

Gigabit SFP (Small Form Pluggable)

Single mode / Multimode Fiber Module Transceiver



- * Available for Single mode & Multimode
- * Dual fiber LC connector
- * Wavelength: 1310nm
- * Dual data-rate of 1.25Gbps
- * Max distance 2km (Multimode)
- * Max distance 20km (Single mode)
- * Suitable for Dahua, HIK, Ruijie, Belco, TP-Link, D-Link, ZyXEL and many other brands switches

System Overview

The SFP transceivers are high performance, cost effective modules supporting dual data-rate of 1.25Gbps/1.0625Gbps. 2km (Multimode) and 20km (Single mode) transmission distance. The transceiver consists of three sections: a FP laser transmitter, a PIN photodiode integrated with a trans-impedance preamplifier (TIA) and MCU control unit. All modules satisfy class I laser safety requirements. The transceivers are compatible with SFP Multi-Source Agreement (MSA) and SFF-8472.

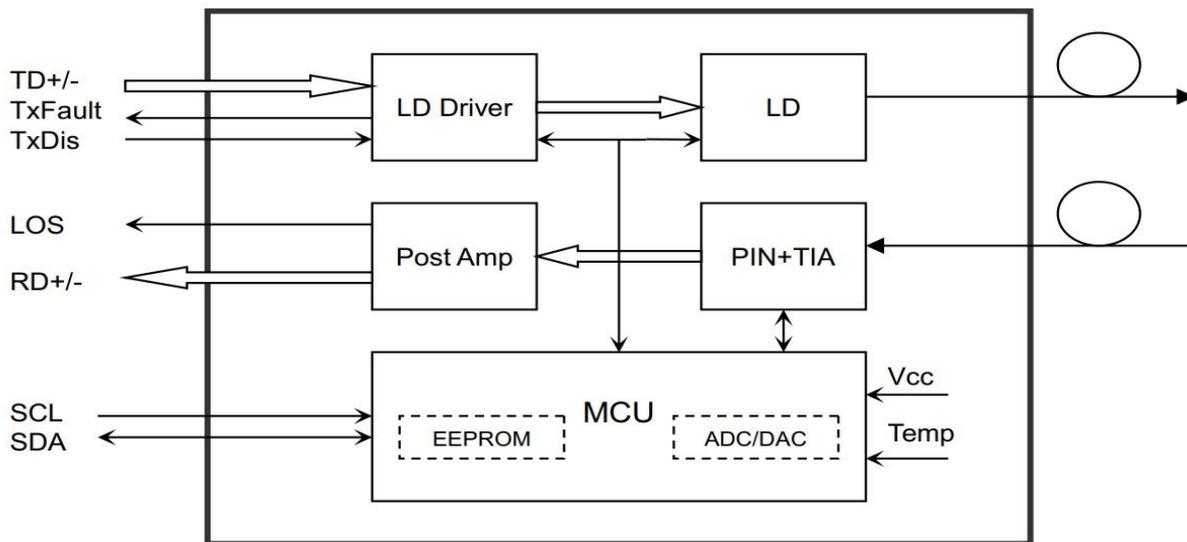
Features

- * Dual data-rate of 1.25Gbps/1.063Gbps operation
- * 1310nm FP laser and PIN photodetector for 2km (MM), 20km (SM) transmission
- * Compliant with SFP MSA and SFF-8472 with duplex LC receptacle
- * Digital Diagnostic Monitoring: Internal Calibration or External Calibration
- * Compatible with RoHS
- * +3.3V single power supply

Applications

- * Gigabit Ethernet
- * Fiber Channel
- * Switch to Switch interface
- * Switched backplane applications
- * Router/Server interface
- * Other optical transmission systems

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Absolute Maximum Ratings

Table 1 - Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc	-0.5	4.5	V
Storage Temperature	Ts	-40	+85	°C
Operating Humidity	-	5	85	%

Recommended Operating Conditions

Table 2 - Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Standard	0		+70	°C
	Industrial	-40		+85	°C
Power Supply Voltage	Vcc	3.13	3.3	3.47	V
Power Supply Current	Icc			300	mA
Data Rate	Gigabit Ethernet		1.25		Gbps
	Fiber Channel		1.063		

Table 3 - Optical and Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Centre Wavelength	λ_c	1260	1310	1360	nm	
Spectral Width (RMS)	$\Delta\lambda$			4	nm	
Average Output Power	Pout	-9		-3	dBm	1
Extinction Ratio	ER	9			dB	
Optical Rise/Fall Time (20-80%)	tr/tf			0.26	ns	
Data Input Swing Differential	VIN	400		1800	mV	2
Input Differential Impedance	ZIN	90	100	110	Ω	

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
TX Disable	Disable		2.0		Vcc	V
	Enable		0		0.8	V
TX Fault	Fault		2.0		Vcc	V
	Normal		0		0.8	V

Receiver						
Centre Wavelength	λ_c	1260		1580	nm	
Receiver Sensitivity				-23	dBm	3
Receiver Overload		-3			dBm	3
LOS De-Assert	LOS _D			-24	dBm	
LOS Assert	LOS _A	-30			dBm	
LOS Hysteresis		1		4	dB	
Data Output Swing Differential	V _{out}	400		1800	mV	4
LOS	High	2.0		Vcc	V	
	Low			0.8	V	

Diagnostics

Table 4 - Diagnostics Specification

Parameter	Range	Unit	Accuracy	Calibration
Temperature	0 to +70	°C	±3°C	Internal/External
	-40 to +85			
Voltage	3.0 to 3.6	V	±3%	Internal/External
Bias Current	0 to 100	mA	±10%	Internal/External
TX Power	-9 to -3	dBm	±3dB	Internal/External
RX Power	-23 to -3	dBm	±3dB	Internal/External

Ordering information

Part Number	Product Description
SFP-DMMLC	LC connectors, 1310nm, 1.25Gbps, 2km
SFP-DSMLC	LC connectors, 1310nm, 1.25Gbps, 20km