RAYMARK RMT-SFP10G-LR1 DATASHEET

Features

- Supports from 9.83 Gb/s to 11.3 Gb/s bit rates
- Compliant with IEEE 802.3ae 10GBASE-LR/LW
- Compliant with 10G FC 1200-SM-LL--L
- Compliant with SFF-8431
- Hot-pluggable SFP+ footprint
- 1310nm DFB laser transmitter
- Duplex LC connector
- Built-in digital diagnostic functions
- Up to 10km on SMF
- Single power supply 3.3V
- RoHS Compliant
- Operating case temperature: 0℃ ~70℃

Applications

- 10GBASE-LR/LW Ethernet
- 10G Fiber Channel
- 10G CPRI

Description

This SFP+ LR optical transceivers are based on 10G Ethernet IEEE 802.3ae standard and SFF-8431 standard, providing a fast and reliable interface for 10G Ethernet applications. This product implements digital diagnostics via a 2-wire serial bus, compliant with the SFF-8472 standard.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Units
Data Rate	*DR*	9.83	10.3125	11.3	Gb/s
Bit Error Rate	*BER*			10^{-12}	
Storage Temperature	T_C	-40		85	°C
Supply Current (Commercial Temperature)	I_{CC}		200	310	mA
Supply Current (Industrial Temperature)	I_{CC}		200	350	mA
Power Dissipation (Commercial Temperature)	P_C		0.65	1.0	W
Power Dissipation (Industrial Temperature)	P_I		0.65	1.2	W
Maximum Voltage	V_{MAX}	-0.5		4	V

Recommended Operating Environment

Parameter	Symbol	Min.	Typ.	Max.	Units
Power Supply Voltage	*Vcc*	3.14	3.3	3.46	V
Operating Case Temperature	T_C	0		70	°C

Digital Diagnostic Functions

Parameter	Symbol	Accuracy	Unit	Notes
Temperature monitor	*DMI_Temp*	± 3	°C	
Supply voltage monitor	*DMI_VCC*	±0.1	V	
TX power	*DMI_TX*	± 2 dB	dB	1
RX power	*DMI_RX*	± 2 dB	dB	1
Bias Current monitor	*DMI_Ibias*	± 10%	mA	

Notes:

1. Due to measurement accuracy of different single mode fibers, there could be an additional +/-1 dB fluctuation, or a +/- 3 dB total accuracy.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Note
Transmitter						
Output Optical Power	P_{TX}	-8.2		0.5	dBm	1
Optical Center Wavelength	λ_C	1260		1355	nm	
Optical Modulation Amplitude	*OMA*	-5.2			dBm	2
Extinction Ratio	*ER*	3.5	5.5		dB	
Spectral Width (-20dB)	$\Delta\lambda$			1	nm	
Side Mode Suppression Ratio	*SMSR*	30			dB	
Relative Intensity Noise	*RIN*			-128	dB/Hz	
Transmitter Dispersion Penalty	*TDP*			3.2	dB	
Launch Power of OFF Transmitter	P_{OUT_OFF}			-30	dBm	1
Transmitter Jitter	*TJ*					2
Receiver						
Center wavelength	λc	1260		1600	nm	
Average Receive Power	P_{RX}	-14.4		0.5	dBm	
Receiver Sensitivity @10.3Gb/s	*SEN*			-14.4	dBm	3
Receiver Reflectance	TR_{RX}			-12	dB	
LOS Assert	LOS_A	-30			dBm	
LOS De-assert	LOS_D			-17	dBm	
LOS Hysteresis	LOS_H	0.5			dB	

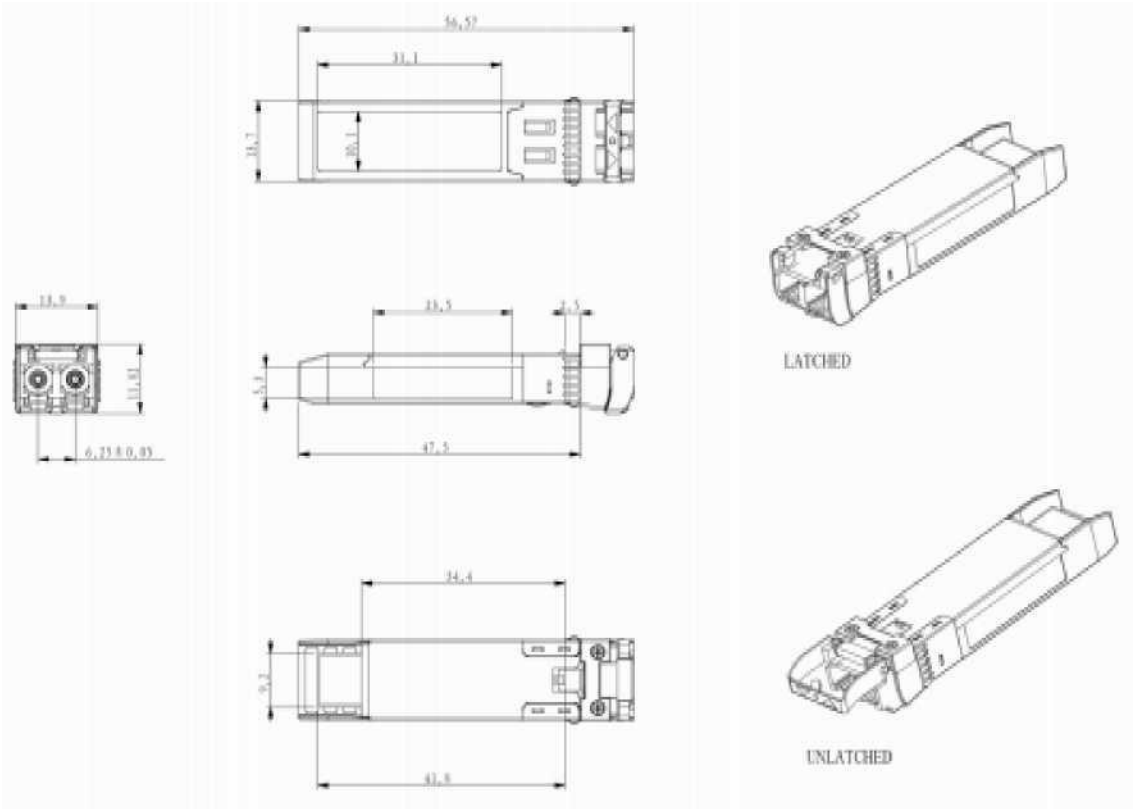
Notes:

2. Average
3. According to IEEE 802.3ae requirement
4. Measure with worst ER;BER<10^{-12};2^{31}-1 PRBS

Electro Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units
Input differential impedance	R_{IN}		100		Ω
Single ended data input swing	Vin_{PP}	180		700	mV
Disable Voltage	V_D	2		Vcc	V
Enable Voltage	V_{EN}	VEE		VEE+0.8	V
Single Ended Data Output Swing	V_{OUT_PP}	300		850	mV
Output Rise and Fall time (20% to 80%)	*Tr, Tf*	28			ps
LOS Assert	V_{LOS_A}	2		VCC_HOST	V
LOS De-Assert	V_{LOS_D}	VEE		VEE+0.5	V

Dimensions



ALL DIMENSIONS ARE ±0.2mm UNLESS OTHERWISE SPECIFIED

UNIT: mm

Ordering Information

Model Number	*Wavelength*	*Temperature*
RMT-SFP10G-LR1	1310nm	0 to 70 °C