



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

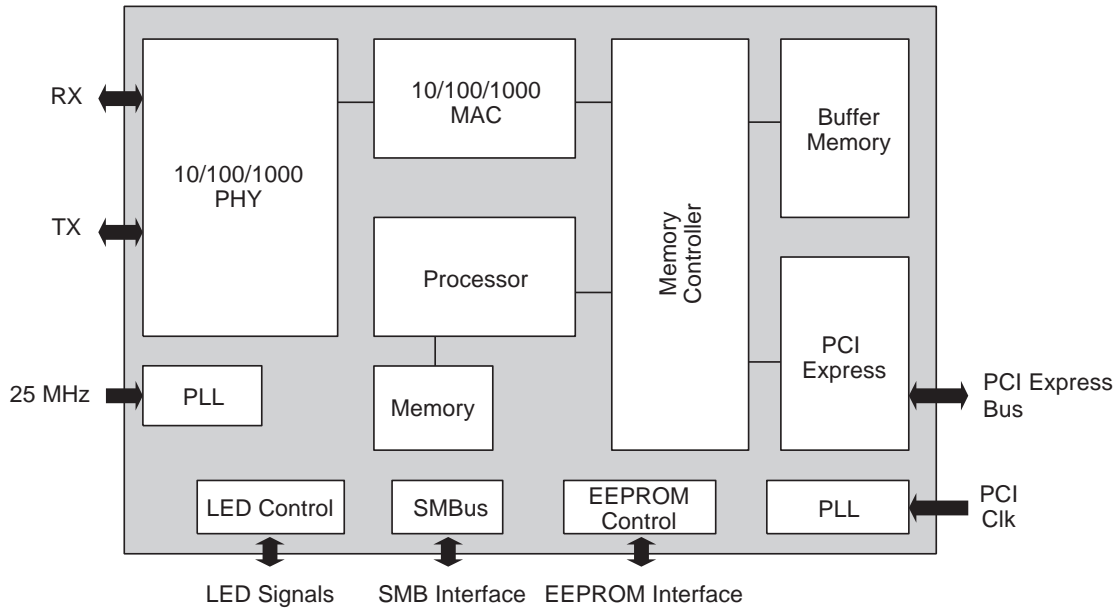
FEATURES

- **Single-chip device for server LAN-on-Motherboard (LOM) or network interface card (NIC) applications**
- **Integrated 10/100/1000BASE-T transceiver**
 - 10/100/1000BASE-T triple-speed MAC
 - High-speed RISC core with 24-KB cache
 - SMBus 2.0 controller
 - On-chip voltage regulation
 - Wake-on-LAN (WOL) power switching circuit
- **PCI Express host interface**
 - 1x lane
 - Four-pin interface
 - Functionality identical to PCI
- **Performance features**
 - TCP, IP, and UDP checksum
 - Microsoft® Large Send Offload
 - Large burst read
 - Interrupt coalescing
- **Industry-compliant manageability features**
 - IPMI 1.5 support
 - Standards-compliant WOL
 - Innovative out-of-box mode WOL
 - Hardware power switching
- **3.3V I/Os (5V tolerant)**
- **JTAG**

SUMMARY OF BENEFITS

- **Wirespeed performance increases user performance**
 - PCI Express provides wirespeed non-blocking throughput
 - TCP/IP offloads significantly reduce utilization of CPU
 - TCP/IP offloads significantly increase throughput to enable faster downloads of large files
- **Industry's smallest GbE form factor enables easier motherboard design**
 - Innovative design reduces footprint to 67% smaller than competing solutions
 - 15 x 15-mm package
 - Integrated WOL switching eliminates external power switching components
- **IPMI 1.5 remote manageability reduces IT costs**
 - Support for standards-based manageability allows IT managers to receive automatic alerts when PC support issues occur
 - Remote power-on/off features allow IT managers to power cycle PCs to address issues

OVERVIEW



The **BCM5721** is a fully integrated 10/100/1000BASE-T Gigabit Ethernet media access control and physical layer transceiver solution for high-performance network applications. The **BCM5721** combines a triple-speed, IEEE 802.3 compliant media access controller (MAC), PCI Express bus interface, on-chip buffer memory, and integrated physical layer transceiver in a single device. The **BCM5721** is fabricated in a low-voltage silicon process, providing an ultra-low power solution. By itself, the **BCM5721** provides a complete single-chip Gigabit Ethernet NIC or LOM solution.

The **BCM5721** includes a 10/100/1000-Mbps Ethernet MAC with full-duplex and half-duplex capability at all speeds. Support for the following 802.3 functions is featured in the MAC:

- VLAN tagging
- Layer 2 priority encoding
- Full-duplex flow control

The transceiver is fully compatible with the IEEE 802.3 standard for auto-negotiation of speed. Additionally, several Plug-and-Play enhancements are included to make the device even more user-friendly. A unique integrated cable analyzer feature allows a user to self-diagnose any issues with the network cabling that could affect the host machine. A link quality indicator LED and a GUI application give installers an instant visual indication of problems. This includes physical wiring defects or channel conditions, such as excessive cable length, return loss, crosstalk, echo, and noise.

Broadcom's remote cable management and diagnostics software can be used with the device to provide remote management of the cable and a first level of diagnostics and fault isolation.

Target applications of the **BCM5721**:

- Server PC NIC
- Server PC LOM

Software drivers available:

- Windows NT®, 2000, XP, and 2003
- Linux® 2.2 and 2.4
- NetWare®
- Solaris™ x86
- UNIX®

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