



# BCM5670 8-PORT, 160-Gbps SWITCH FABRIC

## BCM5670 FEATURES

- Eight 10-Gbps (HiGig™) switch fabric ports
- Nonblocking, 160-Gbps wirespeed, backplane/switch fabric performance
- Forwarding rate of 119 million packets/second
- 8 Integrated high-speed XAUI interfaces
- Eight programmable priority queues per port
- Port trunking and mirroring across multiple devices
- Hot-swap capable with AC coupling
- Supports redundancy on linecards for chassis-based applications
- Advanced diagnostic features including IEEE 1149.1 boundary scan, JTAG and extensive BIST functionality
- Resilient link configuration through active multi-path forwarding
- PCI interface
- I<sup>2</sup>C interface
- Broadcom switch API compatibility
- Advanced 0.13 μm CMOS technology
- Small 600-pin EPGA package
- Low power: 10W

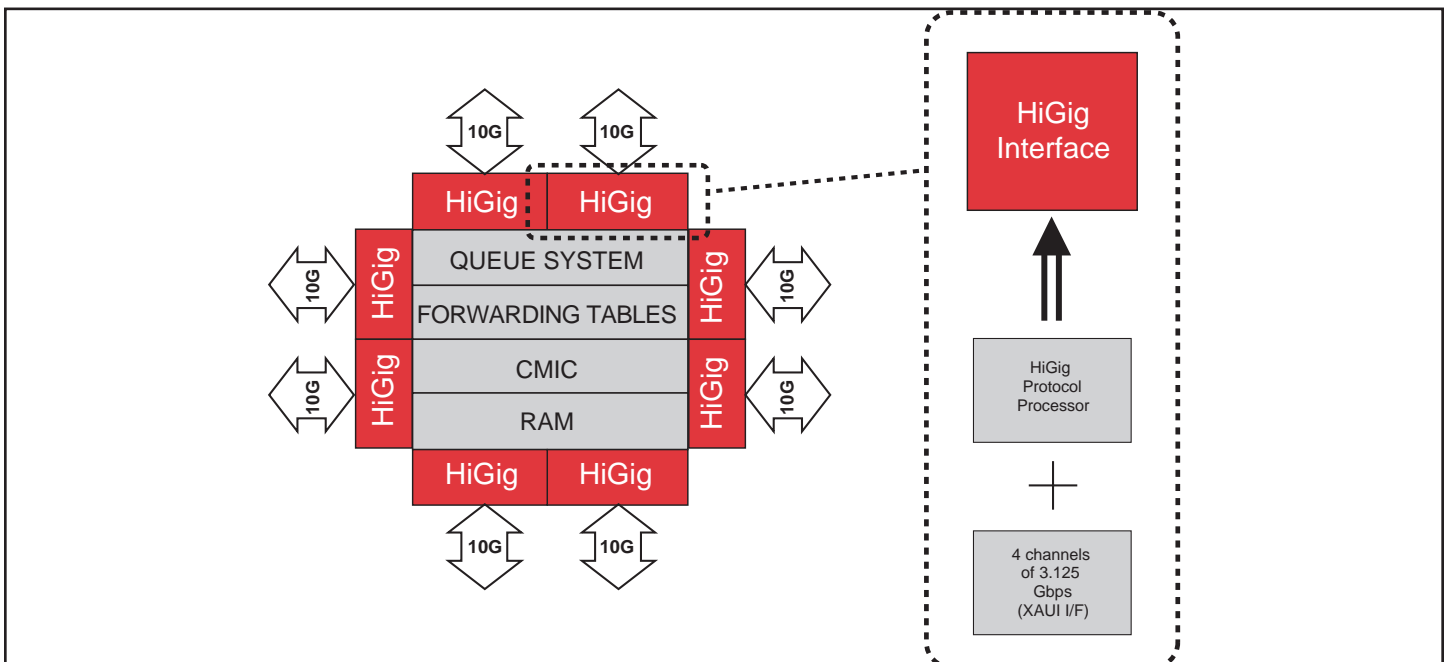
## SUMMARY OF BENEFITS

- System vendors can build high-performance, high-density Gigabit Ethernet LAN switches in several form factors.
- Support for multiple CoS and very low latency enable the support of VoIP and other voice, video, and data applications.
- Built-in high-speed XAUI interfaces with Broadcom-unique SerDes technology eases and accelerates system design, while reducing cost and conserving board space.
- A 1152-KB internal data buffer memory eliminates the need for expensive external memory.
- Drives up to 15m of low-cost copper cables for stacking switch applications.
- Broadcom switch API compatibility enables reuse of resources and fast time-to-market.

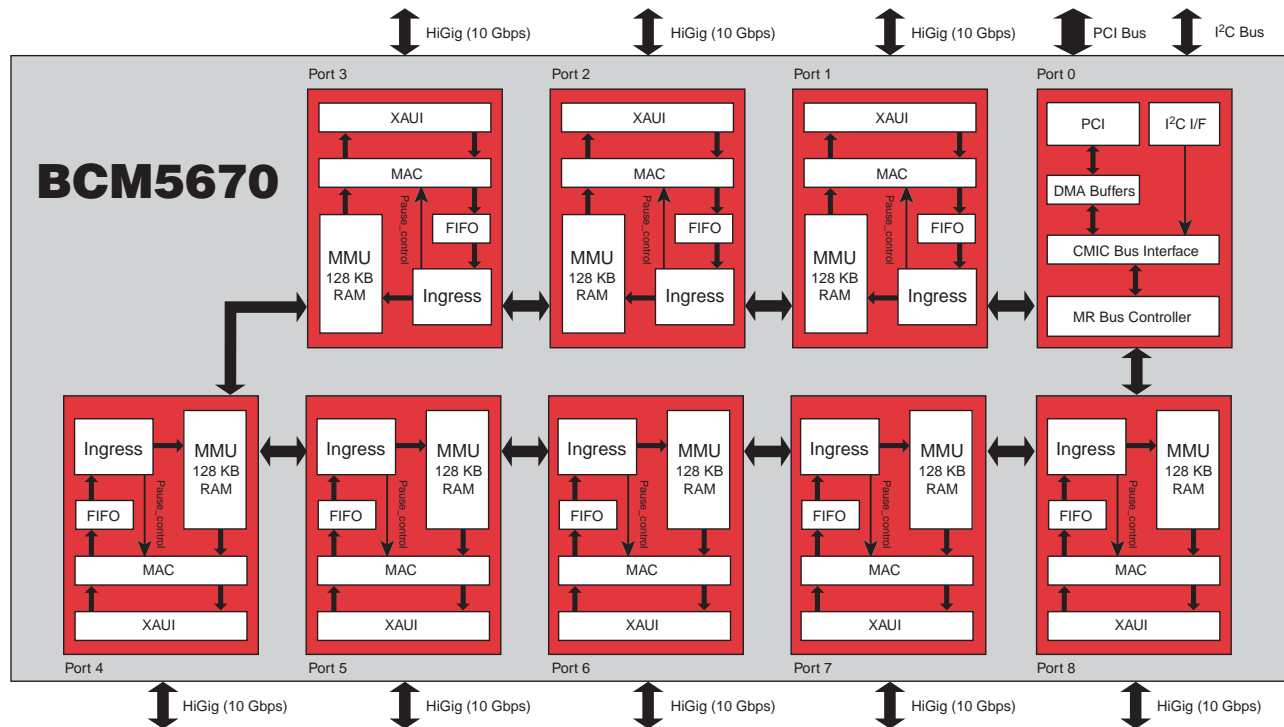
## TARGET APPLICATIONS

- Switch fabric in modular Gigabit Ethernet switches
- Switch fabric in high-port-count stand-alone or stackable Gigabit Ethernet switches
- Switch fabric for chassis and in-server switch blade applications
- Packet-based switch fabric in telco applications

### Non-Blocking 8-Port Gigabit Switch



## Architecture Block Diagram



### General Description

The Broadcom **BCM5670** switch fabric is the central component of the modular and highly scalable StrataXGS Gigabit Ethernet switch architecture. StrataXGS components can be applied in a wide variety of configurations, enabling system designers to strategically balance cost, port density, and performance in the products they build.

### Highly Integrated

The integration of Broadcom's robust XAUI-compatible serializer/deserializer (SerDes) interface on each **BCM5670** port reduces board complexity. The XAUI interface can be used to route high speed signals across 44 inches of FR4, connectors, and backplanes. SerDes technology also enables the use of inexpensive cables for stacking applications.

### Superior Performance

The **BCM5670** delivers wires peed switching performance across all of the ports simultaneously. The effective bandwidth of each HiGig interface is 20 Gbps (10 Gbps, full-duplex). The **BCM5670** switch fabric interconnects other StrataXGS

component chips across a 160-Gbps backplane. It introduces very low switching latency, enabling the high-quality transmission of voice, video, and data traffic.

### Flexible Management

The **BCM5670** HiGig switch links to a host CPU through a PCI bus at speeds of up to 66 MHz. Bus mastering and advanced DMA are supported in hardware for the efficient exchange of packet data between CPU memory and the **BCM5670** switch.

The **BCM5670** switch can also work without host CPU support, using an I2C interface to initialize chip registers and forwarding tables. Also, the BCM5632 chip can link to a **BCM5670** via an XGMII-to-XAUI converter, such as the BCM8011. As many as 15 BCM5632 chips can be interconnected, providing up to 180 Gigabit ports.

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