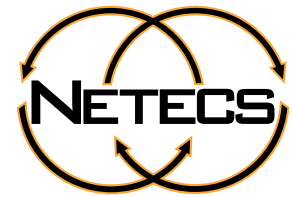


GLC-LH-SM-NT

Cisco 1000Base-LX SFP Module
1310nm, 10Km, SMF, LC RoHS6



GLC-LH-SM-NT

1.25Gbps SFP Transceiver

Features

- Operating data rate up to 1.25Gbps
- 1310nm FP LD Laser Transmitter
- 10Km with 9 /125 μ m SMF
- Singer 3.3V Power supply and TTL Logic interface
- Duplex LC Connector Interface
- Hot Pluggable
- Compliant with specifications for IEEE802.3Z
- Operating Temperature: 0°C ~+ 70°C
- Compliant with MSA SFP Specification

Product Description

GLC-LH-SM-NT is a single-mode transceiver from factor pluggable module for bi-directional serial optical data communications such as Gigabit Ethernet 1000BASE-LX and Fiber Channel 1x SM-LX-L FC-PI. This module is designed for single-mode fiber and operates at a nominal weavelength of 1310nm.

The transmitter section uses a multiple quantum well laser and is a class 1 laser compliant, according to International Safety Standard IEC-60825. The receiver section uses an integrated InGaAs detector preamplifier (IDP) mounted in an optical header and a limiting post-amplifier IC.

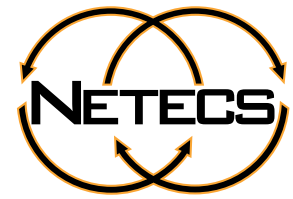
The GLC-LH-SM-NT is designed to be compliant with SFF-8272 SFP Multi-source Agreement (MSA).

Regulatory Compliance

Feature	Standard	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883E Method 3015.7	Class 1(>500 V) Isolation with the case
Electromagnetic Interference (EMI)	FCC Part 15 Class B	Compatible with standards
Laser Eye Safety	FDA 21CFR 1040.10 and 1040.11 EN60950, EN (IEC) 60825-1,2	Compatible with Class I laser product. Compatible with T μ V standards
Component Recognition	UL and CUL	UL file E317337
Green Products	RoHS	RoHS6

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Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	TST	-40	+85	°C
Supply Voltage	VCC	-0.5	3.6	V

Recommended Operating Conditions

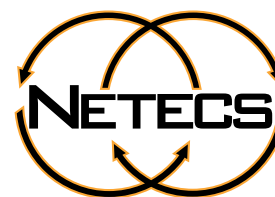
Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	TOP	0		+70	°C
Power Supply Voltage	VCC	3.15	3.3	3.45	V
Power Supply Current	ICC			300	mA
Surge Current	ISurge			+30	mA
Baud Rate			1.25		GBaud

Performance Specifications - Electrical

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
TRANSMITTER						
LVPECL Inputs(Differential)	Vin	400		2500	mVp	AC coupled inputs
Input Impedance (Differential)	Zin	85	100	115	ohms	Rin > 100 kohms @ DC
Tx_DISABLE Input Voltage - High		2		3.45	V	
Tx_DISABLE Input Voltage -Low		0		0.8	V	
Tx_FAULT Output Voltage -- High		2		Vcc+0.3	V	Io = 400µA; Host Vcc
Tx_FAULT Output Voltage --Low		0		0.5	V	Io = -4.0mA
RECEIVER						
LVPECL Outputs (Differential)	Vout	400	800	1200	mVpp	AC coupled outputs
Output Impedance (Differential)	Zout	85	100	115	ohms	
Rx_LOS Output Voltage - High		2		Vcc+0.3	V	Io = 400µA; Host Vcc
Rx_LOS Output Voltage -Low		0		0.8	V	Io = -4.0mA

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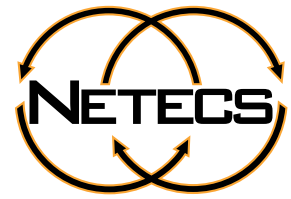
MOD_DEF (0:2)	VoH	2.5			V	With Serial ID
	VoL	0		0.5	V	

Optical and Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
9µm Core Diameter SMF	L		10		Km
Data Rate			1.25		Gbps
Transmitter					
Centre Wavelength	λ _C	1260	1310	1360	nm
Spectral Width (RMS)	λ			3	nm
Average Output Power	P ₀ out	-10		-3	dBm
Extinction Ratio	EX	9			dB
Rise/Fall Time(20%~80%)	tr/tf			1.2	ns
Output Optical Eye	IUT-T G.957 Compliant				
Data Input Swing Differential	V _{IN}	500		2000	mV
Input Differential Impedance	Z _{IN}	90	100	110	Ω
TX Disable	Disable		2.0	VCC+0.3	V
	Enable		0	0.8	
TX_Fault	Fault		2.0	VCC+0.3	V
	Normal		0	0.8	
TX_Disable Assert Time	t _{off}			10	us
Receiver					
Centre Wavelength	λ _C	1100		1600	nm
Receiver Sensitivity	P _{IN}			-20	dBm
Output Differential Impedance	P _{IN}	90	100	110	Ω
Data Output Swing Differential	V _{OUT}	370		2000	mV
Rise/Fall Time	Tr/tf			2.2	ns
LOS De-Assert	LOSD			-24	dBm
LOS Assert	LOSA	-40			dBm
LOS	High		2.0	VCC+0.3	V
	Low		0	0.8	

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Mechanical Specifications

