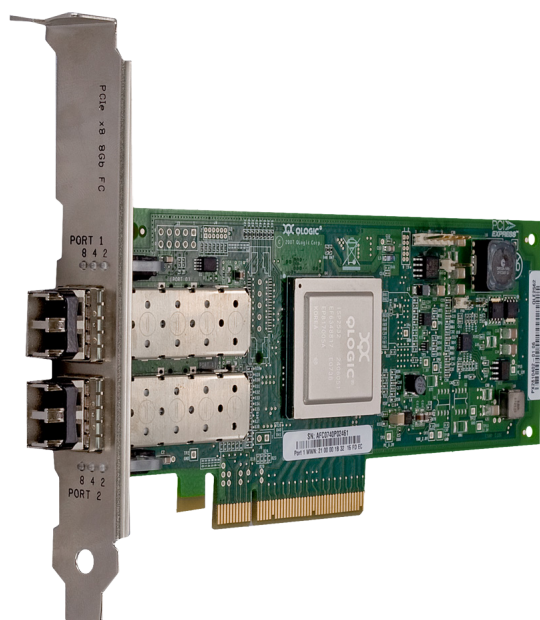


# MARVELL QLogic 2500 Series

## 8GFC-to-PCIe Fibre Channel Adapters



- Fibre Channel 8GFC-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

Marvell® QLogic® 2500 Series Adapters are designed to meet the business requirements of the enterprise data center through the very low power consumption while maintaining a high 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 8GFC Adapters provide investment protection with existing SAN networks and a forward looking migration path with next generation SAN technologies. Choosing Marvell QLogic 8GFC 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' (4GFC and 2GFC) technology. In addition, 2500 Series Adapters work in both PCIe Gen1 and Gen2 host bus interface platforms. Marvell'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 limited warranty.

### 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 Marvell StarPower technology, ensuring power efficiency. Marvell 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 fabric-level isolation (NPIV) and end-to-end data integrity (T10).

### **MANAGEMENT OPTIMIZED**

A single common driver per OS for generations of Fibre Channel adapters simplifies deployment. Marvell's unified driver model (firmware embedded in the driver) eliminates potential interoperability issues between firmware and driver versions. The 2500 Series Adapters' API compatibility 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 Marvell adapters using third-party software applications.

### **COMPREHENSIVE OS SUPPORT**

Marvell 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. Marvell's driver suite supports all major hardware server platforms.

### **LEADERSHIP, CONFIDENCE, AND TRUST**

Marvell is the undisputed leader in FC adapters, with over 20 years of experience, 20+ million ports shipped, and multiple generations of FC products that have been qualified by all major server OEMs. Marvell owns the most established, proven FC stack in the industry with more FC ports shipped than any other vendor.

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
2GFC	150	300	500
4GFC	70	150	380
8GFC	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

**Operating Systems**

- For the latest applicable operating system information, see [www.marvell.com](http://www.marvell.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 • EN61000-3-2
- EN55024 • 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



Marvell\_2500 Series  
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**ABOUT MARVELL:** Marvell first revolutionized the digital storage industry by moving information at speeds never thought possible. Today, that same breakthrough innovation remains at the heart of the company's storage, processing, networking, security and connectivity solutions. With leading intellectual property and deep system-level knowledge, Marvell semiconductor solutions continue to transform the enterprise, cloud, automotive, industrial, and consumer markets. For more information, visit [www.marvell.com](http://www.marvell.com).

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