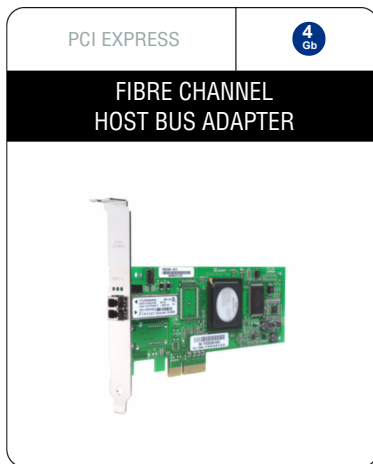




SANblade®

Single Port 4-Gbps Fibre Channel (FC) to
PCI Express Host Bus Adapter (HBA)

QLE2440



Performance

- 100,000 IOPS delivers high I/O transfer rates for storage applications.
- PCI Express™ x4 host bus interface 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

QLE2440 Host Bus Adapter. The QLE2440 is an enterprise class, 4-Gbps to PCI Express x4 HBA that delivers unprecedented levels of performance and availability for enterprise class data centers.

Enterprise Class Features. The QLE2440 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 PCI Express x4 bus speeds. More importantly, the QLE2440 HBA provides increased data protection, advanced frame routing, and enterprise wide management capabilities.

Simplified Setup. Point-and-click installation and configuration wizards simplify the HBA setup process. Storage administrators can quickly deploy HBAs across a SAN using standard HBA management tools and device utilities. The QLE2440 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 fully tested and 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 driver suite supports all major hardware server platforms, including 32/64-bit computing platforms from Intel (IA32, IEM64T), AMD (Opteron64), and Apple® G5 (Power Mac®).

Guaranteed Interoperability. Storage partner certifications, combined with agency and regulatory testing, ensures that 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	PCI Express x4
Memory	512-KB SRAM, 1-MB flash (SPI), and 2-KB NVRAM (SPI)
HW platforms	IA32 (x86), IEM64T, AMD Opteron64, Apple G5 (Power Mac)
Compliance	PCI Express Base Specification rev. 1.0a, PCI Express Card Electromechanical Specification rev. 1.0, PCI Bus Power Management Interface Specification revision. 1.1
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 PCI Express Card: 16.765 cm × 6.89 cm (6.6 in. × 2.713 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	No airflow required.
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	5.0 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/EEC 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 B
Canada	Industry Canada ICES-003, Class B
Europe	89/336/EEC EMC Directive CE Mark: EN55022: 1998 /CISPR22:1997 Class B EN55024: 1998 EN61000-3-2:1995 EN61000-3-3:1994 VCCI, Class B CNS 13438 Class B AS/NZS 3548 Class B
Japan	
Taiwan	
New Zealand/Australia	
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	
QLE2440-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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