

8-Port GbE + 4-Port GbE Highly Integrated Multilayer Switch SoC

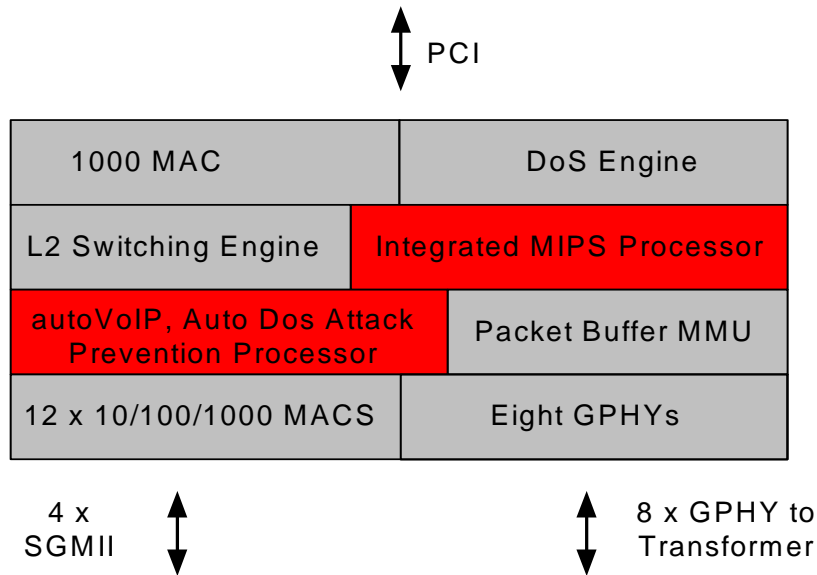
FEATURES

- Highest silicon integration level achieved for a 12-port, 10/100/1000 Mbps Ethernet switch device
- Integrated 8-Gigabit PHY (GPHY)
- Four optional 1-GbE uplink ports
- Integrated MACs (IEEE 802.x compliant) with support for 9600-byte jumbo frames
- Four integrated SGMII interfaces
- Non-blocking Gigabit Ethernet fully integrated switch fabric with 4-Mbit packet buffer memory. Option to share PCB with 24G platform.
- Integrated high-performance MIPS® processor for WebSmart™ applications
- Packet classification using four IEEE 802.1p quality of service (QoS) or DiffServ/ToS priority queues
- Supports autoVoIP and auto DoS attack prevention
- Supports 4K IEEE 802.1Q VLAN
- Supports up to 8K unicast MAC addresses
- Supports MAC-based port aggregation (trunking)
- Supports power-up cable diagnostics
- Full- (IEEE 802.3x) and half-duplex flow control
- Supports automatic address learning and aging
- Supports spanning tree and rapid spanning tree
- Supports IEEE 802.1x MAC security
- Port-based rate control with 1 Mbps granularity
- Low-power 65 nm CMOS core
- 676 PBGA package

SUMMARY OF BENEFITS

- Switch-on-a-Chip (SoC) optimized for the value driven small and medium-size business (SMB) market
- Bill of material (BOM) optimized with integrated CPU and integrated eight GPHY
- Wirespeed performance
- Four flexible class of service (CoS) queues per port assure the lowest latency to high-priority traffic. This supports a wide variety of delay-sensitive video and audio multicast applications.
- IEEE 802.3ad link aggregation increases effective bandwidth and provides link redundancy.
- Storm and bandwidth/rate control provide improved traffic profile management.
- Supports BroadSync™ HD
- Supports essential features for access applications
- Includes advanced security and ease-of-use features such as auto DoS and autoVoIP
- Option to share the same PCB between smart and un-managed platform
- Option to share the same PCB between 8G, 16G, and 24G platforms
- Supports automatic cable diagnostic during power-up cycle

OVERVIEW



BCM53312S Multilayer Switch

The BCM53312S is a complete L2 SoC solution for easy and rapid development of gigabit switching applications. The BCM53312S integrates 12 10/100/1000 wire speed switching processors. From a GPHY interface perspective, it integrates eight GPHYs and four SGMII SerDes cores. From a host interface perspective, it can use either embedded MIPS processors or a PCI interface for external processor connections.

The BCM53312S is a highly integrated solution ideally suited for stand-alone gigabit Ethernet switches. It combines all the functions of a high-speed switch system, including packet buffers, SerDes, media access controllers, address management, a non-blocking switch fabric, and an integrated high-performance CPU into a single 65 nm CMOS device. The BCM53312S supports auto DoS attack prevention and SNMP, IEEE 802.1x, Spanning Tree, and Rapid Spanning Tree protocols.

The BCM53312S switch:

- Integrates internal memory in the common buffer pool (CBP) for packet buffering.
- Integrates eight GPHYs to reduce PCB area.
- Embeds an autoVoIP engine to enhance user VoIP experience.
- Embeds an auto DoS prevention capability to enhance user security protection.

- Provides additional 4 x 1 GbE uplink ports.
- Supports a Broadcom serial control (BSC) controller for communicating with external devices such as serial EEPROM, flash PROM memories, and parallel port devices.
- Supports an integrated MIPS processor for management functions with a DDR memory controller, a CMIC for switch access, parallel flash interface for booting, two serial UART interfaces, and eight GPIO pins.
- Contains memory required to host L2 switching tables.
- Supports VLAN double tagging via Gigabit ports.
- Supports advanced QoS shaping for service provider networks.
- Integrates sophisticated metering, statistics, and traffic management features, optimizing the QoS for voice, video, and data convergence.

Ordering information:

- BCM53312S (8-port GbE + 4-port GbE highly integrated multilayer SoC) for smart applications.

For additional ordering information, contact your Broadcom sales representative.

Broadcom®, the pulse logo, Connecting everything®, the Connecting everything logo, and BroadSync™ HD 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.

Connecting
everything®



BROADCOM CORPORATION

5300 California Avenue
Irvine, California 92617

© 2009 by BROADCOM CORPORATION. All rights reserved.

53312S-PB01-R 04/01/09

Phone: 949-926-5000
Fax: 949-926-5203
E-mail: info@broadcom.com
Web: www.broadcom.com