QLOGIC®

SANblade®
QLA®2460

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

High Performance

- 150,000 IOPS delivers high I/O transfer rates for storage applications
- Intelligent interleaved DMA (iiDMA) ensures maximum utilization of data links
- Out-of-Order Frame Reassembly (OoOFR) reduces congestion and retransmissions

Superior Scalability

- Multi-ID and N_Port virtualization ready. Allows physical ports to be part of multiple logical networks
- Cisco VSAN ready. Allows physical ports to be part of multiple logical networks
- Comprehensive Operating System (OS) driver support including Windows®, Linux™, Solaris™, NetWare, and Mac OS®
- Universal boot support manages multiple hardware platforms and boot options

Enhanced 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

QLA2460 Host Bus Adapter. The QLA2460 is the industry's first, true enterprise class, 4-Gbps to PCI-X 2.0 HBA. The QLA2460 not only delivers unprecedented levels of performance and availability, but also intelligent networking features specific to enterprise class data centers.

Enterprise Class Features. The QLA2460 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 150,000 IOPS, nearly 800 MBps throughput, and support for the PCI-X 2.0 266-MHz DDR bus speed. More importantly, the QLA2460 HBA provides new intelligent storage networking features that redefine the enterprise class HBA, providing 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 QLA2460 is fully compatible with 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 and hardware server platforms. A single driver strategy per OS allows storage administrators to easily deploy and manage HBAs in heterogeneous SAN configurations.

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

- 1-MB SRAM, 1-MB flash (SPI), and 2-KB NVRAM (SPI)

Hardware platforms

- IA32 (x86), IA64, IEM64T, AMD Opteron 64, Sun SPARC, Apple G5 (Xserve and Power Mac)

Compliance

- *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

- 150,000 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. 2,048 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-2), 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 (none)

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

- SANsurfer FC HBA Manager

Device utilities

- Command line interface; utilities for firmware, driver, boot code, and NVRAM

Boot support

- BIOS, EFI, and FCode

APIs

- SNIA HBA API V2, SMI-S, and FDMI

Operating systems

- Windows® Server™ 2003; Windows 2000; Windows XP Pro; Solaris 8, 9, 10; Linux Red Hat AS 3.0, 4.0; Linux SuSE SLES 8, 9; Novell NetWare 6.5; Mac OS X

Ordering Information

QLA2460-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

QLA2460-BK

- Ships in a bulk box in quantities of 20 and 50 with standard size brackets

QLOGIC

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