



The Ultimate in Performance



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# QME7342

## Dual-Port, 40Gbps InfiniBand-to-PCIe Expansion Card

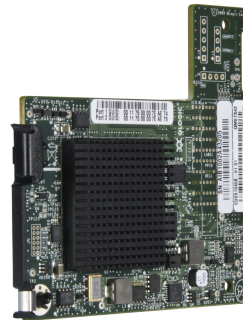
Dell Part Number: A3529571

### Benefits

- High performance
- Superior scalability
- Enhanced reliability
- Protection of existing server investments
- Lowest power and cooling requirements in the industry
- Environmentally friendly

### Features

- Dual 40Gbps quad data rate (QDR) InfiniBand™ interfaces
- 3400MBps unidirectional throughput
- 30M messages processed per second (non-coalesced) in each direction
- 1.0-microsecond latency that remains low as the fabric is scaled
- Multiple virtual lanes (VLs) for unique quality of service (QoS) levels per lane over the same physical port
- TrueScale™ architecture, with MSI-X interrupt handling, is optimized for multi-core compute nodes
- External firmware is neither used nor required
- Congestion control architecture
- Optional data scrambling in InfiniBand link
- RoHS 6 compliant
- Complies with InfiniBand Trade Association (IBTA) v1.2 standard
- Supports OpenFabrics Alliance (OFED and WinOF) software distributions



High performance computing (HPC) solutions have used InfiniBand networks to meet the needs of the most demanding set of applications and grand challenges. The QME7342 is a dual-port, 40Gbps InfiniBand-to-PCI Express® Gen2 x8 Host Channel Adapter designed for the Dell® PowerEdge® Blade Server. The QME7342's highly integrated design delivers unprecedented levels of performance, making it the ideal solution for HPC applications that rely on low latency, direct-memory access.

**High Performance.** Quad data rate (QDR) InfiniBand delivers 40Gbps per port (4×10Gbps), providing the necessary bandwidth for high-throughput applications. With the highest message rate and lowest latency of any InfiniBand adapter, the QME7342 provides superior HPC application performance.

**Superior Scalability.** QLogic's TrueScale architecture delivers near-linear scalability. As additional compute resources are added to a cluster, latency remains low and the message rate scales with the size of the fabric, resulting in maximum usage of compute resources.

**Enhanced Reliability.** The QME7342's advanced design does not need onboard firmware, which enhances its performance and reliability. The controller has ECC protection on all internal SRAMs, and parity checking on all internal buses. Equally important, the stateless design is inherently more resilient to adapter and fabric failures, as it minimizes its reliance on the connection state. Optional data scrambling maximizes data patterns, which in turn minimizes the bit-error rate.

**Investment Protection.** This fourth-generation product is compliant with IBTA version 1.2, ensuring interoperability with all other IBTA-compliant devices. In addition, support for the OpenFabrics community OFED and WinOF distributions ensures rapid adoption by major operating system vendors, system integrators, and independent hardware (IHW) and software (ISV) vendors.

**Power Optimized.** Maximum performance is delivered at the lowest power of any QDR-capable adapter: 6.2W typical and 9.5W maximum (estimate).

**Environmentally Friendly.** The QME7342 is RoHS 6 compliant, as well as antimony free and halogen free.

### Host Bus Interface Specifications

#### Bus interface

- PCI Express Gen2 x8

#### Device type

- End point

#### Advanced interrupts

- MSI-X
- INTx

#### Compliance

- PCI Hot Plug Specification revision 1.0, PCI Bus Power Management Interface Specification revision 1.2
- IBTA version 1.2

### InfiniBand Interfaces and Specifications

#### Data rate

- 40/20/10Gbps auto-negotiation

#### Virtual lanes

- Configurable for one, two, four, or eight VLs
  - 2KB MTU, or
  - 4KB MTU (single InfiniBand port)

#### MTU

- All standard InfiniBand MTUs, including 4KB

#### Interfaces

- Dell PowerEdge Blade Server PCIe® mezzanine slot connector

### Physical Specifications

#### Ports

- Two QDR 4X InfiniBand

#### Form factor

- Dell PowerEdge Blade Server mezzanine form factor

### Environment and Equipment Specifications

#### Power consumption

- Typical 6.2W (estimated)
- Maximum 9.5W (estimated)

#### Temperature

- 0°C/32°F to 55°C/131°F (operating)
- –40°C/–40°F to 70°C/158°F (non-operating)

#### Humidity

- 10% to 90% (operating, non-condensing)
- 5% to 93% (non-operating, non-condensing)

#### RoHS Compliance

- RoHS 6 and green packaging (antimony free and halogen free)

### Agency Approvals—EMI and EMC

#### US and Canada

- FCC Part 15, Subpart B, Class A; ICES-003, Class A

#### Europe

- EN55022, Class A

#### New Zealand and Australia

- AS/NZS 3548 Class A

#### Japan

- VCCI V-3/2004.4, Class A

#### Korea

- MIC

### Agency Approvals—Safety

#### US and Canada

- UL, cUL: UL60950, CSA C22.2 No.60950

#### Europe

- 73/23/ECC Low Voltage Directive:
  - TUV: EN60950-1:2001, EN60825-1:1994+A1+A2, EN60825-2:1994+A1

### Tools and Utilities

#### Host driver and upper level protocol (ULP) support

- OpenFabrics Alliance (OFED, WinOF)
- QLogic SRP
- QLogic VNIC
- Performance scaled messaging (PSM) MPI acceleration stack
- FastFabric™ tools
- SHMEM

#### MPI support

- MVAPICH2, MPICH2, Open MPI, QLogic MPI, HP-MPI, Platform (Scali) MPI, Intel® MPI

#### Operating systems

- Red Hat®
- SUSE®
- CentOS
- Scientific Linux®
- Windows® HPC Server 2008 (check with QLogic Sales for availability)

### Ordering Information

#### QME7342

- The QME7342 is available from Dell (Dell part number: A3529571)



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