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# BCM56503 PRODUCT Brief

# 24-PORT GbE MULTILAYER SWITCH WITH THREE 10-GbE/ HiGig+™ PORTS

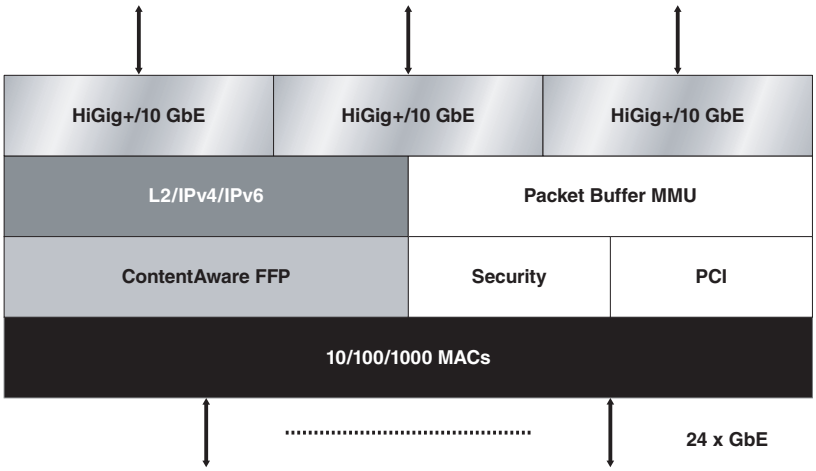
## FEATURES

- 24 10/100/1000 Mbps Ethernet ports supporting both copper and fiber connections
- Fifth generation of StrataSwitch® and StrataXGS® product line
- Three 12-Gbps or 10-Gbps HiGig+™ port uplink interfaces
- Three 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 provide 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 GbE 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 enables cost-effective and high-performance system design.

### 24-Port GbE Multilayer Switch

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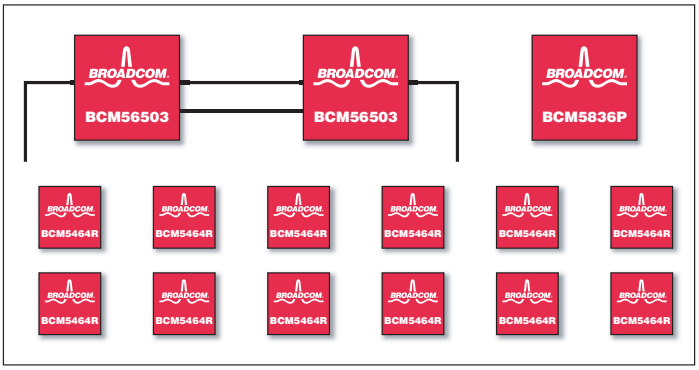
# OVERVIEW



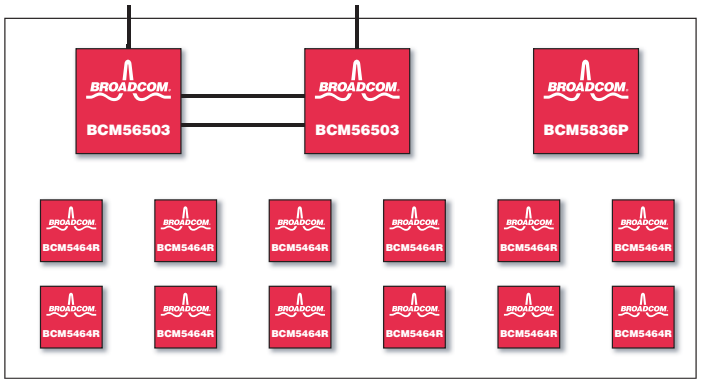

## 48 10/100/1000 + Two 10 GbE Standalone

The BCM56503 is the fifth generation of the highly-integrated and cost-effective StrataSwitch and StrataXGS product line. The BCM56503 is a single-chip solution with 24-GbE ports, and three 10-GbE/HiGig+ uplink ports.

The BCM56503 incorporates 24-GbE ports that can operate 10/100/1000 Mbps. The uplink ports can operate in two modes: 10-GbE switching mode and 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 multi-slot redundant chassis system.

With high-integration and high-port density, the BCM56503 family is ideal for Enterprise applications in standalone, stackable, and chassis configurations applicable in the edge, aggregation, and core areas of the Enterprise. The BCM56503 is also ideal for embedded switch applications like Blade Server Switch, ATCA chassis, IPDSLAM, 3G Wireless Base Station, and others.

The BCM56503 integrates sophisticated advanced L3 switching features for cost-effective highly manageable enterprise networks. The BCM56503 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.




## 48 10/100/1000 + Two HiGig+ Stackable

The ContentAware classification feature of the StrataSwitch and StrataXGS has been further enhanced in the BCM56503 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 BCM56503 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 BCM56503 integrates sophisticated metering, statistics, and traffic management features, optimizing the QoS in the Enterprise networks for voice, video, and data convergence. The BCM56503 also provides rate-adjustable, hardware-based sFlow implementation and flexible multiple-session remote port-mirroring functionality for efficient network management.

The BCM56503 switch supports an $I^2C$ controller for communicating with external devices such as serial EEPROM, flash PROM memories, and parallel port devices. The BCM56503 also supports a serial interface for the MII management of physical layer devices.

The BCM56503 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 BCM56503 switch.

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