Multi-Rate 1 – 8.5 Gb/s 850 nm Multimode, 150 m SFP+ Dual LC Connector

OptixCom Connect with Light

Small Form Pluggable Plus (SFP+)

Description

OptixCom's multi-rate fiber optics transceiver is designed for 1X, 2X, 4X, 8X FC, GbE, and OC48 applications with data rate up to 8.5 Gb/s. This multimode fiber optics transceiver is designed with high performance 850 nm VCSEL light source. Dual LC connectors are used as standard interface and the package is compliant with Small Form Pluggable Plus (SFP+) specifications. The optical connector interface is dual LC.

The module is compliant with SFP+ Multi-Source Agreement (MSA). The transceiver reaches more than 50 meters of transmission distance with high-grade multimode fibers and >4 dB of power budget. The products are RoHS compliant.

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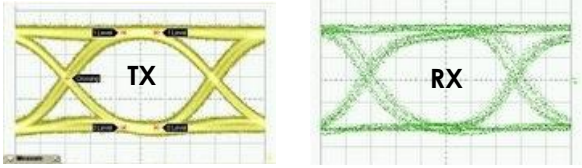
SFP-8500SX-AT150M

Key Features

- 850 nm multimode,
- Multi-rate from 1 to 8.5 Gb/s
- > 4 dB power budget, 150 m reach
- Duplex LC connector optical interface
- Z-axis hot pluggable
- SFF-8472 MSA Compliant
- AC coupling LVPECL differential I/O logics
- Single 3.3 V power supply
- TTL or PECL signal detect to monitor optical signals
- RoHS compliant

8.5 Gb/s, 2^7-1 NRZ Data Eye Pattern



Ordering Information

Part Number: SFP-8500SX-AT150M

Description:

850 nm, 1 to 8.5 Gb/s, multimode, SFP+ fiber optics transceiver, 150 m reach, 0-70°C

Applications

- ✓ Fiber Channel, Gigabit Ethernet
- ✓ High speed I/O for file server
- ✓ Video over fiber links
- ✓ Media converter
- ✓ Data Communication for SAN and LAN
- ✓ Industrial Control Link
- ✓ Central offices routers and switches
- ✓ Mass storage systems interconnect

Operating Conditions

Parameter	Min.	Typical	Max.	Units
Operate Temperature	0	25	70	°C
Data Rate	1	---	8.5	Gb/s
Supply Voltage	3.1	3.3	3.5	V
Supply Current	---	200	250	mA

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Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Storage Temperature	*Tst*	-40	85	°C
Supply Voltage	*Vcc*	-0.5	4.0	V
Input Voltage	*VIN*	-0.5	*Vcc*	V
Operating Current	*Iop*	---	300	mA
Output Current	*Io*	---	50	mA
Soldering Temperature (10 sec. on leads)	*Tsd*	---	260	°C

Transmitter Electro-Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Differential Input Voltage [1]	*ΔVi*	0.2	---	0.9	V
Differential Input Impedance [2]	*Z*	---	100	---	ohm
Optical Output Power [3]	*Po*	-7	---	-1	dBm
Optical Wavelength	*λo*	840	850	860	nm
Relative Intensity Noise	*RIN*	---	---	-128	dB/Hz
Optical Modulation Amplitude	*OMA*	300	---	---	µW
TX Disable Power	*PTD*	---	---	-30	dBm
Spectral Width (rms)	*Δλ*	---	---	0.65	nm
TX Disable Voltage – High	*VDH*	2.4	---	*Vcc*	V
TX Disable Voltage - Low	*VDL*	0	---	0.5	V
TX Fault Output - High	*VFH*	2.4	---	*Vcc*	V
TX Fault Output - Low	*VFL*	0	---	0.5	V
TX Disable Assert Time	*Tass*	---	---	10	µs
TX Disable Deassert Time	*Tdisass*	---	---	1.0	ms
Time to Initialize	*Tas*	---	---	300	ms
TX Fault from Fault to Assertion	*Tfault*	---	---	100	µs
TX Disable Time to Start Reset	*Treset*	10	---	---	µs

Notes:

1. Applied to AC LVPECL I/O coupling. See the design guide for proper termination.
2. Single ended will be 50 ohm for each signal line.
3. Output of coupling optical power into OM2 50/125 µm MMF.
4. Optical eye diagram is compliant with IEEE 802.3z and 1x/2x/4X/8X FC standards.

Class 1 Laser Product
Complies with
21 CFR 1040.10 and 1040.11

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Receiver Electro-Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Differential Input Impedance	Z	---	100	---	Ohm
Differential Output Voltage [1]	ΔV_O	0.4	---	0.8	V
Operating Wavelength	λ_C	840	---	860	nm
Receiver Overload	P_{max}	-1	---	---	dBm
Receiver Sensitivity [2] (@8.5 Gb/s)	P_I	---	---	-11.1	dBm
Receiver Sensitivity (@4.25 Gb/s)	P_I	---	---	-13.1	dBm
Receiver Sensitivity (@2.125 Gb/s)	P_I	---	---	-15.1	dBm
Receiver Sensitivity (@1.0 Gb/s)	P_I	---	---	-17.1	dBm
Optical Return Loss	OL	12	---	---	dB
RX Signal Loss – Deasserted	P_{RL-}	-30	---	---	dBm
RX Signal Loss – Asserted	P_{RL+}	---	---	-14	dBm
Signal Detect Hysteresis	$P_{RL+} - P_{RL-}$	1.0	---	---	dB
RX Signal Loss Assert Time	T_{RL+}	---	---	100	µs
RX Signal Loss Deassert Time	T_{RL-}	---	---	100	µs
RX Signal Loss Output - High	V_{RL+}	2.4	---	Vcc	V
RX Signal Loss Output - Low	V_{RL-}	0	---	0.5	V

Notes:

1. Applied to AC LVPECL I/O coupling. See the design guide for proper termination.
2. Test at 8.5 Gb/s, $2^7 - 1$ PRBS data pattern, and > $1x10^{-12}$ of Bit-Error-Rate (BER)

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