Cablexa
RELIABLE CONNECTIVITY

PRODUCT FEATURES

- Up to 11.1Gbps Data Links
- Up to 60km transmission on SMF
- Power dissipation<1.5W
- 1270nm DFB laser and PIN receiver
- 1330nm DFB laser and PIN receiver
- 2-wire interface with integrated Digital Diagnostic monitoring
- EEPROM with Serial ID Functionality
- Hot-pluggable SFP+ footprint
- Compliant with SFP+ MSA with LC connector
- Single + 3.3V Power Supply
- Case operating temperature: 0ºC ~+70ºC

STANDARD

- Compliant with SFF-8472
- Compliant to SFF-8431
- Compliant to 802.3ae 10GBASE-LR/LW
- RoHS Compliant.

PRODUCT DESCRIPTION

It is hot pluggable 3.3V Small-Form-Factor transceiver module. It's designed expressly for high-speed communication applications that require rates up to 11.1Gbps,it designed to be compliant with SFF-8472 and SFP+ MSA. The module data link up to 60km in 9/125um single mode fiber.

Ⅰ Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	Ts	-40	-	85	℃	
Storage Ambient Humidity	HA	5	-	95	%	
Operating Relative Humidity	RH	-	-	85	%	
Power Supply Voltage	VCC	-0.3	-	4	V	
Signal Input Voltage		Vcc-0.3	-	Vcc+0.3	V	

Ⅱ Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tcase	0	-	70	℃	Without air flow
Power Supply Voltage	VCC	3.14	3.3	3.47	V	
Power Supply Current	ICC	-		350	mA	
Data Rate	BR		10.3125		Gbps	
Transmission Distance	TD		-	10	km	
Coupled fiber	Single mode fiber					9/125um SMF

Ⅲ Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter						
Average Launched Power	P_{Out}	-6	-	-1	dBm	
Average Launched Power(Laser Off)	Poff	-	-	-30	dBm	Note (1)
Center Wavelength Range	λC	1260	1270	1280	nm	
		1320	1330	1340	nm	
Side mode suppression ratio	SMSR	30	-	-	dB	
Spectrum Bandwidth(-20dB)	σ	-	-	1	nm	
Extinction Ratio	ER	3.5		-	dB	Note (2)
Output Eye Mask	Compliant with IEEE 802.3ae					Note (2)
Receiver						
Input Optical Wavelength	λIN	1320	1330	1340	nm	
		1260	1270	1280	nm	
Receiver Sensitivity	Psen	-	-	-14.4	dBm	Note (3)
Input Saturation Power (Overload)	P_{SAT}	0.5	-	-	dBm	Note (3)
LOS -Assert Power	PA	-30	-	-	dBm	
LOS -Deassert Power	PD	-	-	-17	dBm	
LOS -Hysteresis	PHys	0.5	-	5	dB	

IV. Electrical Interface Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Total power supply current	Icc	-		350	mA	
Transmitter						
Differential Data Input Voltage	VDT	180	-	700	mVp-p	
Differential line input Impedance	RIN	85	100	115	Ohm	
Transmitter Fault Output-High	VFaultH	2.4	-	Vcc	V	
Transmitter Fault Output-Low	VFaultL	-0.3	-	0.8	V	
Transmitter Disable Voltage- High	VDisH	2	-	Vcc+0.3	V	
Transmitter Disable Voltage- low	VDisL	-0.3	-	0.8	V	
Receiver						
Differential Data Output Voltage	VDR	300	-	850	mVp-p	
Differential line Output Impedance	ROUT	80	100	120	Ohm	
Receiver LOS Pull up Resistor	RLOS	4.7	-	10	KOhm	
Data Output Rise/Fall time	tr/tf		-	38	ps	
LOS Output Voltage-High	VLOSH	2	-	Vcc	V	
LOS Output Voltage-Low	VLOSL	-0.3	-	0.4	V	

V. Pin Description

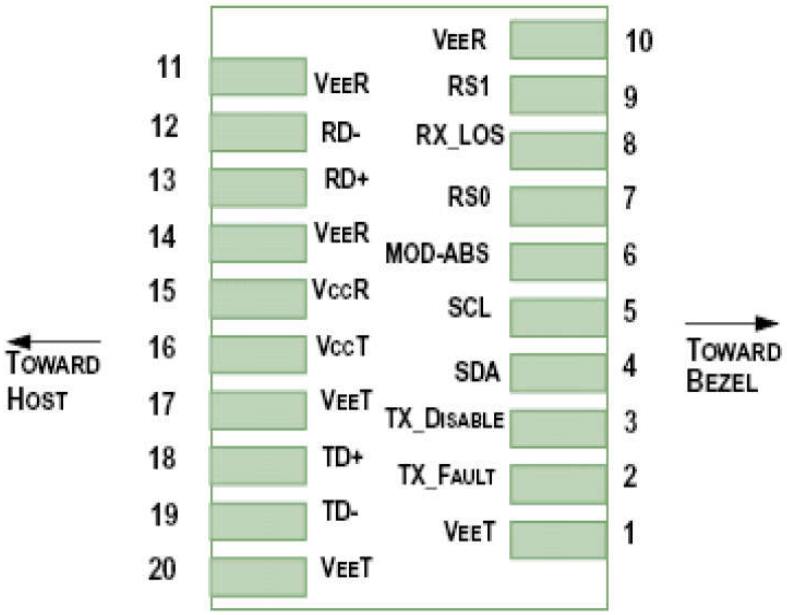

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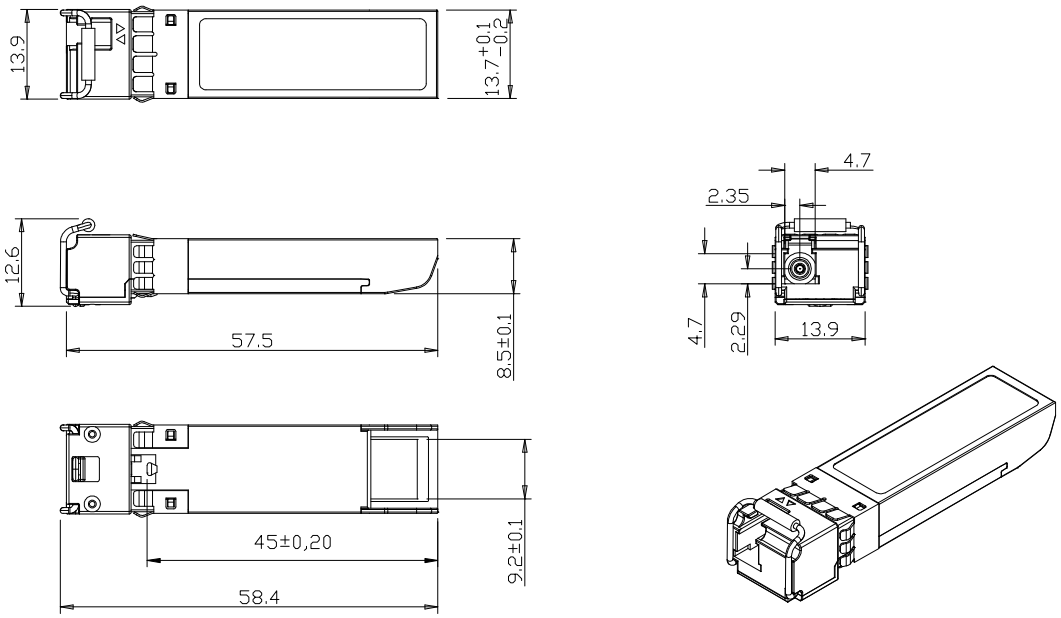
Diagram of Host Board Connector Block Pin Numbers and Name

Pin	Symbol	Name/Description	NOTE
1	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1
2	T_{FAULT}	Transmitter Fault.	2
3	T_{DIS}	Transmitter Disable. Laser output disabled on high or open.	3
4	SDA	2-wire Serial Interface Data Line	4
5	SCL	2-wire Serial Interface Clock Line	4
6	MOD_ABS	Module Absent. Grounded within the module	4
7	RS0	Rate Select 0	5
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	6
9	RS1	No connection required	1
10	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
11	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out. AC Coupled	
13	RD+	Receiver Non-inverted DATA out. AC Coupled	
14	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
15	V_{CCR}	Receiver Power Supply	
16	V_{CCT}	Transmitter Power Supply	
17	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. T_{FAULT} is an open collector/drain output, which should be pulled up with a 4.7k – 10k Ohms resistor on the host board if intended for use. Pull up voltage should be between 2.0V to Vcc + 0.3V.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.
3. Laser output disabled on T_{DIS} >2.0V or open, enabled on T_{DIS} <0.8V.
4. Should be pulled up with 4.7kΩ- 10kΩ host board to a voltage between 2.0V and 3.6V. MOD_ABS pulls line low to indicate module is plugged in.
5. Internally pulled down per SFF-8431 Rev 4.1.
6. LOS is open collector output. It should be pulled up with 4.7kΩ – 10kΩ on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

VI. Outline Dimensions



VII.Ordering information :

SFP-10G-2733-60KM	TX-1270, RX-1330	0~70℃
SFP-10G-3327-60KM	TX-1330, RX-1270	0~70℃