

everything®

# **BCM5703**





# 10/100/1000BASE-T CONTROLLER WITH INTEGRATED TRANSCEIVER

### **FEATURES**

#### Single-chip solution for LAN on Motherboard (LOM) and network interface card (NIC) applications

- Integrated 10BASE-T/100BASE-TX/1000BASE-T transceivers
- 10/100/1000 triple-speed MAC
- · Host interfaces
  - PCI v2.2—32/64 bits, 33/66 MHz
  - PCI-X v1.0—64 bits, 66/100/133 MHz
- Ultra-deep 96-KB on-chip packet buffer
- Dual high-speed RISC cores with 16-KB caches
  - Programmable, in-line packet classification
- SMBus 2.0 controller
- On-chip power circuit controller and Wake on LAN (WOL) power switching circuit

#### • Performance features:

- TCP, IP, UDP checksum
- · TCP segmentation
- CPU task offload
- · Adaptive interrupts
- Ultra-deep 96-KB packet buffer

## • Robust manageability:

- PXE 2.0 remote boot
- Alert Standard Format—ASF 1.0 support
- · Wake on LAN
- Out-of-box (OOB) Wake on LAN
- Intelligent platform management interface (IPMI), version 1.5
- Statistic gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB)
- Comprehensive diagnostic and configuration software suite
- ACPI 1.1a compliant multiple power modes

### Advanced network features:

- Priority queuing—802.1p layer 2 priority encoding; support for four priority queues
- Virtual LANs—802.1q VLAN tagging; support for up to 64 VLANs
- Jumbo frames (9 KB)
- 802.3x flow control

#### Advanced server features:

- Link aggregation—802.3ad, GEC/FEC, Smart Load Balancing<sup>TM</sup> (supports heterogeneous teams)
- Heterogeneous, mixed-speed failover
- PCI Hot-Plug support
- Low-power, 0.13-um CMOS design
- 400-pin FBGA package
- 3.3V I/Os (5V tolerant)
- JTAG

### SUMMARY OF BENEFITS

- Industry's smallest 10/100/1000 MAC+PHY solution—power and space optimized for LOM and low-profile NIC applications
- Completely backward-compatible:
  - To existing 10/100 network infrastructure
  - To existing PCI-based desktop and server platforms

#### Futureproof

- PCI-X interface, on-chip programmable CPUs, ASF support
- Performance focused—optimized for throughput and CPU utilization
  - Adaptive interrupts
  - PCI-X eliminates PCI bottlenecks
  - Ultra-deep 96-KB packet buffer lowers CPU utilization and avoids PCI congestion
  - CPU task offloads reduces utilization level of CPU

#### Robust and highly manageable

- PXE 2.0, ACPI 1.1a, Wake on LAN, ASF 1.0, IPMI
- Integrated cable testing—link quality, length, pair skew, pair polarity, pair swap

### Advanced features

- VLAN, priority queuing, jumbo frames
- RISC processors for advanced packet classification

### Server class reliability, availability, and performance features

- Link aggregation and load balancing
- Switch-dependent
- 802.3ad (LACP), generic trunking (GEC/FEC)
- Switch- and NIC-independent
- Smart Load Balancing<sup>TM</sup>—unique technology that supports heterogeneous teams, and can operate with any switch
- Failover
- Smart Load Balancing allows heterogeneous failover
- PCI Hot Plug

## Low-power for zero airflow implementations

- 0.13-um CMOS design
- · Advanced power management

### Space savings for LOM

- 400-pin FBGA package
- No external memory
- Integrated power circuitry

