

# 10 GB/s 1.4Km SFP+ 1310 nm Transceivers



The RTXM228-702 10Gigabit 1310nm FP Transceiver is designed to transmit and receive serial optical data links up from 2.1Gb/s to 10.52 Gb/s data rate over 1.4km singlemode fiber. The Transceiver is compliant with SFF-8432, FC-PI-4, IEEE802.3ae and applicable portions of SFF-8431. Digital diagnostics functions are available via a 2-wire serial interface, as specified in SFF-8472.

## Features

- Link lengths at 10G 1.4Km with 1310nm
- LC duplex connector
- Low power consumption <1.0W
- -40°C to 85°C operating temperature range
- Single +3.3V±5% power supply
- Digital Monitoring SFF-8472 compliant

## Applications

- CPRI rates 2.4576 Gb/s, 4.9152Gb/s, 6.144Gb/s,9.8304 Gb/s
- 2/4/8GFC Data Storage Channel

## Standards

- IEEE 802.3ae
- SFF-8431 Rev 3.0
- SFF-8472 Rev 10.2
- FC-PI-4 Rev 7.0

## Specifications

(tested under recommended operating conditions, unless otherwise noted)

Parameter	Symbol	Unit	Min	Typ	Max	Note
Transmitter						
Nominal Wavelength	$\lambda$	nm	1260	1310	1360	
Spectral width RMS	$\Delta\lambda$	nm			3	
Optical Modulation Amplitude	POMA	dBm	-5.2			
Optical Output Power	Pav	dBm	-8.2		0.5	
Extinction Ratio	ER	dB	3.5			
Transmitter and Dispersion Penalty	TDP	dB			3.2	
Average launch power of OFF transmitter	P <sub>OFF</sub>	dBm			-35	
Relative Intensity Noise	RIN	dB/Hz			-128	
Optical Return Loss Tolerance	ORLT	dB			12	
Receiver						
Center Wavelength	$\lambda$	nm	1260		1610	
Receiver overload		dBm	+0.5			1
Receiver Sensitivity	R <sub>SENSE1</sub>	dBm			-14.4	1
Receiver Sensitivity (OMA)	R <sub>SENSE2</sub>	dBm			-12.6	
Receiver Reflectance	R <sub>REFL</sub>	dB			-12	
Assert LOS	LOS <sub>A</sub>	dBm	-30			
De-Assert LOS	LOS <sub>D</sub>	dBm			-17	
LOS Hysteresis		dB	0.5			

**Note 1:** Sensitivity for 10G PRBS 2<sup>7</sup>-1 and BER better than or equal to 10E-12

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## Ordering Information

Part No.	Specifications									Application
	Package	Data rate(Gb/s)	Laser	Optical Power (dBm)	Detector	Sensitivity (OMA) dBm	Top	Reach (km)	Other	
RTXM228-702	SFP+	2.1 ~10.52	1310nm FP	-8.2 ~+0.5	PIN	< -12.6	-40~85°C	1.4km	DDM	CPRI/OBSAI

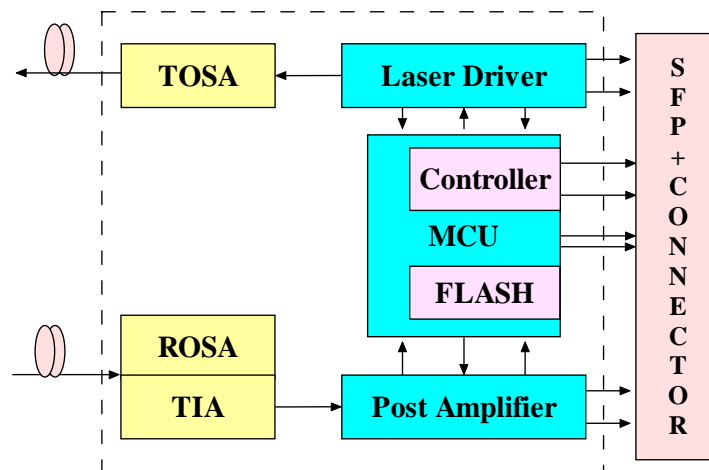
## Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	Ts	°C	-40	85
Relative Humidity	RH	%	0	95
Supply Voltage	V <sub>CC</sub>	V	-0.3	4.0

## Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Operating Case Temperature Range	T <sub>c</sub>	°C	-40		85
Power Supply Voltage	V <sub>CC</sub>	V	3.14	3.3	3.46
Bit Rate	BR	Gb/s	2.1		10.52
Bit Error Ratio	BER				10 <sup>-12</sup>
Max Supported Link Length	L	km			1.4

## Principle diagram



## Electric Ports Definition

Parameter	Symbol	Unit	Min	Typ	Max	Note
Supply Voltage	V <sub>CC</sub>	V	3.14	3.3	3.46	
Supply Current	I <sub>CC</sub>	mA			285	