



# SANblade™

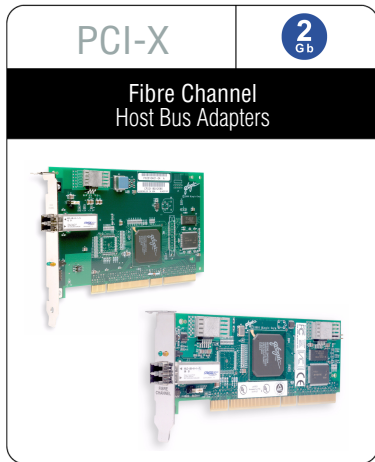
2-Gbps Fibre Channel to  
PCI-X Host Bus Adapters

QLA2310/  
QLA2310FL



## Features

- Unique, single-integrated Fibre Channel controller for added reliability and optimum performance
- Autonegotiation of Fibre Channel speed bit rate (1 Gbps or 2 Gbps)
- Automatic topology detection
- Concurrent support for SCSI and IP protocols
- Simultaneous initiator and target mode support
- Easy detection of activities through an LED panel:
  - Power
  - Online
  - Signal acquired
  - Loss of synchronization
  - Firmware error
- HBA and LUN level failover
- Persistent binding
- LUN masking
- Local and remote management
- Load balancing for optimized performance
- Diagnostics
  - Loop back test
  - Read/write buffer tests



**WHY QLOGIC?** Designed and deployed by major server and storage OEMs, the QLogic SANblade QLA2310F and QLA2310FL host bus adapters (HBAs) offer the high performance of 2-Gbps Fibre Channel combined with 64-bit, 66-MHz PCI-X. These multimode optic HBAs are targeted for servers in direct attach storage (DAS) as well as storage area network (SAN) environments.

**COST EFFECTIVE.** For a cost-effective, optic solution for your SAN with the added performance of 2 Gbps, the QLA2310F is the right solution. If you are looking for low-profile boards for 1U and 2U servers, the QLA2310FL, a low-profile MD2 compliant version of the QLA2310F, is the perfect fit.

**LEADING SINGLE CHIP INTEGRATION.** The QLA2310F/2310FL uniquely integrates a RISC processor, a Fibre protocol engine, and transceivers into a single, efficient FC controller chip that increases reliability and performance by lowering CPU utilization.

**BROAD OEM ACCEPTANCE.** The QLA2310F/2310FL HBA is validated by every major OEM including Dell, EMC, HDS, HP, IBM, and Sun. The QLA2310's extensive certification from major server and storage manufacturers makes it the perfect choice for multiplatform requirements.












**EASY MANAGEMENT.** The QLogic SANsurfer Management Suite™ is available free of charge. This software set simplifies management by making setup, configuration, and maintenance easy, along with features such as remote management, load balancing, failover, and target persistent binding. In addition, the easy to use SANblade Control FX wizard-based application is available on Windows™, Linux®, and Solaris® operating systems. SANblade Control FX provides simple, local host initialization, configuration, and diagnostic functions. The QLA2310F/2310FL is also fully compatible with management applications that support the SNIA API, allowing IT managers to reduce HBA management time and lower their total cost of ownership.

**PROVEN ARCHITECTURE.** The QLA2310F/2310FL architecture is the result of more than 15 years of progressive development and testing. Proven architecture from QLogic delivers higher overall reliability and enables advanced functionality with its single-chip integration, placing QLogic years ahead of its competitors. The QLA2310F/2310FL also has proven interoperability with all major software applications, hardware platforms, and operating systems.

**THE BOTTOM LINE.** Driving the standard for interoperability with extensive FC testing in SAN environments, you can feel confident in choosing the QLogic solution.



Host Bus Interface Specifications	
Speed	64-bit, 66-MHz PCI-X
Voltage	3.3 V and 5.0 V buses supported
Compliance	PCI Local Bus Specification rev. 2.2, PCI-X Addendum rev. 1.0a, PCI Hot Plug Specification rev. 1.0, PCI Bus Power Management Interface Specification rev. 1.1
Fibre Channel Specifications	
Speed	200 MBps maximum at half-duplex, 400 MBps maximum at full-duplex
Compliance	Second Generation FC Generic Services Definition (FC-GS-2), Third Generation FC Generic Services Definition (FC-GS-3), Fibre Channel-Physical and Signaling Interface (FC-PH), SCSI-3 Fibre Channel Protocol (SCSI-FCP), Fibre Channel-Arbitrated Loop-2 (FC-AL-2), Fibre Channel-Private Loop Direct Attach Technical Report (FC-PLDA), RFC 2625 IP and APR Over Fibre Channel, Fibre Channel Framing and Signaling (FC-FS)
Topology	FC-AL, FC-AL-2, point to point, switched fabric (FL_Port and F_Port)
Class of service	Class 3 Fibre Channel service
Protocol	SCSI-FCP, IP, FC-TAPE
Buffer credits	For 512-byte frame size, 9 credits issued. For 2K-byte frame size, 3 credits issued.
Physical Specifications	
Ports	One
Media	Multimode optic
Optics	Short wave laser
Form factor	Half size: 17.78 cm x 10.67 cm (7.0" x 4.2") (QLA2310F); Low-profile MD2: 16.93 cm x 5.15 cm (6.7" x 2.5") (QLA2310FL)
Bracket size	QLA2310F: standard size; QLA2310FL: low-profile size
Connectors	LC-style connector that supports non-OFC, multimode fibre optic cabling using a small form factor optical transceiver module
Power consumption	~ 4.75 watts
Environment and Equipment Specifications	
Airflow	0 lf/m
Temperature	Operating: 0°C/32°F to 55°C/131°F. Storage: -20°C/-4°F to 70°C/158°F
Humidity	Relative (noncondensing): 10% to 90%, Storage: 5% to 95%
Distance	1 Gbps: 500 meters 50/125 µm fiber, 300 meters 62.5/125 µm fiber 2 Gbps: 300 meters 50/125 µm fiber, 150 meters 62.5/125 µm fiber
Cable	50/125µm multimode fiber, 62.5/125 µm multimode fiber
Agency Approvals—Product Safety	
US/Canada	UL, cUL UL1950 (QLA2310FL) UL60950 (QLA2310F) cUL C22.2 No.950 (QLA2310FL) CSA C22.2 No.60950 (QLA2310F) Class 1 Laser Product per DHHS 21CFR (J)
Europe	73/23/ECC Low Voltage Directive: TUV: EN60950: 1992+A1,2,3,4,11 EN60825-1: 1994+A11 EN60825-2: 1994
Agency Approvals—EMI and EMC	
US	FCC Part 15, Class B
Canada	Industry Canada ICES-003, Class B (QLA2310FL only)
Europe	89/336/EEC EMC Directive <b>CE Mark:</b> EN55022: 1995 Class B EN55024: 1998: EN61000-3-2:1995 EN61000-3-3:1994
Japan	VCCI, Class B
Taiwan	CNS 13438 Class B BSMI
New Zealand/Australia	AS/NZS 3548 Class B
Korea	MIC
Software	
SANblade Manager	Easy to use, Java-based, configuration, diagnostics and analysis HBA management application for heterogeneous SAN management across multiple hosts. Includes failover, LUN masking, and persistent binding capabilities.
SANblade Control FX	Wizard-based utility provided for installation, configuration, persistent binding, and diagnostic functions on the local host.
SANblade CLI	Command line interface (CLI) based application provided for installation, configuration, persistent binding, and diagnostic functions on the local host.
Operating System drivers	Windows Server 2003 (32-bit and 64-bit), Windows NT, Windows 2000, Windows XP, Solaris SPARC, Linux (32-bit and 64-bit), Novell NetWare
Flash utilities	Configuration utilities resident with BIOS and FCode
Boot support	Intel x86: BIOS (32-bit), EFI (64-bit); Solaris SPARC: FCode
Ordering Information	
QLA2310F	Ships to OEMs in an individually packed box with a standard size bracket.
QLA2310F-BK	Ships to OEMs in a bulk pack box in quantities of 20, 50, or 100 with standard size brackets.
QLA2310F-CK	Ships to authorized distributors and resellers in an individually packed box with a standard size bracket and the SANsurfer Management Suite CD.
QLA2310FL	Ships to OEMs in an individually packed box with a low-profile size bracket.
QLA2310FL-BK	Ships to OEMs in a bulk pack box in quantities of 20, 50, or 100 with low-profile size brackets.
QLA2310FL-CK	Ships to authorized distributors and resellers in an individually packed box with a low-profile size bracket and the SANsurfer Management Suite CD.

QLogic Corporation • 26650 Aliso Viejo Parkway • Aliso Viejo, CA 92656 • (800) 662-4471 or (949) 389-6000

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