

INTEGRATED GIGABIT ETHERNET CONTROLLER

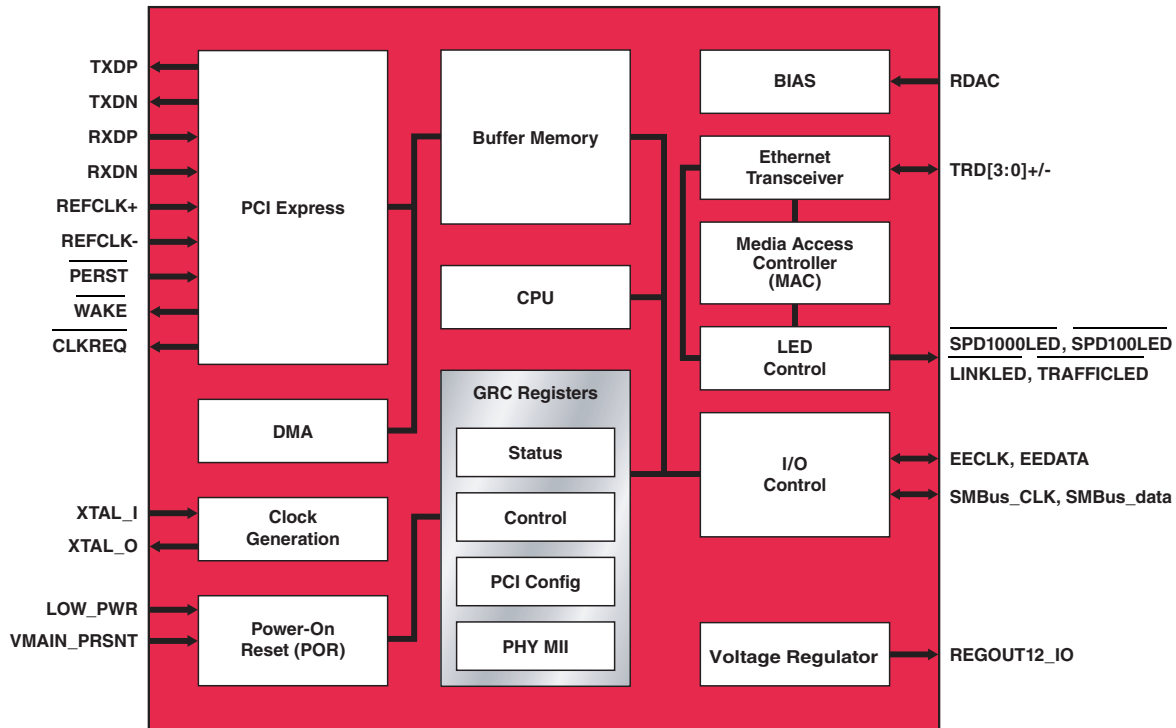
FEATURES

- **Integrated 10/100/1000BASE-T transceiver**
 - 10/100/1000BASE-T triple-speed media access controller (MAC)
 - Compliant with IEEE standards
 - Compliant with IEEE 802.3az draft for Energy Efficient Ethernet™ (EEE)
 - State-of-the-art physical layer interface that exceeds IEEE requirements
 - Jumbo frame support with up to 9.6 KB frame size
 - EthernetAV protocols with IEEE 802.1AS, 1588-2008, IEEE P802.1Qat, and IEEE P802.1Qav support
- **PCI Express® host interface**
 - x1 PCIe™ v1.1
 - Active state power management (ASPM) capability
 - Message signal interrupt (MSI)
- **Intelligent power management**
 - Centralized power management enables easy and efficient control of various power modes.
 - Innovative implementation that optimizes power consumption dynamically and transparently, depending on network and system states
- **Performance features**
 - TCP, IP, and UDP checksum offload (CSO)
 - Receive side scaling (RSS) for multicore client processors
 - IPV4 and IPV6 Microsoft® Large Send Offload (LSO)
 - Interrupt coalescing
 - Microsoft Windows® 7 WOL and Proxy support
- **Robust ACPI-compliant WOL**
- **Alert Standard Format (ASF) 2.0**
- **On-chip voltage regulation using switching regulator**

SUMMARY OF BENEFITS

- **Single-chip solution for LAN on Motherboard (LOM) applications**
- **Proven technology built on twelve generations of controller products**
- **Wirespeed performance increases user performance.**
 - PCI Express provides wirespeed nonblocking throughput.
 - TCP/IP checksum offload significantly reduces CPU usage and increases network throughput for large-file download.
- **Extremely low power consumption enables environment-friendly designs.**
 - Increases battery life in mobile applications and saves energy in desktop implementations
 - Advanced power management capabilities with ASPM L0s, L1, and PCIe™ CLKREQ
 - Eliminates false system wake-up with NIC proxy capabilities
 - Enables Energy Star® compliant platforms
- **Small package enabling smaller and more portable designs**
 - 6 mm x 6 mm, 48-pin QFN package
- **Lower BOM cost and chip cost, reducing overall cost of solution**
 - 65 nm process
 - Fully integrated power regulation with minimal external discrete component
 - On-chip nonvolatile memory that eliminates the need for external memory device
 - Serial NVRAM interface with autosensing capability for advanced capabilities
- **iSCSI boot capability**
 - Allows diskless implementations
 - Improved manageability and deployment with remote boot
- **System alerting and power cycling reduces IT costs**
 - ASF 2.0 support for standards-based alerting—IT managers receive automatic alerts when PC support issues occur.
 - Remote power-on/off features allow IT managers to power-cycle PCs to address issues.

OVERVIEW



Functional Block Diagram

The BCM57761 is a Broadcom® NetXtreme® twelfth-generation 10/100/1000BASE-T Ethernet LAN controller solution for high-performance network applications. The device combines a triple-speed IEEE 802.3™-compliant MAC with a triple-speed Ethernet transceiver, x1 PCIe bus interface, and on-chip buffer memory in a single device. The BCM57761 is fabricated in a 65 nm CMOS process, providing a low-power system solution.

The device performs all the physical layer functions for 1000BASE-T, 100BASE-T, and 10BASE-T Ethernet on standard Category 5 UTP cable. Based on proven DSP technology, the device is a highly integrated solution combining digital adaptive equalizers, ADCs, PLLs, line drivers, echo cancellers, crosstalk cancellers, and all other required support circuitry. A full-featured MAC provides full-/half-duplex capability at all speeds.

The on-chip high-performance processor enables custom frame processing features. For a lower total solution cost and lower power system-level power consumption, the BCM57761 integrates on-chip switching regulators and nonvolatile memory that eliminates the need for an external NVRAM device. The BCM57761 is truly a single-chip solution for a Gigabit Ethernet (GbE) LOM.

Target applications:

- Desktop and mobile PC LOM

Software drivers available:

- Windows® 2000, XP, 7, and Windows Vista®
- Linux® 2.4 and 2.6

Broadcom®, the pulse logo, Connecting everything®, the Connecting everything logo, NetXtreme®, and the NetXtreme logo are among the trademarks of Broadcom Corporation and/or its affiliates in the United States, certain other countries and/or the EU. Any other trademarks or trade names mentioned are the property of their respective owners.

Connecting
everything®

BROADCOM CORPORATION

5300 California Avenue
Irvine, California 92617

© 2009 by BROADCOM CORPORATION. All rights reserved.

57761-PB00-R 12/10/09



Phone: 949-926-5000
Fax: 949-926-5203
E-mail: info@broadcom.com
Web: www.broadcom.com