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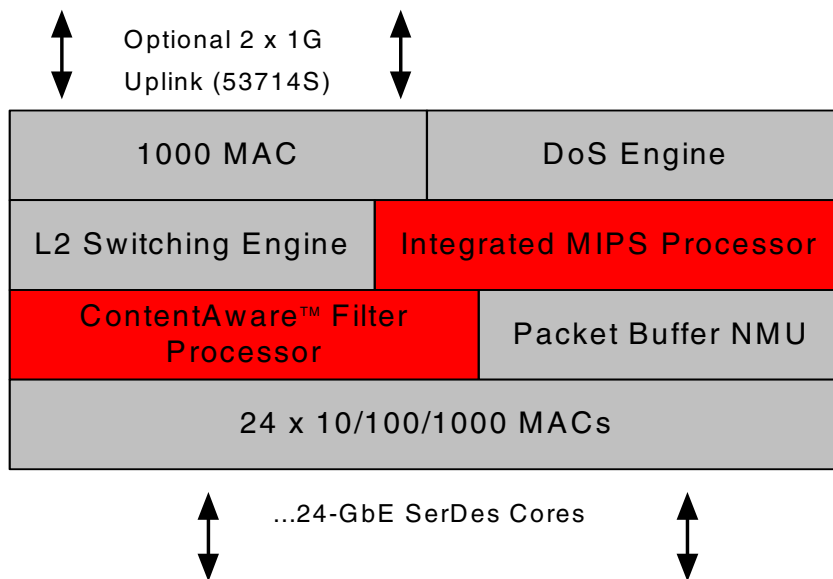
BCM53714/BCM53714S
PRODUCT Brief

24-Port GbE + Optional 2-Port GbE Highly Integrated Multilayer Switch SOC

FEATURES

- Highest silicon integration level achieved for a 24-port, 10/100/1000 Mbps Ethernet switch device

- Optional two 1-GbE Uplink ports (53714S)

- Tenth-generation switch-on-a-chip (SoC)

- Integrated MACs (IEEE 802.x compliant) with support for 9216-byte jumbo frames

- Integrated SGMII/SerDes interfaces

- Non-blocking Gigabit Ethernet fully integrated switch fabric with 4-Mbit packet buffer memory

- 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 4K IEEE 802.1Q VLAN

- Supports up to 8K unicast MAC addresses

- Supports MAC-based port aggregation (trunking)

- Supports access control list (ACL) host table

- 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 0.13 μm CMOS core

- Power dissipation—7W

- 1152-pin flip-chip ball grid array (FCBGA) package

SUMMARY OF BENEFITS

- Single-chip switch (SoC) optimized for the value driven small and medium-size business (SMB) market

- Bill of material (BOM) optimized with integrated CPU

- 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.

- Internet Protocol Version (IPv6) support provides future-proofing.

- Supports essential features for access applications

- Includes Broadcom's WebSuperSmart™ software, an advanced Web-based network management solution

- Includes advanced security and ease-of-use features such as auto-DoS, auto-VoIP, and auto-ACL

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24-Port Gigabit Ethernet Multilayer Switch

The BCM53714 series is a complete L2 SoC solution for easy and rapid development of Gigabit switching applications. The BCM53714 series uses a WebSuperSmart graphical user interface (GUI) for system configuration of supported features. The BCM53714 integrates 24 configurable 1-Gbps ports or 10-Mbps/100-Mbps Ethernet ports, with the BCM53714S adding support for two Gigabit uplink ports.

The BCM53714 series 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 integrated high-performance CPU into a single 0.13 μm CMOS device. The BCM53714 series supports auto-DoS attack prevention and SNMP, IEEE 802.1x, Spanning Tree, and Rapid Spanning Tree protocols.

The BCM53714 switch:
- Integrates internal memory in the common buffer pool (CBP) for packet buffering.
- Provides 24 full-duplex GbE ports that interface to external physical layer devices via the SerDes or SGMII interface. The GbE ports support both copper and fiber media.

- Provides additional 2 x 1-GbE uplink ports for BCM53714S.
- Supports a Broadcom serial control (BSC) controller for communicating with external devices such as serial EEPROM, flash PROM memories, and parallel port devices.
- Supports a serial interface for the MII management of physical layer 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:
- BCM53714 (24 GbE + integrated CPU)
- BCM53714S (24 GbE + 2 GbE Uplinks + integrated CPU)

For additional ordering information, contact your Broadcom sales representative.

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