

RAYMARK RMT-SFP10G-SR DATASHEET

Features

- SFP+ MSA Compliant
- Supports from 9.83 Gb/s to 11.3 Gb/s bit rates
- Compliant with IEEE 802.3ae 10GBASE-SR/SW
- Compliant with SFF-8431
- Hot-pluggable SFP+ footprint
- 850nm VCSEL laser transmitter
- Duplex LC connector
- Built-in digital diagnostic functions
- Up to 300m on OM3 MMF
- Low power consumption (Module work consumption <1W)
- Singlepower supply 3.3V
- RoHSCompliant
- Class1 laser product complies with EN 60825-1
- Operating case temperature: 0°C ~70°C

Applications

- 10GBASE-SR/SW Ethernet
- 10G Fiber Channel
- 10G CPRI

Description

This SFP+ SR 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

<i>Parameter</i>	<i>Symbol</i>	<i>Min.</i>	<i>Typ.</i>	<i>Max.</i>	<i>Units</i>
Data Rate	<i>DR</i>	9.83	10.3125	11.3	Gb/s
Bit Error Rate	<i>BER</i>			10^{-12}	
Storage Temperature	<i>T_c</i>	-40		85	°C
Supply Current	<i>I_{CC}</i>		180	290	mA
Maximum Voltage	<i>V_{MAX}</i>	-0.5		4	V

Recommended Operating Environment

<i>Parameter</i>	<i>Symbol</i>	<i>Min.</i>	<i>Typ.</i>	<i>Max.</i>	<i>Units</i>
Power Supply Voltage	<i>V_{CC}</i>	3.14	3.3	3.46	V
Operating Case	<i>T_c</i>	0		70	°C

Digital Diagnostic Functions

<i>Parameter</i>	<i>Symbol</i>	<i>Accuracy</i>	<i>Unit</i>
Temperature monitor absolute	<i>DMI_Temp</i>	± 3	°C
Supply voltage monitor absolute	<i>DMI_VCC</i>	±0.1	V
TX power	<i>DMI_TX</i>	± 3 dB	dB
RX power	<i>DMI_RX</i>	± 3 dB	dB
Bias Current monitor	<i>DMI_Ibias</i>	± 10%	mA

Optical Characteristics

<i>Parameter</i>	<i>Symbol</i>	<i>Min.</i>	<i>Typ.</i>	<i>Max.</i>	<i>Units</i>	<i>Not</i>
<i>Transmitter</i>						
Output Optical Power	P_{TX}	-7		-1	dBm	1
Optical Center Wavelength	λ_c	840		860	nm	
Optical Modulation Amplitude	OMA		-1.5		dBm	2
Extinction Ratio	ER	3	5.5		dB	
Spectral Width (RMS)	$\Delta\lambda$			0.45	nm	
Relative Intensity Notes	RIN			-128	dB/Hz	
Transmitter Dispersion Penalty	TDP			3.9	dB	
Transmitter Jitter	TJ					3
Launch Power of OFF Transmitter	P_{OUT_OFF}			-30	dBm	1
<i>Receiver</i>						
Center wavelength	λ_c	840		860	nm	
OMA Receiver Overload	P_{OL}	0.5			dBm	
Receiver Sensitivity (OMA)	SEN			-10	dBm	4
Receiver Reflectance	TR_{RX}			-12	dB	
LOS Assert	LOS_A	-30			dBm	
LOS De-assert	LOS_D			-14	dBm	
LOS Hysteresis	LOS_H	0.5			dB	

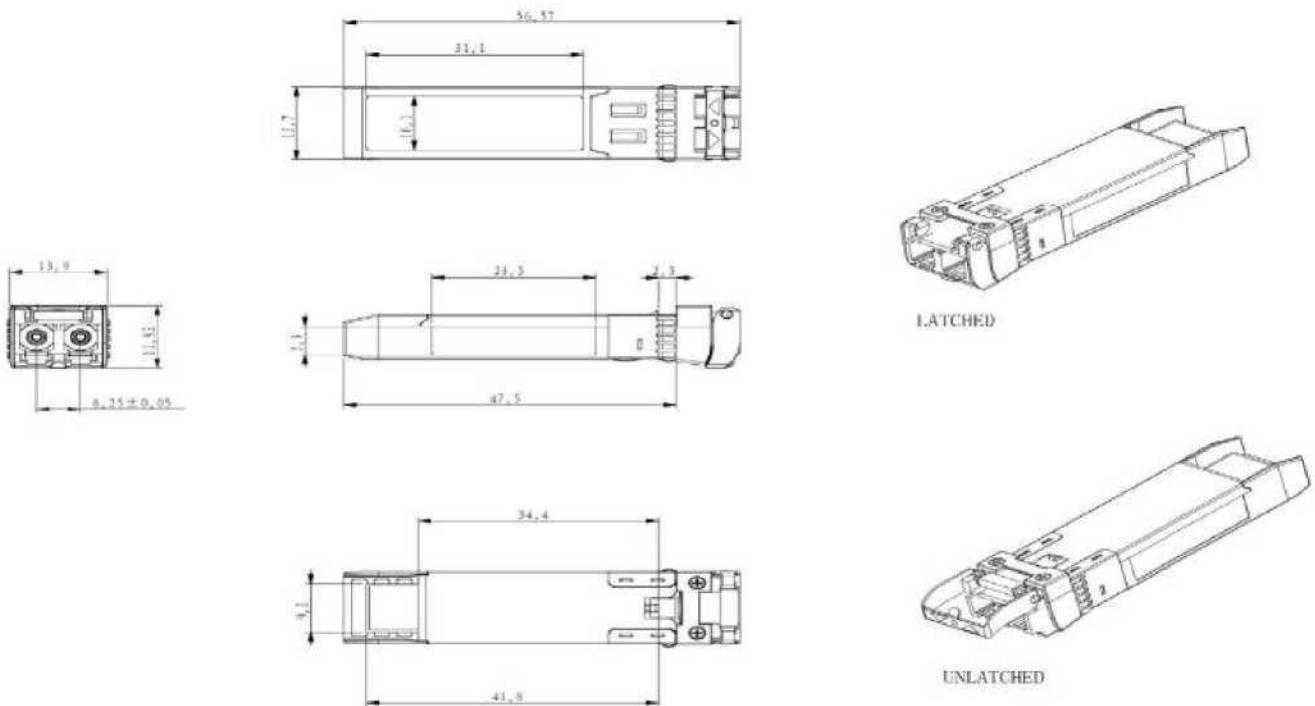
Notes:

1. Average
2. IEEE 802.3ae
3. According to IEEE 802.3ae requirement
4. Measured with worst ER; BER < 10⁻¹²; 2³¹-1 PRBS

Electro Characteristics

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

Dimensions



ALL DIMENSIONS ARE ± 0.2 mm UNLESS OTHERWISE SPECIFIED

UNIT: mm

Ordering Information

<i>Model Number</i>	<i>Wavelength</i>	<i>Temperature</i>
RMT-SFP10G-SR	850nm	0 to 70 °C