7104-HCA-128LP

InfiniBand (IB) 4X SDR to PCI-X Host Channel Adapter (HCA)

Benefits

- Seamless InfiniBand enabling of PCI and PCI-X servers. No operating system or applications changes required
- Improved server CPU utilization with RDMA protocols
- Fast 10-Gbps protocol today for clustering
- Server connectivity to InfiniBand based intelligent virtual I/O and clustering fabrics

Features

- Comprehensive suite of high performance Upper Level Protocols (ULPs)
  – µDAPL
  – Sockets Direct Protocol (SDP)
  – Reliable Datagram Sockets (RDS)
  – VirtualNIC
  – VirtualHBA
  – IPoIB
  – MPI
  – Windows® SDP
- Dual 4X (10 Gb) InfiniBand ports
- Fully PCI/PCI-X compliant
- Low profile design
- Supports up to 130K queue pairs and 130K completion queues

An integral member of the QLogic family of interconnect offerings, the 7104-HCA-128LP is a low profile, dual port 4X (10 Gb) Host Channel Adapter (HCA) that enables the widest variety of current and next-generation servers to realize the full benefits of InfiniBand.

The QLogic HCA creates an expressway between the server and the InfiniBand fabric, allowing information transfer at 10 Gbps, up to 10 times the bandwidth of current server interfaces. A comprehensive host environment of high performance ULPs contained within the QLogic software family enables the HCA to provide unprecedented performance to core business applications that are supported by DBMS clustering, High Performance Business Computing (HPBC), and High Availability Clustering.

QLogic HCA in the Enterprise. Combined with its ULPs, the HCA is the channel by which today's complex and costly enterprise environments quickly evolve to feed ever-growing processing requirements. Clustering, Ethernet, and Fibre Channel are all concurrently supported via a single 10-Gb pipe. The net effect is a significantly reduced level of infrastructure complexity and improved business responsiveness, with a lower total cost of ownership.

The HCA, used in conjunction with QLogic's family of InfiniBand clustering switches and virtual I/O systems, is part of a complete end-to-end InfiniBand solution ready to enable today's servers to handle tomorrow's processing requirements.

Guaranteed Interoperability. InfiniBand ecosystem partner certifications, combined with agency and regulatory testing, ensures all products meet industry compliance hardware and software specifications. All HCAs are tested extensively with third-party hardware, along with multiple software applications, to ensure best-in-class InfiniBand interoperability and compatibility. You can be confident purchasing QLogic HCAs to meet your InfiniBand networking needs.

Investment Protection. For over 15 years, QLogic has been a technological leader with products that address the current needs of customers, yet provide strong investment protection to support emerging technologies and standards. QLogic stands alone in the industry with its product portfolio depth and experience in successfully delivering technological solutions that address the needs of today and tomorrow.

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Host Bus Interface Specifications

PCI v2.2 compliant

- Low profile design
- PCI-X addendum v.10a compliant
- PCI/PCI-X interface at 33, 66, 100, and 133 MHz
- 3.3V interface
- 32-bit and 64-bit data and address buses
- Supports for four outstanding split transactions in PCI-X mode
- Zero wait states on both master and slave data phases

InfiniBand Interfaces and Specifications

Transport types

- Unreliable Datagram (UD)
- Reliable Connection (RC)

Transport services

- RDMA read request
- RDMA write request and atomic operations
- Send/Receive

Kernel bypass

InfiniBand specifications

- 8 virtual fabrics plus management lane
- Configurable up to 130K queue pairs and 130K completion queues[1]
- Configurable up to 256k memory regions/520K Windows regions[1]
- Auto configurable MTU 256 to 2048 bytes (2048 default)
- Support for 64 configurable P_Keys per port
- Up to 8 RDMA read requests as target per queue pair
- Maximum message size 2 GB
- 1 constant and 31 configurable Global IDs (GIDs)
- Support acknowledge (ACK) coalescing
- Memory, work queue, and completion queue accesses protection
- InfiniBand v1.1 and v1.2 compliant

1. Current memory option is 128 MB. Larger memory sizes are available by order

Tools and Utilities

Management support

- InfiniBand Fabric Suite
- BMA, PMA, SMA, CM
- Fabric and device discovery
- Generates SMA traps

Operating environments

- Linux™
- Windows 200x

Connectivity

- SDR: dual 4X or 1X speeds - copper HSSD

Host Driver/Upper Level Protocol (ULP) Support

µDAPL

- ULP RDMA server-to-server access utilizing User Direct Access Program Library (µDAPL) APIs

SDP

- Sockets Direct Protocol (SDP) support for high-performance zero-copy data transfers

RDS

- Sockets off-load driver provides reliable, in order, no duplicate delivery semantics for Oracle® Real Application Clusters (RAC)

VirtualNIC

- Ethernet ULP and advanced functionality (port sharing, load balancing, Ethernet IB switching)

VirtualHBA

- Fibre Channel ULP and advanced functionality (port sharing, LUN management, SCSI Remote DMA Protocol (SRP))

IPoIB

- ULP to allow Internet Protocol (IP) using InfiniBand (IB) as a link layer

MPI

- ULP for HPC clusters utilizing Message Passing Interface (MPI) function calls

WSD

- Windows Sockets Direct Protocol (SDP) support for high-performance zero-copy data transfers

Physical Specifications

- PCI-X low profile form factor 6.60 in x 2.536 in (167.64 mm x 64.41 mm)

Environment and Equipment Specifications

Operating temperature

- 10°C to 45°C at sea level
- 0–3 km (10,000 feet)
- -30°C to 60°C (non-operating)

Humidity (non-condensing)

- Operating: 20% to 80%
- Storage: 5% to 90%

Typical power consumption

- 10 W

Maximum power consumption

- 14 W

RoHs compliance

- RoHS 5

Agency Approvals—Product Safety

- US
  - UL60950
- Europe
  - EN60950

Agency Approvals—EMI and EMC

US

- FCC Part 15, Class A

Europe

- EN55022 level A; EN55024; EN61000-3-2,-3

Ordering Information

7104-HCA-128LP

- Low profile 128 MB Std. PCI-X (low profile bracket). Ships with driver CD.