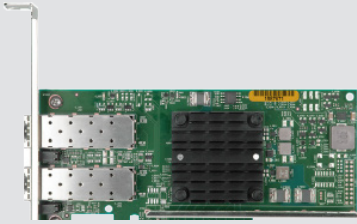


BCM957410

NetXtreme® E-Series Dual-Port PCIe NIC and OCP Mezzanine Ethernet Adapters

Based on the BCM57410 High-Performance 10GbE/25GbE/40GbE/50GbE Solutions



Key Features

- 25G interfaces - IEEE 802.3by and 25G Consortium
- Eight lanes of PCI Express (PCIe) v3.0 compliant host interface
- PCI Electromechanical Specification 3.0 compliant
- RDMA over Converged Ethernet (RoCE) v1 and v2
- Single Root I/O Virtualization (SR-IOV) with 128 VF support
- Function Level Reset (FLR) support
- Tunnel-aware stateless offloads
- SMBus 2.0
- MCTP over SMBus
- Jumbo frames up to 9,600B
- Flow control (802.3x)
- Link aggregation (802.3ad)
- Multiqueue - NetQueue and VMQueue
- IPv4 and IPv6 offloads
- TCP, UDP and IP checksum offloads
- Large Send Offload (LSO)
- Large Receive Offload (LRO)
- TCP Segmentation Offload (TSO)

Description

Virtualization technologies continue to expand server CPU demand, with network performance requirements scaling accordingly. This growth demands a new breed of Ethernet connectivity solutions.

Designed and optimized for rack and tower servers, the Broadcom® BCM57410 family of Ethernet Controllers provides high-performance, low-latency, and value added features for end-to-end solutions in standard adapter form factors.

The E-Series adapters support dual-port 25/10 Gb/s or single-port 50/40 Gb/s. They also feature TruFlow™, Data Center Bridging (DCB), RDMA over Converged Ethernet (RoCE), Single Root I/O Virtualization (SR-IOV), Stateless Offloads, and advanced RDMA Congestion Control.

NetXtreme® E-Series Ethernet adapters are available in standard PCIe half-height/low-profile or OCP v2.0 Mezzanine form factors.

Highlights

- High-Performance Network Controller
 - Full line-rate throughput on all ports
 - Low device latency for optimal application performance
 - Comprehensive stateless offloads to minimize host CPU workload
- Robust Virtualization Features
 - Single Root I/O Virtualization (SRIOV)
 - 128 VFs with fully flexible port assignment
 - VMQ support in hardware
- Optimized silicon design
 - Low device power using Adaptive Voltage Scaling (AVS)
 - Simplified device driver interface for ease of management
 - State machine device architecture for core functions
 - Integrated Ethernet PHY based on market-proven IP
- Reliability
 - Hardware architecture built on 10+ generations of Broadcom expertise in Ethernet
 - Robust drivers for all major enterprise operating systems
 - Full suite of management tools

Key Features (con't)

- Receive-Side Scaling (RSS)
- Transmit-Side Scaling (TSS)
- VLAN insertion/removal (IEEE 802.1q)
- Interrupt coalescing
- Network boot—PXE, UEFI
- iSCSI boot
- MSI and MSI-X

Highlights (cont'd)

- End-to-End 25GbE connectivity
 - Compliant with 25GbE standards (IEEE 802.3by and 25G Ethernet Consortium)
 - Assured performance and compatibility when paired with industry leading Broadcom StrataXGS® and StrataDNX™ based switches

Benefits

- End-to-End 25G and 50G connectivity
 - Paired with industry-leading StrataXGS® and StrataDNX™ switches
 - Congestion avoidance with hierarchical traffic management
- High performance
 - Line rate throughput on all ports
 - Small packet rate up to 30 Mp/s
 - Low device latency for optimal application performance
- Next-Generation Virtualization support
 - TruFlow on-chip flow processing engine frees the host CPU from expensive network operations, providing up to 50% application performance boost
 - TruFlow extends vSwitch policy domain over SR-IOV
- NFV and SDN optimized
 - TruFlow boosts the performance of NFV applications
 - Flexible, standards-based SDN interface enables easy configuration and management

Standards

- General
 - Host interface: PCI Express Card Electromechanical Specification Rev. 3.0
 - Network Interface: x8 PCI Express v3.0 (8.0 GT/s) and v2.0 (5.0 GT/s)
- OS Support
 - Linux: RHEL/CentOS, SLES, Oracle, and Ubuntu
 - Microsoft Windows Server
 - VMware vSphere
 - Citrix XenServer
 - FreeBSD
 - DPDK
 - OFED
- Management
 - Broadcom - Diagnostics (UEFI, Linux, DOS)

Applications

- Server Virtualization
- Host Switching
- Deep Learning
- Flash Storage

Certifications

- Environmental Requirements
 - Operating temperature: 32°F to 131°F (0°C to 55°C)
 - Storage temperature: -40°F to 149°F (-40°C to 65°C)
 - Relative humidity: 5% to 95% noncondensing
 - Vibration and Shock: IEC78-2-(*) and IEC721-3-(*)
- Electromagnetic Compatibility and Electromagnetic Discharge Compliance
 - DE/EU: EN 5502:2010 + *AC:2011 Class B, EN55024 Class B
 - FCC/USA: CFR47, Part 15 Class B
 - IC/Canada: ICES-003 Class B
 - ACA/Australia: EN 55022:2010 + *AC:2011 (RCM Mark)
 - BSMI/Taiwan: CNS 13438 Class B
 - MIC/S.Korea: RRL KN22 Class B, KN24 (ESD) (MSIP Mark)
 - VCCI/Japan: V-3/2014/04
 - ESD: EN55024:2010 Air/Direct Discharge

Ordering Information

Part Number	Form Factor	Number of Ports	Port Speed/Type
BCM957414A4142CC	PCIe NIC	Dual	25GbE/10GbE SFP28
BCM957412A4120AC	PCIe NIC	Dual	10GbE SFP+
BCM957416A4160C	PCIe NIC	Dual	10GBASE-T RJ45