6Gb/s 2km SFP+ 1310nm Transceivers

The RTXM228-601 6Gigabit 1310nm FP Transceiver is designed to transmit and receive serial optical data links up from 2.1 Gb/s to 6.25 Gb/s data rate over singlemode fiber. The Transceiver is compliant with 2/4GFC,CPRI 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 6Gbps 2Km with FP 1310nm
- LC duplex connector
- Low power consumption <1.2W
- -40℃ to 85℃ operating wide temperature range
- Single +3.3V±5% power supply
- Digital Monitoring SFF-8472 compliant

Applications

- Wireless and cellular base station system interconnect:
  OBSAI rates 6.144Gb/s, 3.072 Gb/s
  CPRI rates 4.9152 Gb/s, 2.4576 Gb/s
- 2/4GFC Data Storage Channel

Standards

- SFF-8431 Rev 3
- SFF-8432 Rev5
- SFF-8472 Rev 10

Specifications

(tested under recommended operating conditions, unless otherwise noted)

Parameter	Symbol	Unit	Min	Typ	Max	Note
Transmitter						
Nominal Wavelength	λ	nm	1260	1310	1360	
RMS spectral width	$\Delta\lambda_{rms}$	nm			3	
Optical Output Power	Pav	dBm	-8.2		+0.5	
Optical Modulation Amplitude	POMA	dBm	-5.4			
Average launch power of OFF transmitter	P_{OFF}	dBm			-35	
Extinction Ratio	ER	dB	3.5			
Transmitter and Dispersion Penalty	TDP	dB			3.2	
Relative Intensity Noise	R_{IN}	dB/Hz			-128	
Optical Return Loss Tolerance	ORLT	dB			12	
Receiver						
Center Wavelength	λ_C	nm	1260		1610	
Receiver Sensitivity (OMA)	R_{SENSE1}	dBm			-13.8	1
Receiver overload		dBm	+0.5			1
Receiver Reflectance	R_{REFL}	dB			-12	
Assert LOS	LOS_A	dBm	-30			
De-Assert LOS	LOS_D	dBm			-15	
LOS Hysteresis		dB	0.5			

Note 1: Sensitivity for 10G PRBS 2^7-1 and BER better than or equal to 10E-12

Ordering Information

Part No.	Specifications								Application
	Package	Data rate(Gb/s)	Laser	Optical Power (dBm)	Detector	Sensitivity (OMA) dBm	Top	Reach (km)	Other	
RTXM228-601	SFP+	2.125 ~6.25	1310nm FP	-8.2 ~+0.5	PIN	< -13.8	-40~85 °C	2km	DDM	OBSAI / CPRI 2/4GFC

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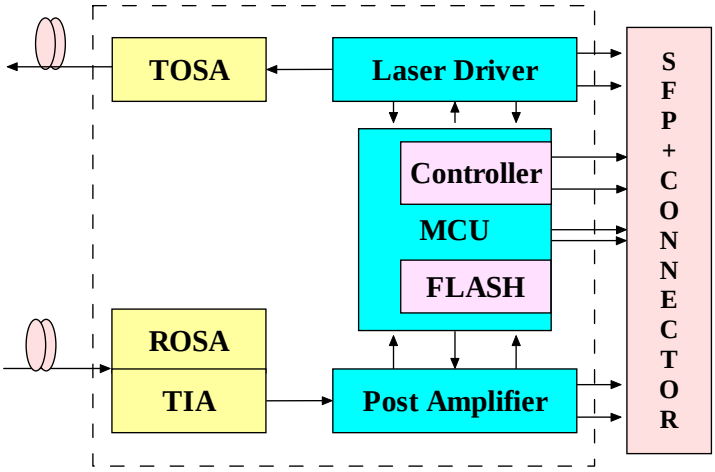
Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	Ts	°C	-40	85
Relative Humidity	RH	%	0	95
Supply Voltage	V_{CC}	V	-0.3	4.0

Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Operating Case Temperature Range	Tc	°C	-40		85
Power Supply Voltage	Vcc	V	3.14	3.3	3.46
Bit Rate	BR	Gb/s	2.125	6.144	6.25
Bit Error Ratio	BER				10^{-12}
Max Supported Link Length	L	km			2

Principle diagram



Electric Ports Definition

Parameter	Symbol	Unit	Min	Typ	Max	Note
Supply Voltage	V_{CC}	V	3.14	3.3	3.46	
Supply Current	Icc	mA			345	
Transmitter						
Input Differential Impedance	R_{IN}	Ω	80	100	120	1
Differential Data Input Swing	V_{IN}	mVp-p	180		700	
Transmit Disable Voltage	V_{DIS}	V	2		V_{CCHOST}	
Transmit Enable Voltage	V_{EN}	V	V_{EE}		V_{EE}+0.8	
Transmit Fault Assert Voltage	V_{FA}	V	2.2		V_{CCHOST}	
Transmit Fault De-Assert Voltage	V_{FDA}	V	V_{EE}		V_{EE}+0.4	