

[< Ethernet Network Adapters](#)

BCM57412 - 25GbE

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High-Performance, Feature-Rich NetXtreme® E-Series BCM57412 25GbE PCIe 3.0 Ethernet Controller

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[Overview](#)

Overview

Based on Broadcom's scalable 10/25/50/100/200G Ethernet controller architecture, the NetXtreme®-E Series BCM57412 25G PCIe 3.0 Ethernet controller is designed to build highly-scalable, feature-rich networking solutions in servers for enterprise and cloud-scale networking and storage applications, including high-performance computing, telco, machine learning, storage disaggregation, and data analytics.

The BCM57412 25G PCIe 3.0 Ethernet controller builds upon the success of the widely-deployed NetXtreme E-Series architecture by combining a high-bandwidth Ethernet controller with a unique set of highly-optimized hardware acceleration engines to enhance network performance and improve server efficiency.

Driven by the growing need for higher server bandwidth and storage capacity to support new and emerging applications, enterprises, telcos and cloud providers are modernizing their data centers by adopting latest networking technologies, such as server virtualization and NVMe-oF. The resulting expansion in data volumes increases server-to-server traffic and CPU loads for networking tasks.

With its market-leading hardware acceleration technologies, the NetXtreme-E Series BCM57412 25G PCIe 3.0 Ethernet controller addresses these performance and service demands of mega-scale data center networks with high throughput and advanced flow processing. Features such as TruFlow™ increase VM density up to 50 percent, freeing more CPU cycles for additional virtual machines. On-chip tunneling protocol processing for Geneve, VXLAN, and NVGRE provides up to a 5X throughput increase while lowering CPU utilization up to 90 percent compared to software-only solutions. NetXtreme-E Series solutions also support advanced networking technologies such as RoCE, SDN and NFV, to facilitate the management of data networks and to enable service provider solutions.

Features

- Standards-compliant 25G PCIe 3.0 Ethernet controller with line-rate, full-duplex throughput
- Single-Port 25/10/1G
- Dual-Port 10/1G
- NIC partitioning supporting 16 physical functions (PFs)
- TruFlow™ engine for intelligent flow processing to increase server VM density and accelerate vSwitch processing
- Industry's most secure PCIe Ethernet controller solution leveraging Broadcom's BroadSAFE® technology to provide unparalleled platform security via Silicon Root of Trust
- New end-to-end congestion avoidance and management to anticipate and eliminate congestion before it happens

Applications

- Cloud and Web2.0 data center servers
- Enterprise data center servers
- Private Cloud
- Machine Learning (ML) clusters
- High-Performance Computing (HPC) clusters
- Multi-node container platforms
- NVMe storage disaggregation (NVMe-oF™)
- Database servers

- Support for advanced networking technologies including RoCE, SDN, NFV and virtualization
- TruManage™ enhances server manageability and security for data center deployments



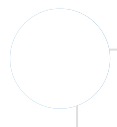
Lifecycle Status

Active

Specifications

Specification	Value
Lifecycle	Active
Distributor Inventory	No
Adapter Type	ASIC
ASIC	BCM57412
Connectors	XFI/SFI/10GBASE-KR/SFP+/SFP28
Link-Speeds	25/10/1GbE
Multi-Host	No
NPAR	Yes
Ordering Part #	BCM57412B1KF5BG
PCIe	Gen 3.0
Ports	2
RoCEv2	Yes
Smart NICs	No
TruFlow™	Yes
TruManage™	Yes

Documentation




White Papers 3


Current

Title	Date	Type	Alert
<p>NetXtreme® E-Series: Industry's Most Secure Ethernet Adapters Building data center security on BroadSAFE™ Silicon Root of Trust with Thor and Whitney+ Ethernet Network Adapters</p> <p>VERSION: NA FILE SIZE: 187 KB LANGUAGE: English</p>	06/14/2019	PDF	
<p>Broadcom 25G Ethernet Adapters Outperform Competition in vSAN Performance Tests Broadcom Ethernet adapters deliver up to 25% better vSAN performance than competing solutions from Mellanox, Intel and Marvell.</p> <p>VERSION: NA FILE SIZE: 781 KB LANGUAGE: English</p>	05/29/2019	PDF	
<p>Broadcom demonstrates the industry's most deterministic latency with its NetXtreme Ethernet adapters Broadcom Ethernet adapters deliver significantly lower tail latency for TCP and RoCEv2 than competing solutions from Mellanox.</p> <p>VERSION: NA FILE SIZE: 916 KB LANGUAGE: English</p>	01/01/2018	PDF	


Previously Viewed



[P210P - 2 x 10GbE PCIe NIC](#)
 High-Performance, Feature-Rich Dual-Port 10G PCIe Ethernet NIC



[N210TP - 2 x 10GBASE-T OCP 3.0 Adapter](#)
 High-Performance, Feature-Rich Dual-Port 10GBASE-T OCP 3.0 Adapter



[LPe35002-M2 FC Host Bus Adapter](#)
 2 Port 32GFC Short Wave Optical – LC SFP+

