



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

FEATURES

- **Single-chip, dual-port solution for dual LAN on Motherboard (LoM) and network interface card (NIC) applications**
 - Two integrated 10BASE-T/100BASE-TX/1000BASE-T transceivers
 - Two 10/100/1000 triple-speed MACs
 - Single host interface
 - PCI v2.2 32/64-bit, 33/66 MHz
 - PCI-X v1.0 64-bit, 66/100/133 MHz
 - Dual ultra-deep 64-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 power switching circuit
 - **Performance features**
 - TCP, IP, UDP checksum
 - TCP segmentation
 - CPU task offload
 - Adaptive interrupts
 - Ultra-deep 64-KB packet buffer
 - **Robust manageability**
 - PXE 2.0 remote boot
 - Alert Standard Format—ASF 1.0 support
 - Wake on LAN (WoL)
 - Out-of-box WoL
 - Intelligent Platform Management Interface (IPMI), ver. 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 (supports heterogeneous teams)
 - Heterogeneous, mixed speed failover
 - Hot-plug PCI support
 - **Low-power, 0.13-µm CMOS design**
 - **300-pin HBGA package**
 - **3.3V I/Os (5V tolerant)**
- JTAG

SUMMARY OF BENEFITS

- **Industry's smallest dual 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 64-KB packet buffer—lowers CPU utilization, avoids PCI congestion
 - Networking task offloads reduces utilization level of CPU
- **Robust and highly manageable**
 - PXE 2.0, ACPI 1.1, 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 (unique technology that supports heterogeneous teams and can operate with any switch)
 - Failover
 - Smart Load Balancing allows heterogeneous failover
 - Hot-plug PCI
- **Low power for zero airflow implementations**
 - 0.13-µm CMOS design
 - Advanced power management
- **Space savings for LoM**
 - 300-pin HBGA package
 - No external memory
 - Integrated power circuitry

