



# SMB Solutions 8-Port 10/100 Plus 3-Port Gigabit Ethernet Stackable Switches

88E6092/88E6095/88E6095F

## PRODUCT OVERVIEW

The Marvell® 88E6092/88E6095/88E6095F devices are single-chip 8-port 10/100 plus 3-port Gigabit Ethernet (GbE) switches with support for Quality of Service (QoS), 802.1Q and RMON counters. It contains eight 10BASE-T/100BASE-TX transceivers (PHYs), and three SERDES interfaces that can be used to connect to external Marvell 10/100/1000 triple-speed Ethernet transceivers. The 88E6092/88E6095 devices provide a scalable, stackable solution that enables the design of Fast Ethernet (FE) switches from 8 to 48 ports with up to 4 GbE uplinks.

The 88E6092 product is designed for unmanaged or lightly managed (web smart) applications. The 88E6095/88E6095F devices are designed for fully managed and stackable switches. The 88E6095F product has two Gigabit ports that support a GMII/MII interface to connect to external GbE and FE media access controllers (MACs), while the 88E6092/88E6095 devices support one GMII/MII and one MII. The switch contains eleven 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. One or more devices can be used to create larger switches, such as 24 FE + 2 GbE or 48 FE + 4 GbE. The 88E6092/88E6095/88E6095F devices are designed for cost-sensitive, low to high-port count switch systems that require QoS, Spanning Tree, and stacking.

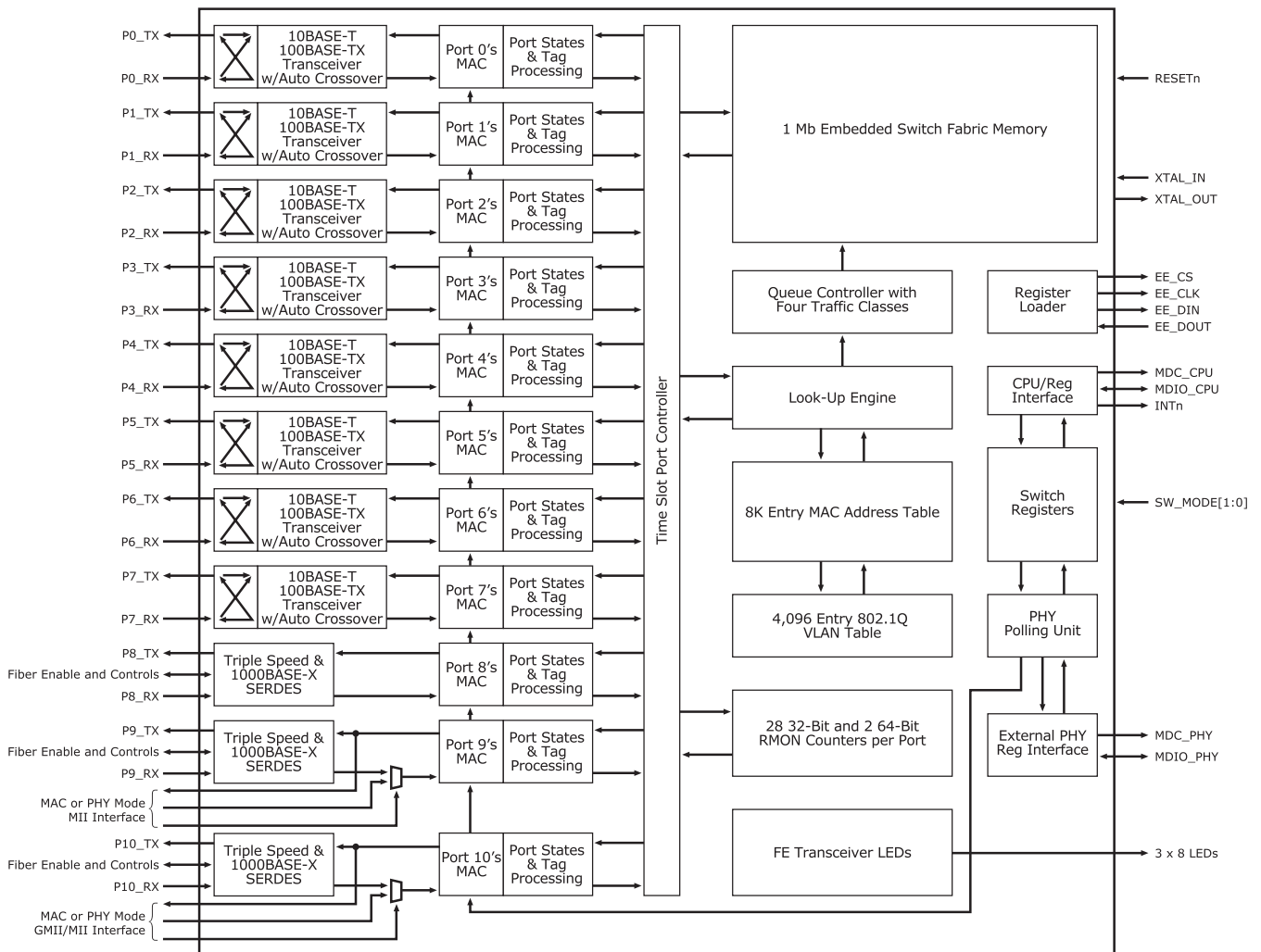


Fig 1. 88E6092/88E6095/88E6095F Block Diagram



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## FEATURES

- Single-chip integration of a 8 FE plus 3 GbE
- Three 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
  - 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
- Each fiber port can drive a Gigabit fiber module directly
- Seamless stacking enabled 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

## APPLICATIONS

The 88E6092/88E6095/88E6095F products offer scalable and reliable platforms for developing 8, 16, 24, and 48 10/100 ports unmanaged, lightly managed (smart), or fully managed solutions. In addition, stackable solutions can be seamlessly achieved using the 88E6185 device in combination with the 88E6095/6095F product. Some application examples are:

- 8 FE + 2 GbE using a single 88E6092/88E6095/88E6095F device
- 16FE + 2 GbE using two 88E6092/88E6095/88E6095F devices
- 24 FE + 2 GbE switch using three 88E6092/88E6095/88E6095F devices
- 24 FE + 4 GbE switch using three 88E6092/88E6095/88E6095F devices with a single 88E6185 (10-port GbE switch)
- 48 FE + 4 GbE switch using six 88E6092/88E6095/88E6095F devices with a single 88E6185 (10-port GbE switch)
- SOHO/SMB router with eight FE and two GbE ports
- Fiber to the curb cascade applications

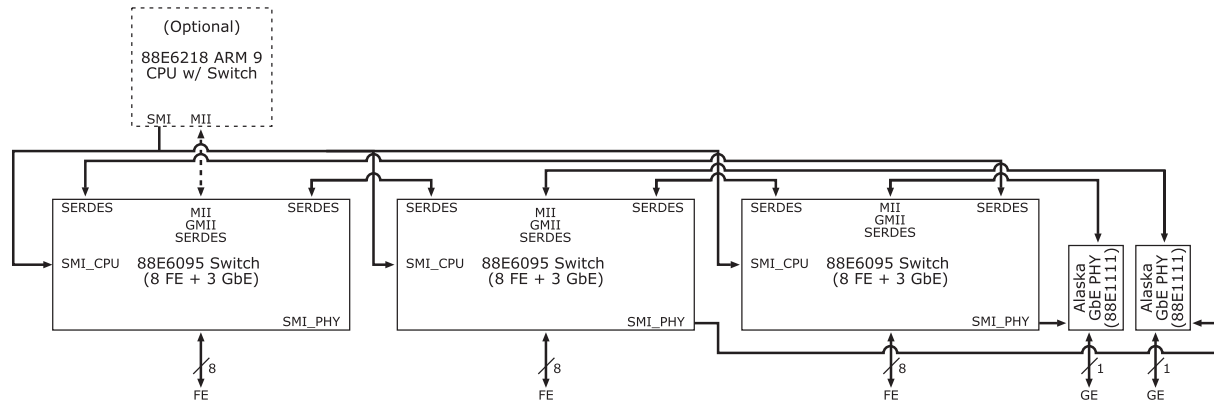


Fig 2. 88E6095-Based 24-Port 10/100 + 2-Port GbE Layer 2 Switch

**THE MARVELL ADVANTAGE:** The Marvell 88E6092/88E6095/88E6095F GbE stackable 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](http://www.marvell.com).



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