BROADCOM®

C o n n e c t i n g
e v e r y t h i n g ®

BCM5671 FOUR-PORT, 80-Gbps SWITCH FABRIC

BCM5671 FEATURES

- Four 10-Gbps (HiGig™) switch fabric ports
- Nonblocking, 80-Gbps wire-speed backplane/switchfabric performance
- Forwarding rate of 60 million packets/second
- 4 integrated high performance 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 multipath forwarding
- PCI interface
- Broadcom Switch API compatibility
- Advanced 0.13 µm CMOS technology
- Small 600-pin EBGA package
- Low power: 6W

## 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 serial interfaces with Broadcom-unique SerDes technology eases and accelerates system design, while reducing cost and conserving board space.
- A 640 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

TARGET APPLICATIONS

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

Nonblocking Four-Port Gigabit Switch
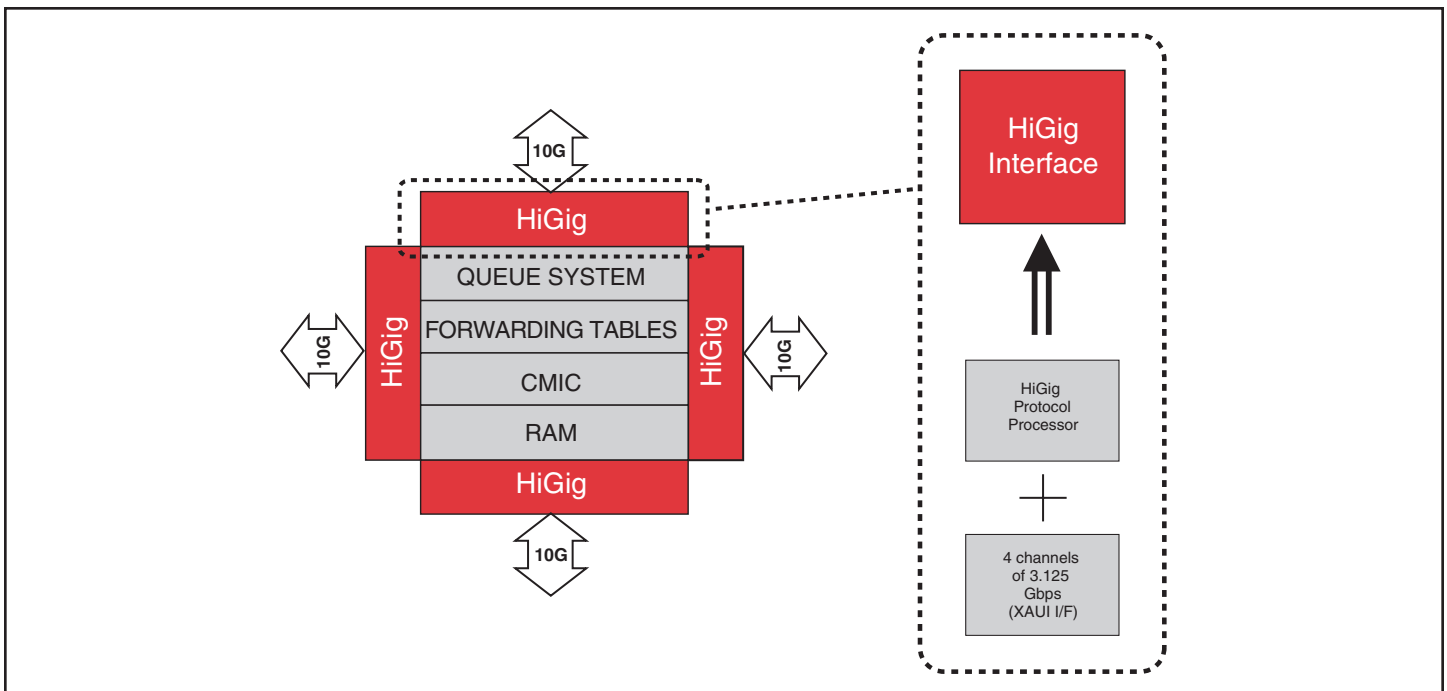
Architecture Block Diagram
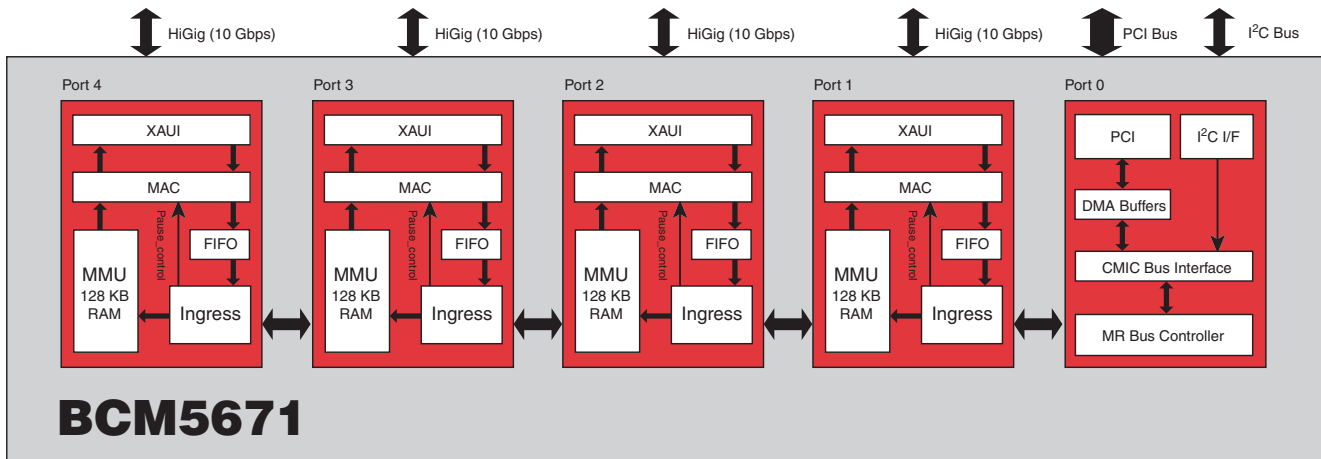
General Description

The Broadcom **BCM5671** 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 **BCM5671** 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 **BCM5671** delivers wire-speed switching performance across all the ports simultaneously. The effective bandwidth of each HiGig™ interface is 20 Gbps (10 Gbps, full-duplex). The **BCM5671** switch fabric interconnects other StrataXGS component chips across an 80-Gbps backplane. It introduces very low switching latency, enabling the high-quality transmission of voice, video, and data traffic. The primary application of the **BCM5671** is stackable solutions and line card applications

Flexible Management

The **BCM5671** HiGig switch links to a host CPU through a PCI bus at speeds 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 **BCM5671** switch.

The **BCM5671** switch can also work without host CPU support, using an I²C interface to initialize chip registers and forwarding tables. The BCM5632 can also link to a **BCM5671** via an XGMII-to-XAUI converter, such as the BCM8011.

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