	32			dB	

Note:

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

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Pin Assignment

Diagram of Host Board Connector Block Pin Numbers and Name

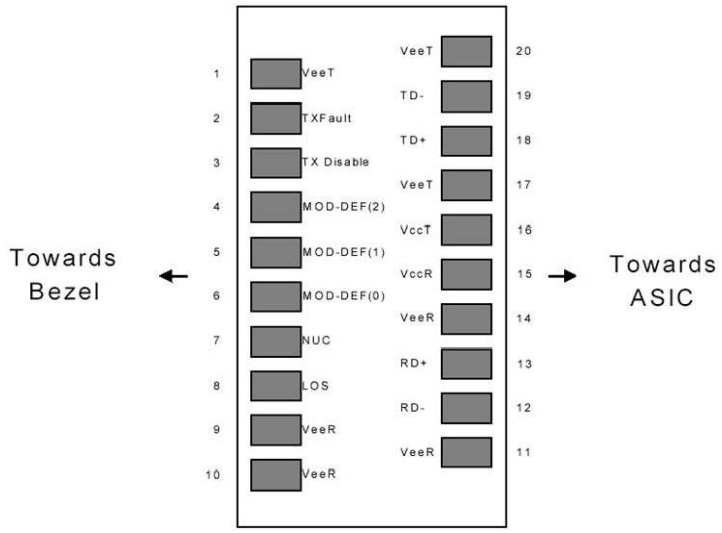


Diagram of Host Board Connector Block Pin Numbers and Names

Pin Function Definitions

Pin	Name	Function	Plug Seq	Notes
1	VeeT	Transmitter Ground	1	1
2	TX Fault	Transmitter Fault Indication	3	
3	TX Disable	Transmitter Disable	3	2
4	MOD-DEF2	Module Definition	2	3
5	MOD-DEF1	Module Definition 1	3	3
6	MOD-DEF0	Module Definition 0	3	3

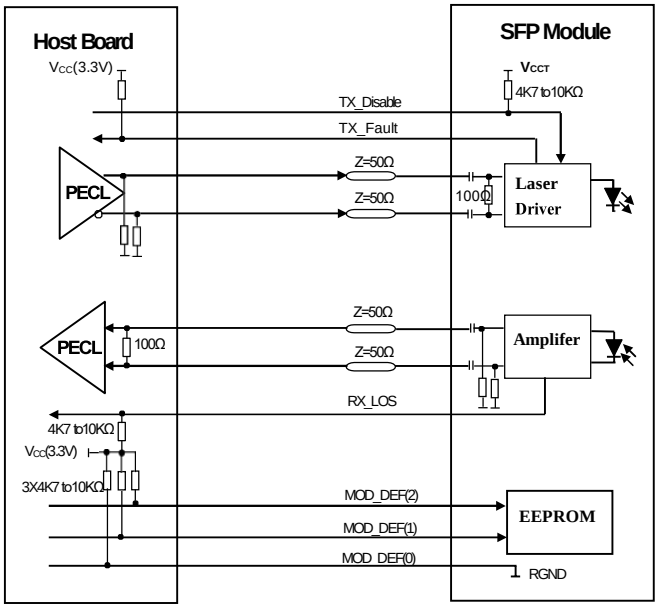
7	Rate Select	Not Connected	3	4
8	LOS	Loss of Signal	3	5
9	VeeR	Receiver Ground	1	1
10	VeeR	Receiver Ground	1	1
11	VeeR	Receiver Ground		1
12	RD-	Inv. Received Data Out	3	6
13	RD+	Received Data Out	3	6
14	VeeR	Receiver Ground	3	1
15	VccR	Receiver Power	2	1
16	VccT	Transmitter Power	2	
17	VeeT	Transmitter Ground	1	
18	TD+	Transmit Data In	3	6
19	TD-	Inv. Transmit In	3	6
20	VeeT	Transmitter Ground	1	

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.
3. Should be pulled up with 4.7k - 10 Kohms on host board to a voltage between 2.0V and 3.6V. MOD_DEF(0) pulls line low to indicate module is plugged in.
4. Rate select is not used

5. LOS is open collector output. Should be pulled up with 4.7k – 10 Kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.
6. AC Coupled

Recommended Circuit



SFP Host Recommended Circuit

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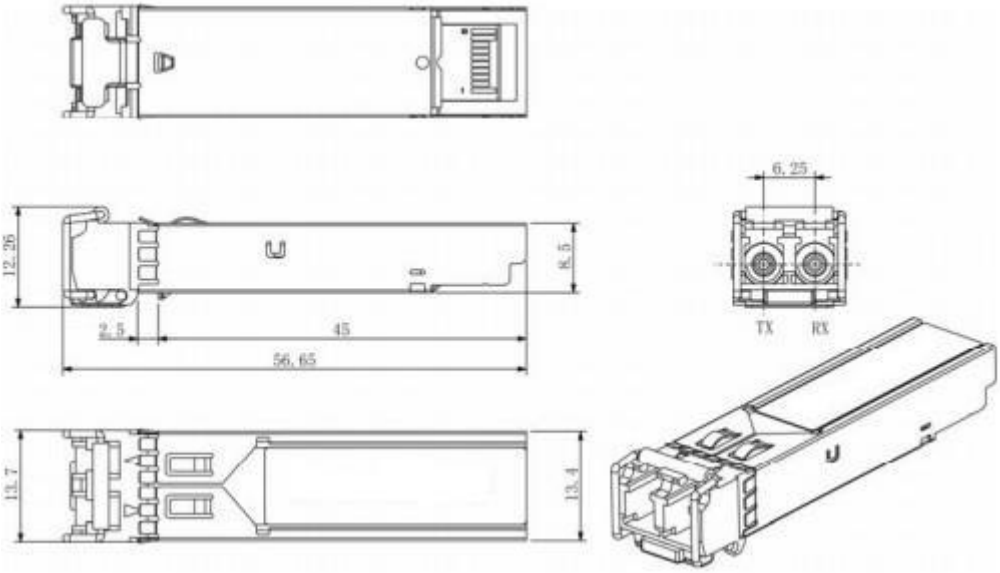
Mechanical Dimensions



Mechanical Drawing

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