



## MULTILAYER 12-PORT GIGABIT ETHERNET STACKABLE SWITCH

### FEATURES

- 12 10/100/1000-Mbps Ethernet ports with copper or fibre connectivity
- HiGig+™ stacking port that runs at 10-Gbps or 12-Gbps speeds
- Integrated high-performance SerDes with XAUI™ interface on the HiGig+ port and an SGMII interface on the Gigabit Ethernet (GbE) ports
- Scalable up to 128 BCM5695 devices in a single configuration
- All address tables and buffer memory fully integrated on-chip
- Support for port trunking and mirroring across stacked links
- Support for jumbo frames of up to 9 KB in size
- Advanced full-duplex end-to-end flow and congestion control with head-of-line blocking prevention
- ContentAware™ packet filtering and classification per-port
  - Wirespeed operation
  - Support for 802.1p, TOS/DiffServ, policing, shaping, marking, and remarking
  - Rate control of broadcast, unknown multicast and unicast packets
  - Eight queues per port
- Support for double 802.1q VLAN tagging and VLAN translation
- Hardware-based IP multicast routing and forwarding
  - Support for replication
- Equal and weighted cost multipath routing for load balancing
- Advanced diagnostic features including JTAG boundary scan and BIST functionality
- Low power consumption of 4.65W in a 480-pin PBGA package
- Pin-to-pin compatible with the BCM5690

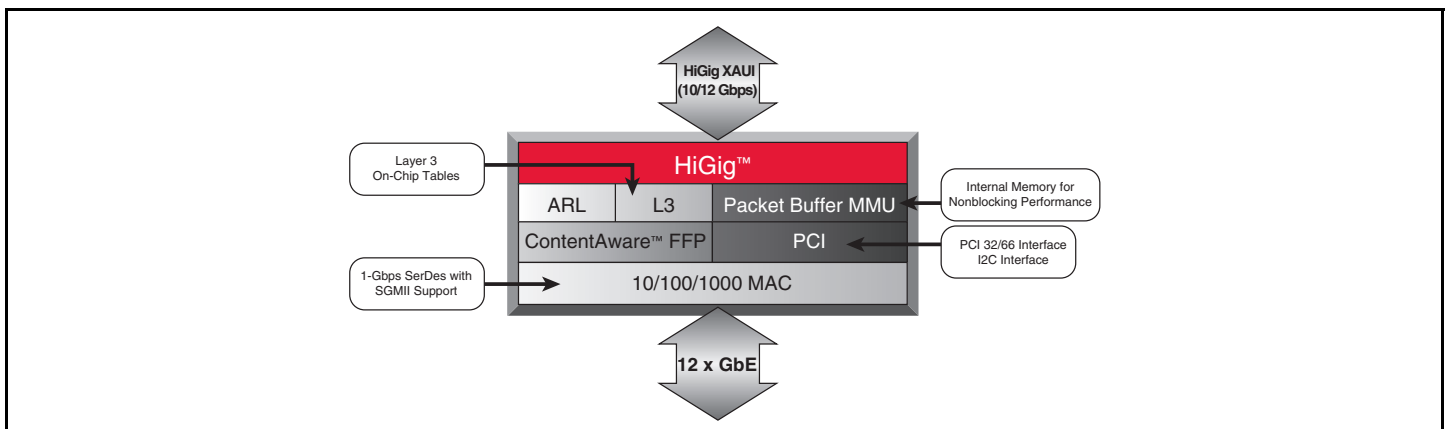
### SUMMARY OF BENEFITS

- Enables modular, scalable, and high-performance GbE switch designs using switch fabric
- Facilitates seamless integration of voice, video, and data traffic through low-latency and advanced QoS
- Enables lower system design cost and board space utilization through superior integration and compact form factor
- Offers quicker time-to-market and software reuse through backward compatibility with Broadcom switch software API

### TARGET APPLICATIONS

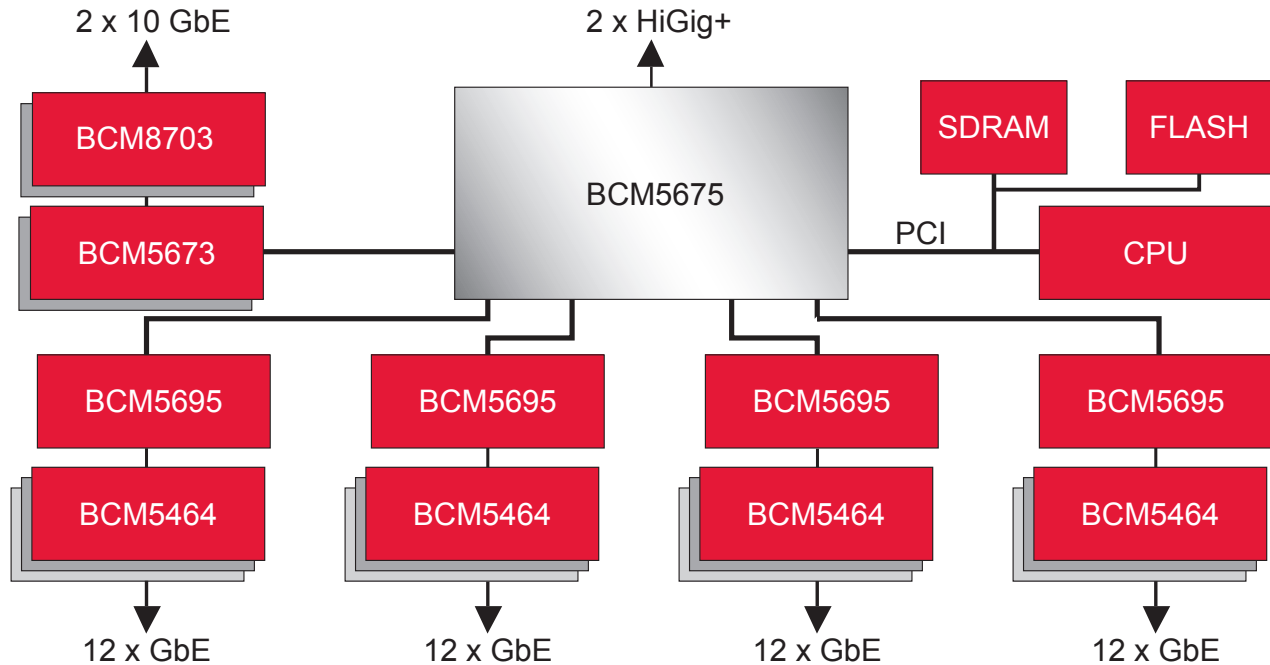
- Modular chassis-based Gigabit and 10-GbE switch solutions for the core of enterprise networks
- Scalable, stackable GbE switch solutions for distribution and wiring closet of enterprise networks
- High-performance standalone GbE switch solutions for enterprise wiring closets and remote branches
- Embedded GbE switch solutions for blade server applications within space-constrained data centers
- Highly reliable GbE switch solutions for telecom applications in central offices

### 12-port Multilayer Gigabit Ethernet Switch with HiGig+™ Stacking



# OVERVIEW

## Functional Design of BCM5695-Based 48-Port GbE Switch With 2 x 10 GbE Ports and Stacking



### General Description

The BCM5695 is an integral component of the highly modular, scalable switch architecture. Each port supports 10/100/1000-Mbps Ethernet with copper or fibre physical interfaces. The BCM5695 has a fully integrated SerDes with a XAUI interface on the HiGig™ port and an SGMII interface on the GbE ports. The flexibility and modularity of the BCM5695 switch architecture makes it suitable for a wide range of applications including stackable, fixed, chassis, blade server, and metro Ethernet switching.

### Scalability

Switches based on the BCM5695 offer world-class scalability, and performance, when used along with other StrataXGS™ family components. A BCM5695-based switch fabric can scale up to as many as 1,536-GbE ports or 128 10-GbE ports in the same configuration. A multistage switch fabric using the StrataXGS family can have a bandwidth capacity of up to 1.5 Tbits. The 12-Gbps HiGig+™ stacking port supports explicit priority, port trunking, and mirroring functions across the switching elements.

### Advanced QoS

The highly flexible ContentAware packet filtering and classification engine in the BCM5695 switch family provides a common application platform across the entire StrataXGS product line. It supports ToS/DiffServ, rate limiting, policing, shaping, marking, and remarking. These features enable cutting-edge voice and video applications based on the Internet Protocol.

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### Multi-Service Intelligence

Superior scalability, high availability, and performance enable network designers to meet the growing needs of mission-critical enterprise applications. Support of multi-service intelligence in the form of integrated security (IEEE 802.1x), wirespeed access control lists, policy-based rate limiting, IP Multicast replication, IPv6 awareness, and advanced Layer 3 functionality ensures robust network design.

New metro Ethernet features extend the security boundary beyond the enterprise networks into service provider networks with support for double VLAN tagging (IEEE 802.1Q) and VLAN translation.

### Superior Performance

The BCM5695 delivers wirespeed switching performance across all ports simultaneously. The effective bandwidth of each HiGig+ interface is 24 Gbps (12 Gbps, full-duplex). The BCM5695 also introduces very low switching latency, enabling very high-quality transmission of voice, video, and data traffic. The BCM5695 supports advanced packet flow control such as head-of-line blocking prevention and IEEE 802.3x-compatible full-duplex control.

### Additional Information

Production-ready reference design kits such as the BCM95695K24U and BCM95695R24S enable faster time-to-market for system vendors and come with extensive support documentation and software. Please contact your local sales representative for more information.



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