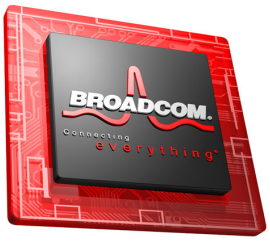
BROADCOM®
Connecting everything®

BCM56511 PRODUCT Brief



FOUR-PORT 10-GBE/HIGIG+™ MULTILAYER SWITCH

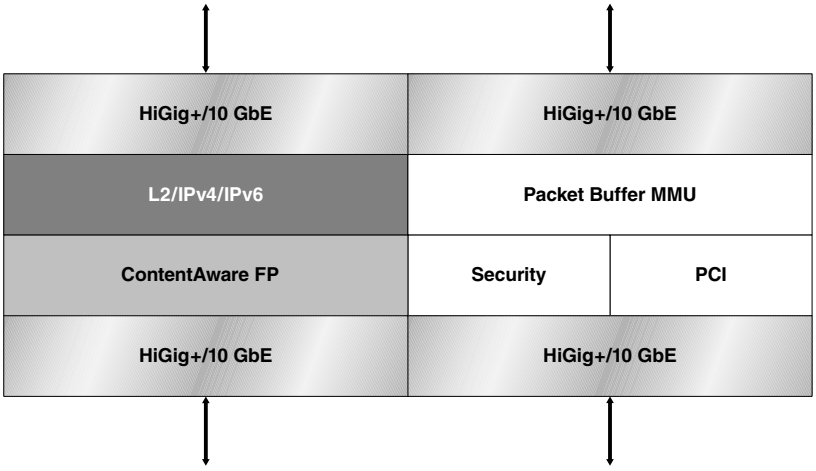
FEATURES

- Fifth generation of StrataSwitch® and StrataXGS® product line
- Four 12-Gbps or 10-Gbps HiGig+ port uplink interfaces
- The BCM56511 device, is a powerful, highly-integrated member of the scalable StrataXGS III product family.
- 2.5 Gbps, 3 Gbps, 10 Gbps, or 12 Gbps HiGig+ stacking ports
- Four 10-GbE switching ports with CX4 support
- Line-rate switching for all packet sizes and conditions
- On-chip data packet memory and table memory
- IPv6 routing and tunneling
- Advanced ContentAware™ classification Filtering Processors (FP)
- Advanced security features in hardware
- Port-trunking and mirroring supported across stack
- Advanced packet flow control:
  - Head-of-line blocking prevention
  - Back pressure support
- Eight QoS queues per port with hierarchical minimum/maximum shaping per Classes of Service (CoS) per queue per port
- Standard compliant 802.1ad provider bridging
- Compatible with BCM5708S, the industry's first 2.5-Gbps SerDes-based ToE solution.

SUMMARY OF BENEFITS

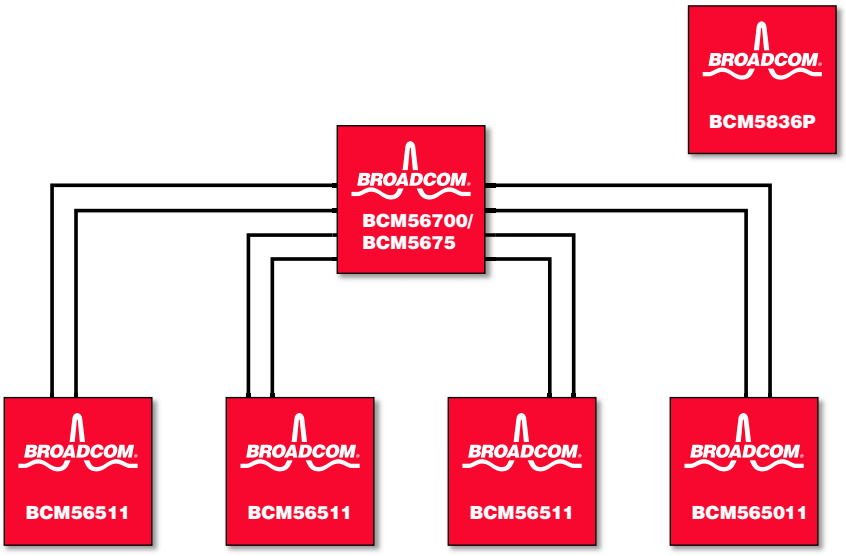
- Highly scalable BroadScale™ architecture evolved from five generations of switching experience provides rich features, scalability, and future proof solutions.
- Optimized for secure switching and convergence of wired and wireless applications and services in networks
- Virtual chassis support with industry-leading high performance and feature rich stacking capabilities
- System vendors can build scalable high-performance, high-port density GbE LAN switches in several form factors.
- Multiple CoS and low latency enable the support of VoIP and triple play services.
- Built-in high-speed serial interfaces with Broadcom-unique SerDes technology ease and accelerate system design while reducing cost and conserving board space.
- Broadcom switch API compatibility enables software reuse and faster time-to-market.
- Small package and low power enables cost-effective and high-performance system design.

Four-Port 10-GbE/HiGig+ Multilayer Switch



BROADCOM®

OVERVIEW



8 x 10 GbE Standalone Switch

The BCM56511 is the fifth generation of the highly-integrated and cost-effective StrataSwitch and StrataXGS product line. The BCM56511 is a single-chip solution with four 10-GbE/HiGig+ uplink ports.

The uplink ports can operate in two modes: 10-GbE switching mode and HiGig+ uplink mode. The integrated 10-GbE switching ports are CX-4 compliant XAUI™ interfaces. The HiGig+ uplink interface is used to connect to other StrataXGS devices in a larger stacking system or to the BCM56700/BCM5675 switch fabric via a backplane in a multi-slot redundant chassis system.

With high integration and high-port density, the BCM56511 family is ideal for Enterprise applications in standalone, stackable, and chassis configurations applicable in the edge, aggregation, and core areas of the Enterprise. The BCM56511 is also ideal for embedded switch applications like Blade Server Switch, ATCA chassis, IPDSLAM, 3G Wireless Base Station, and others.

The BCM56511 integrates sophisticated advanced L3 switching features for cost-effective highly manageable enterprise networks. The BCM56511 performs IPv6 routing and transition services in hardware, allowing IT managers to deploy L3 switches that are future-proof, highly manageable L3 networks to enable cost-effective transition from IPv4 to IPv6.

The ContentAware classification feature of the StrataSwitch and StrataXGS has been further enhanced in the BCM56511 with unmatched flexibility and programmability. The ContentAware engine can be used for applications such as policy-based routing, access control list, and dynamic adaptation to changes in virus threats. The BCM56511 has dedicated ContentAware classification processors to provide both classification and filtering.

The BCM56511 has built-in security functions for highly-secure Enterprise networks including BroadShield™. Utilizing hardware-based identity management and authentication coupled with key management software that directs and manages clients, BroadShield Security provides exceptionally strong network security without impacting network performance.

The BCM56511 integrates sophisticated metering, statistics, and traffic management features, optimizing the QoS in the Enterprise networks for voice, video, and data convergence. The BCM56511 also provides rate-adjustable, hardware-based sFlow implementation and flexible multiple-session remote port-mirroring functionality for efficient network management.

The BCM56511 switch supports an I^2C controller for communicating with external devices such as serial EEPROM, flash PROM memories, and parallel port devices. The BCM56511 also supports a serial interface for the MII management of physical layer devices.

The BCM56511 switch interfaces to a host CPU via a 32-bit PCI bus running at up to 66 MHz. Bus mastering and advanced DMA is supported for efficient exchange of packet data between CPU memory and the BCM56511 switch.

Broadcom®, the pulse logo, **Connecting everything**®, StrataSwitch®, StrataXGS®, ContentAware™, BroadScale™, HiGig+ ™, and BroadSAFE™ are trademarks of Broadcom Corporation and/or its affiliates in the United States, certain other countries and/or the EU. Any other trademarks or trade names mentioned are the property of their respective owners.

Connecting everything®

BROADCOM CORPORATION
16215 Alton Parkway, P.O. Box 57013
Irvine, California 92619-7013

© 2006 by BROADCOM CORPORATION. All rights reserved.

56511-PB00-R 06/13/06

Phone: 949-450-8700
Fax: 949-450-8710
E-mail: info@broadcom.com
Web: www.broadcom.com