



QLE7342

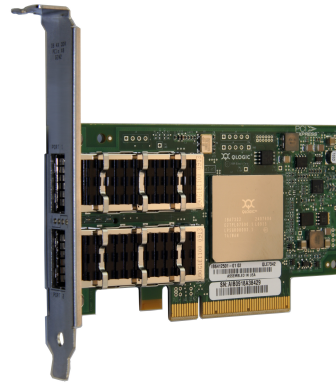
Dual-Port 40Gbps (QDR) InfiniBand™ to PCI Express HCA

Benefits

- High performance
- Superior scalability
- Enhanced reliability
- Protects existing server investments
- Lowest power and cooling requirements
- Environmentally friendly

Features

- 40Gbps InfiniBand (IB) interface
- 3400 MBps unidirectional throughput
- ~30M messages processed per second (non-coalesced)
- ~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
- Operates without external memory
- Congestion control architecture
- Optional data scrambling in IB 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 (IB) networks to meet the needs of the most demanding set of applications and grand challenges. The QLE7342 is a dual-port 40Gbps InfiniBand PCI Express® Gen2 x8 Host Channel Adapter (HCA). It is a highly integrated design that 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) IB delivers 40Gbps per port (4x10Gbps), providing the necessary bandwidth for high-throughput applications. With the highest message rate and lowest latency of any IB adapter, the QLE7342 provides superior HPC application performance.

Superior Scalability. QLogic's TrueScale architecture is designed to deliver 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 utilization of compute resources.

Enhanced Reliability. The QLE7342's advanced design does not need onboard firmware or external memory, which enhances not only its performance, but also reliability. The ASIC 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 provides a mechanism to optimize data patterns, which in turn minimizes the bit-error rate.

Investment Protection. This fourth generation product is compliant with the InfiniBand Trade Association (IBTA) version 1.2 specification, 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, 4.8W typical and 8.1W maximum, of any QDR-capable adapter.

Environmentally Friendly. The QLE7342 is RoHS 6 compliant as well as antimony free and halogen free.

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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 IB port)

MTU

- All standard IB MTUs including 4KB

Interfaces

- Supports Quad Small Form Factor Pluggable (QSFP) optical and copper cable specifications; CX4/microGigaCN specifications

Physical Specifications

Ports

- Two QDR 4X IB

PCI Express Card

- Low profile (4.83 in x 2.71in)

• Brackets

- Standard bracket: 1.84 cm x 12.08 cm (.73 in x 4.76 in)
- Low profile bracket: 1.84 cm X 8.01 cm (.73 in x 3.15 in)

- Link status LED indicators

Environment and Equipment Specifications

Power consumption

- Typical 4.8W/Maximum 8.1W (estimated)

Temperature

- Operating: 10 to 55° C (estimated)
- Storage: -40 to 70° C (estimated)

Humidity

- 10% to 95% (operating, non-condensing) (estimated)
- 5% to 100% (non-operating, non-condensing) (estimated)

Heatsink

- None

RoHS Compliance

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

Agency Approvals—EMI and EMC

US/Canada

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

Europe

- EN55022:1994+A1+A2; EN55024:1998+A1+A2; EN61000-3-2:2000 (Harmonic Current); EN61000-3-3:1995+A1 (Voltage Fluctuation & Flicker)

Japan

- VCCI V-3/2004.4, Class A

New Zealand/Australia

- AN/NZS CISPR 22:2002, Class A

Korea

- MIC (KN22, KN24), Class A

Taiwan

- BSMI (CSN 13438), Class A

China

- CCC, Class A

Agency Approvals—Safety

US/Canada

- UL; CSA/UL 60590-1; CB Scheme: IEC 60950-1

Europe

- TUV: EN60950:2001+A11

Tools and Utilities

Host driver/Upper Level Protocol (ULP) support

- OpenFabrics Alliance (OFED, WinOF)
- QLogic SRP
- QLogic VNIC
- Performance Scaled Messaging (PSM) MPI acceleration stack
- FastFabric™ tools

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

Ordering Information

QLE7342-CK

- Ships in an individually packed box with a standard size bracket, a spare low-profile bracket, and Quick Start Guide



The Ultimate in Performance

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