

10Gbps SFP+ Optical Transceiver 300mLC DDM

Features :

- Support 10GBASE-LR/10GBASE-LW/10G Fiber Channel application Compliant to SFP+ Electrical MSA SFF-8431
- Compliant to SFP+ Mechanical MSA SFF-8432 Multi rate of up to 11.3Gbps
- Transmission distance up to 300m (OM3 MMF)
- +3.3V single power supply Low power consumption
- Operating case temp: 0~+70°C RoHS 6/6 compliant

Absolute Maximum Ratings:

- Table 1- Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Supply Voltage	Vcc3	-0.5	-	+3.6	V	
Storage Temperature	Ts	0	-	70	°C	
Operating Humidity	RH	+5	-	+95	%	

Recommended Operating Conditions:

- Table 2- Recommended operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Operating Case Temperature	TC	0	-	+7	°C	
Power Supply Voltage	Vcc	3	3.3	3.4	V	
Power Supply Current	Icc	-	-	30	mA	
Power Dissipation	Pd	-	-	1.0	W	
Bit Rate	BR	-	10.31	-	Gbp	

Electrical Characteristics:

- Table 3- Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Transmitter						
Differential Data Input Swing	V _{in,P-P}	100	-	1000	mV	
Input Differential Impedance	Z _{IN}	80	100	120	Ω	
Tx_Fault	Normal Operation	0	+0.4	V	V	
	Transmitter Fault	2.0	VCC	V	V	
Tx_Disable	Normal Operation	0	+0.8	V	V	
	Laser Disable	1.7	VCC+0	V	V	
Receiver						
Differential Data Output	V _{out}	300	-	1000	mV	
Output Differential Impedance	Z _D	80	100	120	Ω	
Output Rise Time (20-80%)	T _R	24	-	-	ps	
Output Fall Time (20-80%)	T _F	24	-	-	ps	
Rx_LOS	Normal Operation	VOL	0	+0.4	V	
	Lose Signal	V _{oH}	2.0	VCC	V	Rx_LOS

Transmitter Performance :

- Table 4- optical TX Characteristics

Parameter	Symbo	Unit	Min	Typ	Max	Notes
Optical transmitter Characteristics						

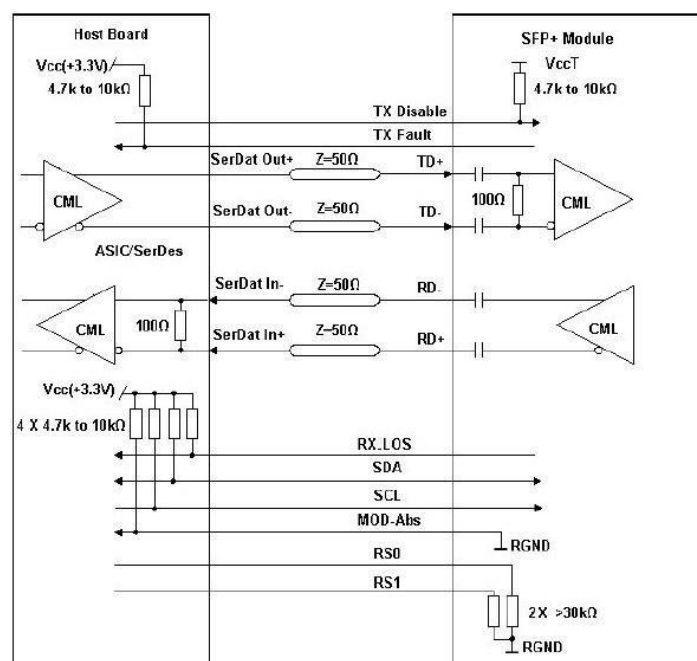


Bit Rate	BR	Gbps	9.95	10.31	11.3	
Center Wavelength Range	λ_c	nm	840	850	860	
Average Launch power Tx off	Poff	dBm	-	-	-45	
Launch Optical Power	P0	dBm	-7.0	-	0	1
Extinction Ratio	ER	dB	3.0	-	-	
Jitter P-P	JP	ps	-	-	30	
Jitter RMS	JR	ps	-	-	5	
Optical Rise/Falltim	Tr/tf	ps	-	-	60	
Eye Diagram	Compliant With IEEE 802.3-2005					
Optical receiver Characteristics						
Bit Rate	BR	Gbps	9.95	10.31	11.3	
Receiver Sensitivity	RS	dBm	-	-	-10.3	2
Overload Input Optical Power	PIN	dBm	0	-	-	2
Center Wavelength Range	λ_c	nm	840	850	860	
LOS	LOSD	dBm	-	-	-11.5	
	LOSA		-24.5	-	-	
LOS Hysteresis		dB	0.5	-	-	

Note:

- Coupled into MMF.
- Measured with PRBS 231-1 test pattern @10.3125Gbps.BER=10E-12

Recommended Interface Circuit:



Recommended Host Board Power Supply Circuit:

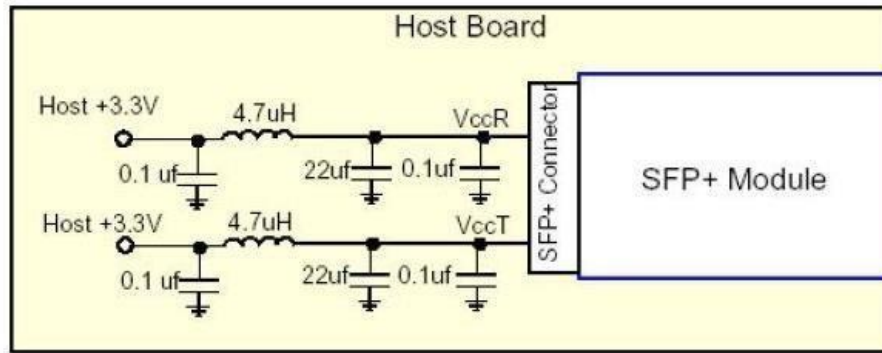


Figure 1, Recommended Host Board Power Supply Circuit

Pin arrangement:

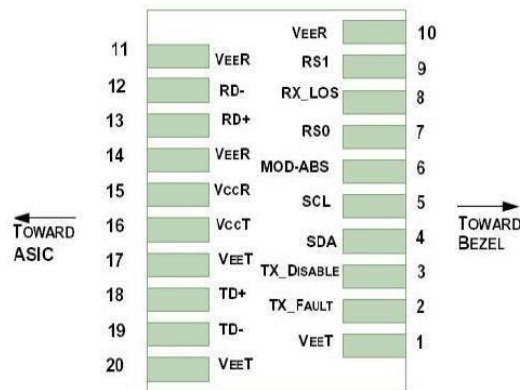


Figure 3, Pin View

Table 5-Pin Function Definitions:

Pin	Symbol	Name/Description	Note
1	VEET	Module Transmitter Ground	1
2	TX_FAULT	Module Transmitter Fault	2
3	TX_DISABLE	Transmitter Disable; Turns off transmitter laser output	3
4	SDA	2-Wire Serial Interface Data Line (MOD-DEF2)	
5	SCL	2-Wire Serial Interface Clock (MOD-DEF1)	
6	MOD_ABS	Module Absent, connected to VEET or VEER in the	2
7	RS0	module Rate Select 0, optionally controls SFP+ module receiver as the following when HIGH input Bit Rate>4.25 Gbps	
8	RX_LOS	andwhenLOWinputBitRate<4.25Gbps. ReceiverLoss of Signal Indication (in FC designated as RX_LOS, in SONET designated as LOS,	2
9	RS1	andin Ethernet designatedas NOT Signal Detect) Rate Select 1, optionallycontrolsSFP+module transmitter as the following when HIGH input Bit Rate>4.25 Gbps and when LOW input Bit Rate ≤4.25 Gbps.	
10	VEER	Module Receiver Ground	1
11	VEER	Module Receiver Ground	1
12	RD-	Receiver Inverted Data Output	
13	RD+	Receiver Non-Inverted Data Output	
14	VEER	Module Receiver Ground	1
15	VCCR	Module Receiver 3.3 V Supply	

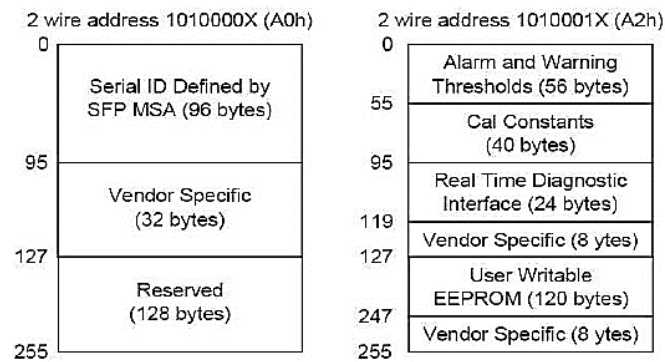


16	VCCT	Module Transmitter 3.3 V Supply	
17	VEET	Module Transmitter Ground	1
18	TD+	Transmitter Non-Inverted Data Input	
19	TD-	Transmitter Inverted Data Input	
20	VEET	Module Transmitter Ground	1

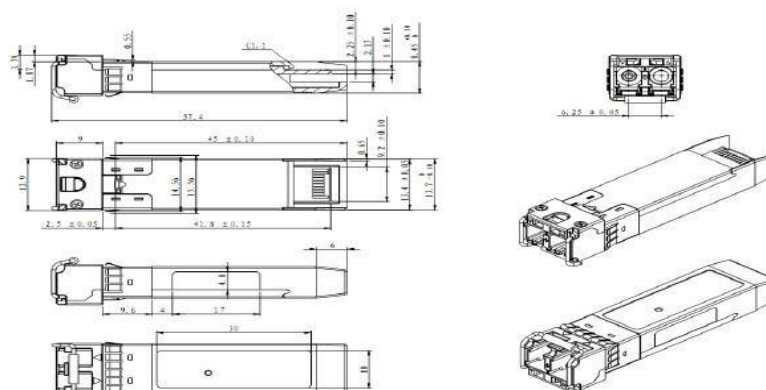
Note:

1. The module ground pins are isolated from the module case.
2. The pins shall be pulled up with 4.7K-10Kohms to a voltage between 3.14V and 3.46V on host board.
3. The pin is pulled up to VCCT with a 4.7K-10KΩ resistor in the module.

Digital Diagnostic Memory Map:



Mechanical Diagram:



Order Information:

Part Number	Product Description
10GDF850-300LAT	10G SFP DF 850nm 300 mtr LC

