



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

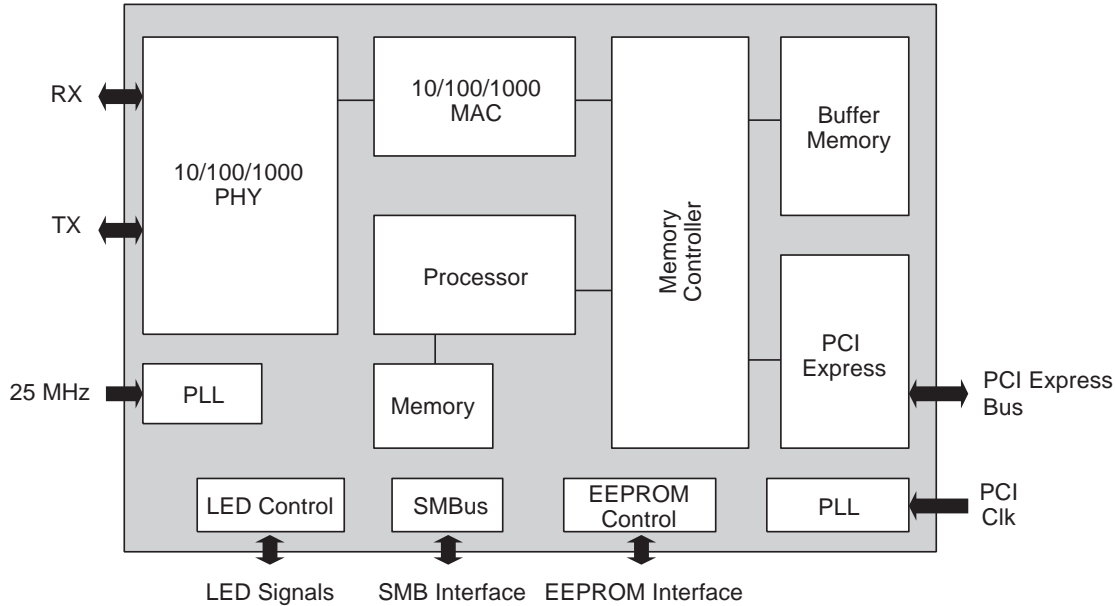
### FEATURES

- **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.

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**BROADCOM CORPORATION**  
16215 Alton Parkway, P.O. Box 57013  
Irvine, California 92619-7013

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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<sup>®</sup>, 2000, XP, and 2003
- Linux<sup>®</sup> 2.2 and 2.4
- NetWare<sup>®</sup>
- Solaris<sup>™</sup> x86
- UNIX<sup>®</sup>



Phone: 949-450-8700  
Fax: 949-450-8710  
E-mail: [info@broadcom.com](mailto:info@broadcom.com)  
Web: [www.broadcom.com](http://www.broadcom.com)