BROADCOM®

Connecting
e v e r y t h i n g ®

BCM56720
PRODUCT Brief

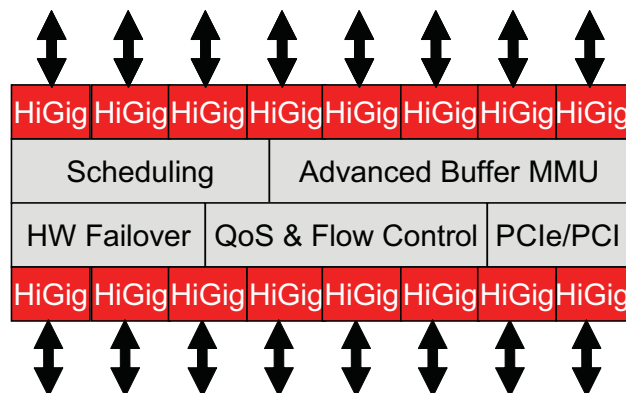# 16-PORT, 256-GBPS HIGIG™/HIGIG2™ SWITCH FABRIC

FEATURES

- Provides 16 HiGig/HiGig2 (HG) ports, each of the HG ports individually each support 10G, 12G, 13G and 16G speeds with HiGig™ or HiGig2™ protocols

- Scalable to multiterabits in multistage Clos architecture

- Line rate full-duplex switching for 256+ Gbps

- Forwarding rate of 320 million packets per second

- 10 priority queues per port: 8 Class of Service (CoS) queues with 2 additional strict priority queues for flow control and in-band management

- Intelligent Scheduler supports Strict Priority (SP), Weighted Round Robin (WRR) & Deficit Round Robin (DRR) with built-in Weighted Random Early Discard (WRED) and Explicit Congestion Notification (ECN) for Congestion Avoidance

- Integrated Dynamic Memory Management Unit (MMU) allows proactive, intelligent allocation of buffer memory resource in real time

- Service Aware Flow Control™ (SAFC) mechanism allows in-band back pressure per CoS

- Integrated HW failover mechanism for fast detection and recovery from link failure (<10 μs)

- Configuration and management via PCI or PCI Express® (PCIe™) with 32 CPU queues
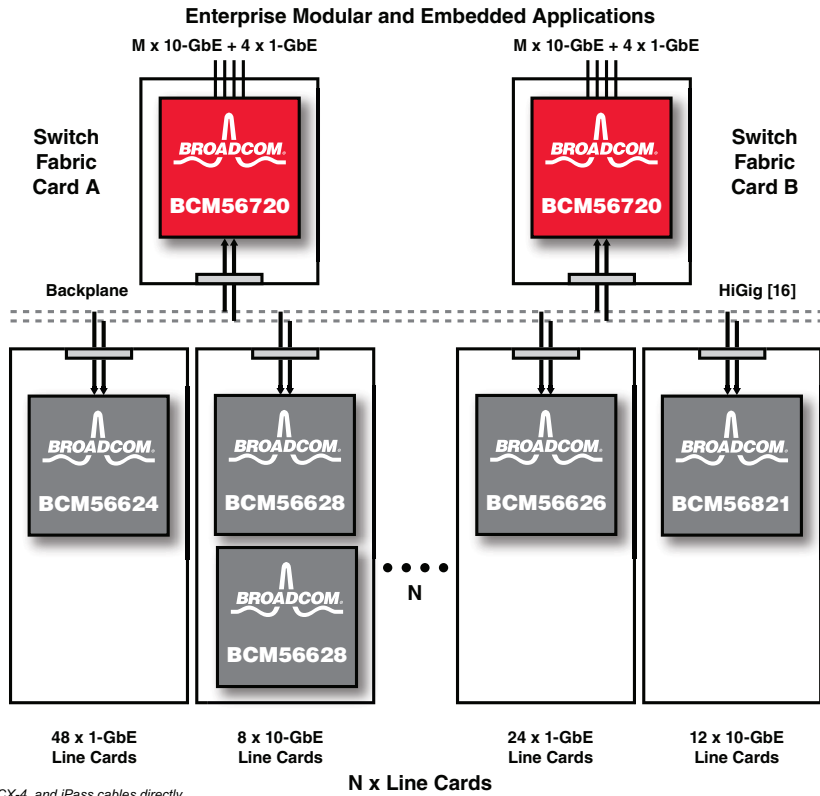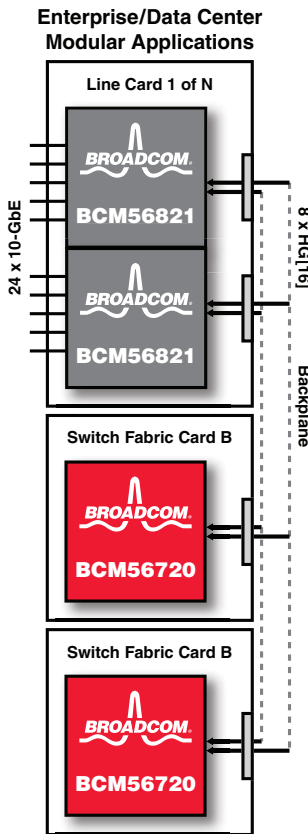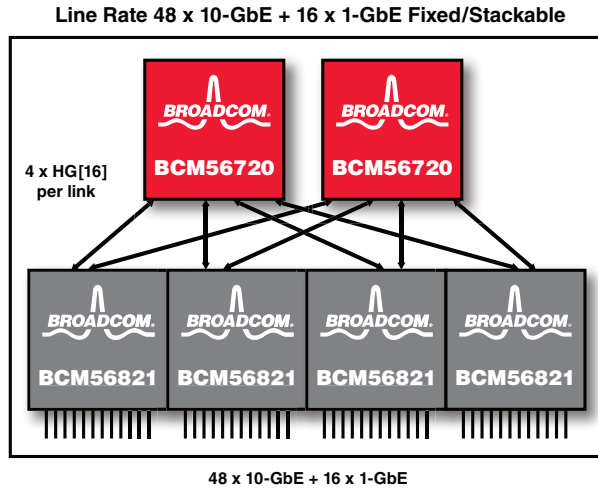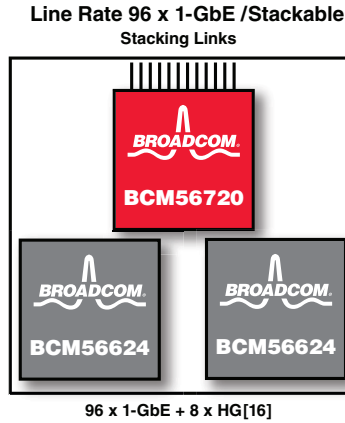
SUMMARY OF BENEFITS

- High level of scalability and integration enables unprecedented 1-GbE and 10-GbE port densities in Enterprise modular applications.

- Robust integrated SerDes, on-chip packet buffer memory and PLLs accelerate system design, drastically reduce cost, and conserve board space.

- Sixth-generation HiGig/HiGig2 stacking technology provides increased stacking bandwidth throughput for modular chassis and fixed/stackable solutions.

- Intelligent traffic management with per CoS SAFC supports lossless delivery of storage, clustering, video, voice and data over a common, unified fabric.

- Advanced load balancing, fast HW failover and recovery (<10 μs) provide high-performance, scalable, and reliable solutions for enterprise and data center.

- Hardware failover combined with improved 16G links enable full linerate operation even during failover condition with N+1 or 1+1 redundancy.

- Per port speed and HiGig/HiGig2 flexibility enable new high-speed HG solutions while maintaining full backward compatibility with existing deployed HG switches/line cards.

- Fully compatible Broadcom software API and Software Development Kit (SDK) enables software reuse from existing deployed systems and faster time-to-market.

Multiport Scalable HiGig Packet Fabric

BROADCOM®

Enterprise/Data Center Fixed/Stackable Applications

Line Rate 96 x 1-GbE /Stackable
Stacking Links

BROADCOM.
BCM56720

BROADCOM.
BCM56624

BROADCOM.
BCM56624

96 x 1-GbE + 8 x HG[16]

Line Rate 48 x 10-GbE + 16 x 1-GbE Fixed/Stackable

BROADCOM.
BCM56720

BROADCOM.
BCM56720

4 x HG[16]
per link

BROADCOM.
BCM56821

BROADCOM.
BCM56821

BROADCOM.
BCM56821

BROADCOM.
BCM56821

48 x 10-GbE + 16 x 1-GbE

Enterprise/Data Center Modular Applications

Line Card 1 of N

BROADCOM.
BCM56821

BROADCOM.
BCM56821

24 x 10-GbE

8 x HG[16]

Backplane

Switch Fabric Card B

BROADCOM.
BCM56720

Switch Fabric Card B

BROADCOM.
BCM56720

Enterprise Modular and Embedded Applications

M x 10-GbE + 4 x 1-GbE

Switch
Fabric
Card A

BROADCOM.
BCM56720

M x 10-GbE + 4 x 1-GbE

BROADCOM.
BCM56720

Switch
Fabric
Card B

Backplane

HiGig [16]

BROADCOM.
BCM56624

BROADCOM.
BCM56628

BROADCOM.
BCM56626

BROADCOM.
BCM56821

BROADCOM.
BCM56628

• • • •
N

48 x 1-GbE
Line Cards

8 x 10-GbE
Line Cards

24 x 1-GbE
Line Cards

12 x 10-GbE
Line Cards

N x Line Cards

Note1: HiGig/10-GbE ports can drive connectors, backplanes or CX-4, and iPass cables directly, allowing physical switch device to be located anywhere in the system.

Broadcom®, the pulse logo, **Connecting everything®**, and the Connecting everything logo are among the trademarks of Broadcom Corporation and/or its affiliates in the United States, certain other countries and/or the EU. Any other trademarks or trade names mentioned are the property of their respective owners.

Connecting
everything®

BROADCOM.