266-Mbps GLM and 1063-Mbps GLM

Gigabit Link Modules for optical data transfer

Highlights

The IBM 266-Mbps and 1063-Mbps Gigabit Link Modules (GLMs) are laser-based data communications links that enable computer manufacturers to integrate low-cost, high-speed fiber-optic communications into computers and peripherals. These powerful devices are well-suited for a wide range of interconnects in Fibre Channel applications. Because of their high speed and low latency, these cards are also useful for connecting two or more computers in shared computing and parallel processing environments.

Advanced Features

- *Short-wavelength (SW) or long-wavelength (LW) lasers*
- *High-reliability optics*
- *Bit error rates less than 10^{-12}*
- *Low-loss SC-type push-pull connectors*
- *Parallel data I/O interface*
- *Double-sided surface-mount technology*

Product Description

The 266-Mbps and 1063-Mbps GLM cards support continuous, full-duplex communication. The GLM converts encoded data that has been serialized into pulses of laser light for transmission into the optical fiber. A GLM at a second optical link, running at the same speed as the sending GLM, receives these pulses, along with the requisite synchronous clocking signals. Another device then deserializes the signals into decoded data.

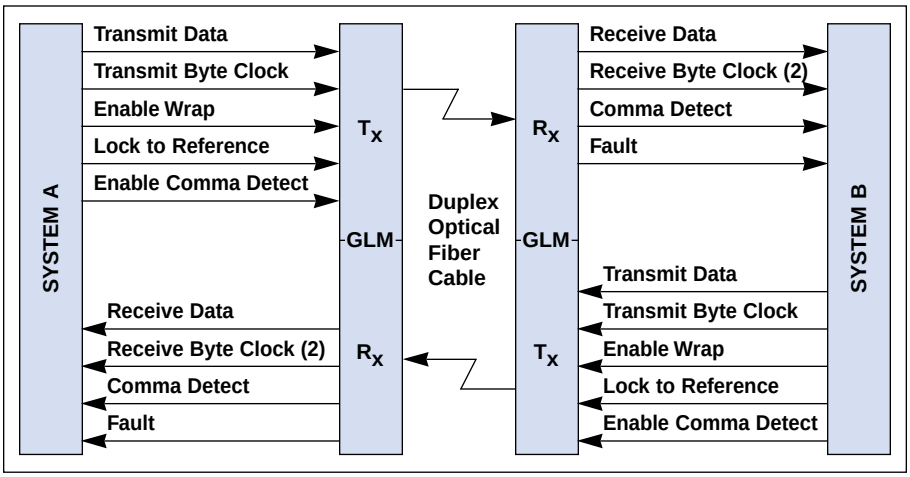
The 266-Mbps and 1063-Mbps GLMs are available with optional Open Fiber Control (OFC) circuitry that disables the lasers if there is a break in the optical link.

Standards Compliance and Safety

The 266-Mbps and 1063-Mbps GLM cards support the American National Standards Institute's (ANSI's) Fibre Channel standard. Fibre Channel is a flexible, cost-effective solution that provides a standardized protocol for system-level interconnect. It features capabilities for high-speed, medium-distance (up to 10 km) data links between processors and peripherals.

The GLMs are UL- and CSA-approved. In addition, they are approved internationally as Class 1 laser safe products and feature optical emission levels below the recommended levels for eye safety.

For more information, visit our web site at www.chips.ibm.com.



GLM electrical specifications for system interconnect.

Specifications	**SW**	**LW**
Fiber		
Recommended optical fiber	50/125 micron	9/125 micron
Recommended fiber bandwidth	500 MHz*km at 850 nm	n/a
Recommended max fiber attenuation	3.0 dB/km at 850 nm	n/a
Environmental		
Operating temperature	10°C to 50°C 8% RH to 80% RH	10°C to 50°C 8% RH to 80% RH
Storage temperature	-40°C to 75°C 5% RH to 95% RH	-40°C to 75°C 5% RH to 95% RH
Physical Size		
Height	11.85 mm (0.47 in)	11.85 mm (0.47 in)
Width	35.25 mm (1.39 in)	35.25 mm (1.39 in)
Depth	102.6 mm (4.04 in)	102.6 mm (4.04 in)
Laser Safety (Class 1)		
U.S.	DHHS 21 CFR(J) conformant, UL	DHHS 21 CFR(J) conformant, UL
International	IEC 825 -1 (11/93) conformant, CSA	IEC 825 -1 (11/93) conformant, CSA

Optical	**GLM 266**	**GLM 1063**	**GLM 1063N***	**GLM1063-LW**	**GLM1063N-LW***
Data rate	265.625 Mbps	1062.5 Mbps	1062.5 Mbps	1062.5 Mbps	1062.5 Mbps
Wavelength	780 nm	780 nm	780 nm	1310 nm	1310 nm
Maximum launch power in fiber (avg.)	0.0 dBm	+1.3 dBm	-5.0 dBm	-3.0 dBm	-3.0 dBm
Minimum launch power in fiber (avg.)	-5.0 dBm	-5.0 dBm	-10.0 dBm	-9.0 dBm	-9.0 dBm
Minimum receiver sensitivity (avg.)	-17 dBm	-13 dBm	-16 dBm	-20.0 dBm	-20.0 dBm
Maximum receiver input (avg.)	0 dBm	+1.3 dBm	0 dBm	-3.0 dBm	-3.0 dBm
Maximum distance	2 km	500 m	500 m	10 km	10 km
Reliability					
Average failure rate	<0.0195%/1,000 hrs (45° C)	<0.0195%/1,000 hrs (45° C)	<0.0195%/1,000 hrs (45° C)	<0.0195%/1,000 hrs (45° C)	<0.0195%/1,000 hrs (45° C)
Bit error rate	$<10^{-12}$ at -17 dBm	$<10^{-12}$ at -13 dBm	$<10^{-12}$ at -16 dBm	$<10^{-12}$ at -16 dBm	$<10^{-12}$ at -16 dBm
Power					
Vcc	+5V ±10%	+5V ±10%	+5V ± 5%	+5V ± 10%	+5V ± 5%
Current (max.)	600 mA	600 mA	600 mA	600 mA	600 mA

**Non-OFC option.*

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