



Yukon™  
 Gigabit Ethernet Controller with  
 Integrated PHY  
 88E8001/88E8010



**PRODUCT OVERVIEW**

The Marvell® Yukon™ 32-bit (88E8001) and 64-bit (88E8010) family of single-chip desktop and server network connectivity solutions offers unprecedented integration of Marvell's market-leading Gigabit PHY and MAC technology with the industry's most comprehensive software driver suite. The Marvell Yukon devices are offered in an ultra-small form factor, and are ideally suited for client and server Network Interface Card (NIC), LAN on Motherboard (LOM) and embedded applications. The Yukon products' deep memory buffers maximize throughput while requiring low PCI bus and CPU utilization, eliminating the need for costly external memory and associated board space. The Marvell Yukon products are the first to utilize the Company's Virtual Cable Tester™ (VCT) technology for advanced cable diagnostics, reducing network installation and support costs. Marvell offers a complete driver suite and hardware reference design for fast time-to-market implementations supporting the Yukon products.

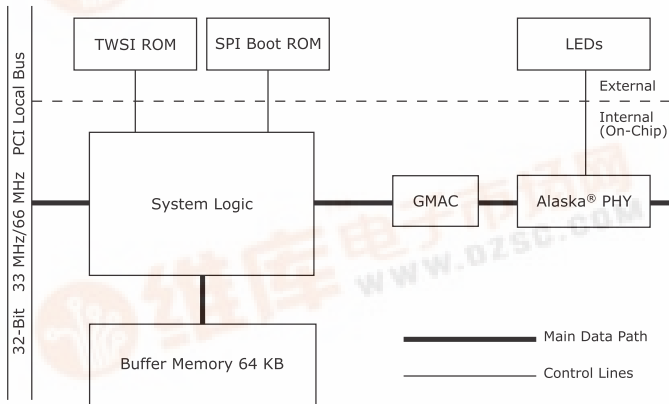


Fig 1. Yukon™ PCI LOM/NIC/Embedded Application (88E8001) Block Diagram

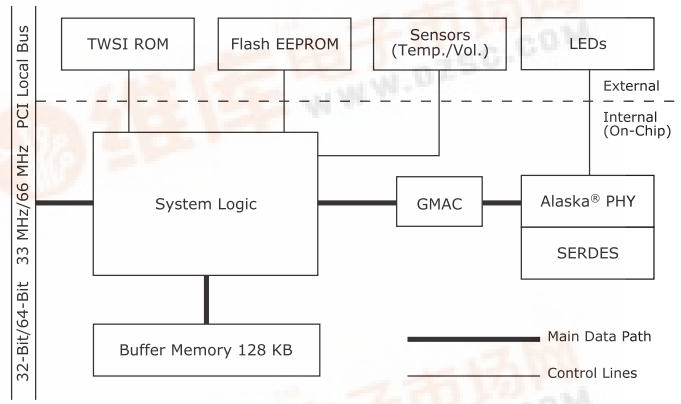


Fig 2. Yukon PCI NIC/LOM/Embedded Application (88E8010) Block Diagram

**FEATURES**

- Ultra small form factor with low pin count
  - 14mm x 20mm, 128 LQFP Yukon device (88E8001)
  - 17mm x 17mm, 256 TFBGA Yukon device (88E8010)
- Integrated market-leading PHY and SERDES (88E8010)
- Triple-speed 10/100/1000BASE-T IEEE 802.3u compliant operation
- Ultra-deep RAM on-chip buffer
  - 64 KB RAM for 88E8001
  - 128 KB RAM for 88E8010
- Host offloads
  - TCP/IP and UDP Checksum generation/checking "on the fly"
  - Interrupt moderation
  - Jumbo frame support

**BENEFITS**

- Minimizes board space, simplifies signal routing and reduces required PCB layers, decreasing overall system costs
- Enables low profile NIC implementations
- Provide highly reliable Gigabit Ethernet (GbE) network connectivity
- Provide integrated SERDES (88E8010), enabling implementation of fiber and copper NICs based on same device
- Enables future-proofed desktop and server network connections with reduced cost of ownership
- Automatically configures to 10, 100 or 1000 Mbps
- Compatible with existing installed base
- Maximizes throughput for better system performance and responsiveness
- Eliminates the need for costly external memory and associated board space
- Provides offloading from the host system CPU and Input and Output (I/O) resources to improve application response
- Provide high throughput for superior network performance





## FEATURES

- Advanced cable diagnostics
  - Marvell VCT technology for advanced cable diagnostic functions
  - Cable monitoring and auto-correct for copper solutions
- PCI 2.3 (88E8001)
- Low power modes and Advanced Power Management
  - Wake on LAN (WOL) power management support
  - WOL Plug-In-Go support (88E8001)
  - Advanced Power Management, compliant to ACPI 2.0
  - Energy detect (88E8001)
  - Clock run (88E8001)
- Broadest software driver suite
  - Microsoft® Windows® 98/Me, NT, 2000, and XP; Linux; SUN® OS and Novell Netware
- Preboot Execution Environment (PXE) 2.1 support
- IEEE 802.1Q VLAN support
  - Support for up to 64 VLANs
- Programmable LEDs
  - Software configurable LED support

## BENEFITS

- Enable IT managers to easily pinpoint location of cabling issues
- Result in plug-and-play operation, reducing support requirements
- Conforms to latest PCI compliance standard
- Provide smart energy efficient minimal power operation and sleep states
- Provide wake-up out of the box functionality
- Provide cost-effective remote management and network administration
- Enable mobile client applications in addition to desktops and servers
- Reduces development time for quick time-to-market
- Implements a range of desktop and server platforms based on compatible technology
- Provides network boot capability for diskless workstations and thin clients
- Enhances network security and enables automated system checking
- Enables VLANs for network segmentation and security
- Provide flexibility to display link speed, status and quality

## APPLICATIONS

The Marvell Yukon products are designed for motherboard, NIC and embedded applications. The Yukon 88E8001 product's small footprint and low pin count is optimized for high-volume 32-bit PCI desktop and mobile motherboard designs as well as NIC implementations. The Yukon 88E8010 device is designed for 64-bit and 32-bit PCI server applications and includes high-link redundancy and aggregation functionality for servers.

Marvell provides comprehensive software driver suites, utilities and boot ROM code support for client and server applications. The product solutions include complete hardware reference designs that include schematics, BOM and layout files for time-to-market implementations.

**THE MARVELL ADVANTAGE:** The Marvell Yukon family of GbE controllers come with complete software driver suites and a hardware evaluation platform to assist with customer product evaluation and quick time-to-market implementations. Marvell's worldwide field applications engineers collaborate closely with network equipment vendors to develop and deliver new competitive products to market on time. Marvell utilizes recognized world-leading semiconductor foundry and packaging services to reliably deliver high-volume and low cost total solutions.

For more information, visit our website at [www.marvell.com](http://www.marvell.com).



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