

XTM858-M3Lx

SFP+ 8.5 Gbps 300 m Optical Transceiver



Applications

- Tri Rate 1.0625/2.125/4.25/8.5 Gbps Fibre Channel
- Other optical links

Features

- Optical interface compliant to IEEE 802.3ae
- Electrical interface compliant to SFF-8431
- Hot Pluggable
- 850 nm VCSEL transmitter, PIN photo-detector
- Maximum link length of 300 m on 2000 MHz/km MMF
- Low power consumption
- All-metal housing for superior EMI performance
- Advanced firmware allow customer system encryption information to be stored in transceiver
- Cost effective SFP+ solution, enables higher port densities and greater bandwidth
- Operating case temperature
Standard: 0°C to 70°C
Industrial: -40°C to 85°C
- RoHS6 compliant (lead free)

Description

This 850 nm VCSEL 8.5Gigabit SFP+ transceiver is designed to transmit and receive optical data over 50/125 μm or 62.5/125 μm multimode optical fiber.

The transmitter converts 8.5 Gbit/s serial PECL or CML electrical data into serial optical data compliant with the FC standard. The receiver converts 8.5 Gbit/s serial optical data into serial PECL/CML electrical data.

Absolute Maximum Ratings

Parameters	Symbol	Min.	Max.	Unit
Power Supply Voltage	V_{CC}	0	+3.6	V
Storage Temperature	T_{st}	-40	85	°C
Operating Case Temperature	T_C	-40	85	°C
Relative Humidity	R_H	5	95	%
RX Input Average Power	P_{max}	-	0	dBm

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max	Unit
Power Supply Voltage	V_{CC}	3.135	3.300	3.465	V
Operating Case Temperature	T_C	-40	25	85	°C

Electrical Specifications

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Data Rate		-	-	8.5	Gbps	
Power Consumption		-	-	800	mW	
Transmitter						
Single Ended Output Voltage Tolerance		-0.3	-	4.0	V	
C common mode voltage tolerance		15	-	-	mV	
Tx Input Diff Voltage	V_I	180		700	mV	
Tx Fault	V_{oL}	-0.3		0.4	V	At 0.7 mA
Data Dependent Input Jitter	DDJ			0.10	UI	
Data Input Total Jitter	TJ			0.28	UI	
Receiver						
Single Ended Output Voltage Tolerance		-0.3	-	4.0	V	
Rx Output Diff Voltage	V_o	300		850	mV	
Rx Output Rise and Fall Time	T_r/T_f	30			ps	20% to 80%
Total Jitter	TJ			0.70	UI	
Deterministic Jitter	DJ			0.42	UI	

Optical Specifications

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Transmitter						
Center Wavelength	λ_t	840	850	860	nm	
RMS spectral width	P_m	-	-	Note 1	nm	
Average Optical Power	P_{avg}	-6.5	-	-1	dBm	2
Extinction Ratio	ER	3.5	-	-	dB	3
Transmitter Dispersion	TDP	-	-	3.9	dB	
Relative Intensity Noise	Rin	-	-	-128	dB/Hz	12 dB
Optical Return Loss		-	-	12	dB	
Receiver						
Center Wavelength	λ_r	840	850	860	nm	
Receiver Sensitivity	P_{sens}	-	-	-11.1	dBm	4
Stressed Sensitivity in OMA		-	-	-7.5	dBm	4
Los function	Los	-30	-	-12	dBm	
Overload	P_{in}	-	-	-1.0	dBm	4
Receiver Reflectance		-	-	-12	dB	

Notes

1. Trade-offs are available between spectral width, center wavelength and minimum OMA
2. The optical power is launched into MMF
3. Measured with a PRBS $2^{31}-1$ test pattern @8.5Gbps
4. Measured with a PRBS $2^{31}-1$ test pattern @8.5Gbps, $BER \leq 10^{-12}$.

Ordering information¹

PN	Description
XTM858-M3LY	SFP+ 850 nm, 8.5 Gbps, 300 m, 0°C ~ +70°C, DDM
XTM858-M3LM	SFP+ 850 nm, 8.5 Gbps, 300 m, -40°C ~ +85°C, DDM

Notes:

¹ Specification may change without notice. For accurate specification please contact XenOpt reseller before placing an order. The content of this document is subject to change without notice. Please specify any compatibility requirements at time of ordering. Standard MSA compatible pluggable components may not work or some function of these components may not be available in devices that require customized compatible devices. Pluggable components compatible with one type of communications equipment may not work in other type of communications equipment.

References

1. "Specifications for Enhanced Small Form Factor Pluggable Module SFP+", SFF-8431, Rev 4.1, July 6, 2009.
2. "Improved Pluggable Formfactor", SFF-8432, Rev 4.2, Apr 18, 2007
3. IEEE802.3ae – 2002
4. "Diagnostic Monitoring Interface for Optical Transceivers" SFF-8472, Rev 10.3, Dec 1, 2007

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