
METE10-N0I-T1

Features

- ◆ Up to 10.5 Gbps data rate
- ◆ 1310nm DFB Laser and PIN photo detector
- ◆ Duplex LC receptacle optical interface compliant
- ◆ Single +3.3V power supply
- ◆ AC coupling of LVPECL signals
- ◆ International Class1 laser safety certified
- ◆ Operating temperature range:
- ◆ Industry: -40°C~85°C
- ◆ RoHS Compliant

Application

- ◆ 10GBASE-LR
- ◆ 10G Fiber Channel
- ◆ Data center

Standard

- ◆ Compliant with SFF-8431

General Description

Endurance is a family of compact transceiver modules designed for Fibre Channel and Ethernet optical data links which enables the compact form-factor and low power consumption. Because Endurance has two through-hole mountingposts and the pins are soldered directly to the board, it does not use a host cage. The compact module saves valuable board space and allows multiples of them to be mounted side-by-side on a Printed Circuit Board (PCB) for high-density port count

Specification

Absolute Maximum Ratings				
Parameter	Symbol	Min	Max	Unit
Storage Temperature	Ts	-55	+85	°C
Operating Humidity	RH	5	95	%
Supply Voltage	Vcc	-0.5	+4	V

Recommended Operating Conditions					
Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Tc	-40		85	°C
Supply Voltage	Vcc	3.135	3.3	3.465	V
Supply Current	Icc			300	mA
Bit Rate	BR		10.3125		Gbps
Supported Link Length		-	10		km

Optical Characteristics						
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter Characteristics						
Launched Power (avg.)	Pout	-8.2		+0.5	dBm	
Operating Wavelength Range	λ_c	1260	1310	1355	nm	
Spectral Width	$\Delta\lambda$			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Extinction Ratio	ER	3.5			dB	1
Optical Rise/Fall Time	Tris/Tfall	28		50	Ps	2
Transmitter and Dispersion Penalty	TDP			3.2	dB	
Optical Tx Output disable	Pdis			-45	dBm	
Output Eye Diagram	Complies with IEEE802.3ae eye masks when filtered					
Receiver Characteristics						
Receiver Sensitivity	S			-14.4	dBm	3
Wavelength Range	λ_c	1260		1355	nm	

Receiver Reflectance				-12	dB	
Optical Power Input Overload	P_{in-max}	0.5			dBm	3
LOS De-assert	P_d			-17	dBm	
LOS Assert	P_a	-30			dBm	3
LOS hysteresis		0.5		5	dBm	3

Note1. For the measurements, the device was driven with $2^{31}-1$ PRBS pattern

Note2. Optical transition time is the time interval required for the rising or falling edge of an optical pulse to transition between the 20% and 80% amplitudes relative to the logical 1 and 0 levels.

Note3. Measured with a PRBS $2^{31}-1$ test pattern, @10.3125Gbps, ER=4dB, BER< 10^{-12} .

Pin definition

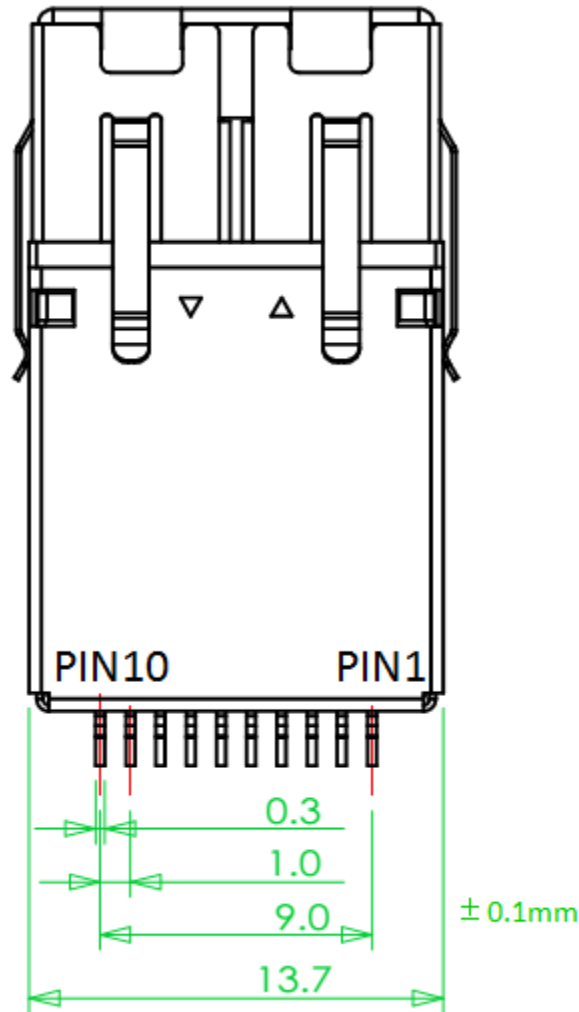


Figure 1 Endurance Pad assignment Top View

Table 1

Pin	Symbol	Name/Description	Power Seq.	Ref.
1	TD+	Transmitter Non-Inverted DATA in. AC Coupled. CML-I	1	TD+
2	VEET	Transmitter Ground	2	VEET
3	TD-	Transmitter Inverted DATA in. AC Coupled. CML-I	1	TD-
4	VCCT	Transmitter Power Supply	3	VCCT
5	RX_SD	Receiver signal detect High: signal detected Low: loss of signal	4	RX_SD
6	TX_DIS	Transmitter Disable High: Transmitter off Low: Transmitter on	5	TX_DIS
7	RD+	Receiver Non-inverted DATA out. AC Coupled. CML-O	6	RD+
8	VCCR	Receiver Power Supply	3	VCCR
9	RD-	Receiver Inverted DATA out. AC Coupled. CML-O	6	RD-
10	VEER	Receiver Ground	1	VEER

Endurance Module PIN Definition

Note1. TD-/+ : These are the differential transmitter inputs. They are CML AC-coupled with 100 Ohm terminal resistor matching internal.

Note2. The module signal ground contacts.

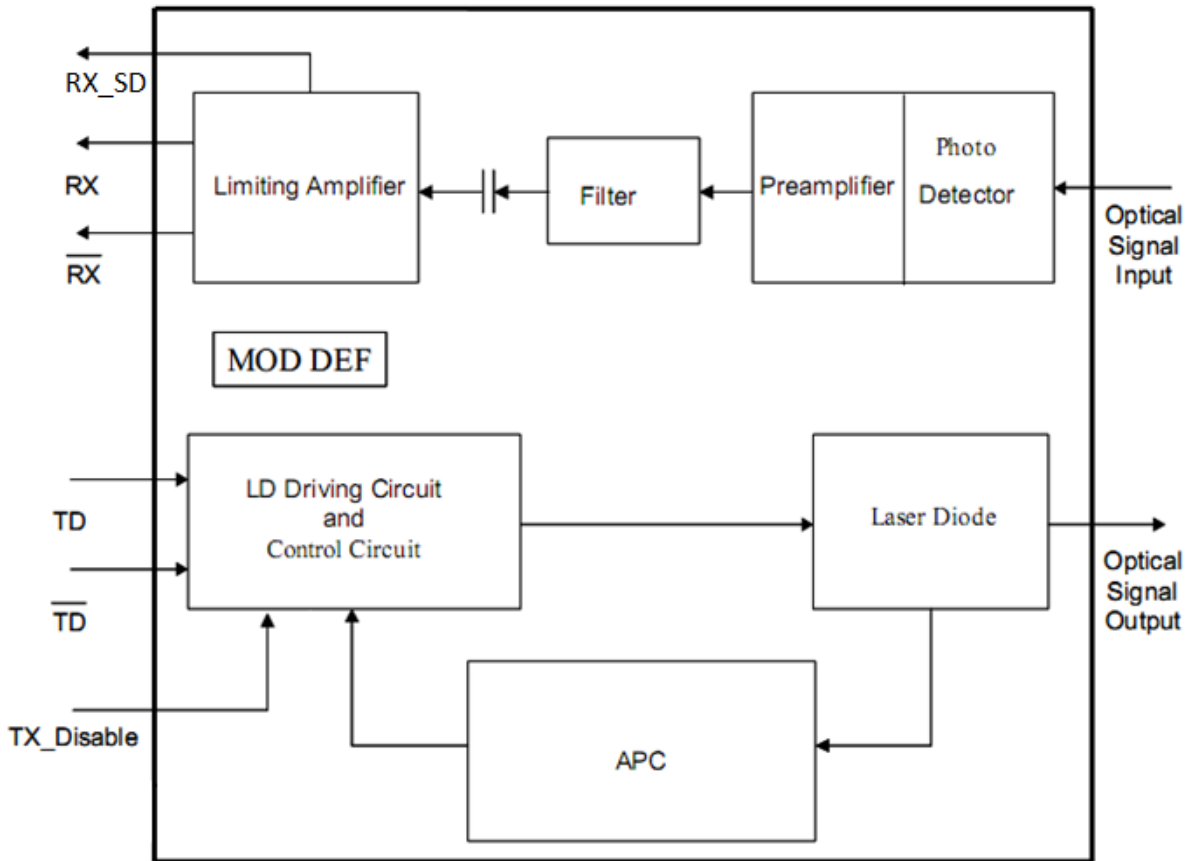
Note3. VCCR and VCCT are the receiver and transmitter power supplies.

Note4. Module RX_SD need pull up to VCCR with a 4.7k~10k Ohm resistor on host board.

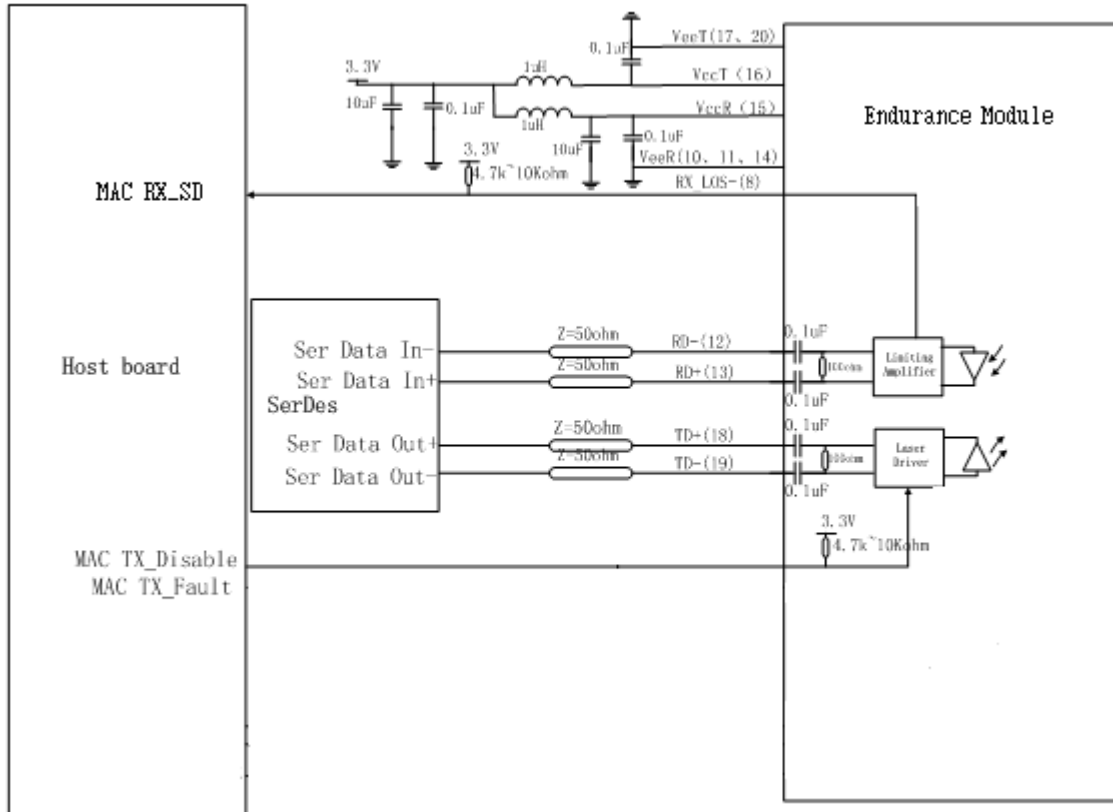
Note5. This pin should be pulled up to Vcct with a 4.7k~10k Ohm resistor in modules.

Note6. RD -/+ : These are the differential receiver outputs. They are CML AC-coupled with 100 Ohm terminal resistor matching internal.

Host-Active optical cable end Interface Block Diagram

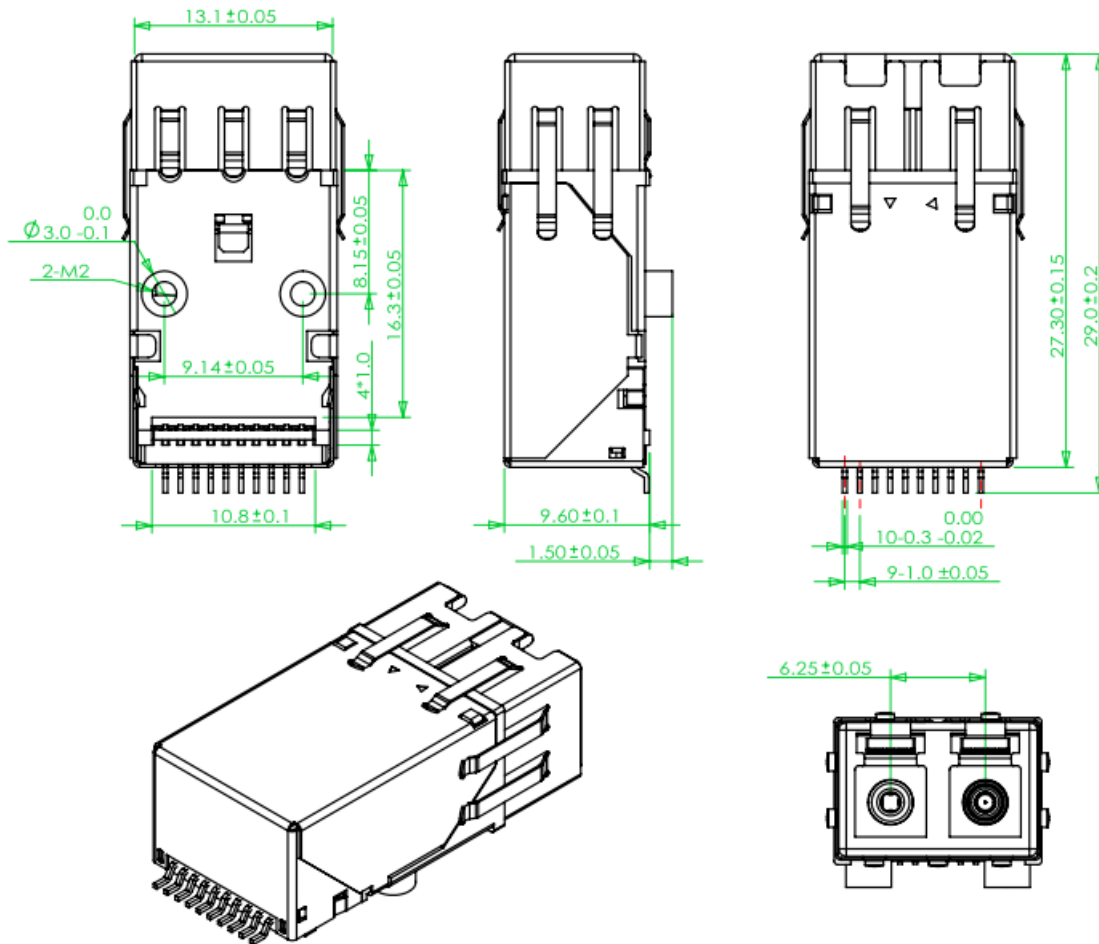


Typical application Circuit



Package Outline

Dimensions are in millimeters.



Ordering information

Part. No	Specifications						
	Pack	Rate (Gbps)	Tx (nm)	Rx	Temp (°C)	Reach (m)	Others
METE10-N0I-T1	Endurance	10.3	1310	-8.2~+0.5	PIN	<-14.4	-40~85