PRODUCT OVERVIEW

The Marvell® family of low power Gigabit Ethernet (GbE) switches provide industry-leading functionality and price performance ratio for the Enterprise desktop switching market and Small Office/Home Office (SOHO) market. The 88E6182/88E6185 devices are single-chip 10-port GbE switches with support for Quality of Service (QoS), 802.1Q, and RMON counters. Both devices contain 10 SERDES ports, three of which can drive a fiber module directly.

The 88E6182 product is designed for unmanaged or lightly managed (web smart) applications. The 88E6185 device is designed for fully managed and stackable switches. The 88E6182/88E6185 GbE switches have one Gigabit port that supports a GMII/MII interface to connect to external Gigabit media access controllers (MACs). The switch contains 10 independent 802.3 media access controllers (MACs), a high-speed, non-blocking four traffic class QoS switch fabric, a high-performance address lookup engine, and a 1 Mb frame buffer memory. The devices are designed for cost-sensitive, low to high-port count switch systems that require QoS, Spanning Tree, and stacking.
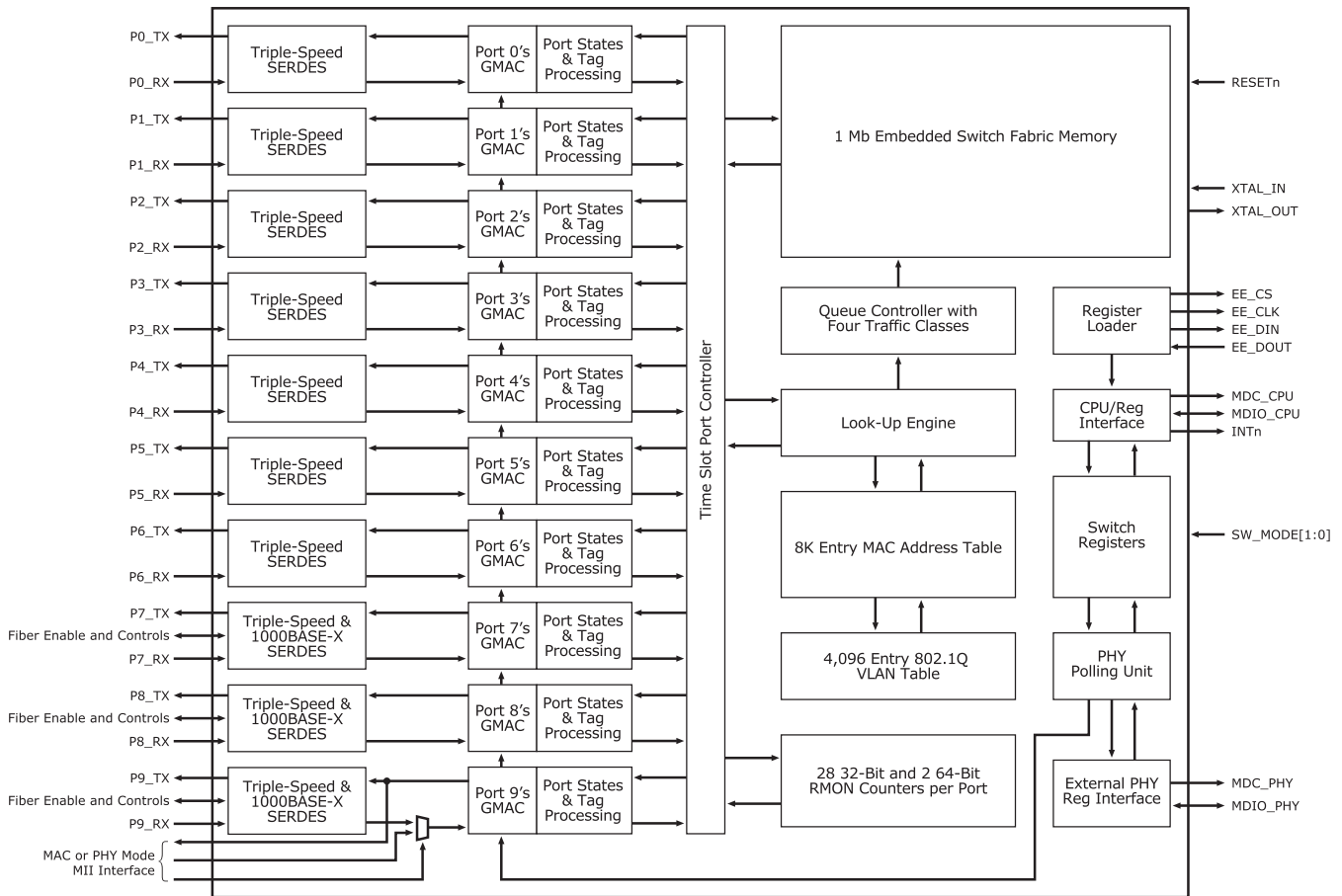

Fig 1. 88E6182/88E6185 Block Diagram

FEATURES

- Single-chip integration of a 10 GbE switch

- 10 integrated triple-speed 10/100/1000 SERDES ports

- Distributed Switching Architecture (DSA) for cascading multiple devices and stacking multiple systems
- IEEE 802.1X MAC-based authentication
- Port-based VLANs supported in any combination
- High-speed switch fabric
  - High-performance look-up engine with support for up to a 8K MAC address entries with automatic learning and aging tags, IPv4 Type of Service (TOS), Differentiated Services (DiffServ), and IPv6 traffic class
  - Port-based VLANs supported in any combination

- QoS determined by port ID, IEEE 802.1p and multimedia traffic tags, IPv4 Type of Service (ToS), Differentiated Services (DiffServ), IPv6 Traffic Class, 802.1Q VLAN ID, destination MAC address, and source MAC address
- Supports port-based VLANs and up to the full 4K 802.1Q VLANs

- Extensive RMON statistics counters
- Link aggregation for up to 16 trunks of up to 8 ports each
- Port mirroring

- IEEE 802.1D/w/s Spanning Tree Protocol Support
- Chip configuration through SMI ports (MDC/MDIO) or by low cost Serial EEPROM
- CMOS low power dissipation (typical 1.0W)

BENEFITS

- Provides a complete SOHO switching solution with true non-blocking switching performance and IEEE 802.1p QoS provisions
- Provide a glueless interface to Marvell Alaska® Gigabit PHYs. Allows triple-speed Ethernet 10/100/1000 Mbps operation. Three ports can drive a Gigabit fiber module directly
- Seamless stacking provided through standard Ethernet interfaces

- Provides Layer 2 security and authentication
- Provide Layer 2 firewall port isolation
- Provides true non-blocking switching performance
  - Supports a large number of Ethernet nodes

  - Supports port-based VLAN to allow suppression or addition of group membership to provide flexible management by IT managers

- Supports the highest number of traffic priority schemes in its class

- Provides Layer 2 firewall protection with port-based membership or 802.1Q VLAN-based membership

- Provides SNMP support for better network management
- Groups multiple links into one higher speed link
- Enables monitoring/analysis tools to monitor data from the network, mirrored from each selected port
- Conducts bridged loop detection through management packets
- Provides an easy, low cost switching configuration

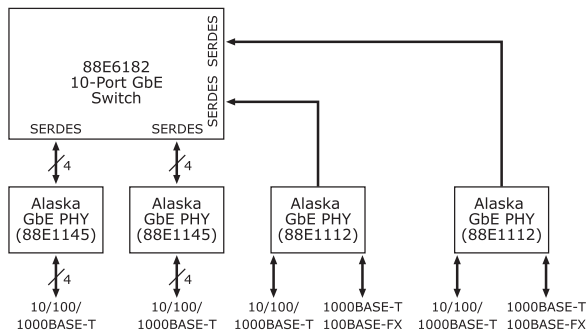- Eliminates expensive heatsinks or fans and permits the use of low cost, small enclosures

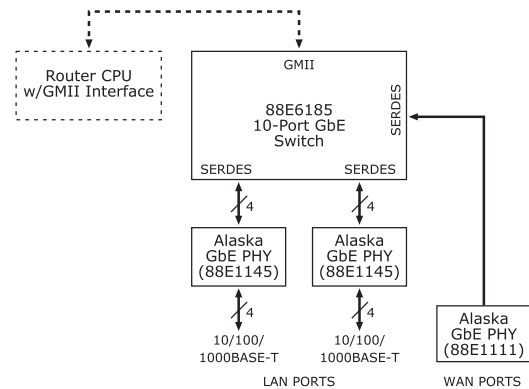Fig 2. 88E6182-Based 10-Port GbE Layer 2 Switch

Fig 3. 88E6185-Based 8-Port GbE Router with WAN Interface

APPLICATIONS

The 88E6182/88E6185 products offer a scalable and reliable platform for developing 8 and 10 port GbE unmanaged, lightly managed (smart), or fully managed solutions. Additionally, when used in conjunction with the 88E6092/88E6095 products, the 88E6182/88E6185 devices can be used to create 24 Fast Ethernet (FE) + 4 GbE and 48 FE + 4 GbE unmanaged, lightly managed (smart), or fully managed solutions. Some application examples are:

- Managed, smart, or unmanaged 8 GbE switch
- 8-port GbE router with WAN interface
- Unmanaged 10 GbE using a single 88E6182/88E6185 device
- 24 FE + 4 GbE switch using a single 88E6182/88E6185 with three 88E6092/88E6095 devices
- 48 FE + 4 GbE switch using a single 88E6182/88E6185 with six 88E6092/88E6095 devices

THE MARVELL ADVANTAGE: The Marvell 88E6182/88E6185 GbE switches come with a complete set of hardware and software development tools to assist network hardware engineers with product evaluation. 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.