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BCM56102
PRODUCT Brief

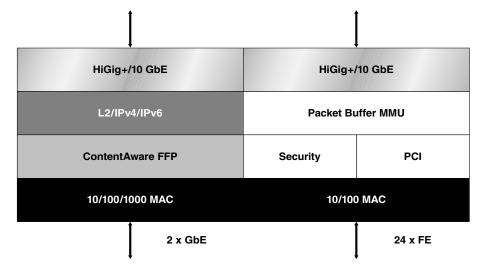# 24-PORT FAST ETHERNET AND 2-PORT GBE MULTILAYER SWITCH WITH TWO 10-GBE/HIGIG+™ PORTS

FEATURES

- Twenty-four 10/100 Mbps and two 10/100/1000 Mbps Ethernet ports supporting both copper and fiber connections
- Fifth generation of StrataSwitch® and StrataXGS® product line
- Two 12-Gbps or 10-Gbps HiGig+™ port uplink interfaces
- Two 10-GbE Switching ports, CX4 support
- Line-rate switching for all packet sizes and conditions
- On-chip data packet memory and table memory
- IPv6 routing and tunneling
- Advanced Fast Filter Processor (FFP) ContentAware™ classification
- Advanced security features in hardware
- 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 Classes of Service (CoS) per queue per port
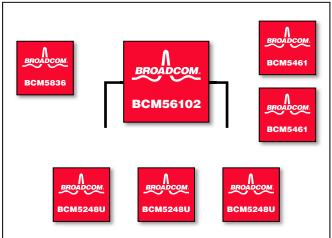- Standard compliant 802.1ad provider bridging

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.
- System vendors can build scalable high-performance, high-port density FE LAN switches in several form factors.
- 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.
- Small package and low power enable cost-effective and high-performance system design.
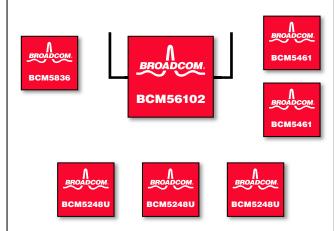
24-Port Fast Ethernet and 2-Port Gigabit Ethernet Multilayer Switch

HiGig+/10 GbE		HiGig+/10 GbE	
L2/IPv4/IPv6		Packet Buffer MMU	
ContentAware FFP		Security	PCI
10/100/1000 MAC		10/100 MAC	

2 x GbE   24 x FE

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24 10/100 and 2 10/100/100 + Two 10xGbE Stand-alone

The BCM56102 is the fifth generation of the highly-integrated and cost-effective Broadcom StrataSwitch and StrataXGS product line in a single-chip solution, with 24 FE, two GbE, and two 10-GbE/HiGig+ uplink ports. The uplink ports can operate in two modes:

- 10-GbE switching mode
- HiGig+ uplink mode

The integrated 10-GbE switching ports are CX-4 compliant XAUI interfaces. The HiGig+ uplink interface is used to connect to other StrataXGS devices in a larger stacking system or to the BCM5675/BCM5676 Switch Fabric via a backplane in a multislot redundant chassis system.

With high-integration and high-port density, the BCM56102 family is ideal for Enterprise applications in stand-alone, stackable, and chassis configurations. The BCM56102 configurations are applicable in the edge, aggregation, and core areas of the Enterprise. The BCM56102 is also ideal for embedded switch applications like the Blade Server Switch, ATCA chassis, IPDSLAM, 3G Wireless Base Station, and others.

The BCM56102 integrates sophisticated advanced L3 switching features for cost-effective highly manageable enterprise networks. The BCM56102 performs IPv6 routing and transition services in hardware,

allowing IT managers to deploy L3 switches that are future-proof, highly manageable L3 networks and to enable cost-effective transition from IPv4 to IPv6.

24 10/100 and 2 10/100/100 + Two HiGig+ Stackable

The ContentAware classification feature of the StrataSwitch and StrataXGS has been further enhanced in the BCM56102 with unmatched flexibility and programmability. The ContentAware engine could be used for applications such as policy-based routing, access control list, dynamic adaptation to changes in virus threats, and so on.

The BCM56102 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 BCM56102 integrates sophisticated metering, statistics, and traffic management features, optimizing the QoS in the Enterprise networks for voice, video, and data convergence. The BCM56102 also provides rate adjustable hardware-based sFlow implementation and flexible multiple session remote port mirroring functionality for efficient network management.

The BCM56102 switch supports an I2C controller for communicating with external devices such as serial EEPROM, flash PROM memories, and parallel port devices, and also supports a serial interface for the MII management of physical layer devices.

The BCM56102 switch interfaces to a host CPU via a 32-bit PCI bus running at up to 66 MHz. Bus mastering and advanced DMA are supported for efficient exchange of packet data between CPU memory and the BCM56102 switch.

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