



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

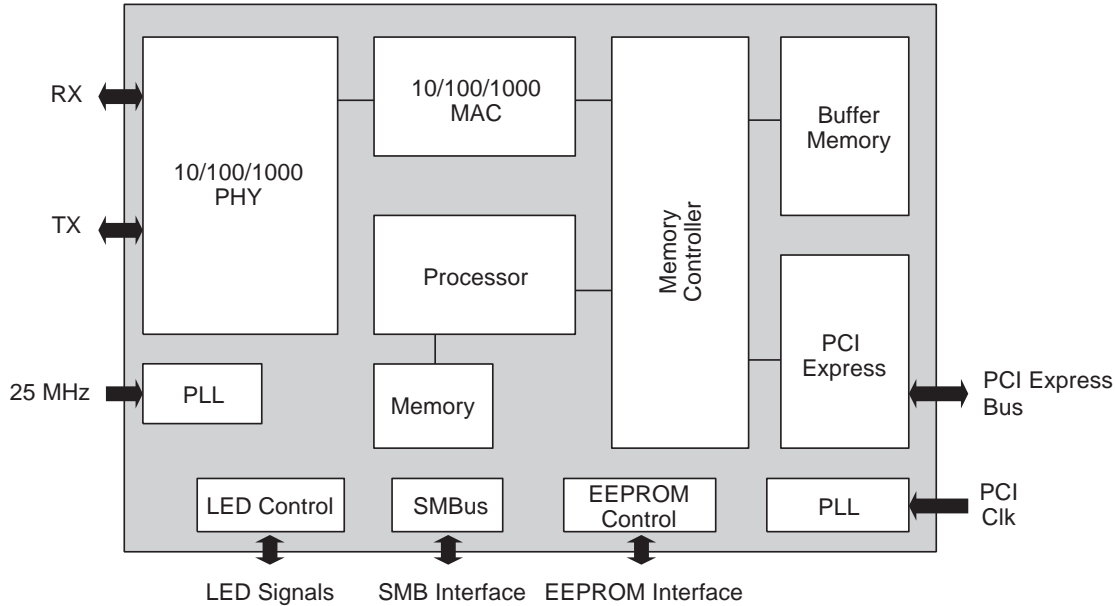
FEATURES

- **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'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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