

SCALABLE 12-PORT GIGABIT ETHERNET MULTILAYER SWITCH

BCM5690 FEATURES

- **12 10/100/1000 Mbps Ethernet ports supporting both copper and fiber connections**
- **Integrated high-performance SerDes**
 - Single 10 Gbps XAUI HiGig expansion port
 - Gigabit Ethernet SerDes per port
 - 4-pin per port SGMII interface to Gigabit Ethernet PHYs
- **32 million packets/second (line rate) aggregate switching capacity**
- **Supports 8 classes of service (CoS) per port**
- **Scalable upto 32 BCM5690 switches in a system**
- **Port trunking and mirroring supported across stacked switches**
- **Fully integrated data and address memory on chip**
- **Advanced packet flow control:**
 - Head of line blocking prevention
 - Full-duplex flow control (802.3x compatible)
- **ContentAware™ network processing per port**
 - Line rate multifield packet classification
 - Supports IEEE802.1p, TOS/DiffServ, rate limiting, policing, priority tagging, and remapping
- **Support for jumbo Frames of up to 9 KB**
- **Advanced diagnostic features including IEEE1149.1 JTAG boundary scan and BIST functionality**
- **Low power, enhanced thermal 480-pin EBGA package**

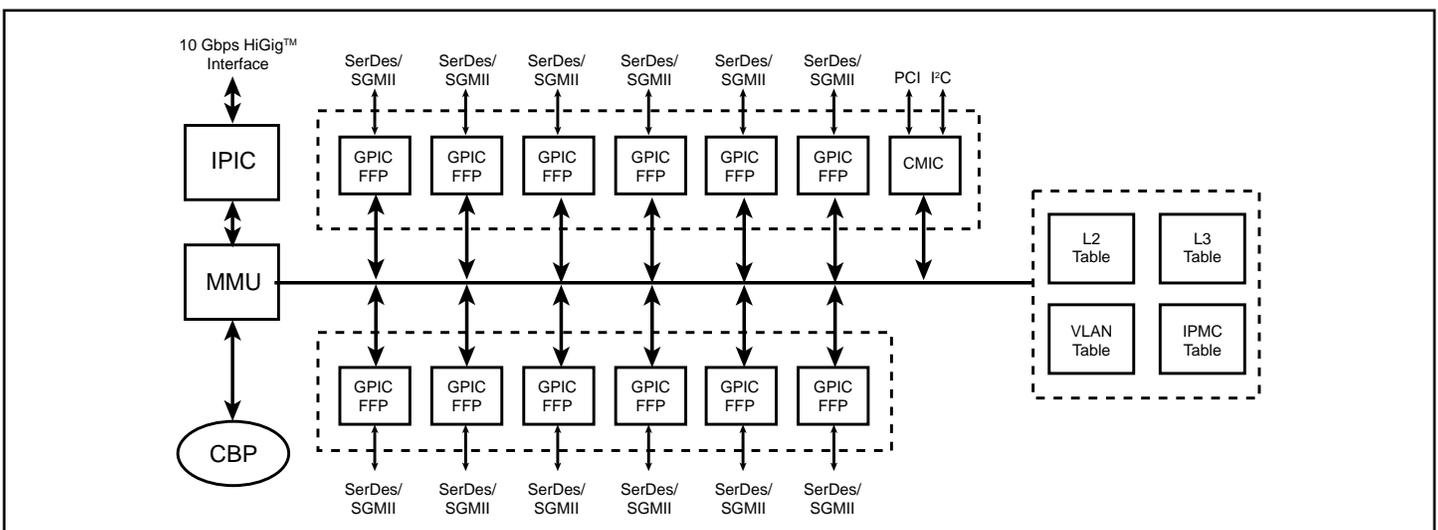
SUMMARY OF BENEFITS

- **System vendors can build scalable high-performance, high port density Gigabit Ethernet LAN switches in several form factors.**
- **Multiple classes of service (CoS) and very low latency enable the support of VoIP and other voice, video, and data applications.**
- **Built-in high-speed serial interfaces with Broadcom-unique SerDes technology eases and accelerates 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**

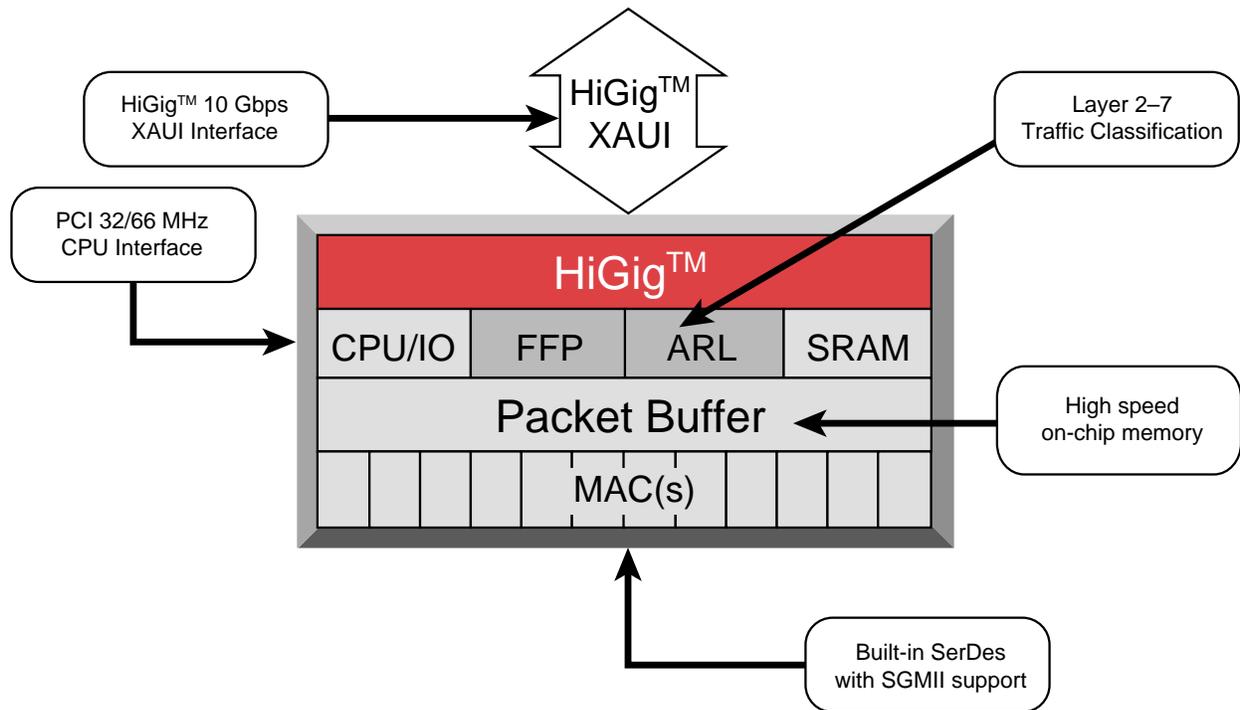
TARGET APPLICATIONS

- **Multilayer switch in modular Gigabit Ethernet switches**
- **High port count stand-alone or stackable Gigabit Ethernet switches**
- **Chassis and in-server switch blade applications**

12-Port Gigabit Ethernet Multilayer Switch with HiGig™



BCM5690 Block Diagram



The **BCM5690** network switch is a scalable, modular chip solution with 12 ports. Each of these flexible ports supports Gigabit Ethernet or 10/100 Mbps Ethernet. Additionally, the **BCM5690** supports both copper and fiber physical interfaces. The **BCM5690** has a fully integrated SerDes functionality consisting of a 10 Gbps XAUI HiGig Port, Gigabit Ethernet or a SGMII PHY interface.

The 10 Gbps HiGig Expansion port supports explicit priority, port trunking, and mirroring functions across switch elements. The HiGig port can be used to interconnect upto 32 **BCM5690s** making it extremely useful for highly-scalable network switch applications.

The advanced fast filter processor (FFP) provides ContentAware™ network processing per port. The FFP supports ToS/DiffServ, rate limiting, policing, priority tagging, and remapping. The advanced packet filtering and classification functions of the **BCM5690** make it ideal for cutting-edge VoIP and firewall applications.

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The **BCM5690** supports advanced packet flow control such as head-of-line blocking prevention and IEEE 802.3x compatible full-duplex control. Moreover, the **BCM5690** supports a fully-integrated data and address memory.

The **BCM5690** switch supports an I²C controller for communicating with external devices such as serial EEPROM, flash memories, and parallel port devices.

The modular switching architecture of the **BCM5690** embodies the scalability, integration and performance features that a next generation switch requires.

Additional information

The system design kits available are BCM95690K24 and BCM95690K24s which include supporting documentation and software. Please contact your local sales representative for more information.



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