

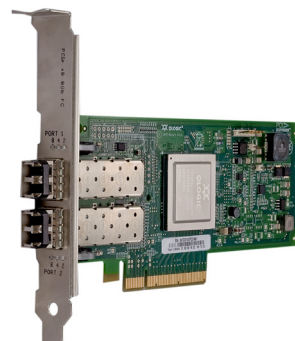
# 2500 Series

## PCIe-to-8Gbps Fibre Channel Adapters

### Overview

The 2500 Series Adapters are designed to meet the business requirements of the enterprise data center by enabling the lowest possible power consumption and the highest level of data protection. These adapters interface to the host server with a PCIe<sup>®</sup> Gen2 bus, ensuring no internal performance bottlenecks.

The 2500 Series 8Gb Adapters are the highest performing adapters in QLogic's industry leading Fibre Channel technology portfolio. Choosing QLogic's 8Gb adapters will not only meet the needs of today's demanding data center requirements by providing power and virtualization optimization, but investment protection is built in by being backward compatible with previous generations (4Gb and 2Gb) technology. In addition, the 2500 Series Adapters work in both PCI Express<sup>®</sup> Gen1 and Gen2 host bus interface platforms. QLogic's unique Dynamic Power Management technology enables the 2500 Series Adapters to provide the lowest possible power consumption. The 2500 Series Adapters are also backed by an industry leading 5-year (no charge) limited warranty for –CK/–E SKUs.



## Highlights

- Fibre Channel 8Gb to PCI Express
- 1600MBps (full-duplex) per port
- 200,000 initiator and target IOPS per port
- StarPower™ technology
- Virtualization optimized
- Power optimized
- Reliability, availability, serviceability (RAS) optimized
- Security optimized
- Management optimized. Deployments managed through QConvergeConsole® management applications (GUI and CLI)

### Virtualization Optimized

The 2500 Series Adapters deliver enhanced security, quality of service (QoS), and enable dynamic provisioning. The 2500 Series Adapters also allow multiple logical (virtual) connections to share the same physical port. Each logical connection has its own resources and the ability to be managed independently.

### Power Optimized

The 2500 Series Adapters take advantage of QLogic StarPower technology, ensuring power efficiency. QLogic StarPower technology offers dynamic and adaptive power management features such as power and bandwidth optimized intelligent PCI Express link training, low-power switching power supplies, and thermally efficient layout requiring lower airflows.

### RAS Optimized

The 2500 Series Adapters provide the highest data integrity by ensuring overlapping protection domains (OPDs) on both the control and data paths. In addition, the 2500 Series Adapters use enhanced hardware assist firmware tracing (EHAFT), allowing more comprehensive debugging with standard drivers.

### Security Optimized

The 2500 Series Adapters support SAN-level authentication (FC-SP) fabric-level isolation (NPIV), and are capable of end-to-end data integrity (T10).

### Management Optimized

The 2500 Series Adapters are backward compatible with 4Gb and 2Gb speeds. A single common driver per operating system for three generations of Fibre Channel adapters (8Gb, 4Gb, and 2Gb) simplifies deployment. QLogic's unified driver model (firmware embedded in the driver) eliminates potential interoperability issues between firmware and driver versions. The 2500 Series Adapters' API compatibility with 4Gb products accelerates deployment while ensuring application compatibility.

### Simplified Setup

Point-and-click installation and configuration wizards simplify the adapter setup process. Storage administrators can quickly deploy adapters across a SAN using standard adapter management tools and device utilities. The 2500 Series Adapters are also fully compatible with industry standard APIs, including SNIA HBA API and SMI-S, thereby allowing administrators to manage QLogic adapters using third-party software applications.

### Comprehensive 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®, VMware® ESX®. A single driver strategy per OS allows storage administrators to easily deploy and manage adapters in heterogeneous SAN configurations. QLogic's driver suite supports all major hardware server platforms, including 32/64-bit computing platforms from Intel® (IA32, IA64, IEM64T) and AMD® (Opteron64).

### 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.

## Fibre Channel Specifications

### Negotiation

- 8/4/2Gbps auto-negotiation

### IOPS

- 200,000 initiator and target IOPS per port

### Class of Service

- 2 and 3

### Topology

- FC-AL, FC-AL2, point-to-point, switched fabric

### Protocols

- FCP-3-SCSI
- FC-Tape (FCP-2)

### Cable Distances

Rate	Multi-Mode Optic		
	Cable Type and Distance (m)		
	OM1	OM2	OM3
2Gbps	150	300	500
4Gbps	70	150	380
8Gbps	21	50	150

## PCI Express Interface

### 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*
- *PCI Hot Plug Specification rev. 1.0*

### Physical and Electrical

- PCIe x8 physical connector
- StarPower link training
  - Maximum x4 lanes for Gen2 rate
  - Maximum x8 lanes for Gen1 rate

## Connectivity

### Ports

- QLE2560: single 8Gbps Fibre Channel
- QLE2562: dual 8Gbps Fibre Channel
- QLE2564: quad 8Gbps Fibre Channel

## Host Bus Adapter Specifications

### Airflow

- No airflow required

### Power Consumption

- QLE2560: 5.5 Watts (typical)
- QLE2562: 6.2 Watts (typical)
- QLE2564: 13 Watts (typical)

### Form Factor

- QLE2560/QLE2562
  - Low-profile PCIe card (6.6in. × 2.54in.)
- QLE2564
  - Full-height PCIe card (6.6in. × 4.376 in.)

### Temperature

- 0 to 55°C (operating)
- –40 to 70°C (non-operating)

### Relative Humidity

- 10% to 90% (operating, noncondensing)
- 5% to 93% (non-operating, noncondensing)

### RoHS Compliance

- RoHS 6

## Tools and Utilities

### Management Tools

- QConvergeConsole: a unified management tool (GUI and CLI) for adapter configuration and management

### Device Utilities

- Utilities for flashing bootcode
- Linux SuperInstaller—Driver and Management Tool Installer and Linux Tools

### Boot Support

- BIOS, FCode, EFI

### APIs

- SNIA HBA API V2, SMI-S, FDMI

## Platform/Operating System Support

### Hardware Platforms

- IA32 (x86), IA64, Intel 64
- AMD Opteron64
- Sun® SPARC®

### Operating Systems

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

## Agency Approvals—EMI and EMC

### US/Canada

- FCC Rules, CFR Title 47, Part 15, Subpart B: 2006 Class A
- Industry Canada, ICES-003:2004 Class A

### Europe

- CISPR 22:2005 (Amds. A1:2005, A2:2006)
- EN55022:2006, Class A (Amd. A1:2007)
- EN55024:1998 (Amds. A1:2001, A2:2003)
- EN6100-3-2:2006
- EN6100-3-3:1995 (Amds A1:2001, A2:2005)

### New Zealand/Australia

- AS/NZS; CISPR 22:2006 Class A

### Japan

- VCCI 2007-04 Class A

### Korea

- KN22, KN24 RRL Class A

### Taiwan

- CNS 13438:2006 Class A

## Agency Approvals—Safety

### US/Canada

- UL60950-1:3-2007 (2nd Edition)
- CSA C22.2 60950-1; 3-2007 (2nd Edition)
- Class 1 Laser Product per DHHS 21CFR J
- Use only with listed ITE or equivalent.

### Europe

- TUV EN60950-1:2006+A11 (2nd Edition)

## Ordering Information

- QLE2560-CK (single port)<sup>1, 2</sup>
- QLE2562-CK (dual port)<sup>1, 2</sup>
- QLE2564-CK (quad port)<sup>2, 3</sup>

<sup>1</sup> Ships in an individually packed box with a standard-size bracket and a spare low-profile bracket

<sup>2</sup> Ships with SR optical transceivers installed

<sup>3</sup> Ships in an individually packed box with a standard-size bracket



www.qlogic.com

Follow us: [Facebook] [Google+] [LinkedIn] [Twitter] [YouTube] [RSS] [Blogger] Share: [Facebook Share] [Twitter Share] [Google+ Share]

Corporate Headquarters QLogic Corporation 26650 Aliso Viejo Parkway Aliso Viejo, CA 92656 949-389-6000

International Offices UK | Ireland | Germany | France | India | Japan | China | Hong Kong | Singapore | Taiwan



© 2011, 2012 QLogic Corporation. Specifications are subject to change without notice. All rights reserved worldwide. QLogic, the QLogic logo, QConvergeConsole, and StarPower are trademarks or registered trademarks of QLogic Corporation. AMD is a registered trademark of Advanced Micro Devices, Inc. Citrix and XenServer are registered trademarks of Citrix Systems, Inc. Intel is a registered trademark of Intel Corporation. Linux is a registered trademark of Linus Torvalds. Microsoft, Windows, and Windows Server are registered trademarks of Microsoft Corporation. Novell and SLES are registered trademarks of Novell, Inc. Oracle is a registered trademark of Oracle Corporation. PCIe and PCI Express are registered trademarks of PCI-SIG Corporation. Red Hat is a registered trademark of Red Hat Software, Inc. SPARC is a registered trademark of SPARC International, Inc. in the USA and other countries. Sun and Solaris are registered trademarks of Sun Microsystems, Inc. VMware and ESX are registered trademarks of VMware, Inc. All other brand and product names are trademarks or registered trademarks of their respective owners. Information supplied by QLogic Corporation is believed to be accurate and reliable. QLogic Corporation assumes no responsibility for any errors in this brochure. QLogic Corporation reserves the right, without notice, to make changes in product design or specifications.