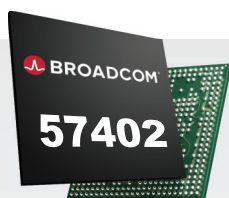


# Broadcom 57402 Dual-Port 10GbE SFP+ PCIe Adapter



- Flexible, power efficient 10 Gb Ethernet.
- High performance across varied workloads and frame sizes.
- Optimized end-to-end solution with Broadcom-based switches
- Reliability and interoperability resulting from Broadcom's market-proven Ethernet heritage.
- Integrated management access through integration with Dell's embedded management framework (iDRAC and Lifecycle Controller).

## BCM57402

✓	Datacenter
✓	Enterprise
✓	High Performance

## 2CS957402-PB100-D8OVERVIEW

The Broadcom® dual-port 10 GbE Ethernet Network Adapter for Dell PowerEdge rack servers is based on the NetXtreme E-series BCM57402 Controller ASIC, and extends Broadcom's long-standing industry leadership in Ethernet solutions.

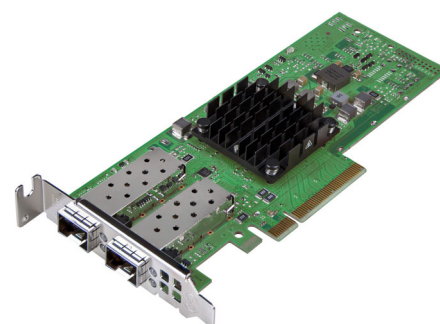
As application workloads and virtualization technologies drive increased demands on server performance, network performance requirements scale accordingly. This growth demands a new breed of Ethernet connectivity solutions. Broadcom NetXtreme E-series adapters in Dell's PowerEdge servers deliver high 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.
  - Single Root I/O Virtualization (SR-IOV).
  - 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 SFP+ interfaces - compliant to SFF-8402
- 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	SFF-8402 compliant interface; 10G SFP+ direct attach copper or optical transceiver
Data transfer rate	10 Gbps per port, per direction
Network controller device	BCM57402

### OS SUPPORT

Microsoft	Windows Server 2012, Windows Server 2012 R2
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

Parameter	Condition
Storage Temperature	-40°C to +65°C
Storage Humidity	5% to 95% non-condensing
Vibration and Shock	IEC78-2-(*) and IEC721-3-(*)

### ELECTROMAGNETIC COMPATIBILITY (EMC) AND ELECTROSTATIC DISCHARGE (ESD) COMPLIANCE

Item	Standard
CE/EU	EN 55022:2010 + *AC:2011 Class B, EN55024 Class B
FCC/USA	CFR47, Part 15 Class B
IC/Canada	ICES-003 Class B
ACA/Australia, New Zealand	EN 55022:2010 + *AC:2011 (RCM Mark)
BSMI/Taiwan	CNS13438 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

Description	Part Number
Broadcom 57402 Dual-port 10GbE SFP+ Network Interface Card with full-height PCIe bracket	406-BBKS
Broadcom 57402 Dual-port 10GbE SFP+ Network Interface Card with low-profile PCIe bracket	406-BBKR

## 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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