



Features

- 6~11.32Gbps bi-directional fiber link
- Compatible with IEEE802.3ae 10GBase-LR/LW Ethernet
- Compatible with 1200-SM-LL-L 10G Fibre Channel
- Compatible with CPRI and OBSAI wireless standard
- Compliant with SFP+ MSA SFF-8431
- Compliant with SFF8472 diagnostic monitoring interface for Optical Transceivers (DOM)
- 1310nm FP transmitter
- SMF 1.4km point-to-point transmission
- Support Hot Pluggable
- Duplex LC receptacle connector
- 2-wire I2C interface for management and diagnostic monitor
- Manufactured using Tier 1 supplier chips (Silicon Labs, Semtech, ADI)
- RoHS Compliant

Application

- 10GBase-LR Lite
- 8x & 10x Fibre Channel
- CPRI & OBSAI Wireless Application
- SONET OC-192 & SDH STM-64

Ordering Information

PART NO.	TX	RX	DISTANCE	DOM	TEMPERATURE
GL10G-SFP-LRL	1310 nm	1310nm	SMF 1.4km	Support	0~70°C
GL10G-SFP-LRL-E	1310 nm	1310nm	SMF 1.4km	Support	-5~85°C
GL10G-SFP-LRL-I	1310 nm	1310nm	SMF 1.4km	Support	-40~85°C

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10Gbase-LR Lite SFP+ Optical Transceiver Single-Mode 1310nm, 1.4km, DOM



Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNITS	NOTE
Storage Temperature	T_s	-40	+85	°C	
Supply Voltage	V_{cc}	-0.5	4.0	V	
Storage Relative Humidity	RH	5	95	%	

Recommended Operating Conditions

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Case Operating Temperature	T_C	0	---	70	°C	GL10G-SFP-LRL
		-5	---	85	°C	GL10G-SFP-LRL-E
		-40	---	85	°C	GL10G-SFP-LRL-I
Supply Voltage	V_{cc}	3.13	3.3	3.47	V	
Supply Current	$I_{TX} + I_{RX}$	---		300	mA	
Power Consumption	P			1.0	W	

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Transmitter Electro-optical Interface

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Data Rate	DR	6	10.3125	11.32	Gbps	
Optical Output Power	P _O	-8.2		+0.5	dBm	1
Optical Extinction Ratio	ER	3.5			dB	
Center Wavelength	λ_c	1260	1310	1355	nm	
Spectral Width (RMS)	$\Delta\lambda$			3	nm	
Relative Intensity Noise	RIN			-128	dB/Hz	
Output Eye		Compliant with IEEE802.3ae				
Output Power @Tx_Dis Asserted	P _{OFF}			-30	dBm	
Differential Input Voltage Swing	V _{DIFF}	180		850	mV	
Differential Input Impedance	Z _d	90	100	110	Ω	
Tx_Fault – High (Tx Fault)	V _{Fault_H}	2.0		V _{cc}	V	
Tx_Fault – Low (Tx Normal)	V _{Fault_L}	V _{ee}		0.8	V	
Tx_Disable – High (Tx Off)	V _{Disable_H}	2.0		V _{cc}	V	
Tx_Disable – Low (Tx On)	V _{Disable_L}	V _{ee}		0.5	V	

Note 1: Coupling into a 9/125 μ m single-mode fiber.

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Receiver Electro-optical Interface

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNITS	NOTE
Data Rate	DR	6	10.3125	11.32	Gbps	
Optical Input Power-maximum	P _{IN}			+0.5	dBm	
Receiver Sensitivity	P _{IN}			-14.5	dBm	1
Operating Center Wavelength	λ_c	1260		1620	nm	
Optical Return Loss	ORL	12			dB	
Loss of Signal (LOS) - Asserted	P _A	-30			dBm	
Loss of Signal (LOS) - De-asserted	P _D			-15.5	dBm	
Differential Output Voltage Swing	V _{DIFF}	300		900	mV	
Differential Input Impedance	Z _d	90	100	110	Ω	
LOS Signal Output Voltage - Low	LOS _{VL}	V _{ee}		0.5	V	
LOS Signal Output Voltage - High	LOS _{VH}	2.4		V _{cc}	V	

Note 1: With BER better than or equal to 1×10^{-12} , measured in the center of the eye opening with 10.3125Gbps, PRBS 2³¹-1

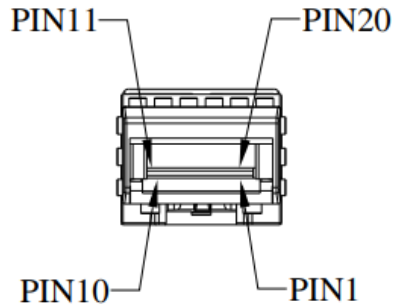
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Pin Assignment



PIN NO.	PIN NAME	FUNCTION	NOTE
1	VeeT	Transmitter Ground	
2	TX Fault	Transmitter Fault Indication	
3	TX Disable	Transmitter Disable	
4	MOD_DEF 2	Module Definition 2 (Serial Data Signal)	SDA
5	MOD_DEF 1	Module Definition 1 (Serial Data Clock)	SCL
6	MOD_DEF 0	Module Definition 0	TTL Low
7	RS0	Rx Rate Select	No used
8	Rx_LOS	Loss of Signal	Open collector
9	RS1	Tx Rate Select	No used
10	VeeR	Receiver Ground	
11	VeeR	Receiver Ground	
12	RD-	Inv. Receiver Data Out (AC coupled)	
13	RD+	Receiver Data Out (AC coupled)	
14	VeeR	Receiver Ground	
15	V _{CC} R	Receiver Power	
16	V _{CC} T	Transmitter Power	
17	VeeT	Transmitter Ground	
18	TD+	Transmitter Data In (AC coupled)	
19	TD-	Inv. Transmitter Data In (AC coupled)	
20	VeeT	Transmitter Ground	

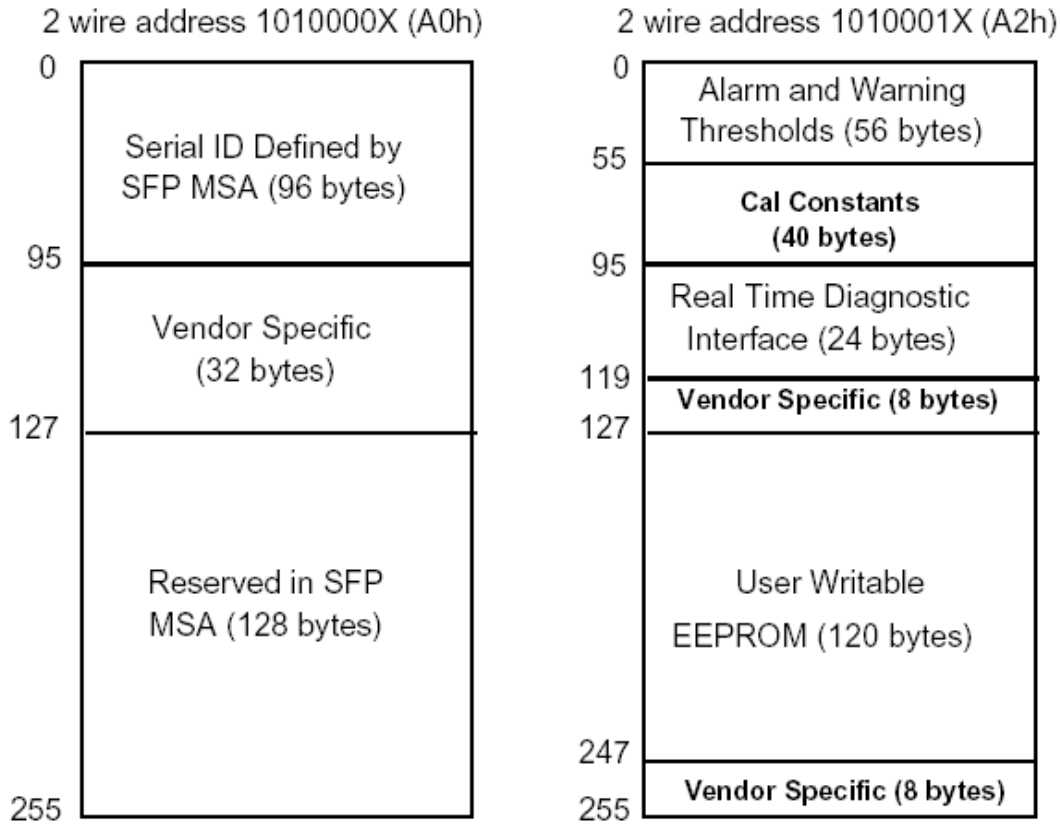
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Digital Diagnostic Memory Map



Digital Diagnostic Monitoring Characteristics

PARAMETER	SYMBOL	ACCURACY	UNIT	NOTE
Transceiver Temperature	T_{INT}	± 3	$^{\circ}C$	
Transceiver Supply Voltage	V_{INT}	± 3	%	
TX Bias Current	I_{BIAS}	± 10	%	
TX Output Power	P_{TX}	± 3	dB	
RX Received Optical Power	P_{RX}	± 3	dB	

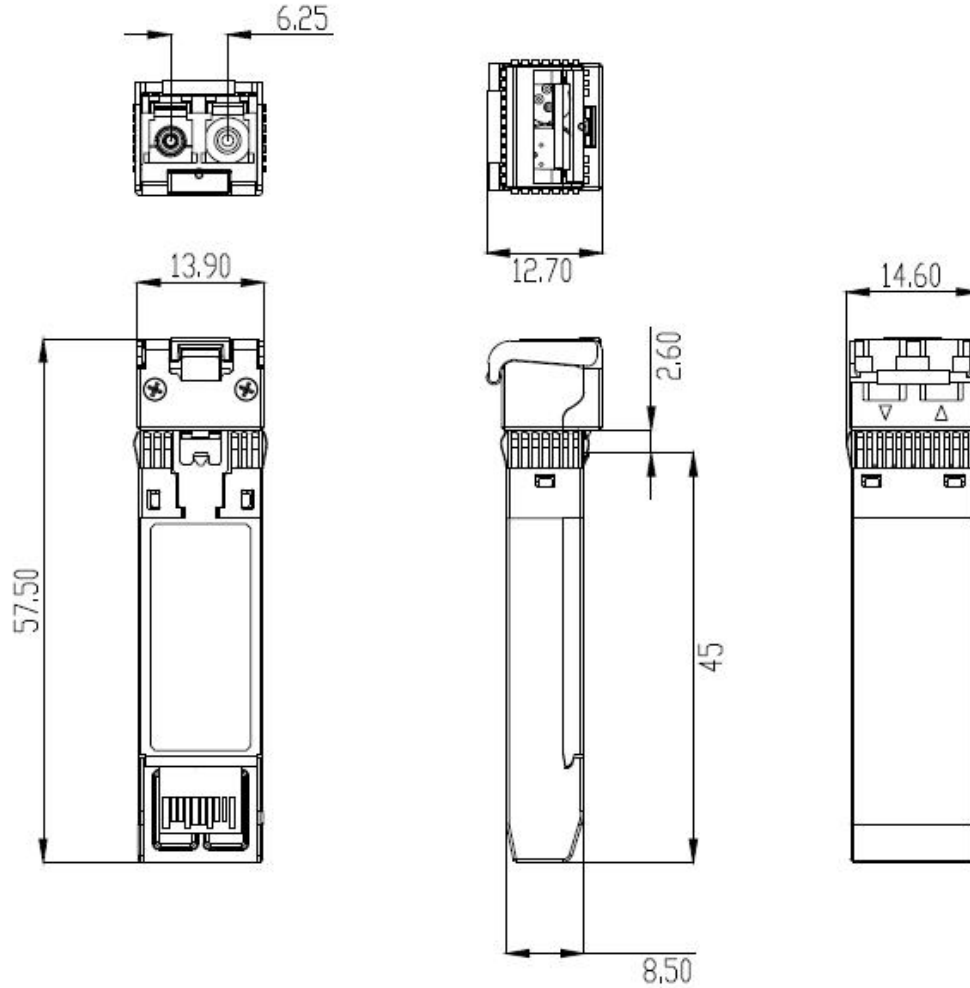
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Mechanical Dimensions (All dimensions are $\pm 0.20\text{mm}$ Unless Otherwise Specified, Unit: mm):



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