



 **BCM5715S**  
**PRODUCT**  
**Brief**



## DUAL-PORT GIGABIT ETHERNET CONTROLLER WITH A PCI EXPRESS<sup>®</sup> HOST INTERFACE

### FEATURES

- Dual integrated 1.25 Gbps SerDes interface
- PCI Express<sup>®</sup> x4 Host Interface
- Dual 1000BASE-X Media Access Controllers (MACs)
- MACs
  - Integrated high-speed RISC cores
  - 5 KB receive and 22 KB transmit buffers
  - CPU task offload features (TCP, IP, UDP checksum, and Microsoft<sup>®</sup> Large Send Offload)
- TCP segmentation, IP fragmentation, and reassembly
- Robust manageability
  - PXE 2.0 remote boot
  - Universal Management Port (UMP) interface for high-speed system management traffic
  - IPMI-compliant server management interface
  - Out-of-Box Wake-on-LAN (OoB WOL)
  - Statistic gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB for (802.3x, clause 30)
  - Comprehensive diagnostic and configuration software suite
  - SMBus 2.0 controller
- Power management, ACPI 1.1a-compliant in multiple power modes

### FEATURES (CONT.)

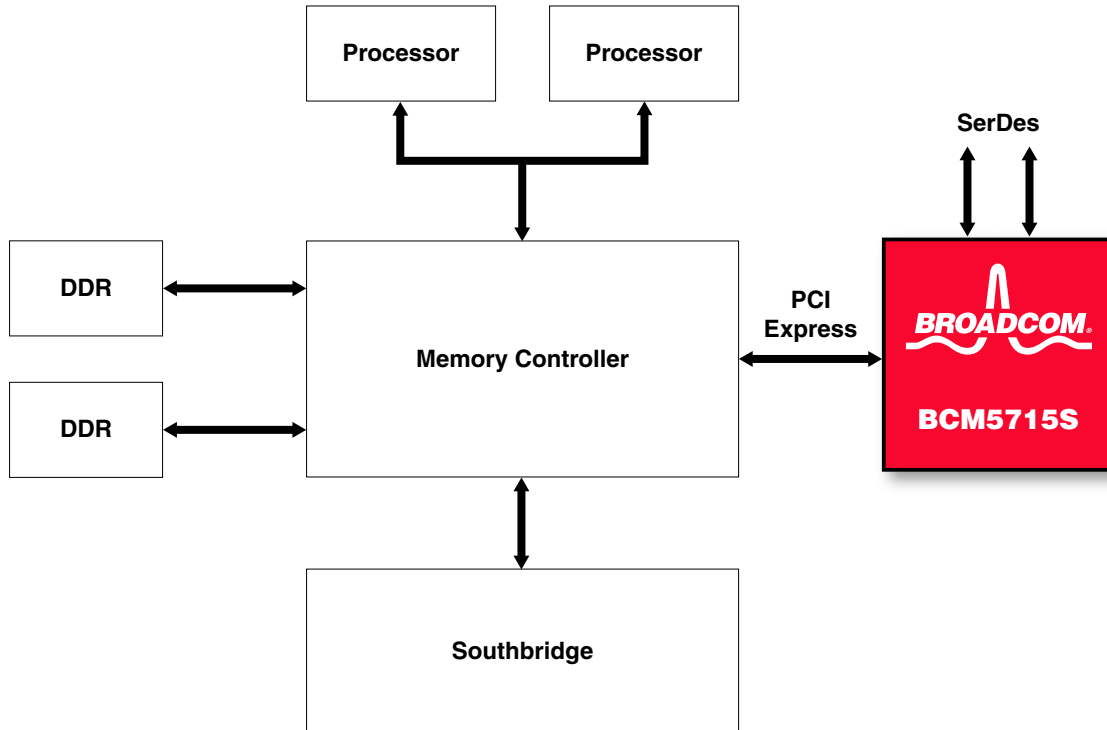
- Advanced Features
  - Priority queuing—802.1p Layer 2 priority encoding
  - Virtual LANs—802.1q VLAN tagging and support for up to 64 VLANs
  - Jumbo frames (9 KB)
  - 802.3x flow control
  - Link aggregation—802.3ad, GEC/FEC, and Smart Load Balancing<sup>™</sup>
  - Failover
- Performance features
  - CPU task offload
  - Adaptive interrupts
- 484-pin PBGA package
- Power
  - Rails—1.2V core, 2.5V I/O, and 3.3V I/O
- 0.13  $\mu\text{m}$  CMOS technology

### APPLICATIONS

- Highly integrated LAN on Motherboard (LOM) designs
- Blade servers
- Rack-optimized servers
- Dual-port Gigabit Ethernet (GbE) Network Interface Controller (NIC) card



## OVERVIEW



### System Block Diagram

Designed as a gigabit dual-port LAN controller for high-performance server applications, the BCM5715S combines dual 1000BASE-X MACs with dual 1000BASE-X SerDes transceivers, a UMP, and an on-chip memory buffer in a single device. The device is fabricated in a 1.2V CMOS process, providing a low-power system solution.

The BCM5715S provides a single x4 PCI Express host interface and two GbE Controllers. Each function has its own PCI configuration space.

Each Ethernet controller has a dedicated on-chip, high-performance RISC processor for custom frame features.

The BCM5715S supports a UMP interface for high-speed system management communications via the dual-GbE ports. Two fully featured MACs provide full-duplex and half-duplex modes at 1000 Mbps.

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### BROADCOM CORPORATION

5300 California Avenue  
Irvine, California 92617

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5715S-PB03-R 04/14/09

Phone: 949-926-5000  
Fax: 949-926-5203  
E-mail: [info@broadcom.com](mailto:info@broadcom.com)  
Web: [www.broadcom.com](http://www.broadcom.com)