QLOGIC®
The Ultimate in Performance

EP8112

Dual Port 10Gbps FC over Ethernet (FCoE) to PCI Express Controller

High Performance

- 10Gbps per port maximum throughput for high bandwidth storage (SAN) and networking (LAN) traffic
- Full hardware offload for FCoE protocol processing
- 250,000 IOPS per port deliver high I/O transfer rates for storage applications
- Full support for TCP/IP and Ethernet performance enhancements such as priority based flow control (802.1Qbb), jumbo frames, checksum offloads, and segmentation offloads.

Lower Total Cost of Ownership (TCO)

- Reduced hardware, cabling, power, cooling, and management costs through convergence of data and storage networking
- Preservation of familiar data and storage concepts resulting in lower training and administrative costs

Investment Protection

- Works seamlessly with existing Fibre Channel (FC) storage
- Communicates via Ethernet, the most common networking technology in the world
- Shares a common API with QLogic 2500 Series 8Gb FC host bus adapers, simplifying the porting of existing 8Gb initiator and target mode drivers

Fibre Channel over Ethernet (FCoE) Technology. FCoE provides an opportunity to reduce data center costs by converging data and storage networking. Standard TCP/IP and Fibre Channel traffic can both run on the same high speed 10Gbps Ethernet wire, resulting in cost savings through reduced adapter, switch, cabling, power, cooling, and management requirements. FCoE has gained rapid market traction because it delivers excellent performance, reduces data center TCO, and protects current data center investment.

iSCSI. The EP8112 even supports iSCSI storage protocol using iSCSI software initiators, which are available with all major operating systems.

High Performance. The EP8112 boosts system performance with 10Gbps speed and full hardware offload for FCoE protocol processing. Cutting edge 10Gbps bandwidth eliminates performance bottlenecks in the I/O path with a 10X data rate improvement versus existing 1Gbps Ethernet solutions. Additionally, full hardware offload for FCoE protocol processing reduces system CPU utilization for I/O operations, which leads to faster application performance and higher levels of consolidation in virtualized systems.

Lower TCO. The EP8112 reduces data center costs through convergence. Now, one ASIC can do the work of both Fibre Channel and Ethernet controllers. This convergence also means fewer cables, fewer switches, less power consumption, reduced cooling, and easier management. The EP8112 also preserves familiar FC concepts such as WWNs, FC-IDs, LUN masking, and zoning, thereby eliminating training costs that are usually required for a new storage technology.

Investment Protection. The EP8112 and FCoE are designed to preserve existing investment in Fibre Channel storage and core Ethernet switches and routers for data networking. The EP8112 also shares a common API with QLogic's 2500 Series 8Gb FC host bus adapters, making it possible to highly leverage existing initiator and target mode drivers when developing similar drivers for the EP8112.

Unmatched Expertise. QLogic has an unparalleled advantage in delivering this new FCoE technology. QLogic is the undisputed leader in both FC and iSCSI controllers, with years of experience providing FC and Ethernet based products. While some competitors have expertise in either networking or storage, no other I/O provider can match QLogic's expertise in FC and Ethernet hardware and software solutions.

Host Bus Interface Specifications

Bus interface
- PCI Express Gen1 x8 or PCI Express Gen2 x4

PCI functions
- Two NIC functions and two FCoE functions

Advanced Interrupts
- MSI and MSI-X

Compliance
- *PCI Express Base Specification*, rev. 2.0, *PCI Bus Power Management Interface Specification*, rev. 1.2

Ethernet Specifications

Throughput
- 10Gbps full duplex line rate per port

Topology
- Any 10Gb Ethernet Network

Ethernet Frame
- 1500 byte or 9000 byte (Jumbo Frame)

Stateless offload
- IP, TCP, and UDP checksum offloads
- Large and Giant Send Offload (LSO, GSO)
- Receive Side Scaling (RSS)
- Header-Data split
- Interrupt coalescing
- NetQueue

BMC Support
- SMBus and RMII (NC-SI)

Enhanced Ethernet
- Priority-based flow control (802.1Qbb rev. 0)
- Enhanced transmission selection (802.1Qaz rev. 0)
- DCBX protocol (802.1Qaz rev. 0)

Compliance
- *IEEE: 802.3ae (10Gb Ethernet) 802.1q (VLAN), 802.3ad (Link Aggregation), 802.1p (Priority Encoding), 802.3x (Flow Control), 802.3ap (KX/KX4), 802.3ak (CX4), IEEE 1149.6 (JTAG), IPv4 Specification (RFC 791), IPv6 Specification (RFC 2460), TCP/UDP Specification (RFC 793/768), ARP Specification (RFC 826)*

Fibre Channel over Ethernet (FCoE) Specifications

Performance
- 250,000 IOPS per port

Logins
- Support for 2048 concurrent logins and 2048 active exchanges per port

Class of service
- Class 3

Protocols
- FCP (SCSI-FCP), FC-TAPE (FCP-2)

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)*

Controller Specifications

Ports
- Dual XAUI/CX4/KX4 or XFI/KR

Memory
- Integrated 1MB per port SSRAM

Input voltages
- Core: 1.0V
- 10GbE SERDES: 1.2V, 2.5V
- PCIe SERDES: 1.5V, 2.5V
- I/O: 3.3V

Temperature
- 110° C maximum junction temperature

Airflow
- System-design dependent

Power consumption
- 3.0 Watts (nominal conditions, PCIe Gen2 x4, XFI, dual ports active)

Storage Temperature
- -45 to 125°C

RoHS compliance
- RoHS 6

Packaging
- 29mm x 29mm
- 783-ball (FCBGA)
- Ball pitch 1.0 mm

Ordering Information
- EP8112
  - Ships with minimum order quantity of 144 devices (36 devices per tray × 4 trays); increments in multiples of 36 (1 tray)

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