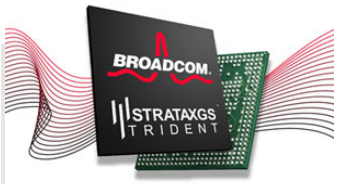
HIGH-CAPACITY STRATAXGS® TRIDENT II 104X 10G/32X 40G ETHERNET MULTILAYER SWITCH FAMILY FEATURING WARPCORE™ SERDES INTERFACES



Highlights

- World's first single chip to deliver more than one hundred 10GbE ports.
- Integrated SmartSwitch technologies deliver unprecedented innovation for cloud-scale networking.
- SmartNV: Infrastructure virtualization using advanced Layer 2 over Layer 3 (L2oL3) network overlay technologies such as VxLAN and NVGRE.
- SmartBuffer: Ensures dynamic memory allocation and optimal performance levels.
- SmartHash: Eliminates polarization and load imbalances in fat-tree networks possessing heavy and diverse traffic patterns.
- SmartTables: Delivers highest Layer 2 and Layer 3 forwarding scale with network topology-based profiling for maximum deployment flexibility.
- Standards-based TRILL and SPB support for Layer-2 multipathing.
- Ultralow, pin-to-pin latency in Cut-Through and Store-and-Forward modes.

	BCM56850
Service Provider	◐
Data Centers	●
Enterprise	●

◐ Supported ● Best Choice

Overview

As server interfaces transition to higher Ethernet speeds, and as virtualization continues to increase link utilization, data center networks are demanding switches with dense 10GbE and 40GbE connectivity at the access and aggregation layers. With up to 128 integrated 10G SerDeses and full flexibility in configuring 10GbE/40GbE ports, the StrataXGS® Trident II switch series can be used to build highly scalable and feature-rich, top-of-rack (ToR) switches, blade switches, and aggregation equipment to enable cloud-scale networking.

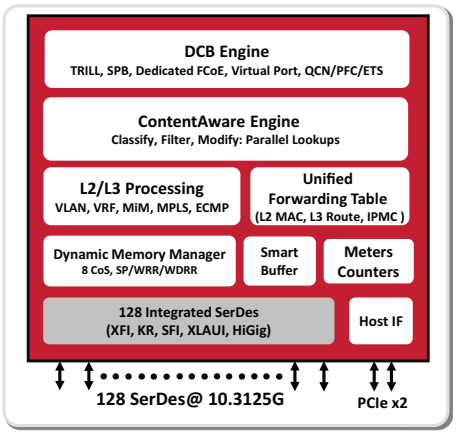
In addition, fabrics of BCM56850 devices can be interconnected via the HiGig2™ protocol to support multiterabit chassis designs for large-scale enterprise and service provider applications. The StrataXGS Trident II Integrated SmartSwitch has been designed to address performance, capacity, and service requirements for next-generation data centers, cloud computing applications, enterprise campus backbone equipment, and high-density fabrics for access and mobile core networks.

Summary of Benefits

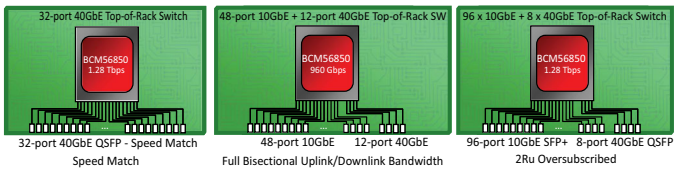
- Single-chip solution for common fixed top-of-rack (ToR) and line-card switching applications.
- Single design meets the needs of multiple markets including Enterprise, HPC, and cloud data centers as well as carrier-access applications.
- Enables spanning-tree-free and CLOS-style network topologies through TRILL, SPB, and ECMP.
- Enables unification of Fibre Channel, iSCSI, and compute traffic on a single Ethernet network.
- Virtual-machine-aware switching ensures seamless and secure interoperability with leading server and server virtualization vendors.
- Enables Green data centers through Energy Efficient Ethernet technologies.
- Fastest time-to-market and reduced development complexity due to simplified hardware designs; common software API with StrataXGS portfolio.
- Reduced latency operation with cut-through switching architecture and 10G SerDes integration.
- Enables the highest density backplane designs with integrated 10GBASE-KR SerDes.

Features

- 128 Serial 10G ports, based on Broadcom's Warpcore™ SerDes technology, for maximum port density per RU.
- Standards-compliant 10GbE/40GbE switch with support for up to 32 ports of 40GbE or up to 104 logical ports of 1GbE.



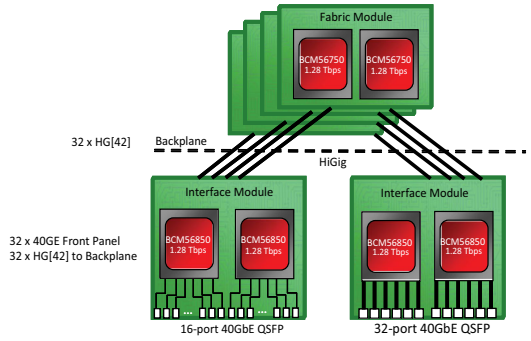
Fixed/Top-of-Rack Switches



Solution Characteristics

- Single-chip design
- Lowest power/highest density
- Line rate and oversubscribed configurations for power/performance tradeoff
- FCoE support on all ports
- No external PHY needed for 10GbE or 40GbE

Modular Chassis



Solution Characteristics

- Line rate and oversubscribed configurations for power/performance tradeoff
- Lowest power/highest density 40GbE solution available
- FCoE support on all ports
- Support for 40GbE flows

Deployment Scenarios

Features (Cont.)

- Power-efficient, fully integrated switching architecture.
- Low pin-to-pin latency in Cut-Through and Store-and-Forward Modes.
- Full IPv4 and IPv6 unicast and multicast routing support.
- Smart-NV technology featuring support for VMware VxLAN, Microsoft NVGRE overlays, 802.1Qbg Edge Virtual Bridging, 802.1BR Bridge Port extension, and per-virtual machine traffic shaping.
- SmartTable technology to maximize L2 and L3 forwarding database capacities for maximum deployment flexibility.
- Advanced SmartHash engine for optimal and resilient load distribution across HiGig™, LAG, and ECMP trunk groups.
- Integrated SmartBuffer supporting lossless performance guarantees and high-burst absorption using innovative traffic load awareness and dynamic allocation schemes.
- ContentAware™ Engine for scalable, high-density ingress and egress packet classification.
- Data Center Bridging support: PFC, QCN, ETS.
- Dedicated FCoE forwarding engine enabling FC-BB-5 and FC-BB-6 deployment models.
- Tagged and tagless virtual machine switching support for leading server and server virtualization switching vendors.
- Hardware-based tunneling services including MPLS, VPLS, ISATAP, MAC-in-MAC, TRILL, SPB, and Q-in-Q.
- Energy Efficient Ethernet support including customizable, low-power idle (LPI) control policies.
- Per-port configurable oversubscription to reduce peak power.
- Integrated 1588v2 processor for Precision Time Protocol and IEEE 802.1AS for Timing and Synchronization.

Ordering Information

	I/O BW	Part Number
104 x 10GbE/32 x 40GbE	1280G	BCM56850A0KFSBG
104 x 10GbE/32 x 40GbE	1280G	BCM56851A0IFSBG
96x 10GbE/24 x 40GbE	960G	BCM56852A0KFSBG
72 x 10GbE/18 x 40GbE	720G	BCM56854A0IFSBG

About Broadcom

Broadcom Corporation (NASDAQ: BRCM), a FORTUNE 500® company, is a global leader and innovator in semiconductor solutions for wired and wireless communications. Broadcom® products seamlessly deliver voice, video, data, and multimedia connectivity in the home, office, and mobile environments. With the industry's broadest portfolio of state-of-the-art system-on-a-chip and embedded software solutions, Broadcom is changing the world by Connecting everything®. For more information, go to www.broadcom.com.

BROADCOM
Connecting everything®

Broadcom, the pulse logo, Connecting everything, and the Connecting everything logo, BroadSync™, ContentAware™, HiGig™, HiGig2™, StrataXGS®, and Warpcore™ are among the 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.

July 3, 2013 • 56850-PB03-R