

# Marvell® QLogic® EP2714/2722

32Gb Fibre Channel-to-PCIe® Controllers



- Up to 2.6 million IOPS fuel high performance in all flash arrays and high density virtualized environments
- FC-NVMe capability allows simultaneous access to NVMe™ and FCP storage on the same port
- Up to 3,200MBps throughput for high bandwidth storage traffic; a total of up to 25,600MBps bidirectional throughput for four ports
- 1.5 X performance per watt over previous 16GFC solutions
- Industry's first 32GFC solution with complete investment protection for legacy 16GFC, 8GFC, and 4GFC infrastructure
- Total per-port traffic isolation for greater reliability and security

The Marvell QLogic EP2714/2722 are the industry's first 32-Gigabit Fibre Channel (GFC) controllers. The 32GFC standard is the world's fastest storage networking protocol.

The EP2714/2722 Controllers from Marvell boast industry-leading native Fibre Channel (FC) performance, achieving line-rate, 32GFC throughput with low CPU use, and full hardware offloads. This extreme performance eliminates potential I/O bottlenecks in today's powerful storage and flash arrays, which is essential to evolving application workloads and I/O aggregation. Marvell's end-to-end data integrity with overlapping protection domains and support for the T10 data integrity field ensure that the EP2714/2722 Controllers are ideal for enterprise-class storage applications.

## Enabling Flash and SSD Solutions

The Marvell QLogic EP2714/2722 32GFC Controllers deliver the performance and reliability to drive next-generation fabric-based flash arrays. With the ability to drive up to 2.6 million IOPS and 25,600MBps of bidirectional throughput, the Marvell QLogic EP2714/2722 are the right choice for the most demanding of flash-based solutions.

## Designed for Virtualization

The 32GFC EP2714/2722 Controllers consume the fewest CPU cycles to drive storage traffic at line rate across all ports. With support for up to 650K IOPS per port, Marvell controllers are ideal for hyper-scale virtualization, solid-state storage technologies, and new data center architectures.

## NVM Express® Support

The EP2714/2722 Controllers support the recently ratified FC-NVMe (NVMe over Fibre Channel) protocol. The EP2714/2722 Controllers can simultaneously support FC-NVMe and FCP-SCSI storage traffic. NVMe storage offers exceptionally high performance at very low latencies. NVMe works best when coupled with a network that can provide lossless, low-latency, and high-performing transport. The Marvell QLogic EP2714/2722 Series 32GFC Controllers bring the best of both worlds by offering the highest performance and lowest latency access to NVMe and SCSI storage over a Fibre Channel network.

## **Investment Protection**

The EP2714/2722 Controllers are compatible with the existing 8GFC and 16GFC software API that is shipping today on Marvell QLogic's 2500 and 2600 Series FC Controllers.

## **Unmatched Expertise**

Marvell is the undisputed leader in FC adapters. Marvell's FC products have been qualified by all major storage OEMs to provide native FC, iSCSI, and Fibre Channel over Ethernet connectivity from storage to fabric.

Marvell is a strategic solution provider across server and storage technologies, offering the strongest technology portfolio for storage connectivity applications.

## Fibre Channel Specifications

### Negotiation

- Quad-port 32/16/8/4GFC auto-negotiation (EP2714)
- Dual-port 32/16/8/4GFC auto-negotiation (EP2722)

### Throughput

- 32GFC line rate per port maximum

### Logins

- Support for 2,048 concurrent logins and 2,048 active exchanges
- Capability to support up to 32K concurrent logins and 32K active exchanges (EP2714)

### Port Virtualization

- N\_Port ID virtualization

### 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)*
- *Fibre Channel Physical Interface-5 (FC-PI-5)*
- *Fibre Channel Physical Interface-6 (FC-PI-6)*

## Host Bus Interface Specifications

### Bus Interface

- PCI Express Gen 3 ×16 (EP2714)
- PCI Express Gen 3 ×8 (EP2722)

### Host Interrupts

- INTx and MSI-X

### Compliance

- *PCI Express Base Specification rev 3.1*
- *PCI Express Card Electromechanical Specification rev 3.0*
- *PCI Bus Power Management Interface Specification rev. 1.2*
- *PCI Hot Plug Specification rev. 1.1*

## Controller Specifications

### Port Configurations

- Four 32Gb FC ports (EP2714)
- Two 32Gb FC ports (EP2722)

### Memory

- Integrated SRAM for FC applications
- 16-bit, ECC-protected DDR3 interface to external SDRAM (optional) (EP2714)

### Temperature

- Operating: 105°C maximum junction temperature
- Storage: -45°C to 125°C

### Airflow

- System-design dependent

### RoHS Compliance

- Green (RoHS 6 compliant and halogen free)

### Packaging

- EP2714
  - 33mm × 33mm, 1013 ball (lidless flip chip ball grid array)
  - 1.0mm ball pitch
- EP2722
  - 19mm × 19mm, 525 ball (lidless flip chip ball grid array)
  - 0.8mm ball pitch

### Power

- EP2714
  - Maximum: 13.5W
  - Typical: 10.0W
- EP2722
  - Maximum: 7.0W
  - Typical: 5.5W

## Ordering Information

### EP2714

- Quad-port embedded controller for storage target applications
- Ships with a minimum order of 192 devices (24 devices per tray × 8 trays)

### EP2722

- Dual-port embedded controller for storage target applications
- Ships with a minimum order of 210 devices (70 devices per tray × 3 trays)



To deliver the data infrastructure technology that connects the world, we're building solutions on the most powerful foundation: our partnerships with our customers. Trusted by the world's leading technology companies for 25 years, we move, store, process and secure the world's data with semiconductor solutions designed for our customers' current needs and future ambitions. Through a process of deep collaboration and transparency, we're ultimately changing the way tomorrow's enterprise, cloud, automotive, and carrier architectures transform—for the better.

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