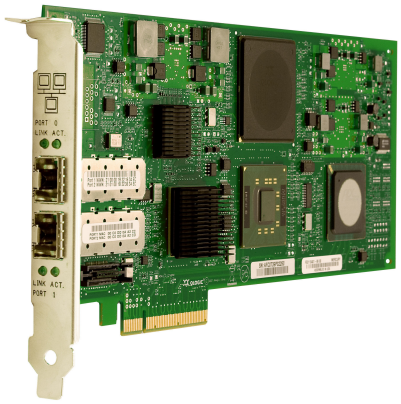
QLOGIC®
The Ultimate in Performance

QLE8042

Dual Port 10Gbps Ethernet to PCIe Converged Network Adapter (CNA)



High Performance

- 10Gbps maximum throughput for high bandwidth storage (SAN) and networking (LAN) traffic
- Full hardware offload for FCoE protocol processing
- 150,000 IOPS per port deliver high I/O transfer rates for storage applications
- Full support for TCP/IP and Ethernet performance enhancements such as priority-based flow control (802.1Qbb), jumbo frames, checksum offloads, and segmentation offloads

Lower Total Cost of Ownership (TCO)

- Reduced hardware, cabling, power, cooling, and management costs through convergence of data and storage networking
- Preservation of familiar data and storage concepts resulting in lower training and administrative costs

Investment Protection

- Works seamlessly with existing Fibre Channel (FC) storage
- Communicates via Ethernet, the most common networking technology in the world
- Compatible with existing FC and networking drivers that have been deployed in millions of existing systems

Fibre Channel over Ethernet (FCoE) Technology. FCoE provides an opportunity to reduce data center costs by converging data and storage networking. Standard TCP/IP and Fibre Channel traffic can both run on the same high speed 10Gbps Ethernet wire, resulting in cost savings through reduced adapter, switch, cabling, power, cooling, and management requirements. FCoE has gained rapid market traction because it delivers excellent performance, reduces data center TCO, and protects current data center investment.

High Performance. The QLE8042 boosts system performance with 10Gbps speed and full hardware offload for FCoE protocol processing. Cutting edge 10Gbps bandwidth eliminates performance bottlenecks in the I/O path with a 10X data rate improvement versus existing 1Gbps Ethernet solutions. Additionally, full hardware offload for FCoE protocol processing reduces system CPU utilization for I/O operations, which leads to faster application performance and higher levels of consolidation in virtualized systems.

Lower TCO. The QLE8042 reduces data center costs through convergence. Now, one CNA can do the work of a discrete FC Host Bus Adapter (HBA) and Ethernet NIC. This convergence also means fewer cables, fewer switches, less power consumption, reduced cooling, and easier management. The QLE8042 also preserves familiar FC concepts such as WWNs, FC-IDs, LUN masking, and zoning, thereby eliminating training costs that would be required for a new storage technology.

Investment Protection. The QLE8042 and FCoE are designed to preserve existing investment in Fibre Channel storage and core Ethernet switches and routers for data networking. The QLE8042 leverages the same identical software and driver stacks that have been deployed and battle-hardened in millions of previous installations.

Unmatched Expertise. QLogic has an unparalleled advantage in delivering this new CNA technology. QLogic is the undisputed leader in both FC and iSCSI HBAs, with years of experience providing FC and Ethernet based products. While some competitors have expertise in either networking or storage, no other I/O provider can match QLogic's expertise in FC and Ethernet hardware and software solutions.

Host Bus Interface Specifications

Bus interface
- PCI Express x8

Hardware platforms
- IA32 (x86); Intel64, AMD64 (x64)

Compliance
- *PCI Express Base Specification*, rev. 1.0a, *PCI Bus Power Management Interface Specification*, rev. 1.1

Ethernet Specifications

Throughput
- 10Gbps full duplex line rate

Topology
- Any 10Gb Ethernet Network

Ethernet Frame
- 1500 byte or 9600 byte (Jumbo Frame)

Stateless offload
- IP, TCP, and UDP checksum offloads
- Large Send Offload (LSO)

Enhanced Ethernet
- Priority-based flow control (802.1Qbb)
- DCBX protocol (802.1Qaz)

Compliance
- *IEEE: 802.3ae (10Gb Ethernet), 802.1q (VLAN), 802.3ad (Link Aggregation), 802.1p (Priority Encoding), 802.3x (Flow Control), 802.3ap (KX/KX4), 802.3ak (CX4), IEEE 1149.1 (JTAG), IPv4 Specification (RFC 791), IPv6 Specification (RFC 2460), TCP/UDP Specification (RFC 793/768), ARP Specification (RFC 826)*

FCoE Specifications

Performance
- 150,000 IOPS per port

Logins
- Support for 512 concurrent logins and 1024 active exchanges per port

Class of service
- Class 3

Protocols
- FCP (SCSI-FCP), FC-TAPE (FCP-2)

Compliance
- *SCSI-3 Fibre Channel Protocol (SCSI-FCP), 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)*

Tools and Utilities

Management tools
- SANsurfer® FC HBA Manager (GUI and CLI)
- Intel® PROSet for Windows Device Manager

Device utilities
- Utilities for programming boot code; Linux® scripting tools

Boot support
- BIOS

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

Operating systems
- Windows Server® 2003, Windows Server 2008, Red Hat® AS 4.*x* and 5.*x*, Novell® SLES 10.*x*, VMware® ESX 3.5

Physical Specifications

Ports
- Dual 10Gbps Ethernet

Connections
- Small form factor pluggable (SFP+)

Form factor
- Standard height PCI Express card: 24.13 cm × 11.12 cm (9.50 in. × 4.376 in.)

Environment and Equipment Specifications

Airflow
- 100 LFM

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
- 27.0W (nominal, QLE8042-SR)

Cable Distances

Cable Type	Optical	Copper
Description	SR	Twinax
Distance	300m	10m

Agency Approvals—Product Safety

US/Canada
- UL60950-1; CSA C22.2 60950-1

Europe
- EN60950-1:2001+A11; EN60825-1:1994+A1+A2; EN60825-2:2004

Agency Approvals—EMI and EMC

US/Canada
- FCC CFR Title 47, Part 15, Subpart B:2006 Class A; ICES-003:2004 Class A

Europe
- EN55022:2006 Class A; EN55024:1998; EN61000-3-2: 2006; EN61000-3-3:1995

Asia/Pacific
- VCCI:2007-04 Class A (Japan), MIC (Korea), AS/NZS; CISPR 22:2006 Class A (Australia/NZ), BSMI CNS 13438:2006 Class A (Taiwan)

Ordering Information

- QLE8042-CK
  - Ships without transceivers (Direct Attached SFP+ twinax copper cables sold separately; check with your FCoE switch vendor for details.)
- QLE8042-SR-CK
  - Ships with two SR optical transceivers

All -CK parts ship in an individually packed box with a CD and Quick Start Guide.

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