

BCM5680 8-PORT GIGABIT SWITCH ON A CHIP

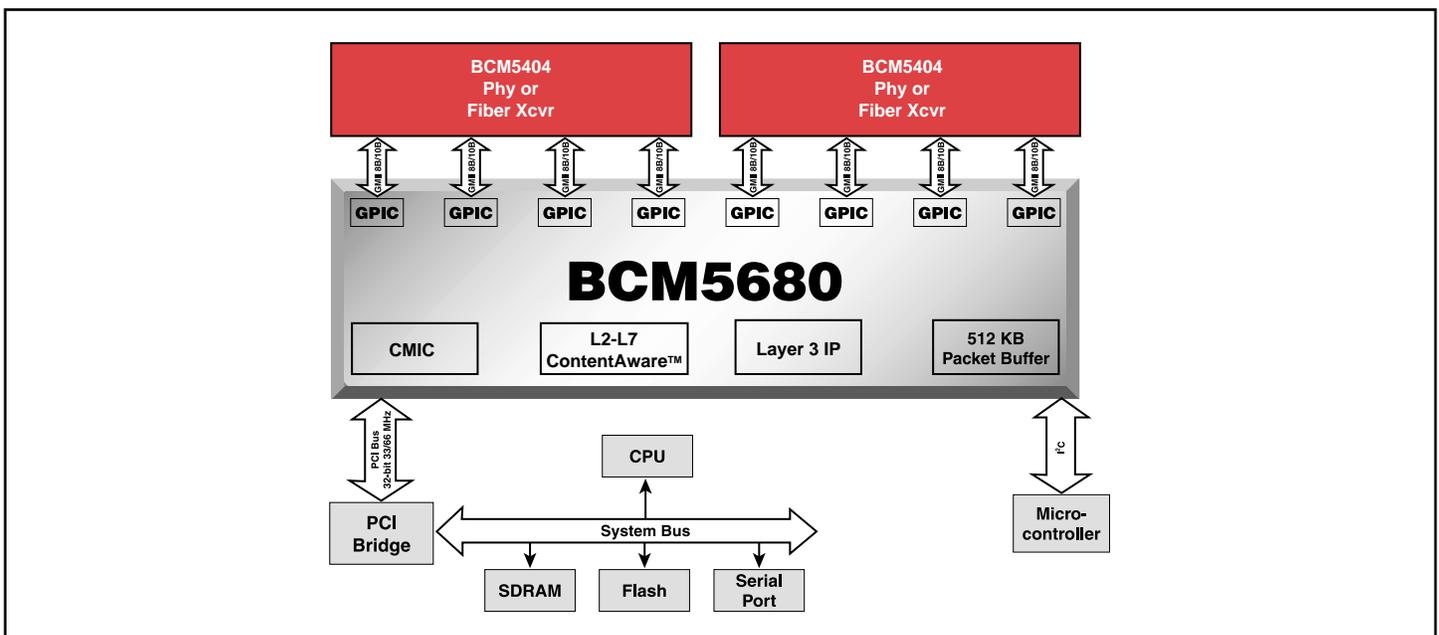
BCM5680 FEATURES

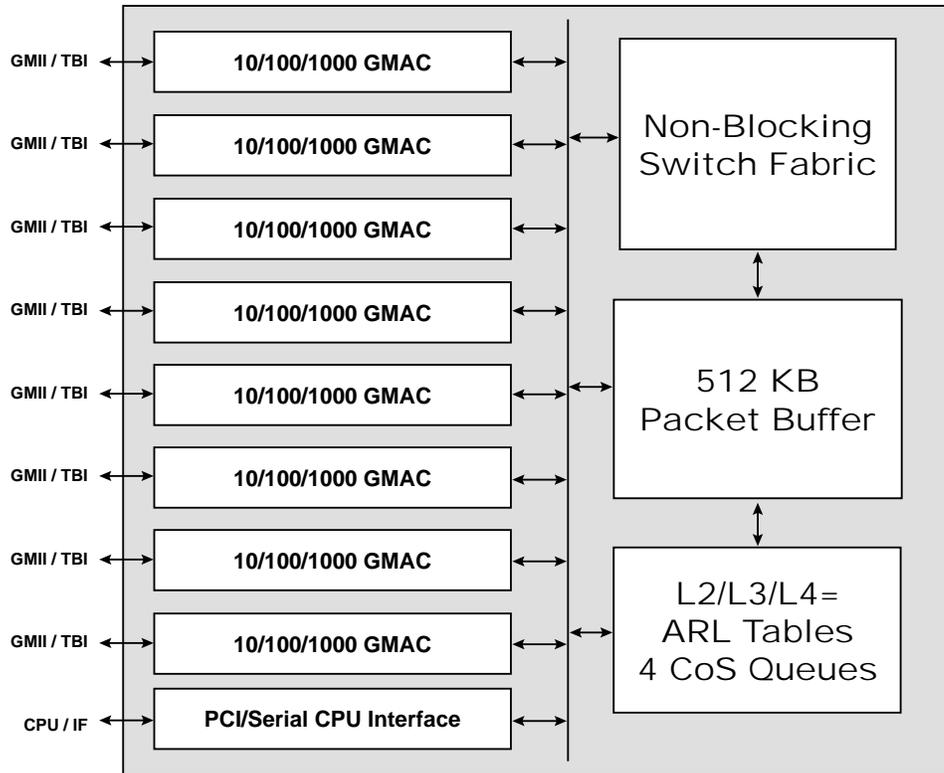
- Switch fabric to deliver 12-Mpps switching performance, providing line rate throughput independent of protocol layer processed
- Layer 2 through 7 filtering and ContentAware™ packet classification, at full line rate on all ports
- Integrated buffer memory
 - Configurable to be static, dynamically allocated, or both
 - Highly efficient data memory packing
- Eight 10/100/1000 Ethernet MACs
- Gigabit stacking support for higher density system requirements
- IEEE 802.1 Support
 - Q => Support for VLAN
 - D => Support for Spanning Tree
 - p => Support for traffic classification
- 8K MAC and 2K IP address tables on chip
- Flexible link aggregation on any port
- Port mirroring support
- Low-power 3.3/2.5V operation
- 400-pin TBGA package

SUMMARY OF BENEFITS

- Represents the highest level of silicon integration achieved for a complete eight-port gigabit switch, integrating the switch fabric, MACs, address tables and packet buffering functions.
- The highly programmable filter engine (FFP) supports wire-speed pack-by-packet filtering and classification, making the BCM5680 the ideal choice for sophisticated switching applications.
- Supports a wide range of choices in user management costs, featuring both an I²C and a 33/66 MHz PCI interface.
- Supports four levels of CoS; maps to 802.1p priority levels.
- Provides advanced packet flow control with HOL prevention, backpressure support, and packet rate control (802.3x).
- At 3 μsec, the BCM5680 provides the world's lowest latency for an eight-port gigabit switch.
- The BCM5680 seamlessly integrates with the BCM5600 (24 Fast Ethernet plus 2 Gigabit Ethernet ports), the BCM5602 and other BCM5680s to provide high levels of flexibility in network system designs.

Non-Blocking 8-Port Multi-Layer Gigabit Switch





The Broadcom **BCM5680** represents the highest level of cost-reduction and integration available for the Gigabit Ethernet market. A Broadcom-based eight-port gigabit switch reduces today's costs by as much as 50% over competing solutions.

The PCI interface provides a high-speed, flexible mechanism for network system management. Its ability to run either 33 MHz or 66 MHz gives users the flexibility to choose between bandwidth and cost when designing a managed solution. Integrated features such as Scatter/Gather DMA supports advanced management software requirements. Alternatively, an I²C compatible interface is supported.

The 10/100/1000 megabit interface enables users to connect at any speed required on a given port. This triple-speed interface automatically negotiates to support legacy devices alongside newer, high-bandwidth devices, all in the same switch. The interface permits the use of a BCM8002 SerDes for fiber optics, a quad BCM5404 Gigabit PHY for 1000TX, or a standard 100TX PHY.

The integrated 512 KB data packet memory eliminates the need for external data packet storage. The memory organization and structure can be optimized to provide a minimum fixed allocation of buffer space per port and a dynamic pool size, to absorb any bursty traffic requirements.

The integrated L2, L3, and filtering tables deliver industry-leading switching performance. The **BCM5680** achieves full wirespeed layer 2 and layer 3 switching on all ports. Additionally, its innovative architecture supports wirespeed layer 2 through layer 7 filtering, utilizing a 35 Gbps internal high speed bus.

Higher density configurations are easily achieved through link-aggregating multiple ports or stacking ports from box to box. Stand-alone configurations can easily achieve 24-Gigabit ports using only five devices with no external memory required.

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