



# 8200 Series

## 10Gbps Ethernet-to-PCIe Converged Network Adapters

### High Performance

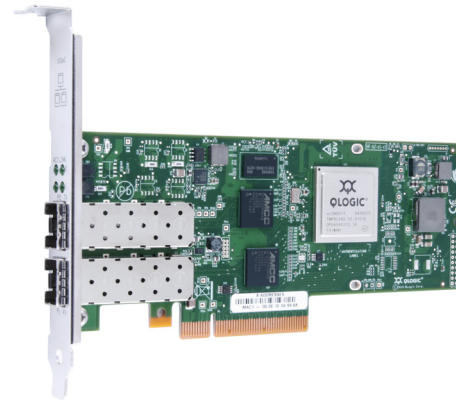
- 10Gbps per-port maximum throughput for high bandwidth storage (SAN) and networking (LAN) traffic
- Full hardware offload for Fibre Channel over Ethernet (FCoE) and iSCSI protocol processing
- Full support for TCP/IP and Ethernet performance enhancements such as Priority-Based Flow Control (802.1Qbb), jumbo frames, checksum offloads, and segmentation offloads
- SR-IOV support for faster networking performance in virtualized environments

### Lower Total Cost of Ownership (TCO)

- Reduced hardware, cabling, power, cooling, and management costs through convergence of data and storage networking
- Create virtual adapters with guaranteed bandwidth allocations using QLogic's VMflex feature
- Manage networking, FCoE, and iSCSI with a single, unified management application (GUI and CLI)

### Investment Protection

- Works seamlessly with existing Fibre Channel and iSCSI storage
- Communicates using Ethernet, the most common networking technology in the world
- Compatible with existing Fibre Channel and iSCSI drivers, and management applications that are currently deployed in millions of systems



**8200 Series.** The 8200 Series of Converged Network Adapters support simultaneous LAN (TCP/IP) and SAN (FCoE, iSCSI) traffic at line-rate, 10Gbps Ethernet speed. These adapters interface to the host server with a PCIe® Gen2 x8 bus, ensuring no internal performance bottlenecks.

**FCoE and iSCSI Hardware Offload.** The 8200 Series adapters support full hardware offload for FCoE and iSCSI protocol processing. QLogic's FlexOffload reduces server CPU utilization for I/O operations, which leads to faster application performance and higher levels of consolidation in virtualized systems.

**Convergence.** The 8200 Series adapters reduce data center costs by converging data and storage networking. This convergence results in buying fewer adapters, cables, and switches. In addition, convergence offers lower power consumption, reduced cooling, and easier LAN and SAN management.

**VMflex.** With QLogic's new VMflex technology, one Converged Network Adapter is viewed by the server operating system (OS) as a flexible mix (up to four per physical port) of standalone NICs, FCoE adapters, and iSCSI adapters, with the ability to allocate guaranteed bandwidth to each virtual adapter. This unique feature can be switch dependent or switch agnostic—it is not necessary to pair an 8200 Series adapter with any specific 10GbE switch model to enable partitioning.

**Common Drivers.** The 8200 Series adapters are compatible with the same Fibre Channel and iSCSI software driver stacks that have been deployed and battle-hardened in millions of previous installations. Networking, FCoE, and iSCSI functionality can be controlled with QLogic's new, unified management application, QConvergeConsole (QCC). QCC provides single pane-of-glass management for QLogic's broad product line of storage and networking adapters.

**Unmatched Expertise.** QLogic has an unparalleled advantage in delivering this new Converged Network Adapter technology. QLogic is the undisputed leader in both Fibre Channel and iSCSI adapters, with years of experience providing Fibre Channel and Ethernet-based products.

## 8200 Series 10Gbps Ethernet-to-PCIe Converged Network Adapters

## Host Bus Interface Specifications

## Bus Interface

- PCI Express® Gen2 x8

## Host Interrupts

- INTx, MSI, and MSI-X

## I/O Virtualization

- SR-IOV
- QLogic VMflex technology

## Compliance

- PCI Express Base Specification, rev. 2.0, PCI Express Card Electromechanical Specification, rev. 2.0, PCI Bus Power Management Interface specification, rev. 1.2

## Ethernet Specifications

## Throughput

- 10Gbps full-duplex line rate per-port

## Ethernet Frame

- 1500 byte or 9600 byte (jumbo frame)

## Stateless Offload

- IP, TCP, and UDP checksum offloads
- Large and giant send offload (LSO, GSO)
- Large receive offload (LRO)
- Receive side scaling (RSS)
- Interrupt coalescing
- VMware® NetQueue and Microsoft® VMQ

## Compliance

- IEEE: 802.3ae (10Gb Ethernet), 802.1q (VLAN), 802.3ad (Link Aggregation), 802.1p (Priority Encoding), 802.3x (Flow Control), IPv4 (RFQ 791), IPv6 (RFC 2460), 802.1Qbb (Priority-Based Flow Control), 802.1Qaz (DCBX/Enhanced Transmission Selection), 802.1Qau (Congestion Notification)

## FCoE Specifications

## Logins

- Support for 2,048 concurrent logins and 2,048 active exchanges

## Port Virtualization

- N\_Port ID virtualization (NPIV)

## 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), FCoE & FIP (FC-BB-5)

## iSCSI Specifications

## Compliance

- RFC 3347 (iSCSI Requirements and Design Considerations), CHAP, iSNS, SLP

## Tools and Utilities

## Management Tools and Device Utilities

- QConvergeConsole: a unified management tool (GUI and CLI) for Fibre Channel/FCoE, iSCSI, and networking
- Native OS management tools for networking

## Boot Support

- LAN and SAN boot (PXE, BIOS, UEFI)

## APIs

- SNIA HBA API V2, SMI-S, FDMI, NDIS 5.x, NDIS 6.x, and WMI

## Operating Systems

- Microsoft Windows Server®; Red Hat® Linux®; Novell® SLES; VMware ESX™/ESXi; Oracle® Solaris®, OpenSolaris™; Citrix® XenServer™

## Physical Specifications

## Ports

- QLE8240: single 10Gbps Ethernet
- QLE8242: dual 10Gbps Ethernet

## Form Factor

- Low-profile PCIe card: (6.6 in. × 2.54 in.)
- Custom form factors also available

## Environment and Equipment Specifications

## 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%

## Maximum Cable Distances (Optical)

- QLE824x-SR: 300m, OM3 multi-mode fibre

## Agency Approvals

## Safety

- US, Canada, Europe

## EMI and EMC (Class A)

- US, Canada, Europe, Australia/New Zealand, Japan, Korea, Taiwan

## Ordering Information

QLE8240-CU-CK (single port)<sup>1</sup>

QLE8242-CU-CK (dual port)<sup>1</sup>

- Ships without transceivers. Intended for use with copper cables (not included). A list of approved copper cables is posted at [http://www.qlogic.com/Products/CU\\_Cables.aspx](http://www.qlogic.com/Products/CU_Cables.aspx)

QLE8240-SR-CK (single port)<sup>1</sup>

QLE8242-SR-CK (dual port)<sup>1</sup>

- Ships with SR optical transceivers installed

<sup>1</sup> All "-CK" parts ship in an individually packed box with a standard-size bracket, a spare low-profile bracket, and a Quick Start Guide.



**QLOGIC**

The Ultimate in Performance



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