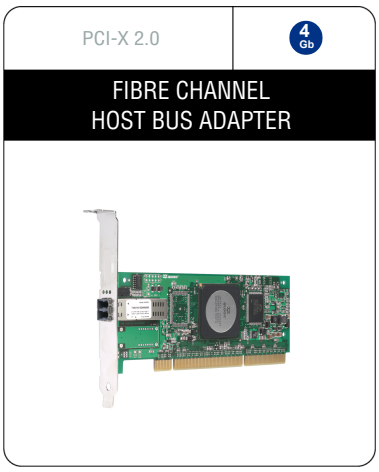
SANblade®

Single Port 4-Gbps Fibre Channel (FC) to PCI-X 2.0 266-MHz Host Bus Adapter (HBA)

QLA®2440



Performance
- 100,000 IOPS delivers high I/O transfer rates for storage applications.
- 64-bit, PCI-X 2.0 266-MHz dual data rate (DDR) bus for high throughput applications.

Scalability
- Multi-ID and N_Port virtualization ready. Allows physical ports to be part of multiple logical networks.
- Comprehensive operating system (OS) driver support including Windows®, Linux™, Solaris™, and Mac OS®.

Reliability
- Overlapping protection domains for continuous protection of internal data paths.
- T10 cyclic redundancy check (CRC) ensures end-to-end data integrity across storage area networks (SANs).
- Three LEDs display real-time status and link activity information.

- 4/2/1 Gbps (auto-negotiation)
- 1,024 concurrent logins
- Persistent binding
- HBA and target level failover
- LUN masking
- RoHS compliant
- Loopback and read/write buffer tests
- HBA information, topology maps, statistics, and graphs

QLA2440 Host Bus Adapter. The QLA2440 is an enterprise class 4-Gbps to PCI-X 2.0 HBA that delivers unprecedented levels of performance and availability for enterprise class data centers.

Enterprise Class Features. The QLA2440 HBA is the highest performing and most reliable HBA in the industry. It delivers unmatched performance by leveraging a single ASIC design, combining a unique hardware architecture to deliver over 100,000 IOPS, nearly 800 MBps throughput, and support for the PCI-X 2.0 266-MHz DDR bus speed. More importantly, the QLA2440 HBA provides increased data protection, advanced frame routing, and enterprise wide management capabilities.

Simplified Setup. Point-and-click installation and configuration wizards simply the HBA setup process. Storage administrators can quickly deploy HBAs across a SAN using standard HBA management tools and device utilities. The QLA2440 is also fully compatible with industry standard application programming interfaces (APIs), including SNIA HBA API and SMI-S, thereby allowing administrators to manage QLogic HBAs using third-party software applications.

Comprehensive Operating System (OS) Support. QLogic offers the broadest range of support for all major operating systems to ensure OS and hardware server compatibility. Drivers are available for all major operating systems, including Windows®, Linux™, Solaris™, NetWare®, and Mac OS® X. A single driver strategy per OS allows storage administrators to easily deploy and manage HBAs in heterogeneous SAN configurations. QLogic's comprehensive driver suite supports all major hardware server platforms, including 32/64-bit computing platforms from Intel (IA32, IEM64T), AMD (Opteron 64), and Apple® G5 (Xserve® and Power Mac®).

Guaranteed Interoperability. Storage partner certifications, combined with agency and regulatory testing, ensures all products meet world compliance hardware and software specifications. All HBAs are tested extensively with third-party hardware, along with multiple software applications, to ensure best-in-class SAN interoperability and compatibility. You can be confident purchasing QLogic HBAs to meet your FC storage networking needs.

Investment Protection. For over 15 years, QLogic has been a technological leader with products that address the current needs of customers, yet provide strong investment protection to support emerging technologies and standards. QLogic stands alone in the industry with its product portfolio depth and experience in successfully delivering technological solutions that address the needs of today and tomorrow.

Host Bus Interface Specifications	
Bus interface	64-bit, PCI-X 2.0 266-MHz DDR, compatible with 66/33-MHz PCI and 133/100/66-MHz PCI-X
Signal voltage	3.3V (mode 1), 3.3V/1.5V (mode 2)
Memory	512-KB SRAM, 1-MB flash (SPI), and 2-KB NVRAM (SPI)
HW platforms	IA32 (x86), IEM64T, AMD Opteron 64, Apple G5 (Xserve and Power Mac)
Compliance	Conforms to *PCI Local Bus Specification*, revision 2.3, *PCI-X Protocol Addendum to the PCI Local Bus Specification*, revision 2.0a, *PCI-X Electrical and Mechanical Addendum* (revision 2.0a) to the *PCI Local Bus Specification*, *PCI Bus Power Management Interface Specification* revision 1.1, *PCI Hot Plug Specification*, revision 1.0

Fibre Channel Specifications	
Data rate	4/2/1 Gbps auto-negotiation (4.2480/2.1240/1.0625 Gbps)
Performance	100,000 IOPS
Topology	Point-to-point (N_Port), arbitrated loop (NL_Port), and switched fabric (N_Port)
Logins	Support for F_Port and FL_Port login. 1,024 concurrent logins and 2,048 active exchanges
Class of service	Class 2 and 3
Protocols	FCP (SCSI-FCP), IP (FC-IP), FC-TAPE (FCP-2)
Compliance	*SCSI-3 Fibre Channel Protocol (SCSI-FCP), Fibre Channel Physical and Signaling Interface (FC-PH), Fibre Channel 2nd Generation (FC-PH-2), Third Generation Fibre Channel Physical and Signaling Interface (FC-PH-3), Fibre Channel-Arbitrated Loop (FC-AL-2), Fibre Channel Fabric Loop Attachment Technical Report (FC-FLA), Fibre Channel-Private Loop Direct Attach Technical Report (FC-PLDA), Fibre Channel Tape (FC-TAPE) profile, SCSI Fibre Channel Protocol-2 (FCP-2), Second Generation FC Generic Services (FC-GS-3), Third Generation FC Generic Services (FC-GS-3), Fibre Channel Framing and Signaling (FC-FS)*

Physical Specifications	
Ports	Single 4-Gbps FC
Connections	Small form factor fixed (SFF) multimode optic with LC-style connector
Form factor	Low-profile MD2: 16.93 cm × 5.15 cm (6.7 in. × 2.5 in.)
Bracket size	Standard: 1.84 cm × 12.08 cm (.73 in. × 4.76 in.); Low-profile: 1.84 cm × 8.01 cm (.73 in. × 3.15 in.)

Environment and Equipment Specifications	
Airflow	—
Temperature	Operating: 0°C/32°F to 55°C/131°F. Storage: -20°C/-4°F to 70°C/158°F
Humidity	Relative (non-condensing): 10% to 90%, Storage: 5% to 95%
Power dissipation	6.5 W (maximum)
Cable distances	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 4 Gbps: 150 meters 50/125 µm fiber, 70 meters 62.5/125 µm fiber

Agency Approvals—Product Safety	
US/Canada	UL, cUL UL60950 CSA C22.2 No.60950 Class 1 Laser Product per DHHS 21CFR J
Europe	73/23/ECC Low Voltage Directive: TUV: EN60950-1: 2001 EN60825-1: 1994+A1+A2 EN60825-2: 1994 +A1

Agency Approvals—EMI and EMC	
US	FCC Part 15, Class A
Canada	Industry Canada ICES-003, Class A
Europe	89/336/EEC EMC Directive CE Mark: EN55022: 1998 /CISPR22:1997 Class A EN55024: 1998 EN61000-3-2:1995 EN61000-3-3:1994
Japan	VCCI, Class A
Taiwan	CNS 13438 Class A
New Zealand/Australia	AS/NZS 3548 Class A
Korea	MIC

Tools and Utilities	
Management tools	FC HBA Manager
Device utilities	Command line interface; utilities for firmware, driver, boot code, and NVRAM
Boot support	BIOS
APIs	SNIA HBA API V2, SMI-S, and FDMI
Operating systems	Windows® Server™ 2003; Windows 2000; Windows XP Pro; Solaris 10; Linux Red Hat AS 3.0, 4.0; Linux SuSE SLES 8, 9; Novell NetWare 6.5; Mac OS X

Ordering Information	
QLA2440-CK	Ships in an individually packed box with a standard size bracket and a spare low-profile bracket, FC HBA Manager CD, and Quick Start Guide

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