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BCM56602
PRODUCT Brief

# 10-GbE HIGH-FEATURE ETHERNET MULTILAYER SWITCH WITH HiGig+™ UPLINK

FEATURES

- Provides 10-GbE CX-4 compliant switching
- Fifth generation of StrataSwitch® and StrataXGS® product line
- HiGig+ uplink port that can operate at 12 Gbps or 10 Gbps
- 128 MB external packet buffer memory
- Line-rate switching for all packet sizes and conditions
- On-chip table with external table expansion options
- IPv6 routing and tunneling
- MPLS forwarding and VPN services
- Advanced Fast Filter Processor (FFP) ContentAware™ classification
- Advanced security features in hardware
- Hardware based IP multicast routing/forwarding and replication
- Port-trunking and mirroring supported across stack
- Advanced packet flow control:
  - Head-of-Line blocking prevention
  - Back pressure support
- Eight QoS queues per port with hierarchical minimum/maximum shaping per Class of Service (CoS) per queue per port

SUMMARY OF BENEFITS

- Highly scalable BroadScale™ architecture evolved from five generations of switching experience provides rich features, scalability, and future proof solutions.
- Optimized for secure-switching and convergence of applications and services in the networks.
- Complete IPv6 enabled Layer 2 and Layer 3 switch-on-a-chip solution for easy and rapid development of multilayer switching applications.
- System vendors can build scalable high-performance, high-port density GbE and 10-GbE LAN switches in several form factors.
- Optimized features that span both Enterprise and Service provider applications.
- Multiple CoS and 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 ease and accelerate system design, while reducing cost and conserving board space.
- Broadcom switch API compatibility enables software reuse and faster time-to-market.
- Enabled *pay as you grow* option for all switching features, optimized flexibility for high-end enterprise and service provider applications.

10-GbE High-Feature Ethernet Multilayer Switch

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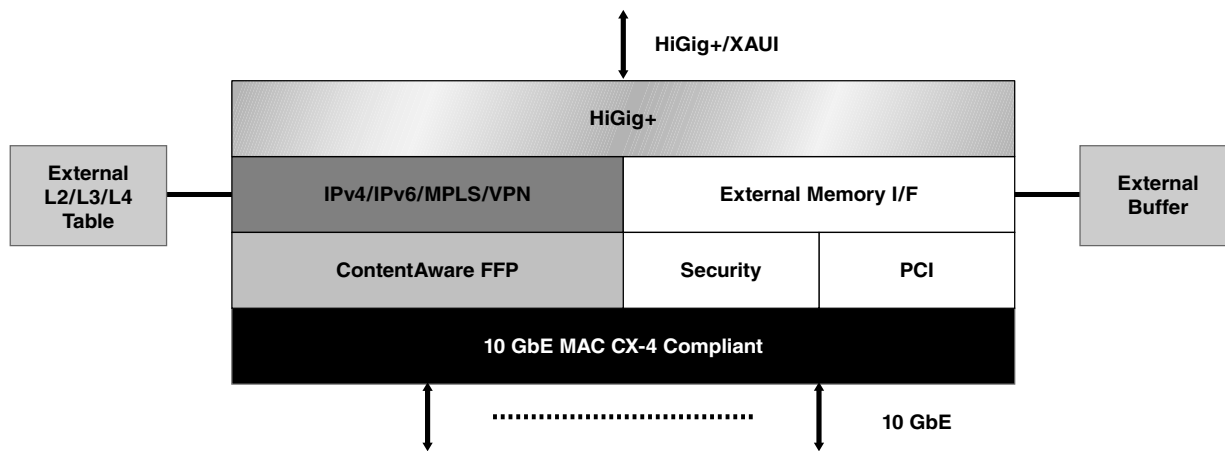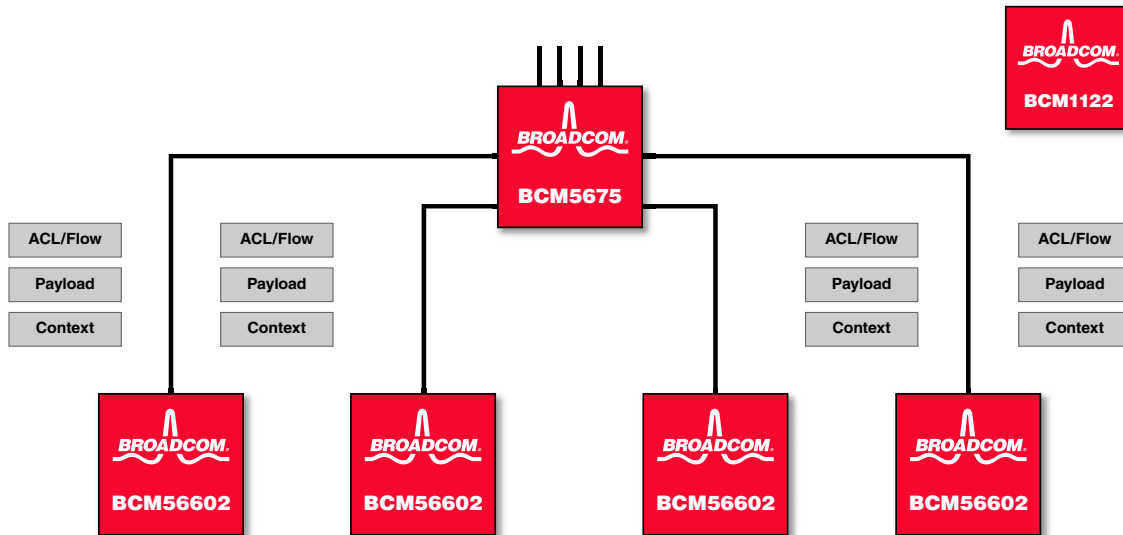
4 x 10 GbE + 4 HiGig+ Line Card

The BCM56602 is the fifth generation of the highly-integrated and cost-effective StrataSwitch and StrataXGS product line. The BCM56602 product family extends the scalability and feature set for providing enhanced services for both LAN and WAN applications.

The BCM56602 provides 10-GbE CX-4 compliant switching at 10/100/1000 Mbps. The BCM56602 also includes a HiGig+ uplink port that can operate at 12 Gbps or 10 Gbps. The BCM56602 is capable of supporting large external buffer memory for absorbing round trip delays in the network. In order to provide flexibility to customers in growing the L2-L7 tables depending on specific applications, the BCM56602 supports external table expansion interfaces that enable the MAC, IPv4, IPv6, MPLS, and ACL tables to be extended.

With high scalability and flexible configurations on the memory interfaces and applications, the BCM56602 is ideal for a wide range of applications spanning from Enterprise aggregation, to Enterprise Core chassis, to Enterprise Routing switch, to WAN access and WAN edge in standalone, stackable, and chassis configurations.

The BCM56602 integrates sophisticated advanced L3 switching features for cost-effective highly manageable enterprise networks. The BCM56602 performs IPv6 routing and transition services in hardware, allowing IT managers to deploy L3 switches that are future-proof, highly manageable L3 networks to enable cost-effective transition from IPv4 to IPv6.

The ContentAware classification feature of the StrataSwitch and StrataXGS has been further enhanced in the BCM56602 with unmatched flexibility and programmability. The ContentAware engine can be used for applications such as policy-based routing, access control list, dynamic adaptation to changes in virus threats, and so on.

The BCM56602 has built-in security functions for highly-secure enterprise networks including BroadSAFE™. Utilizing hardware-based identity management and authentication coupled with key management software that directs and manages clients, BroadSAFE Security provides exceptionally strong network security without impacting network performance.

The BCM56602 integrates sophisticated per-flow metering, statistics, and traffic management features, optimizing the QoS in the Enterprise networks for voice, video, and data convergence. The BCM56602 also provides rate-adjustable, hardware-based sFlow implementation and flexible multiple-session remote port-mirroring functionality for efficient network management.

The BCM56602 switch supports an I^2C controller for communicating with external devices such as serial EEPROM, flash PROM memories, and parallel port devices. The BCM56602 also supports a serial interface for the MII management of physical layer devices.

The BCM56602 switch interfaces to a host CPU via a 32-bit PCI bus running at up to 66 MHz. Bus mastering and advanced DMA is supported for efficient exchange of packet data between CPU memory and the BCM56602 switch.

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