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BCM56601
PRODUCT Brief

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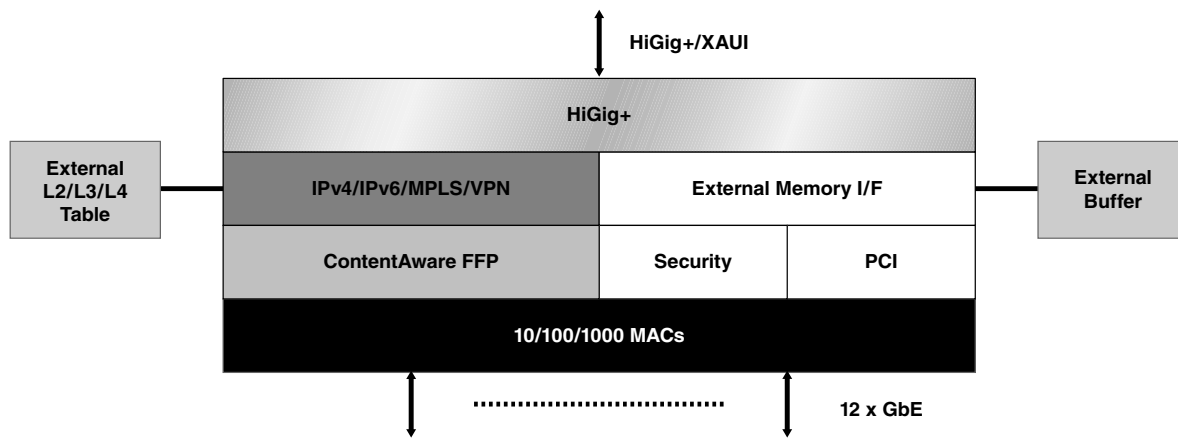# 12 x GbE HIGH-FEATURE ETHERNET MULTILAYER SWITCH WITH HiGig+™ UPLINK

FEATURES

- Provides 12 Gigabit Ethernet (GbE) ports, each capable of operating at 10/100/1000 Mbps
- Fifth generation of StrataSwitch® and StrataXGS® product line
- HiGig+ uplink port that can operate at 12 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
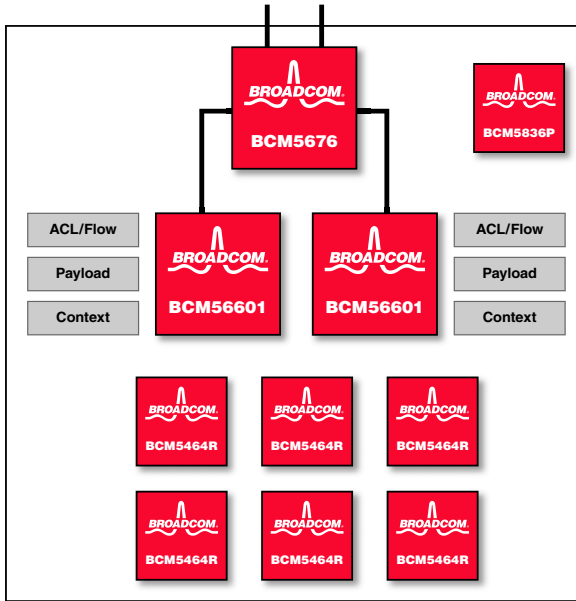
SUMMARY OF BENEFITS

- Highly scalable BroadScale™ architecture evolved from five generations of switching experience provide 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.

12 x GbE High-Feature Ethernet Multilayer Switch

HiGig+/XAUI

HiGig+

External L2/L3/L4 Table

IPv4/IPv6/MPLS/VPN | External Memory I/F

External Buffer

ContentAware FFP | Security | PCI

10/100/1000 MACs

12 x GbE

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24 10/100/1000 High-Feature Stackable

24 10/100/1000 High-Feature Line Card

The BCM56601 is the fifth generation of the highly-integrated and cost-effective StrataSwitch and StrataXGS product line. The BCM56601 product family extends the scalability and feature set for providing enhanced services for both LAN and WAN applications.

The BCM56601 provides 12-Gigabit Ethernet (GbE) ports, each capable of operating at 10/100/1000 Mbps. The BCM56601 also includes a HiGig+ uplink port that can operate at 12 Gbps or 10 Gbps.

The BCM56601 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 BCM56601 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 BCM56601 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 BCM56601 integrates sophisticated advanced L3 switching features for cost-effective highly manageable enterprise networks. The BCM56601 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.
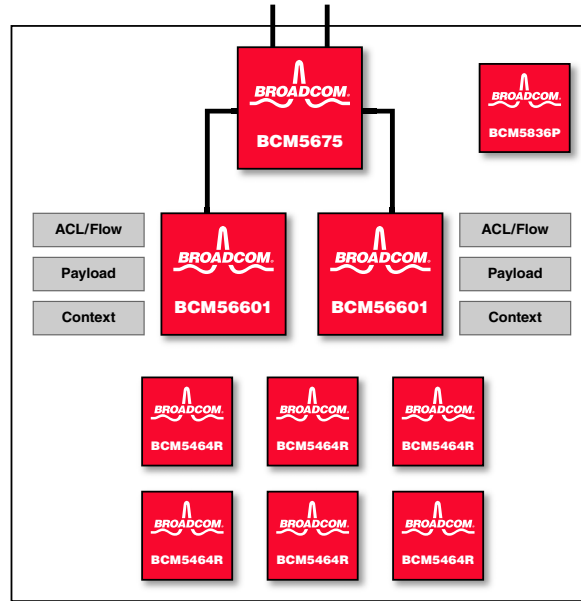
The ContentAware classification feature of the StrataSwitch and StrataXGS has been further enhanced in the BCM56601 with unmatched flexibility and programmability. The ContentAware engine can be used for applications such as policy-based routing, access control list, dynamic adaptation to changes in virus threats, and so on.

The BCM56601 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 BCM56601 integrates sophisticated per-flow metering, statistics, and traffic management features, optimizing the QoS in the Enterprise networks for voice, video, and data convergence. The BCM56601 also provides rate-adjustable, hardware-based sFlow implementation and flexible multiple-session remote port-mirroring functionality for efficient network management.

The BCM56601 switch supports an I^2C controller for communicating with external devices such as serial EEPROM, flash PROM memories, and parallel port devices. The BCM56601 also supports a serial interface for the MII management of physical layer devices.

The BCM56601 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 BCM56601 switch.

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