BCM53547

Highly Integrated SMB/SME Edge Switch for 8/16/24-Port Systems

Description

The Broadcom® BCM53547 switch family offers industry-leading integration and low power in a small footprint. The device offers up to 24GbE ports and four 2.5G uplink ports in a 25 mm x 25 mm package. Offering the industry's highest level of integration, the BCM53547 has 24 embedded copper GPHYs as well as a powerful ARM Cortex-A9 processor. The BCM53547 is ideal for cost-sensitive edge applications such as L2/L3 Smart-managed wiring closet switches for enterprise or MTU/MDU switches for service providers.

The BCM53547 family offers I/O configurations that address key segments of Edge connectivity. A single device supports the popular 24x GbE switch with 4x 2.5G uplinks.

IEEE 802.11ac Wave2 increases the data rate required by access points from GbE to 2.5GbE. The BCM53547 provides up to four of the 24 ports to be multirate, enabling the development of cost-effective platforms that support both Gigabit connections for the desktop as well as 2.5G for access points.

The BCM53547 device family builds on the successful BCM53344 and features EEE for low power, IEEE 802.1Q VLAN, VLAN translation, enhanced Denial-of-Service (DoS) protection, IPv4 and IPv6 support, advanced ContentAware™ Engine, IEEE 802.1p Quality-of-Service (QoS), and HiGig-Lite™ stacking. New features in this generation include priority flow control, and IEEE 802.1br port extender support.

Benefits

- Single-chip solution reduces overall system cost by eliminating the number of required components
- 28 nm process technology reduces the overall power consumption and package size for additional system cost reductions
- Supports IEEE 802.11ac Wave2 data rates of 2.5 Gb/s on up to four of the 24 ports to provide future-proofing
- Eight flexible Class-of-Service (CoS) queues per port assure the lowest latency to high-priority traffic
- Based on industry-leading and market-proven StrataXGS® architecture reduces development costs
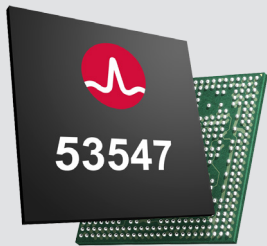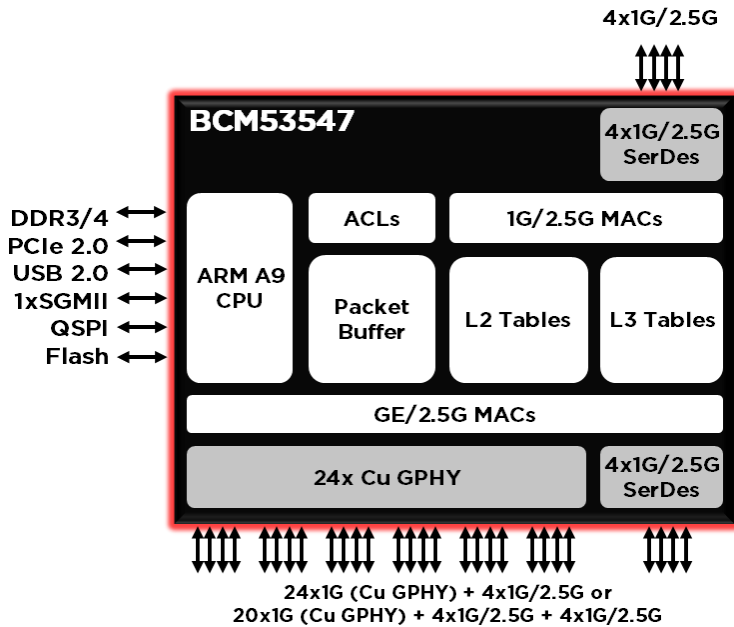- IPv6 support provides future-proofing

Key Features

- Highly integrated 24-port 10/100/1000 Mb/s Ethernet switch with 24 integrated copper 10/100/1000 PHYs
- Four ports support either GPHY, SGMII, or 2500BASE-X
- Four 2.5G stacking/uplink ports, configured as SGMII, 2500BASE-X, or HiGig-Lite
- Integrated ARM Cortex-A9 CPU
- Fully integrated packet buffer
- Intelligent Memory Management Unit (MMU) optimized for handling bursty data traffic
- L2, IPv4/IPv6 L3 packet classification
- Flow-based classification, metering, and marking of frames
- Enhanced DoS attack statistics gathering
- Industrial temperature support
- IEEE 1588 (1-Step TC) support
- Advanced single-stage ContentAware Engine
- Enhanced security and visibility into tunnels
- Full IPv4 and IPv6 support
- Low-power Energy Efficient Ethernet support
- Low-power 28 nm CMOS process

Applications

- SMB/SME 1G/2.5G switches
- Security Appliances
- Multi-dwelling Unit (MDU) switches
- Industrial Ethernet/Automotive switches

BCM53547 Block Diagram

Ordering Information

Part Number	Package	Description
BCM53547AoKFSBG BCM53547AoIFSBG	25 mm x 25 mm	24x1G + 4x1G/2.5G or 20x1G + 4x1G/2.5G + 4x1G/2.5G
BCM53548AoKFSBG BCM53548AoIFSBG	25 mm x 25 mm	16x1G + 4x1G/2.5G or 12x1G + 4x1G/2.5G + 4x1G/2.5G
BCM53549AoKFSBG BCM53549AoIFSBG	19 mm x 19 mm	8x1G + 4x1G/2.5G or 4x1G + 4x1G/2.5G + 4x1G/2.5G

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