

DUAL-PORT GIGABIT ETHERNET CONTROLLER WITH A PCI EXPRESS® HOST INTERFACE

FEATURES

- Dual integrated 1.25 Gbps SerDes interface
- PCI Express® 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® 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

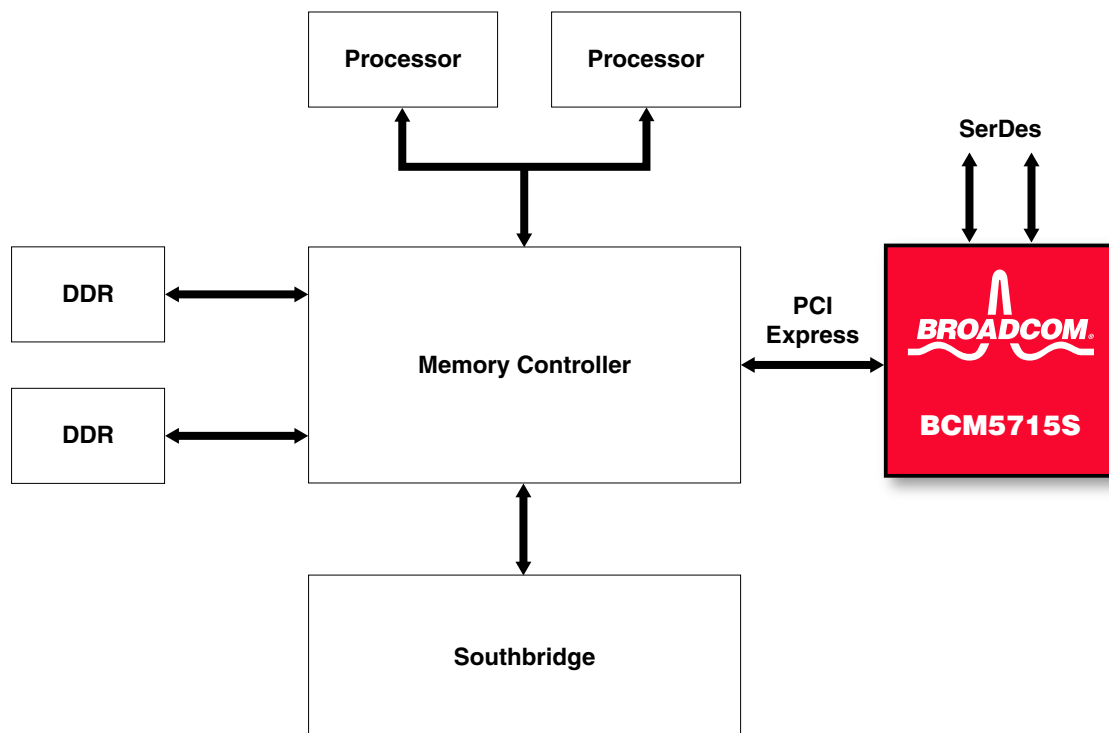
FEATURES (CONT.)

- 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™
 - 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 µm 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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