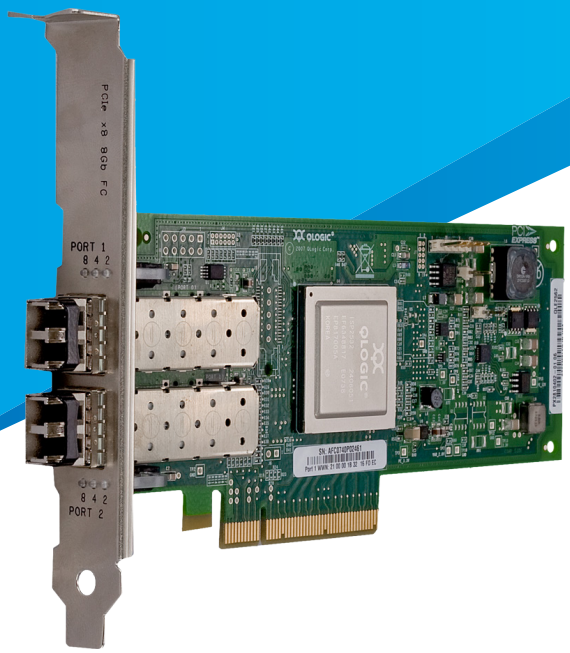
2500 Series

8Gb-to-PCIe Fibre Channel Adapters



- Fibre Channel 8Gb-to-PCIe
- 1,600MBps (full-duplex) per port
- Up to 200,000 initiator and target IOPS per port
- StarPower™ technology
- Virtualization optimized
- Power optimized
- RAS optimized
- Security and management optimized

OVERVIEW

QLogic® 2500 Series Adapters are designed to meet the business requirements of the enterprise data center through the lowest possible power consumption and the highest level of performance. These adapters interface to the host server with a PCI Express® (PCIe®) 2.0 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 8Gb adapters will not only meet today's demanding data center requirements by providing power and virtualization optimization, but investment protection is built in through backward compatibility with previous generations' (4Gb and 2Gb) technology. In addition, 2500 Series Adapters work in both PCIe Gen1 and 2.0 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 five-year (no charge) limited warranty; for details, visit:

http://www.qlogic.com/Support/Pages/Warranty.aspx

VIRTUALIZATION OPTIMIZED

The 2500 Series Adapters deliver enhanced security and quality of service (QoS), and they enable dynamic provisioning. 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 PCIe link training, low-power switching power supplies, and a thermally efficient layout requiring lower airflows.

RELIABILITY, AVAILABILITY, SERVICEABILITY (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, 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 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 OS 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 the SNIA HBA API and SMI-S—that allow administrators to manage QLogic adapters using third-party software applications.

COMPREHENSIVE OS SUPPORT

QLogic offers the broadest range of support for all major OSs to ensure OS and hardware server compatibility. Drivers are fully tested and available for Windows®, Linux®, Solaris®, and 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- and 64-bit computing platforms from Intel® (IA32, IA64, and EM64T) and AMD® (Opteron™ 64).

INVESTMENT PROTECTION

For over 20 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
- Up to 200,000 initiator and target IOPS per port

Class of Service
- 2 and 3

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

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

Cable Distances
- Multimode optic:

Rate	Cable 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 2.0 rate
  - Maximum x8 lanes for Gen1 rate

Connectivity

Ports
- QLE2560: single 8Gbps Fibre Channel
- QLE2562: dual 8Gbps Fibre Channel
- QLE2564 and QLE2564L: 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 and QLE2564L: 13 watts (typical)

Form Factor
- QLE2560, QLE2562, and QLE2564L
  - Low-profile PCIe cards (6.6in. × 2.54in.)
- QLE2564
  - Full-height PCIe card (6.6in. × 4.376in.)

Temperature
- Operating: 0°C to 55°C (32°F to 131°F)
- Non-operating: –40°C to 70°C (-40°F to 158°F))

Relative Humidity
- Operating, non-condensing: 10% to 90%
- Non-operating, non-condensing: 5% to 93%

RoHS Compliance
- RoHS 6

Tools and Utilities

Management Tools
- QConvergeConsole: Unified management tool (GUI and CLI) for adapter configuration and management

Device Utilities
- Utilities for flashing boot code
- Linux SuperInstaller: Driver and management tool installer and Linux tools

Boot Support
- BIOS, FCode, and extensible firmware interface (EFI)

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

Platform and Operating System Support

Hardware Platforms
- Intel IA32 (x86), IA64, and EM64T
- AMD Opteron 64
- Sun® SPARC®

Operating Systems
- For the latest applicable operating system information, see http://driverdownloads.qlogic.com

Agency Approvals—Safety

US and Canada
- UL 60950-1
- CSA C22.2

Agency Approvals—EMI and EMC (Class A)

US and Canada
- FCC Rules,CFR Title 47, Part 15, Subpart Class A
- Industry Canada, ICES-003: Class A

Europe
- EN55022
- EN55024
- EN61000-3-2
- EN61000-3-3

Japan
- VCCI: Class A

New Zealand and Australia
- AS/NZS: Class A

Korea
- KC-RRA Class A

Taiwan
- BSMI CNS 13438

Ordering Information

QLE2560 (Single Port)
- Ships in an individually packed box with a standard-size bracket and a spare low profile bracket
- Ships with SR optical transceivers installed

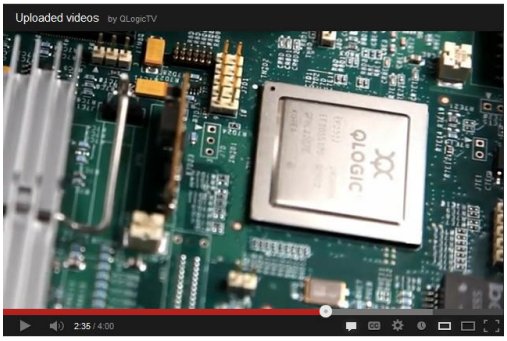
QLE2562 (Dual Port)
- Ships in an individually packed box with a standard-size bracket and a spare low profile bracket
- Ships with SR optical transceivers installed

QLE2564 (Quad Port)
- Ships in an individually packed box with a standard-size bracket
- Ships with SR optical transceivers installed

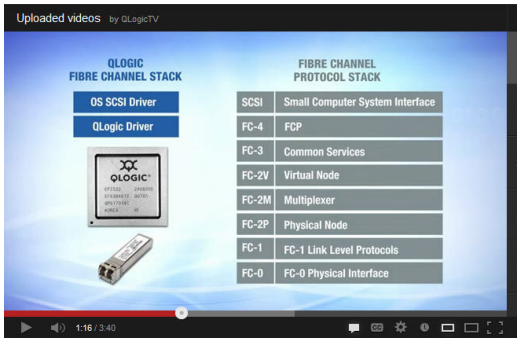
QLE2564L (Quad Port)
- Ships in an individually packed box with a low profile bracket
- Ships with SR optical transceivers installed

QLOGIC ADAPTERS AT WORK—RELATED VIDEOS

Click the video links below to see why QLogic adapters are the best choice for your SAN.



QLogic Adapter of Choice for Database Performance



QLogic Adapter of Choice for Fibre Channel SAN

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