

6Gb/s 15km SFP+ 1310nm Transceivers



The RTX228-618 6Gigabit 1310nm DFB 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 15Km with DFB 1310nm
- LC duplex connector
- Low power consumption <1.2W
- -40°C to 85°C 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

Ordering Information

Specifications

(tested under recommended operating conditions, unless otherwise noted)

Parameter	Symbol	Unit	Min	Typ	Max	Note
Transmitter						
Nominal Wavelength	λ	nm	1260	1310	1360	
Side Mode Suppression Ratio	SMSR	dB	30			
Spectral Width	$\Delta\lambda_{rms}$	nm			1	
Optical Output Power	P_{av}	dBm	-5.2		+0.5	
Average launch power of OFF transmitter	P_{OFF}	dBm			-35	
Extinction Ratio	ER	dB	3.5			
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	R_{SENSE}	dBm			-14.4	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 6G PRBS 2⁷-1 and BER better than or equal to 10E-12

Part No.	Specifications									Application
	Package	Data rate(Gb/s)	Laser	Optical Power (dBm)	Detector	Sensitivity dBm	Top	Reach (km)	Other	
RTXM228-618	SFP+	2.125 ~6.25	1310nm DFB	-5.2 ~+0.5	PIN	< -14.4	-40~85°C	15km	DDM	OBSAI / CPRI 2/4GFC

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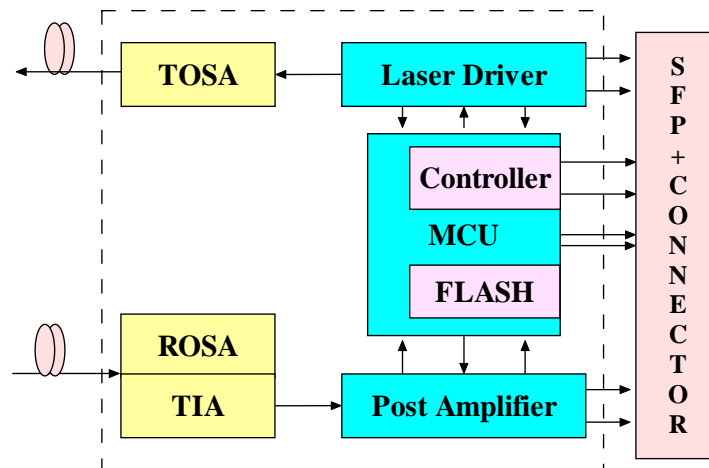
Absolute Maximum Ratings

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	V _{CC}	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			15

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	I _{CC}	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 _{CC} H0ST	
Transmit Enable Voltage	V _{EN}	V	V _{EE}		V _{EE} +0.8	
Transmit Fault Assert Voltage	V _{FA}	V	2.2		V _{CC} H0ST	
Transmit Fault De-Assert Voltage	V _{FDA}	V	V _{EE}		V _{EE} +0.4	