1.25 Gb/s, 1310 nm Multimode, 2 km GBIC Dual SC Package

OptixCom Connect with Light

Gigabit Ethernet (GBIC) Transceivers

Description

This fiber optics transceiver is designed with high performance 1310 nm FP laser for use of multimode fibers. This product is compliant with Gigabit Interface Converter (GBIC) specifications. This product can be used at 1.0625 Gb/s for Fiber Channel or 1.25 Gb/s for Gigabit Ethernet applications.

The transceiver uses duplex SC connector for the optical interface and SCA-2 host connector for the electrical interface. The product is hot pluggable in the z-axis along the transceiver module. The transceiver reaches more than 2 km of transmission distance with high-grade multimode fibers and > 10 dB of power budget. The products are RoHS compliant.

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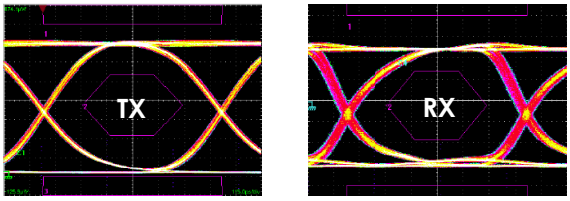
GBC-1250LX-AT2K

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



Key Features

- 1310 nm multimode, 1.0625/1.25 Gb/s data rates
- > 10 dB power budget
- Duplex SC connector optical interface
- Z-axis hot pluggable with SCA-2 host connector
- AC coupling LVPECL differential I/O logics
- 2 km with standard multimode fibers
- Compliant with IEEE 802.3z, 1000BASE-LX
- Compliant with Fiber Channel Standard
- TTL Signal detect function to monitor optical signals
- -40–85 °C operating temperatures available
- Single 3.3/5 V power supply

Applications

- ✓ 1X Fiber Channel
- ✓ Gigabit Ethernet
- ✓ High speed I/O for file server
- ✓ Video over fiber links
- ✓ Media converter
- ✓ Data Communication for SAN and LAN
- ✓ Central offices routers and switches
- ✓ Mass storage systems interconnect
- ✓ Computer cluster cross-connect

Ordering Information

Part Number: GBC-1250LX-AT2K

Description:

1310 nm 1.0625/1.25 Gb/s, multimode, GBIC Fiber Optics Transceiver, 2 km reach, 0-70°C, RoHS compliant.

* Add "-T" in the Part Number for extended temperature range -40–85 °C, i.e., GBC-1250LX-AT2K-T.

Operating Conditions

Parameter	Min.	Typical	Max.	Units
Operate Temperature	0	25	70	°C
- T Transceivers	-40	25	85	°C
Data Rate	---	1.25	1.3	Gb/s
Supply Voltage	3.1	3.3	5.25	V
Supply Current	---	200	300	mA

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Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Storage Temperature	*Tst*	-40	85	°C
Supply Voltage	*Vcc*	-0.5	6.0	V
Input Voltage	*VIN*	-0.5	*Vcc*	V
Operating Current	*Iop*	---	400	mA
Output Current	*Io*	---	50	mA

Transmitter Electro-Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Units
Differential Input Voltage [1]	*ΔVi*	0.4	---	2.0	V
Differential Input Impedance [2]	*Z*	---	150	---	ohm
Optical Output Power [3]	*Po*	-9	---	-1	dBm
Optical Wavelength	*λo*	1270	1310	1355	Nm
Extinction Ratio	*ET*	9	---	---	dB
Spectral Width (rms)	*Δλ*	---	---	4	nm
Relative Intensity Noise	*RIN*	---	---	-120	dB/Hz
Rise/Fall Time (20% - 80%)	*Tr/Tf*	---	---	260	ps
Total Jitter	*Tj*	---	---	227	ps
TX Disable Asserted	*POFF*	---	---	-45	dBm
TX Fault Output - High	*VFH*	2.4	---	*Vcc*	V
TX Fault Output - Low	*VFL*	0	---	0.5	V
TX Disable Voltage – High	*VDH*	2.4	---	*Vcc*	V
TX Disable Voltage - Low	*VDL*	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. Module is designed for AC coupling. DC voltage will be filtered by internal capacitor.
2. Single ended will be 75 ohm for each signal line.
3. Output of average coupling optical power into 50/125 or 62.5/125 µm MMF.
4. Optical eye diagram is compliant with IEEE 802.3z standard.

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
Receiver Overload	*Pmax*	-1	---	---	dBm
Receiver Sensitivity [1]	*PI*	---	---	-19	dBm
Operating Wavelength	λ_C	1260	---	1610	nm
Differential Output Voltage	ΔV_O	0.5	---	1.2	V
Differential Input Impedance [2]	*Z*	---	150	---	Ohm
Optical Return Loss	*OL*	12	---	---	dB
Rise/Fall Time	*Tr/Tf*	---	---	350	ps
RX Signal Loss – Asserted	P_{SD+}	---	---	-19	dBm
RX Signal Loss – Deasserted	P_{SD-}	-35	---	---	dBm
RX Signal Loss Output - High	V_{RL+}	2.4	---	V_{CC}	V
RX Signal Loss Output - Low	V_{RL-}	0	---	0.5	V
RX Signal Loss Assert Time	T_{RL+}	---	---	100	µs
RX Signal Loss Deassert Time	T_{RL-}	---	---	100	µs
Serial ID Clock Rate	f_C	---	---	100	kHz

Notes:

1. Test at 1.25 Gb/s, $2^7 - 1$ PRBS data pattern, and > $1x10^{-12}$ of Bit-Error-Rate (BER).
2. Single ended will be 75 ohm for each signal line.

Class 1 Laser Product
Complies with
21 CFR 1040.10 and 1040.11

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