BROADCOM®

Product Brief

BCM56760
880 Gb/s Multilayer Switch

Overview

The current demand from servers and top-of-rack (ToR) interfaces for higher Ethernet speeds has created the need for switches that support 25G and 100G ports. Virtualization in data centers requires both higher Ethernet speeds and better link utilization. The BCM56760 with native support for 25G and 100G coupled with smart hashing is ideally suited for these emerging trends. Furthermore, as data centers interwork with public networks, there is an increasing need for these switches to support service provider features such as MPLS. The BCM56760 is built from the field-proven and industry-leading Trident2+ architecture, and is designed to provide a complete solution that blends service provider and data center requirements.

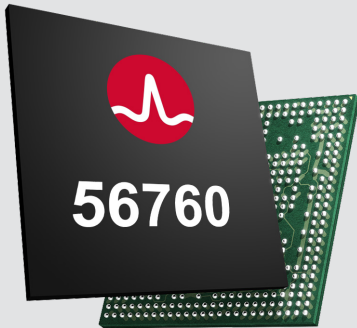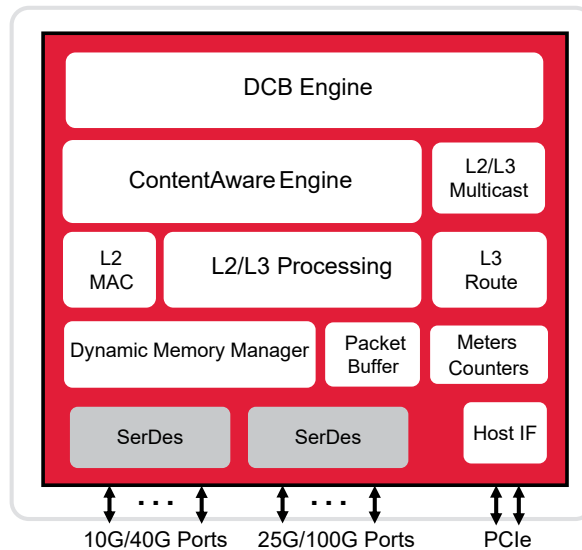**Figure 1: BCM56760 Block Diagram**

Highlights

- Route into and out of VxLAN and SPB tunnels in a single pass

- Native 25G and 100G support for dense rack server and ToR implementation

- MPLS and other service features that allow data centers to easily interface with provider networks

- Segment routing provides NFV applications ability to chain services

- SmartNV for infrastructure virtualization using advanced Layer 2 over Layer 3 (L2oL3) network overlay technologies such as VxLAN and NVGRE

- SmartBuffer to ensure dynamic memory allocation and optimal performance levels

- Standards-based TRILL and SPB support for Layer 2 multipathing

- SmartHash to eliminate polarization and load imbalances in fat-tree networks possessing heavy and diverse traffic patterns

- Dynamic load-balancing support based on flow bandwidth

- Ultralow pin-to-pin latency in Cut-Through and Store-and-Forward modes

Features

- Segment routing for service chaining in NFV applications

- Standards-compliant 10GbE/40GbE switch

- Advanced SmartHash engine for optimal and resilient load distribution across HiGig™, LAG, and ECMP trunk groups

- Smart-NV technology featuring support for VxLAN, NVGRE overlays, IEEE 802.1Qbg Edge Virtual Bridging, IEEE 802.1BR Bridge Port extension, and per-virtual machine traffic-shaping

- RIOT for VxLAN and SPB tunnels in a single pass

- Integrated SmartBuffer supporting lossless performance and high burst absorption using innovative traffic-load awareness and dynamic allocation schemes

Benefits

- Support for 100G via native CAUI-4

- Support for 25G ports as the industry transitions from 10G to 25G

- Single-chip solution for common fixed ToR, 10G/25G Blade Server, and line-card switching applications

- Fast time to market and reduced development complexity with common software API that abstracts the entire StrataXGS portfolio

- Reduced latency operation with cut-through switching architecture

- Power-saving with Energy Efficient Ethernet (EEE)

Applications

- Data centers

- Enterprise

- Service provider

Features (cont.)

- ContentAware™ engine for scalable, high-density ingress and egress packet classification

- Data center bridging support: PFC, QCN, ETS

- Dedicated FCoE forwarding engine enabling FC-BB-5 and FC-BB-6 deployment models

- Hardware-based tunneling services

- Energy Efficient Ethernet (EEE) support including customizable, low-power idle (LPI) control policies

- Integrated 1588v2 processor for Precision Time Protocol and IEEE 802.1AS for timing and synchronization

Figure 2: BCM56760-Based 1RU Fixed Pizza Boxes
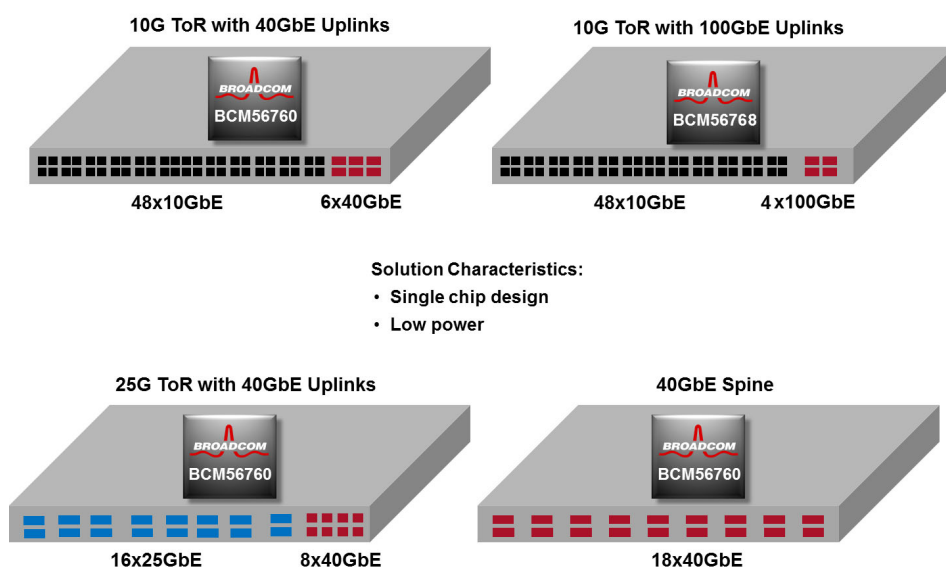
Ordering Information	
Part Number	SerDes Configurations
BCM56768	48x10G + 4x100G (CAUI-4) I/O
BCM56760	48x10G + 2x100G (CAUI-4), 72x10G, 18x40G, 16x25G + 8x40G
BCM56762	48x10G, 12x40G, 16x25G + 2x40G, 8x25G + 4x40G, 24x10G + 2x100G
BCM56765	72x10G, 18x40G, 48x10G + 6x40G

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