OVERVIEW

The Broadcom® dual-port 10GBASE-T Ethernet Network Adapter for Dell PowerEdge rack servers is based on the NetXtreme E-series BCM57406 Controller ASIC, and extends Broadcom's long-standing industry leadership in Ethernet solutions. As application workloads and virtualization technologies drive increased demands on server performance, network performance requirements scale accordingly. This growth demands a new breed of Ethernet connectivity solutions. Broadcom NetXtreme E-series adapters in Dell's PowerEdge servers deliver high throughput, low latency and key features to enable optimal performance for a variety of workloads.

Whether in a native bare-metal platform or in a virtualized environment, NetXtreme-E series solutions are designed to deliver the networking performance and flexibility needed to ensure optimal application performance. Features like SR-IOV with 128 virtual functions (VFs) and VMQ hardware support give IT administrators the tools to address any networking challenge.

NetXtreme E-series adapters help IT organizations control cost of ownership by keeping the cost of management and power to a minimum. Integrated support for Dell's embedded management framework - integrated Dell Remote Access (iDRAC) with Lifecycle controller – ensures that deployment and management are as simple as possible. To keep power consumption to a best-in-class minimum, the NetXtreme E-series devices take advantage of cutting-edge architectural and physical design features, such as optimized hardware state machines and Adaptive Voltage Scaling (AVS).

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.
  – 128 VFs with fully flexible port assignment.
  – oVMQ 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
FEATURES
- Dual RJ45 interfaces – compliant to IEEE 802.3an & 802.3ab
- x8 PCI Express v3.0 compliant host interface.
- PCI Express Electromechanical Specification 3.0 compliant.
- 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 9,600 B.
- 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).
- Receive-side scaling (RSS).
- Transmit-side scaling (TSS).
- VLAN insertion/removal (802.1q).
- Interrupt coalescing.
- Network boot – PXE, UEFI.
- iSCSI boot.
- MSI and MSI-X.
- IEEE 1588 – Precision Time Protocol.
- IEEE 802.1AS – Timing and Synchronization.
- Integrated support for Dell’s embedded management framework (iDRAC with Lifecycle Controller).

SPECIFICATIONS

GENERAL
- Form factor: PCI Express Card Electromechanical Specification Rev. 3.0
- Host interface: x8 PCI Express v3.0 (8.0 GT/s) and v2.0 (5.0 GT/s)
- Network interface: RJ45 connectors; compliant to IEEE 802.3an (10GBASE-T) and IEEE 802.3ab (1000BASE-T) SFF-8402 compliant interface; 25G SFP28 or 10G SFP+ direct attach copper or optical transceiver
- Data transfer rate: 10 or 1 Gbps per port, per direction
- Network controller device: BCM57406

OS SUPPORT
- Linux: RHEL 6.7, RHEL 7.1, RHEL 7.2, SLES 11 SP4, SLES 12 SP1
- VMware: ESXi 5.5 U2 and U3, ESXi 6.0, ESXi 6.0 U2
- Citrix: XenServer 7.0

MANAGEMENT
- Broadcom: Diagnostics (UEFI, Linux, DOS)
- Dell: Embedded management framework (iDRAC and Lifecycle Controller)

ENVIRONMENTAL REQUIREMENTS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Condition</th>
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<tbody>
<tr>
<td>Storage Temperature</td>
<td>-40°C to +65°C</td>
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<tr>
<td>Storage Humidity</td>
<td>5% to 95% non-condensing</td>
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<tr>
<td>Vibration and Shock</td>
<td>IEC78-2-(<em>) and IEC721-3-(</em>)</td>
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ELECTROMAGNETIC COMPATIBILITY (EMC) AND ELECTROSTATIC DISCHARGE (ESD) COMPLIANCE

<table>
<thead>
<tr>
<th>Item</th>
<th>Standard</th>
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<tbody>
<tr>
<td>CE/EU</td>
<td>EN 55022:2010 + *AC:2011 Classb, EN55024 Class B</td>
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<tr>
<td>FCC/USA</td>
<td>CFR47, Part 15 Class B</td>
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<tr>
<td>IC/Canada</td>
<td>ICES-003 Class B</td>
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<tr>
<td>ACA/Australia, New Zealand</td>
<td>EN 55022:2010 + *AC:2011 (RCM Mark)</td>
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<tr>
<td>BSMI/Taiwan</td>
<td>CNS13438 Class B</td>
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<td>MIC/S. Korea</td>
<td>RRL KN22 Class B, KN24 (ESD) (MSIP Mark)</td>
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<tr>
<td>VCCI/Japan</td>
<td>V-3/2014/04</td>
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<tr>
<td>ESD</td>
<td>EN55024:2010 Air/Direct discharge</td>
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ORDERING INFORMATION

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<tr>
<th>Description</th>
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<tr>
<td>Broadcom 57406 Dual-port 10GBase-T Network Interface Card with full-height PCIe bracket</td>
<td>406-BBLB</td>
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<tr>
<td>Broadcom 57406 Dual-port 10GBase-T Network Interface Card with low-profile PCIe bracket</td>
<td>406-BBKP</td>
</tr>
</tbody>
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ABOUT BROADCOM

Broadcom (NASDAQ: AVGO) is a diversified global semiconductor leader built on 50 years of innovation, collaboration and engineering excellence. Broadcom’s extensive product portfolio serves multiple applications within four primary end markets: wired infrastructure, wireless communications, enterprise storage and industrial & others. Broadcom is changing the world by Connecting everything®.

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