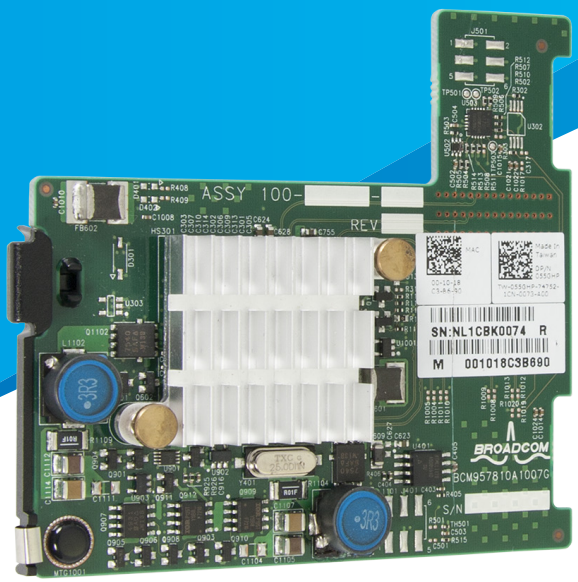
QLogic® 57810S-K Dual KR Blade Mezzanine

Dual-Port 10GbE Converged Network Mezzanine Adapter for Dell PowerEdge Blade Servers



- Delivers full line-rate 10GbE performance across all ports
- Consolidates network traffic and storage traffic over converged 10GbE connections
- Enables provisioning of 10GbE ports for greater deployment flexibility through Dell Switch Independent Partitioning
- Boosts host CPU efficiency with hardware offload for storage (FCoE/iSCSI) data traffic
- Streamlines administrative tasks with the QCS management application and integration into Dell's embedded management framework (iDRAC7 and Lifecycle Controller)

OVERVIEW

QLogic® now offers the 57810S-K, a dual-port 10-gigabit Ethernet (10GbE) converged mezzanine adapter for Dell™ PowerEdge™ blade servers. The 57810S-K leverages QLogic's long-standing industry leadership in Ethernet, providing the highest levels of performance, efficiency, and scalability for the enterprise data center.

For more effective utilization of the 10GbE bandwidth, the QLogic 57810S-K-based mezzanine adapter offers Dell Switch Independent Partitioning, which enables the segmentation of a single 10GbE port into four virtual ports with flexible allocation of bandwidth to each of the ports. The segmentation allows IT organizations to improve resource utilization while lowering infrastructure and operational costs.

Virtualization, cloud computing, High-Performance Computing (HPC), convergence, and clustering initiatives are increasing workload demands. The QLogic 57810S-K based mezzanine adapter is the solution of choice for workload-intensive computing environments, providing a reliable, high-performance 10GbE connectivity solution.

FEATURES

- Dual-port 10GbE connectivity for Dell PowerEdge blade servers
- x8 PCI Express® (PCIe®) V2.0 (5 GT/s) support
- Full line-rate performance across all ports
- Broad OS and hypervisor support
- Full iSCSI and Fibre Channel over Ethernet (FCoE) hardware offload
- Network boot support:
  - iSCSI remote boot
  - Fibre Channel over Ethernet (FCoE) boot from SAN
  - Pre-execution environment (PXE) 2.0
- MSI and MSI-X support
- IPv4 and IPv6 offloads
- PCI-SIG® single root input/output virtualization (SR-IOV) ready
- Comprehensive stateless offloads
- Multi-tenant tunnel offloads
- RX/TX multiqueue
- Receive side scaling (RSS)

FEATURES (*continued*)

- Transmit side scaling (TSS)
- Support for jumbo frames larger than 1,500 bytes
- Network teaming, failover, and load balancing:
  - Smart Load Balancing™ (SLB)
  - Link aggregation control protocol (LACP) and generic trunking
- Data center bridging (DCB)
- FCoE converged mezzanine adapter features provide support for:
  - FCoE initialization protocol (FIP) and FCoE Ethertypes
  - Fabric-provided MAC address (FPMA)
  - Boot from SAN
  - Large, concurrent port logins and exchanges (4,096 each)
  - Native OS storage failover and load balancing
  - N_Port ID virtualization (NPIV)

BENEFITS

Accelerates Server Performance

- Boosts network performance with full line-rate 10GbE performance across all ports
- Increases server performance with full hardware offload for storage traffic
- Maximizes server processing performance by reducing CPU overhead and lowering interrupt latency through the use of the MSI-X standard
- Boosts performance in Windows® and Linux® environments by directing interrupts to the server's CPU cores, leveraging TSS and RSS

Includes Robust Virtualization Capabilities

- Enhances server CPU scaling through full support of virtualization technologies such as VMware® NetQueue™ and Microsoft® virtual machine queue (VMQ)
- Enhances network management and efficiency with support for virtual LAN (VLAN) and VLAN tagging

Streamlines Deployment and Management

- Increases network flexibility, scalability, and capacity with Dell Switch Independent Partitioning, segmenting 10GbE ports, and reallocating their bandwidth and resources to address the application's performance requirements
- Simplifies deployment and management complexity—QLogic Ethernet solutions are available across a wide range of Dell server platforms
- Unifies the NIC and storage management using the integrated Dell Remote Access Controller (iDRAC7) and Lifecycle Controller management framework or QLogic Control Suite (QCS) management application

DISCLAIMER

Reasonable efforts have been made to ensure the validity and accuracy of this data. QLogic Corporation is not liable for any errors in this document. QLogic specifically disclaims any warranty, expressed or implied, relating to this product.

Host Bus Interface Specifications

Bus Interface
- PCI Express Gen2 x8

Host Interrupts
- MSI-X supports independent queues

I/O Virtualization
- Single-root input/output virtualization (SR-IOV)
  - Maximum virtual functions per device: 128
- Dell Switch Independent Partitioning (NPAR)
- Network Virtualization using Generic Routing Encapsulation (NVGRE) packet task offloads
- Virtual Extensible LAN (VXLAN) packet task offloads

Compliance
- *PCI Express Base Specification*, rev. 2.0
- *PCI Bus Power Management Interface Specification*, rev 1.2
- *Advanced Configuration and Power Interface (ACPI)*, v2.0
- *SMBus* 2.0

Ethernet Specifications

Throughput
- 10Gbps full-duplex line rate per port

Ethernet Frame
- 1,500 bytes and larger (jumbo frames)

Stateless Offload
- TCP segmentation offload (TSO)
- Large send offload (LSO)
- Large receive offload (LRO)
- Giant send offload (GSO)
- TCP and user datagram protocol (UDP) checksum offloads
- Receive segment coalescing (RSC)
- Hardware transparent packet aggregation (TPA)
- Interrupt coalescing
- RSS and TSS
  - Maximum of 16 queues per physical function (PF) in single function (SF) and Dell Switch Independent Partitioning modes
- VMware NetQueue and Microsoft virtual machine queue (VMQ)
  - VMware NetQueues and Windows Server® 2008 R2 Hyper-V VMQs up to 16 queues per any PF in SF and Dell Switch Independent Partitioning modes, which can be set by the user
  - Windows Server 2012 R2 Hyper-V automatically allocates up to 61 dynamic VMQs per any PF in SF and Dell Switch Independent Partitioning modes. The current host-allocated number is displayed by the Microsoft Windows PowerShell® `Get-NetAdapterVmq` command in the `NumberOfReceiveQueues` field

Compliance
- *IEEE 802.3ae (10Gb Ethernet)*
- *IEEE 802.1q (VLAN)*
- *IEEE 802.3ad (Link Aggregation)*
- *IEEE 802.3ap (Backplane Ethernet)*
- *IEEE 802.3x (Flow Control)*
- *IPv4 (RFC 791)*
- *IPv6 (RFC 2460)*
- *IEEE 802.1Qbb (Priority-Based Flow Control)*
- *IEEE 802.1Qaz (DCBX and Enhanced Transmission Selection)*

Tools and Utilities

Management Tools and Device Utilities
- QLogic Control Suite (QCS)
- Embedded management framework (iDRAC7 and Lifecycle Controller)
- Native OS management tools for networking

Boot Support
- iSCSI remote boot
- FCoE boot from SAN
- PXE 2.0

Operating System Support

Linux
- Red Hat® Enterprise Linux (RHEL) 5.7, 6.1, 7.0, and later
- Novell® SUSE® Linux Enterprise Server (SLES) 10 SP3, 11 SP1, 12, and later

Microsoft
- Windows Server 2008 and 2008 R2, all editions
- Windows Server 2012 and 2012 R2, all editions

VMware
- ESXi 5.0 and later

Citrix®
- XenServer® 6.0 and later

Physical Specifications

Ports
- Dual 10Gbps Ethernet

Form Factor
- Mezzanine adapter 3.13in × 2.85in (79.5mm × 72.4mm)

Supported Servers
- 13th Generation: M630
- 12th Generation: M420, M520, M620, and M820

Certifications
- RoHS, FCC A, UL, CE, VCCI, BSMI, C-Tick, KCC, TUV, and ICES-003

Environmental and Equipment Specifications

Temperature
- Operating: 32°F to 131°F (0°C to 55°C)
- Storage: –40°F to 149°F (–40°C to 65°C)

Relative Humidity
- 5% to 95% noncondensing

Ordering Information

QLogic 57810S-K Dual Port 10GbE KR bMezz CNA
- With server, order PG SKU# 430-4401
- Without server, order PG SKU# 430-4457