

Selection Guide

Key Features

- PCIe NIC 3.0-compliant
- Line-rate throughput from 1 Gb/s to 200 Gb/s
- 1-port, 2-port, and 4-port support
- DAC, copper, and fiber connectivity
- PCIe 3.0, PCIe 4.0 host interface
- 25G, 50G PAM-4 SerDes
- TruFlow™-configurable packet processor for virtual switch acceleration
- BroadSAFE® technology provides Silicon Root of Trust, secure boot, and secure key storage
- TruManage™ for cloud-scale manageability
- On-chip tunneling protocol processing for Geneve, VXLAN, and NVGRE
- Multi-host with ECN marking
- Hardware-based low-latency RoCE v1/v2
- SR-IOV up to 1K VFs
- GPUDirect acceleration

NetXtreme® E-Series

PCIe NIC Ethernet Adapters

Specification Sheet

Overview

Broadcom® offers a complete PCIe NIC 3.0 Ethernet portfolio supporting the full range of speeds and feeds, from 1G to 200G, on one same Small Form Factor (SFF). Broadcom utilizes its highest-performance market-leading silicon solutions for this portfolio, including Thor—the market's first 200G Ethernet controller.

Broadcom's NetXtreme E-Series network controller delivers best-in-class performance and hardware acceleration and offload capabilities that result in higher throughput, higher CPU efficiency, and lower workload latency for TCP/IP as well as RoCE traffic.

Broadcom PCIe NIC 3.0 Ethernet adapters utilize the NetXtreme market-leading 25G NRZ, 50G PAM-4, and PCIe 4.0 SerDes technology, ensuring seamless interoperability with Broadcom's market-leading Top-of-Rack switch and PCIe Express switch solutions which also use the same SerDes technology.

Broadcom Ethernet adapters, including the PCIe NIC portfolio, are supported with a full suite of drivers for all major operating system distributions and versions. The latest firmware, drivers, and tools can be downloaded from www.broadcom.com.

Portfolio and Ordering Information

Part Number	Name	Port Speed	I/O	Host I/F	Multihost
BCM957508-P2200G	P2200G	2× 200GbE	QSFP56	PCIe 4.0 ×16	Yes
BCM957508-P2100G	P2100G	2× 100GbE	QSFP56	PCIe 4.0 ×16	Yes
BCM957454A4540C	P1100p	1× 100GbE	QSFP28	PCIe 3.0 ×16	No
BCM957414A4140C	P150p	1× 50GbE	QSFP28	PCIe 3.0 ×8	No
BCM957504-P425G	P425G	4× 25GbE	SFP28	PCIe 4.0 ×16	Yes
BCM957414A4142CC	P225p	2× 25GbE/10GbE	SFP28	PCIe 3.0 ×8	No
BCM957454-P410SG	P410SG	4× 10GbE	SFP+	PCIe 3.0 ×16	No
BCM957454-P410SGBT	P410SGBT	4× 10 Gb/s	RJ-45	PCIe 3.0 ×8	No
BCM957412A4120AC	P210p	2× 10GbE	SFP+	PCIe 3.0 ×8	No
BCM957416A4160C	P210TP	2× 10GbE	RJ-45	PCIe 3.0 ×8	No

Product Features

- Dual-port media interface
- QSFP56/QSFP28 optical transceiver or copper direct-attach cable
- Multi-host support: Dual-host x8 mode
- x16 PCI Express 4.0 compliant
- SR-IOV with up to 1k virtual functions (VFs)
- TruFlow™ flow processing engine
- Virtual Network Termination: VXLAN, NVGRE, Geneve, GRE encaps/decap
- vSwitch Acceleration
- Tunnel-aware stateless offloads
- DCB support: PFC, ETS, QCN, DCBx
- RDMA over Converged Ethernet (RoCE)
- Advanced congestion avoidance
- Multiqueue, NetQueue, and VMQ
- IPv4 and IPv6 offloads
- Large send offload (LSO)
- Large receive offload (LRO)
- TCP segmentation offload (TSO)

P2200G

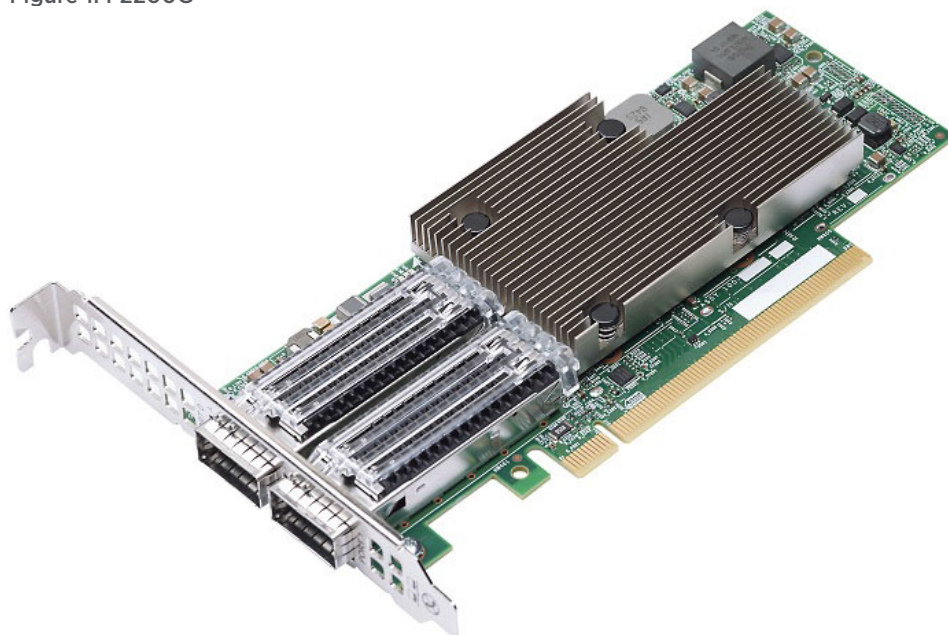
Dual-Port 200 Gb/s with 400 Gb/s High-Availability Connectivity QSFP56 Ethernet PCI Express 4.0 x16 Network Interface Card

The Broadcom BCM957508-P2200G is a dual-port 200 Gb/s with 400 Gb/s connectivity PCI Express 4.0 x16 Network Interface Card that supports QSFP56/QSFP28 optical modules and copper direct-attach cables. The card uses the Broadcom BCM57508 200GbE MAC controller with an integrated dual-channel 200GbE SFI transceiver. 200 Gb/s Ethernet includes 400 Gb/s network connectivity for high-availability features and flexible port configurations including 2× 100GbE and 2× 200GbE, eliminating throughput bottlenecks for data-intensive applications.

P2200G Information

Attribute	Details
Ordering Part No.	BCM957508-P2200G
Product Description	Dual-Port 200 Gb/s QSFP56 Ethernet PCI Express 4.0 x16 Network Interface Card
Port Configuration	2× 100GbE/50GbE/25GbE/10GbE and 2× 200GbE (failover)
Power	TBD
Airflow Requirements	TBD
Weight	167 grams
Dimensions (in.)	PCIe NIC Form Factor
Warranty	3 years

Figure 1: P2200G



Product Features

- Dual-port media interface
- QSFP56/QSFP28 optical transceiver or copper direct-attach cable
- Multi-host support: Dual-host x8 mode
- x16 PCI Express 4.0 compliant
- SR-IOV with up to 1k virtual functions (VFs)
- TruFlow™ flow processing engine
- Virtual Network Termination: VXLAN, NVGRE, Geneve, GRE encap/decap
- vSwitch Acceleration
- Tunnel-aware stateless offloads
- DCB support: PFC, ETS, QCN, DCBx
- RDMA over Converged Ethernet (RoCE)
- Advanced congestion avoidance
- Multiqueue, NetQueue, and VMQ
- IPv4 and IPv6 offloads
- Large send offload (LSO)
- Large receive offload (LRO)
- TCP segmentation offload (TSO)

P2100G

Dual-Port 100 Gb/s QSFP56 Ethernet PCI Express 4.0 x16 Network Interface Card

The Broadcom BCM957508-P2100G is a dual-port 100 Gb/s PCI Express 4.0 x16 Network Interface Card that supports QSFP56/QSFP28 optical modules and copper direct-attach cables. The card uses the Broadcom BCM57508 200GbE MAC controller with an integrated dual-channel 100GbE SFI transceiver.

P2100G Information

Attribute	Details
Ordering Part No.	BCM957508-P2100G
Product Description	Dual-Port 100 Gb/s QSFP56 Ethernet PCI Express 4.0 x16 Network Interface Card
Port Configuration	2x 100GbE, 2x 50GbE, 2x 25GbE, 2x 10GbE
Power	19.3 watts (typical)
Airflow Requirements	400 LFM at 55°C
Weight	167 grams
Dimensions (in.)	PCIe NIC Form Factor
Warranty	3 years

Figure 2: P2100G



Product Features

- Single-port media interface
- 100 Gb/s or 40 Gb/s QSFP28/QSFP+ optical transceiver or with copper direct-attach cable
- 16-lane PCI Express host interface designed to operate to the PCI Express v3.0 specifications
- SR-IOV with up to 1K virtual functions (VFs)
- TruFlow™ flow processing engine
- Virtual Network Termination: VXLAN, NVGRE, Geneve, GRE encap/decap
- vSwitch acceleration
- Tunnel-aware stateless offloads
- TruManage™ integrated BMC
- Advanced Congestion Avoidance
- Multiqueue, NetQueue, and VMQ
- IPv4 and IPv6 offloads
- Large Send Offload (LSO)
- Large Receive Offload (LRO)
- TCP Segmentation Offload (TSO)
- Wake-on-LAN (WOL)
- MSI and MSI.X
- Conforms to the PCI Express Card Electromechanical Specification Rev. 3.0

P1100p

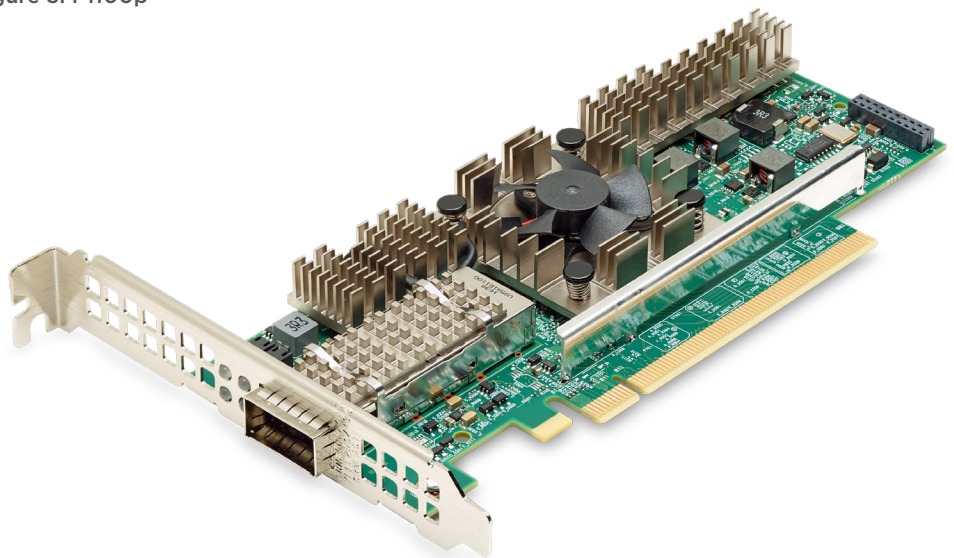
Single-Port 1/10/25/40/50/100 Gb/s Ethernet PCI Express 3.0 x16 Network Interface Card

The Broadcom® BCM957454A4540C is a single-port 1/10/25/40/50/100 Gb/s adapter that supports both QSFP28/QSFP+ optical modules and copper direct-attach cable. The card uses the Broadcom BCM57454 100 Gb/s Ethernet LAN controller targeted at Public, Private Cloud, and specifically, Big Data, and Multitenant applications. The BCM57454 supports single-port 1/10/25/40/50/100 Gb/s, Dual-Port 1/10/25/50 Gb/s, and Quad-Port 1/10/25 Gb/s Ethernet speeds. The device includes a FalconCore, providing a 4-lane Multi- Rate SerDes (MRS) transceiver. It is focused on providing high performance, low latency, and value-added features for end-to-end solutions using Broadcom switches and controllers.

P1100p Information

Attribute	Details
Ordering Part No.	BCM957454A4540C
Product Description	Single-Port 100 Gb/s QSFP28/QSFP+ Ethernet PCI Express 3.0 x16 Network Interface Card; RoHS-compliant
Port Configuration	1x 100GbE, 1x 50GbE, 1x 40GbE, 1x 25GbE, 1x 10GbE, 1x 1GbE
Power	TBD
Airflow Requirements	TBD
Weight	TBD
Dimensions (in.)	PCIe NIC Form Factor
Warranty	3 years

Figure 3: P1100p



Product Features

- Single-port media interface
- 50GbE or 40G QSFP28/QSFP+ optical transceiver or with copper direct-attach cable
- x8 PCI Express v3.0 compliant
- SR-IOV with up to 128 VFs
- Function Level Reset (FLR) support
- TruFlow™ flow processing engine
- Virtual Network Termination: VXLAN, NVGRE, Geneve, GRE encaps/decap
- vSwitch acceleration
- Tunnel-aware stateless offloads
- DCB support: PFC, ETS, QCN, DCBx
- RDMA over Converged Ethernet (RoCE)
- Advanced Congestion Avoidance
- Multiqueue, NetQueue, and VMQ
- IPv4 and IPv6 offloads
- Large Send Offload (LSO)
- Large Receive Offload (LRO)
- TCP Segmentation Offload (TSO)
- Conforms to the PCI Express Card Electromechanical Specification Rev. 3.0

P150p

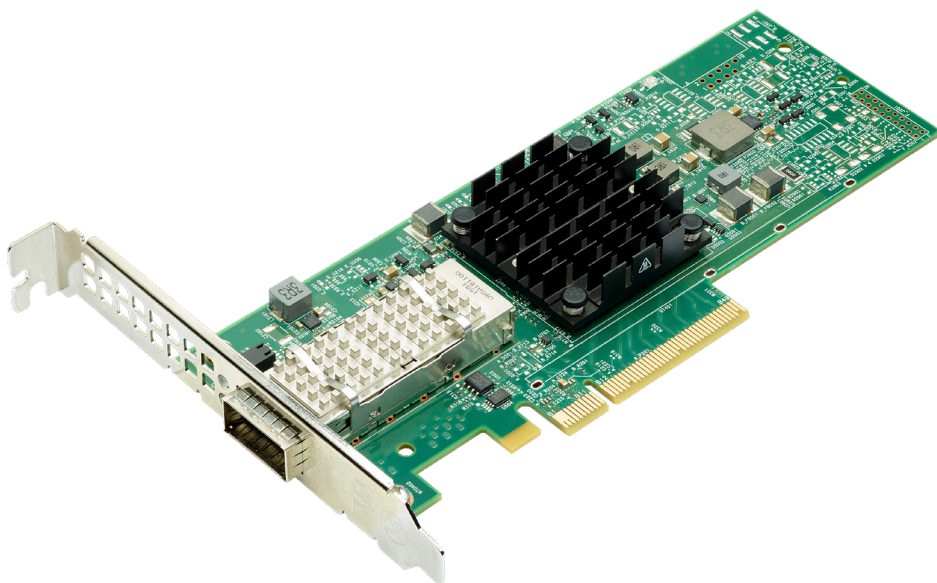
Single-Port 50 Gb/s or 40 Gb/s Ethernet PCI Express 3.0 x8 Network Interface Card

The Broadcom® BCM957414A4140C is a single-port 50 Gb/s or 40 Gb/s, PCI-Express 3.0 x8 Network Interface Card (NIC) that supports both QSFP28/QSFP+ optical modules and copper direct-attach cable. The card uses the Broadcom BCM57414 50GbE MAC controller with the integrated single-channel 50GbE SFI transceiver.

P150p Information

Attribute	Details
Ordering Part No.	BCM957414A4140C
Product Description	Single-Port 50 Gb/s or 40 Gb/s QSFP28/QSFP+ Ethernet PCI Express Network Interface Card; RoHS-compliant
Port Configuration	1× 50GbE, 1× 40GbE, 1× 25GbE, 1× 10GbE, 1× 1GbE
Power	9.9 watts
Airflow Requirements	TBD
Weight	78 grams
Dimensions (in.)	PCIe NIC Form Factor
Warranty	3 years

Figure 4: P150p



Product Features

- Quad-port media interface
- SFP28/SFP+ optical transceiver or copper direct-attach cable
- BroadSAFE® technology
- Multi-host support: Dual-host x8 mode
- x16 PCI Express 4.0 compliant
- SR-IOV with up to 1k virtual functions (VFs)
- Function-Level Reset (FLR) support
- TruFlow™ flow processing engine
- Virtual Network Termination: VXLAN, NVGRE, Geneve, GRE encap/decap
- vSwitch Acceleration
- Tunnel-aware stateless offloads
- RDMA over Converged Ethernet (RoCE)
- Advanced congestion avoidance
- Multiqueue, NetQueue, and VMQ
- IPv4 and IPv6 offloads
- Large send offload (LSO)
- Large receive offload (LRO)
- TCP segmentation offload (TSO)

P425G

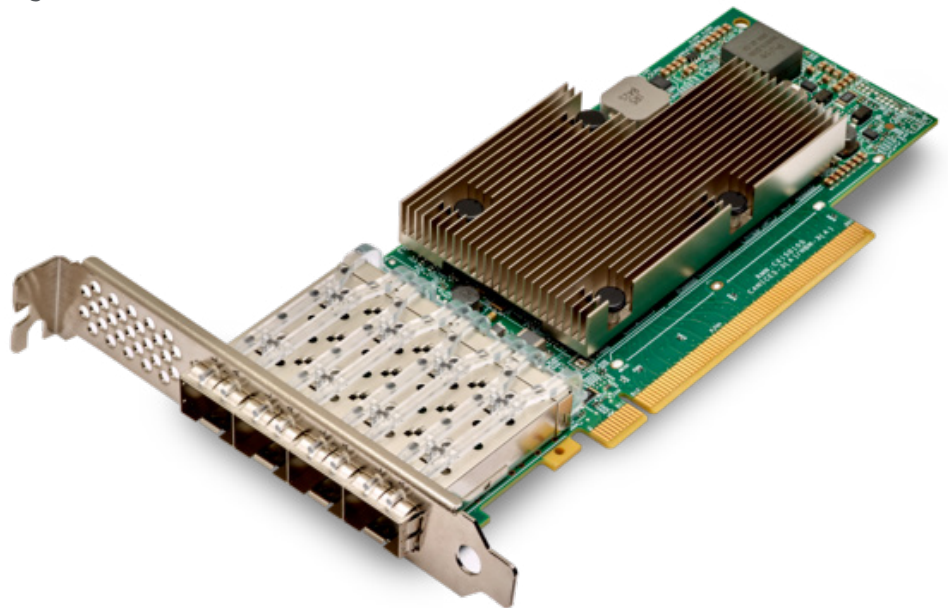
Quad-Port 25 Gb/s SFP28 Ethernet PCI Express 4.0 x16 Network Interface Card

The Broadcom BCM957504-P425G is a quad-port 25 Gb/s PCI Express 4.0 x16 network interface card that supports SFP28/SFP+ optical modules and copper direct-attach cables. The card uses the Broadcom BCM57504 100GbE MAC controller with an integrated quad-channel 25GbE SFI transceiver.

P425G Information

Attribute	Details
Ordering Part No.	BCM957504-P425G
Product Description	Quad-Port 25 Gb/s SFP28 Ethernet PCI Express 4.0 x16 Network Interface Card, Halogen-Free
Port Configuration	4× 25GbE, 4× 10GbE
Power	16.9 watts (typical)
Airflow Requirements	225 LFM at 55°C
Weight	160 grams
Dimensions (in.)	PCIe NIC Form factor
Warranty	3 years

Figure 5: P425G



Product Features

- Dual-port media interface
- 25GbE or 10GbE SFP28/SFP+ optical transceiver or with copper direct-attach cable
- x8 PCI Express v3.0 compliant
- SR-IOV with up to 128 VFs
- Function Level Reset (FLR) support
- TruFlow™ flow processing engine
- Virtual Network Termination: VXLAN, NVGRE, Geneve, GRE encap/decap
- vSwitch acceleration
- Tunnel-aware stateless offloads
- RDMA over converged Ethernet (RoCE)
- Advanced Congestion Avoidance
- Multiqueue, NetQueue, and VMQ
- IPv4 and IPv6 offloads
- Large Send Offload (LSO)
- Large Receive Offload (LRO)
- TCP Segmentation Offload (TSO)
- Conforms to the PCI Express Card Electromechanical Specification Rev. 3.0

P225p

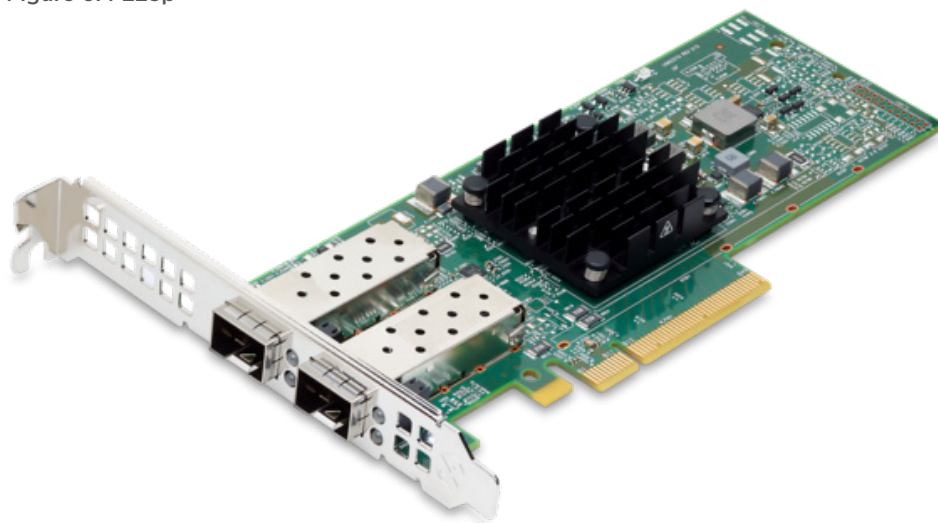
Dual-Port 25 Gb/s or 10 Gb/s Ethernet PCI Express 3.0 x8 Network Interface Card

The Broadcom® BCM957414A4142CC is a dual-port 25 Gb/s or 10 Gb/s, PCI-Express 3.0 x8 Network Interface Card that supports both SFP28/SFP+ optical modules and copper-direct attach cable. The card uses the Broadcom BCM57414 25GbE MAC controller with the integrated dual-channel 25GbE SFI transceiver.

P225p Information

Attribute	Details
Ordering Part No.	BCM957414A4142CC
Product Description	Dual-Port 25 Gb/s or 10 Gb/s SFP28 Ethernet PCI Express Network Interface Card; RoHS-compliant
Port Configuration	2× 25GbE, 2× 10GbE, 2× 1GbE
Power	9.9 watts (typical)
Airflow Requirements	100 LFM at 55°C
Weight	75 grams
Dimensions (in.)	PCIe NIC Form Factor
Warranty	3 years

Figure 6: P225p



Product Features

- Standards-compliant 10 Gb/s Quad-port PCIe x16 NIC with line-rate, full-duplex throughput
- 16-lane PCI Express host interface designed to operate to the PCI Express v3.0 specifications
- SR-IOV with up to 1K virtual functions (VFs)
- TruFlow™ flow processing engine
- Advanced Congestion Avoidance
- Multiqueue, NetQueue, and VMQ
- IPv4 and IPv6 offloads
- Large Send Offload (LSO)
- Large Receive Offload (LRO)
- TCP Segmentation Offload (TSO)
- Conforms to the PCI Express Card Electromechanical Specification Rev. 3.0

P410SG

Quad-Port 10 Gb/s Ethernet PCI Express 3.0 x16 Network Interface Card

The Broadcom® BCM957454-P410SG is a quad-port 10 Gb/s Network Interface Card designed with four SFP+ network ports. Based on Broadcom's scalable 10/25/50/100G Ethernet controller architecture, the BCM957454-P410SG network interface card 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.

P410SG Information

Attribute	Details
Ordering Part No.	BCM957454-P410SG
Product Description	Quad-Port 10 Gb/s SFP+ Ethernet x16 PCI Express Network Interface Card; RoHS-compliant
Port Configuration	4× 10GbE, 4× 1GbE
Power	TBD
Airflow Requirements	TBD
Weight	TBD
Dimensions (in.)	PCIe NIC Form factor
Warranty	3 years

Figure 7: P410SG



Product Features

- Standards-compliant 10GBASE-T quad-port PCIe NIC with line-rate, full-duplex throughput
 - 10GBASE-T IEEE 802.3an
 - 1000BASE-T IEEE 802.3ab
 - EEE on 10GBASE-T and 1000BASE-T
 - Auto-negotiation with link partner
 - IEEE fast retrain and link monitoring
- 8-lane PCI Express host interface designed to operate to the PCI Express v3.0 specifications
- SR-IOV with up to 1K virtual functions (VFs)
- Function-Level Reset (FLR) support
- TruFlow™ flow processing engine
- Virtual Network Termination: VXLAN, NVGRE, Geneve, GRE encap/decap
- vSwitch acceleration
- Tunnel-aware stateless offloads
- TruManage™ integrated BMC
- Advanced Congestion Avoidance
- Multiqueue, NetQueue, and VMQ
- IPv4 and IPv6 offloads
- Large Send Offload (LSO)
- Large Receive Offload (LRO)
- TCP Segmentation Offload (TSO)
- Conforms to the PCI Express Card Electromechanical Specification Rev. 3.0

P410SGBT

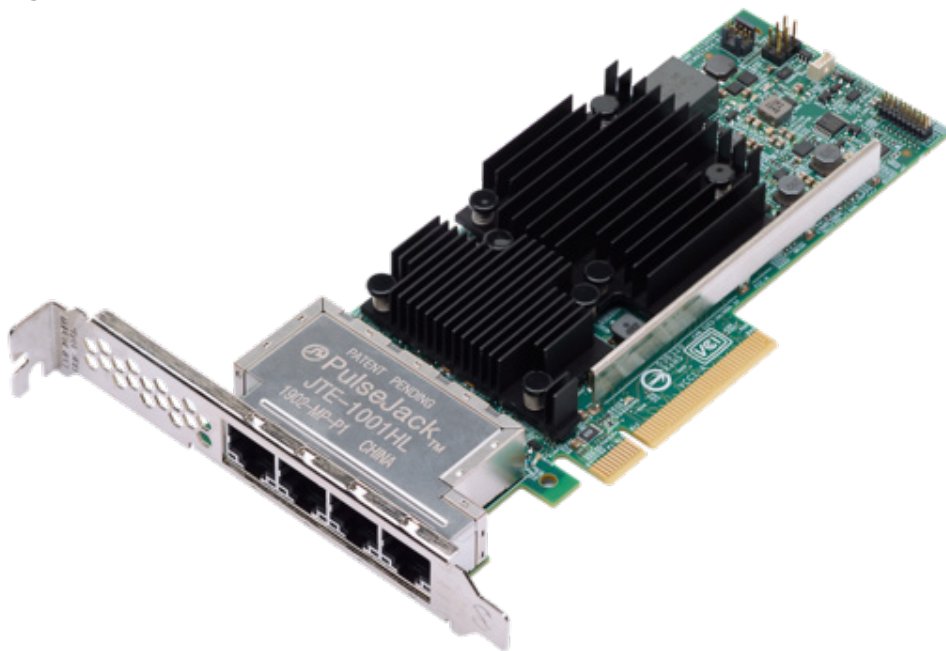
Quad-Port 10GBASE-T Ethernet PCI Express 3.0 x8 NIC

The Broadcom® BCM957454-P410SGBT is a quad-port 10 Gb/s PCI Express 3.0 x8 Network adapter designed with four 10GBASE-T network connectors. The adapter supports 10GBASE-T and 1000BASE-T Ethernet on Category 6, 6A, or 7 twisted-pair cables. The 1000BASE-T can operate on standard Category 5e UTP. The card uses the Broadcom BCM57454 controller and BCM84894 PHY.

P410SGBT Information

Attribute	Details
Ordering Part No.	BCM957454-P410SGBT
Product Description	Quad-port 10GBASE-T Ethernet x8 PCI Express Network interface Card; RoHS-compliant
Port Configuration	4× 10GBASE-T, 4× 1GBASE-T
Power	TBD
Airflow Requirements	TBD
Weight	TBD
Dimensions (in.)	PCIe NIC Form Factor
Warranty	3 years

Figure 8: P410SGBT



Product Features

- Dual-port media interface
- 10G SFP+ optical transceiver or with copper direct-attach cable
- x8 PCI Express v3.0 compliant
- SR-IOV with up to 128 VFs
- TruFlow™ flow processing engine
- Virtual Network Termination: VXLAN, NVGRE, GRE encap/decap
- vSwitch acceleration
- Tunnel-aware stateless offloads
- RDMA over converged Ethernet (RoCE)
- Advanced Congestion Avoidance
- Multiqueue, NetQueue, and VMQ
- IPv4 and IPv6 offloads
- Large Send Offload (LSO)
- Large Receive Offload (LRO)
- TCP Segmentation Offload (TSO)
- Conforms to the PCI Express Card Electromechanical Specification Rev. 3.0

P210p

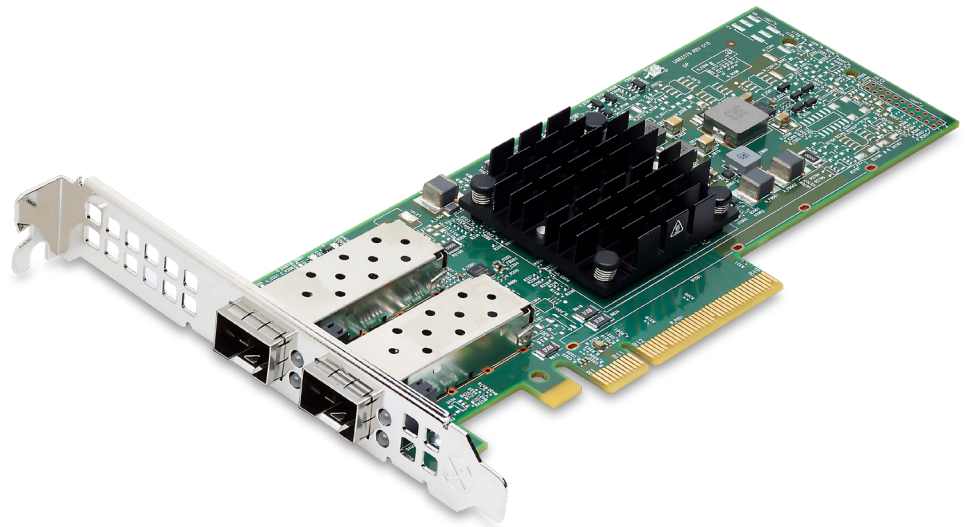
Dual-Port 10 Gb/s Ethernet PCI Express 3.0 x8 Network Interface Card

The Broadcom® BCM957412A4120AC is a dual-port 10 Gb/s, PCI-Express 3.0 x8 Network Interface Card that supports both SFP+ optical modules and copper direct-attach cable. The card uses the Broadcom BCM57412 10GbE MAC controller with the integrated dual-channel 10GbE SFI transceiver.

P210p Information

Attribute	Details
Ordering Part No.	BCM957412A4120AC
Product Description	Dual-Port 10 Gb/s SFP+ Ethernet PCI Express Network Interface Card; Halogen-Free
Port Configuration	2× 10GbE, 2× 1GbE
Power	9.1 watts (typical)
Airflow Requirements	100 LFM at 55°C
Weight	75 grams
Dimensions (in.)	PCIe NIC Form Factor
Warranty	3 years

Figure 9: P210p



Product Features

- Dual-port 10-Gigabit Ethernet
- x8 PCI Express v3.0 compliant
- SR-IOV with up to 128 VFs
- TruFlow™ flow processing engine
- Virtual Network Termination: VXLAN, NVGRE, Geneve, GRE encap/decap
- vSwitch acceleration
- Tunnel-aware stateless offloads
- RDMA over Converged Ethernet (RoCE)
- Advanced Congestion Avoidance
- Multiqueue, NetQueue, and VMQ
- IPv4 and IPv6 offloads
- Large Send Offload (LSO)
- Large Receive Offload (LRO)
- TCP Segmentation Offload (TSO)
- Conforms to the PCI Express Card Electromechanical Specification Rev. 3.0

P210TP

Dual-Port 10GBASE-T Ethernet PCI Express 3.0 x8 Network Interface Card

The Broadcom® BCM957416A4160C is a dual-port 10GBASE-T, PCI-Express 3.0 x8 Network Interface Card that supports a dual-port 10GBASE-T media interface that is fully compliant with the IEEE 802.3an standard. The card uses the Broadcom BCM57416 Ethernet controller with the integrated dual-channel 10GBASE-T transceiver.

P210TP Information

Attribute	Details
Ordering Part No.	BCM957416A4160C
Product Description	Dual-Port 10GBASE-T Ethernet PCI Express Network Interface Card; RoHS compliant
Port Configuration	2× 10GBASE-T, 2× 1GBASE-T
Power	16.1 watts (typical)
Airflow Requirements	100 LFM at 55°C
Weight	75 grams
Dimensions (in.)	PCIe NIC Form Factor
Warranty	3 years

Figure 10: P210TP

