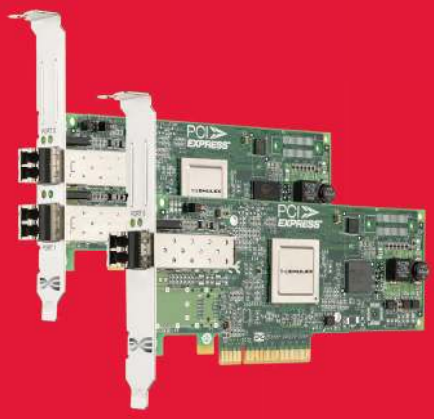
EMC² BUSINESS PARTNER Technology Connect SELECT

BROADCOM®

Emulex® LPe12000/LPe12002

8Gb Fibre Channel PCIe 2.0 HBAs for EMC

Data Sheet



Key benefits

- Provides superior performance for the enterprise
- Integrates seamlessly into existing SANs
- Supports IT server consolidation and energy conservation initiatives
- Allows application of SAN best practices, tools and processes with virtual server deployments
- Protects sensitive data from unauthorized access
- Assures data availability and data integrity
- Improves IT staff productivity through simplified deployment and management

Key features

- Support for Message Signal Interrupts eXtended (MSI-X), improves host utilization and enhances application performance
- Support for 8GFC, 4GFC and 2GFC devices

Unparalleled Manageability, Reliability, Performance and Ease of Deployment

Streamlined installation and management, unrivaled scalability, and industry-leading virtualization support make the single-port Emulex LPe12000 and dual-port LPe12002 8Gb Fibre Channel (8GFC) Host Bus Adapters (HBAs) for EMC ideal for enterprise, mixed-OS and virtual server environments.

Proven Design, Architecture and Interface

Emulex HBAs' highly integrated processor design minimizes onboard components to improve host performance and efficiency. Advanced error-checking features ensure the integrity of block data as it traverses the Storage Area Network (SAN). Emulex's firmware-based architecture enables feature and performance upgrades without costly hardware changes. The unique Service Level Interface (SLI) allows use of a common driver across all models of Emulex HBAs on a given OS platform. Installation and management facilities are designed to minimize server reboots and further simplify deployment. Emulex is trusted by data centers the world-over, with more than 17 million HBA ports shipped and installed to date.

Powerful Management Software for Maximum Data Center Efficiency

The Emulex OneCommand® Manager enterprise-class management application features a multiprotocol, cross-platform architecture that provides centralized management of all Fibre Channel adapters provided by Broadcom. This enables IT administrators to manage network connectivity with one tool for maximum efficiency.

The OneCommand Manager plug-in for VMware vCenter Server enables comprehensive control of Fibre Channel HBAs from VMware's vCenter Server management console. It supports both the Web Client and the desktop client with an identical feature set. plug-in for VMware vCenter Server supports both the new VMware vSphere 5.1 Web Client.and the VMware vCenter Server desktop client with an identical feature set regardless of the client

Specifications

Key features (cont'd)

- Comprehensive virtualization capabilities with support for N_Port ID Virtualization (NPIV) and Virtual Fabric
- Host to Fabric FC-SP authentication
- Long wave optical transceiver model available—allows the board to transmit signal over long distances
- Secure management with role-based administration integrated with Light Directory Access Protocol (LDAP) and Active Directory (AD) services
- End-to-end T10 PI data integrity for protection against silent data corruption events
- Common driver model allows a single driver to support all Emulex HBAs on a given OS
- Easy deployment of new firmware with minimal server reboots
- Efficient centralized administration of Emulex HBAs via powerful management tools
- PCIe 2.0 bus compliant, with PCIe 1.0 backward compatibility supported

Standards

- ANSI Fibre Channel: FC-PI-4, FC-FS-2, FC-FS-2/AM1, FC-LS, FC-AL-2, FC-GS-6, FC-FLA, FC-PLDA, FC-TAPE, FC-DA, FCP through FCP-4, SBC-3, FC-SP, FC-HBA and SMI-S v1.1
- PCI Express base spec 2.0
- PCI Express card electromechanical spec 2.0
- Fibre Channel class 2 and 3
- PHP hot plug-hot swap

Architecture

- Single-port (LPe12000) or dual-port (LPe12002)
- 8GFC, 4GFC or 2GFC link speeds automatically detected
- Integrated data buffer and code space memory

Comprehensive OS and hypervisor support

- Windows Server
- Linux
- Solaris
- VMware vSphere
- Windows Hyper-V
- Additional support is available from OEMs and partners

Hardware environments

- PowerPC, SPARC, x86, x64 and Intel Itanium 64-bit processor family

Optical

- Data rates: 2.125, 4.25 and 8.5GFC (auto-detected)
- Optics: Short wave lasers with LC type connector
- Cable: Operating at 8GFC
  - 50/125µm (500MHz*km BW)-up to 50m
  - 50/125µm (2000MHz*km BW)-up to 150m

Physical dimensions

- Short, low profile MD2 form factor card
- 167.64mm x 68.91mm (6.60" x 2.71")
- Standard bracket (low profile available)

Power and environmental requirements

- Volts: +3.3, +12
- Operating temperature: 0° to 55°C (32° to 131° F)
- Storage temperature: -40° to 70°C (-40° to 158° F)
- Relative humidity: 5% to 95% non-condensing
- 23°C wet bulb

Agency and safety approvals

North America

- FCC Class A
- UL/CSA Recognized

Europe

- CE Mark
- EU RoHS compliant
- TUV Bauart Certified

Japan

- VCCI Class A

Taiwan

- BSMI Class A

Korea

- MSIP (formally KCC/MIC) Class A

China

- China RoHS Compliant

(Please refer to the product page on www.emulex.com for further details)

Ordering information

Emulex 8GFC HBAs are available from EMC using the following part numbers:

LPe12000-E

- Single-port, multi-mode optic interface+

LPe12002-E

- Dual-port, multi-mode optic interface

Added features

Performance features

- Doubling the maximum Fibre Channel link rate from 4GFC to 8GFC and enhanced virtualization capabilities help support IT "Green" initiatives
- Frame-level Multiplexing and out-of-order frame reassembly increases link efficiency and maximizes HBA performance.

Data protection features

- End-to-end data protection with hardware parity, CRC, ECC and other advanced error checking and correcting algorithms ensure data is safe from corruption.

Deployment and management features

- Universal boot capability allows the appropriate boot environment to be automatically selected for any given hardware.
- Boot from SAN capability reduces system management costs and increases uptime.
- Detailed, real-time event logging and tracing enables quick diagnosis of SAN problems.
- Beaconing feature flashes the HBA LEDs, simplifying their identification within server racks.
- Environmental monitoring feature helps optimize SAN availability.

Management features

- The Emulex OneCommand Manager application enables centralized discovery, monitoring, reporting, and administration of Emulex adapters on local and remote hosts. Powerful automation capabilities facilitate remote driver parameter, firmware and boot code upgrades. Advanced diagnostic features such as adapter port beaconing and adapter statistics help to optimize management and network performance while the environmental monitoring feature helps to maintain optimum host to fabric connections. In addition to the GUI interface, management functions can also be performed via a scriptable Command Line Interface (CLI) as well as a web browser. With in-band and out-of-band management capabilities, Emulex provides data center administrators with the greatest level of management flexibility.
- OneCommand Manager supports role-based management to facilitate administration of adapters throughout the data center without compromising security. Management privileges can be assigned based on LDAP and AD group memberships.
- Emulex's management instrumentation complies to Open Management Standards, such as SMI-S and common HBA API support, which enables seamless upward integration into enterprise storage and server management solutions.

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