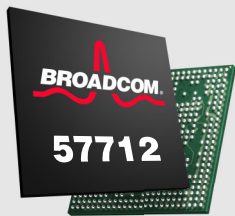


# Broadcom® NetXtreme II® BCM57712 10 GbE SFP+ PCIe™ Adapter with TOE, iSCSI, and FCoE

Connecting everything®



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## Highlights

- No-compromise multiprotocol support with simultaneous networking and storage traffic over a single 10 GbE connection.
- Provides a turnkey dual-port adapter solution, offering flexibility for optical and copper (twinax) cabling.
- Provides a dependable, performance-focused solution that can be optimized for high throughput and high I/O per second, with low CPU utilization.
- Optimizes performance with high throughput and lowest latency and CPU utilization.
- Designed and jointly tested to support Cisco Adapter Fabric Extender (Adapter FEX) technology.

## DUAL-PORT 10G SFP+ CONVERGED NIC WITH TOE, ISCSI, AND FCOE FOR CISCO® UCS C-SERIES

### Overview

The Broadcom® NetXtreme II® BCM57712 dual-port SFP+ Adapter with TCP/IP Offload Engine (TOE), iSCSI and FCoE offload features a robust, standards-based SFP+ adapter in a low-profile PCI Express® form factor, combining advanced, multiprotocol offload technologies with standard Ethernet functionality. It enables affordable 10 Gigabit Ethernet (10 GbE) network performance with optical or direct-attach cable (DAC) connectivity with copper (twinax).

The BCM957712 adapter is based on Broadcom's complete suite of 10 GbE ASICs, featuring Broadcom's latest-generation, industry-leading dual-port MAC coupled with Broadcom's dual-port transceiver, Broadcom's field-proven driver stack for mainstream operating systems, and Broadcom Advanced Control Suite (BACS) for comprehensive, unified device management.

Increased demand for network and storage connectivity performance is driven by the growth of server virtualization coupled with data storage. The Broadcom family of 10 GbE adapters empowers network and data-intensive applications such as convergence, digital, and social media content, as well as cloud computing to achieve the desired levels of performance and consolidation.



### Features

- SFP+ connectors — can support either Optical or Copper (twinax) configurations
- PCI Express x8 2.0, 5GT/s host interface
- TCP/IP Offload Engine
  - Microsoft® Chimney-compliant
- iSCSI HBA and iSCSI boot support
- Data Center Bridging
  - Data Center Bridging Exchange (DCBX)
  - Priority-based Flow Control (PFC)
  - Enhanced Transmission Selection (ETS)
- FCoE HBA offload and FCoE boot from SAN
  - FCoE initialization Protocol (FIP)
  - N\_Port ID Virtualization (NPIV)
- Ethernet features:
  - Jumbo frame support (9600 bytes)
  - Flow-control support (IEEE 802.3x)
  - Stateful offload (TOE)
  - TCP/UDP stateless offloads for IPv4 and IPv6
  - RX/TX multiqueue
  - VMware® NetQueue™ and Microsoft® VMQ
  - Message Signal interrupts (MSI, MSI-X) support
  - VLAN support
- Management:
  - BACS GUI and CLI
  - WMI and Broadcom Management API
- Preboot execution environment (PXE) 2.0
- Teaming with Smart Load Balancing (SLB) and failover support
- PCI-SIG SR-IOV-ready
- Cisco Adapter FEX-ready

57712	
Service Provider	●
Data Centers	●
Enterprise	●

● Best Choice

## Benefits

Benefits include the following:

- **High performance:** Provides the highest performance levels for mission-critical enterprise and mega data centers.
  - Full-duplex line rate across both ports
  - Over 1.0 million IOPS for iSCSI
  - Over 1.7 million IOPS for FCoE
- **No-compromise converged NIC:** Broadcom leverages field-proven support for L2 networking, TOE, iSCSI HBA, and FCoE HBA.
- **Low CPU utilization:** Broadcom offload architecture minimizes the CPU overhead, eliminating competition with the host application for host resources and freeing valuable CPU cycles for processing user applications:
  - iSCSI and FCoE operation is offloaded and accelerated for block storage, with high I/O per second and high bandwidth.
  - RSS is used to avoid bottlenecks by distributing network processing across multiple CPUs.
  - Adaptive interrupt coalescing streamlines interrupt processing.
  - MSI/MSI-X allows interrupt distribution in multi-CPU systems.
- **Field-proven software:** The Broadcom NetXtreme II BCM57712 Adapter leverages field-proven networking and storage software stacks for networking and storage. Broadcom's software suite supports the advanced Ethernet features in virtualization, load balancing, failover, and performance.
- **Unified network and storage management:** The BACS management application provides a single, centralized management platform for both network and storage I/O management.



## Specifications

### General

- Form Factor: PCIe™ short, low-profile card
  - 167.64 mm x 68.91 mm (6.6" x 2.71")
  - optional standard height bracket
- Connector: two SFP+
- Cabling: optical, copper (twinax)
- Supported servers: Cisco UCS C-series

### OS Support

- Windows Server® 2008, 2008 R2
- VMware® ESX 4.0 and 4.1
- Red Hat® Enterprise Linux® Server, 5.5, 6.0
- Novell® SUSE® Linux Enterprise Server, SLES 11 U1

### Environmental Requirements

- Operating temperature: 0° to 55°C (32° to 131°F)
- Storage temperature: –40° to +70°C (–40° to +158°F)
- Relative humidity: 5% to 95% noncondensing

### Hardware Certifications

- FCC Class A, UL, CE, VCCI, BSMI, CTICK, KCC
- RoHS, EU RoHS (Directive 2002/95/EC), China RoHS

### Advanced Features and Standards

- PCI Express base specification 2.0
- PCI Bus Power Management Interface, rev. 1.2
- Advanced Error Reporting (AER)
- PCI hot plug/hot swap
- IEEE 802.3ae
- IEEE 802.3ad (Link Aggregation)
- IEEE 802.3x (Flow Control)
- IEEE 802.1q (Virtual LANs)
- IEEE 802.1ab (Link Level Discovery Protocol)

### Data Center Bridging (DCB)

- IEEE 802.1Qbb—Priority-based Flow Control
- IEEE 802.1Qaz—Enhanced Transmission Selection and Data Center Bridging Exchange (DCBX)
- IEEE 802.1Qau ready—Congestion notification

## Ordering Information

Cisco 10 GbE BCM57712 Network Adapter

## Part Number

BCM957712A1213G\_C

Cisco has tested and certified the Broadcom NetXtreme II BCM57712 SFP+ 10 GbE PCIe Adapter with TOE, iSCSI, and FCoE offload. Cisco specifically disclaims knowledge of the accuracy, completeness, or substantiation for all statements and claims made in this document regarding the properties, capabilities, speeds, or qualifications of the adapter.

## About Broadcom

Broadcom Corporation is a major technology innovator and global leader in semiconductors for wired and wireless communications. Broadcom® products enable the delivery of voice, video, data and multimedia to and throughout the home, the office and the mobile environment. We provide the industry's broadest portfolio of state-of-the-art system-on-a-chip and software solutions to manufacturers of computing and networking equipment, digital entertainment and broadband access

products, and mobile devices.

These solutions support our core mission: Connecting everything®.

Broadcom, one of the world's largest fabless communications semiconductor companies, with 2010 revenue of \$6.82 billion, holds more than 4,800 U.S. and 2,000 foreign patents, and has more than 7,800 additional pending patent applications, and one of the broadest intellectual property portfolios addressing both wired and wireless transmission of voice, video, data, and multimedia.

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