

SFP-1G-EZX

1.25Gbps SFP
1550nm
120km Reach

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Features

- Support up to 1.25Gbps data links
- 120km (32dB) transmission on 9/125µm SMF
- Duplex LC Connector Interface
- Hot-Pluggable Capability
- Compliant with SFP MSA and DDM interface SFF-8472
- Laser Class1, IEC60825-1 compliant
- Single +3.3V power supply and TTL logic interface
- Operating case temperature: Commercial: 0°C to +70°C
 Industrial: -40°C to +85°C
- RoHS6 Compliant



Applications

- Gigabit Ethernet / Fast Ethernet / OC-3 / OC-12
- Switch to Switch interface
- Other optical transmission systems

Part number	Product description
SFP-1G-EZX	1.25Gbps SFP, 1550nm, 120km/32dB, DDM, 0°C ~ +70°C
SFP-1G-EZX-I	1.25Gbps SFP, 1550nm, 120km/32dB, DDM, -40°C ~ +85°C

PIN Description

PIN	Symbol	Name - Description	Notes
1	VEET	Transmitter Ground (Common with Receiver Ground)	
2	TFAULT	Transmitter Fault. Not supported.	1
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	1
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	1
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	1
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	3
9	VEER	Receiver Ground (Common with Transmitter Ground)	
10	VEER	Receiver Ground (Common with Transmitter Ground)	
11	VEER	Receiver Ground (Common with Transmitter Ground)	
12	RD-	Receiver Inverted DATA out. AC Coupled	4
13	RD+	Receiver Non-inverted DATA out. AC Coupled	4
14	VEER	Receiver Ground (Common with Transmitter Ground)	
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	5
19	TD-	Transmitter Inverted DATA in. AC Coupled.	5
20	VEET	Transmitter Ground (Common with Receiver Ground)	

Notes:

1. Open collector/drain output, which should be pulled up with a 4.7k Ω to 10k Ω resistor on the host board if intended for use. Pull up voltage should be between 2.0V to 3.6V. A high output indicates a transmitter fault caused by either the TX bias current or the TX output power exceeding the preset alarm thresholds. A low output indicates normal operation. In the low state, the output is pulled to <0.8V.
2. Laser output disabled on Tx_Disable >2.0V or open, enabled on Tx_Disable <0.8V.
3. LOS is open collector output. Should be pulled up with 4.7k Ω to 10k Ω on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.
4. RD-/+: These are the differential receiver outputs. They are internally AC-coupled 100 Ω differential lines which should be terminated with 100 Ω (differential) at the user SERDES.
5. TD-/+: These are the differential transmitter inputs. They are internally AC-coupled, differential lines with 100 Ω differential termination inside the module.



Figure 1. Diagram of host board connector block pin numbers and names

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Maximum Supply Voltage	V _{CC}	-0.5	-	5.0	V	
Storage Temperature	T _s	-40	-	+85	°C	
Relative Humidity	RH	5	-	95	%	1

Notes:

1. Non-condensing.

Recommend Operation Conditions

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Power Supply Voltage	V _{CC}	3.13	3.3	3.47	V	
Power Supply Current	I _{CC}	-	-	110	mA	
Power Dissipation	P _O	-	-	1.0	W	
Case Operating Temperature (com.)	T _{OP}	0	-	+70	°C	
Case Operating Temperature (ind.)	T _{OP}	-40	-	+85	°C	

Electrical Characteristics

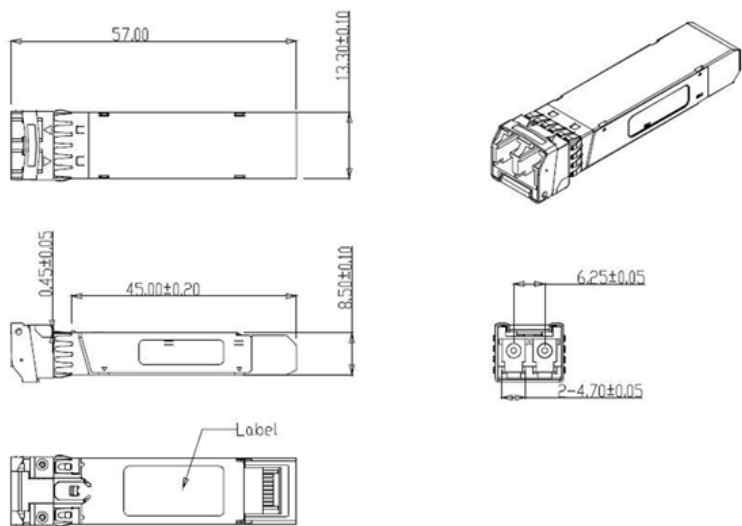
Parameter	Symbol	Min	Typ	Max	Unit	Notes
Transmitter						
Input Differential Impedance	Z _{in}	90	100	110	Ω	
Differential Input Voltage	V _{in}	600	-	1400	mV	
Receiver						
Output Differential Impedance	Z _{out}	90	100	110	Ω	
Differential Output Voltage	V _{out}	600	-	1400	mV	

Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Transmitter						
Optical Center Wavelength	λ_C	1480	1550	1580	nm	
Average Output Power	Po	0	-	5.0	dBm	
Optical Extinction Ratio	ER	10	-	-	dB	
RMS Spectral Width (-20dB)	$\Delta\lambda$	-	-	1	nm	
Data Rate	-	-	1.25	-	Gb/s	
Receiver						
Optical Center Wavelength	λ_C	1260	-	1620	nm	
Receiver Sensitivity	Pmin	-	-	-32	dBm	
Receiver Overload	Pmax	-3.0	-	-	dBm	
LOS De-Assert	LOSD	-	-	-24	dBm	
LOS Assert	LOSA	-45	-	-	dBm	
LOS Hysteresis	LOSH	0.5	-	-	dB	

Notes:
Sensitivity is measured at 1.25 Gbps with BER=<10^-12

Mechanical Dimensions



Revision history

Revision	Date	Author	Description
V1.1	05-03-2020	JGN	Initial Document

Note : Nexgen A/S reserves the right to change this document without notice.