Switching Solutions

Link Street™
10-Port Fast Ethernet Switch with 802.1Q
88E6083

LINK STREET™

PRODUCT OVERVIEW

The Marvell® Link Street™ family of low power Fast Ethernet (FE) switches provides industry-leading functionality and price-performance ratio for the cost-sensitive Small Office/Home Office (SOHO) gateway/switching market and enterprise desktop switching market. The Link Street 88E6083 device is a 10-port Quality of Service (QoS) switch integrating a high-performance switching fabric with eight 10/100 Ethernet digital PHY ports and two MII ports. The device integrates strong support for QoS: four IEEE 802.1p priority queues per PHY port, plus 802.1p/IPv4/IPv6 traffic classification. The device also integrates strong network management and configuration support: IEEE 802.1Q VLANs and SNMP support with extensive RMON counters. The 88E6083 switch has optimizations for faster packet routing and is an ideal product for low cost enterprise-class desktop switches, advanced broadband gateway routers and Multi-Tenant Unit (MTU) gateways.

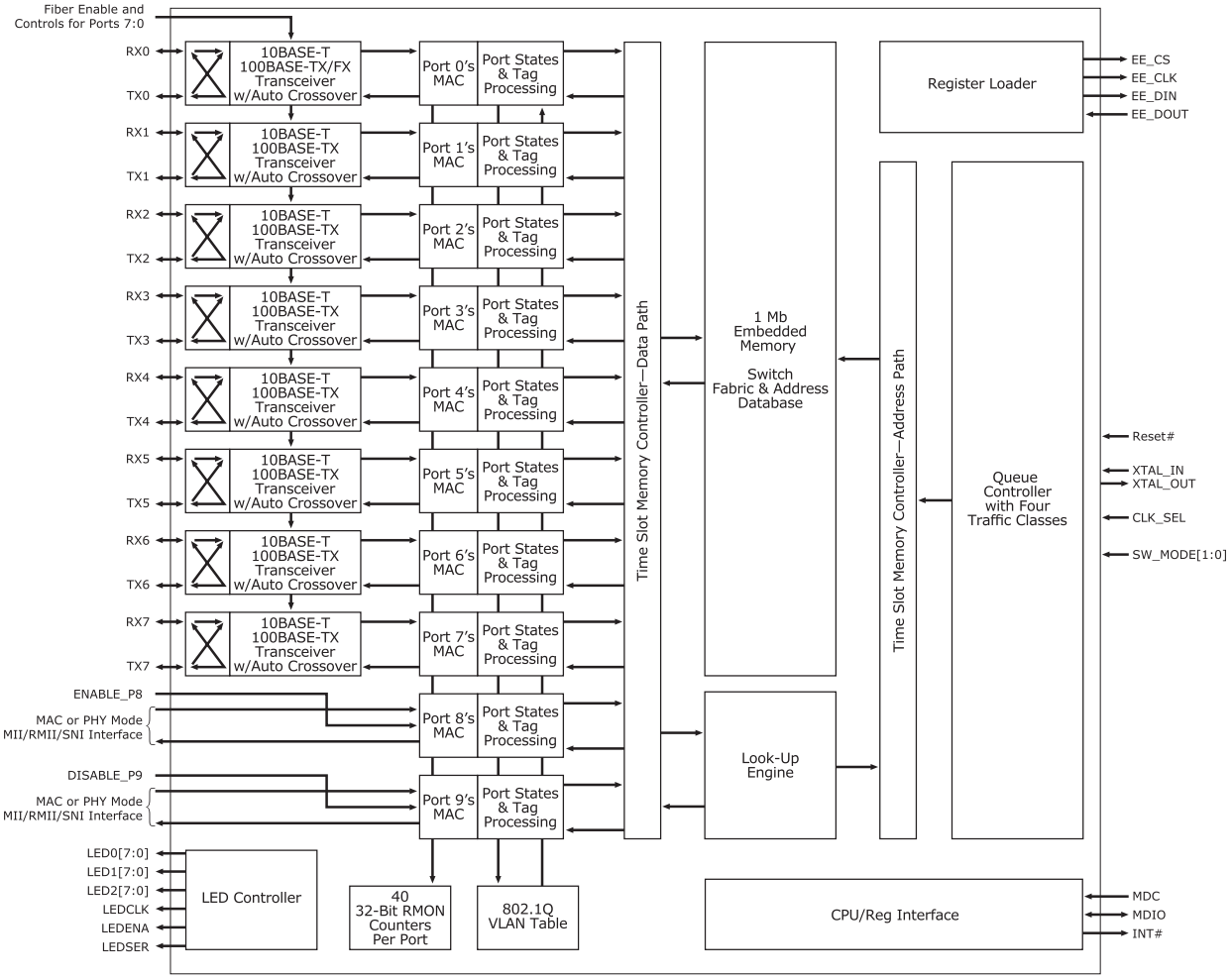

Fig 1. Link Street™ SOHO Switch (88E6083) Internal Block Diagram

MARVELL®

Link Street™ 10-Port Fast Ethernet Switch with 802.1Q

MOVING FORWARD FASTER®

FEATURES	BENEFITS
• Single-chip integration of a 10-port FE QoS switch	• Complete mixed-signal SOHO switching solution with true non-blocking switching performance and IEEE 802.1p QoS provisions
• Eight integrated 10/100 Ethernet PHY ports and two MII ports – Two of the PHY ports can be configured as copper or fiber – Multi-mode MII interfaces	– Support both copper and fiber connections – Provide design flexibility for connections to CPUs or external PHYs
• Eight integrated 10/100 Ethernet PHY ports – Automatic-MDI/MDIX crossover for 100BASE-TX and 10BASE-T ports – Two PHY ports can be configured for copper (100BASE-TX or 10BASE-T) or fiber (100BASE-FX) connections	– Simplifies and reduces cost of networking installation and reduces costly phone calls to equipment manufacturers' support centers – Support both copper and fiber connections with integrated Marvell Alaska® digital PHY technology for market-leading network reach
• High-speed switch fabric – High-performance look-up engine with support for up to 2,048 MAC address entries with automatic learning and aging – Port-based VLANs supported in any combination	• Provides true non-blocking switching performance – Supports a large number of Ethernet nodes – Allows for suppression or addition of group membership to provide flexible management by IT managers
• Virtual Cable Tester™ (VCT) technology	• Helps customers determine location of cable opens, shorts and impedance mismatch, reducing costly phone calls to equipment manufacturers' support centers
• QoS determined by destination MAC address, port ID, IEEE 802.1p and multimedia traffic tags, IPv4 Type of Service (TOS), and Differentiated Services (DiffServ)	• Supports the most number of traffic priority schemes in its class
• Port VLAN and 802.1Q support – 802.1Q VLAN support for up to 64 VLANs	• Provides Layer 2 firewall protection – Support both port-based membership or 802.1Q VLAN-based membership schemes
• Multiple address data bases (up to 16)	• Allows packet routing without modification of the MAC address
• SNMP and traffic class snooping support	• Enhances manageability
• Extensive RMON statistics counters	• SNMP support for better network management
• IGMP snooping (IPv4) and MLD snooping (IPv6)	• Allows better monitoring of traffic running on the network
• CMOS low power dissipation = 1.3W	• Eliminates expensive heatsinks or fans and permits the use of low cost and small enclosures

APPLICATIONS

The Marvell Link Street family of products provides industry-leading functionality for low cost integrated switches. The 88E6083 switch's high integration, low power and two extra ports saves BOM costs and supports many applications with few additional active components in a small footprint. The Link Street 88E6083 device is a 10-port QoS switch integrating a high-performance switching fabric with four priority queues, a high-speed address look-up engine, eight 10/100 Ethernet digital PHY ports, two MII ports, ten independent MACs, VCT technology for advanced cable diagnostics, 1Mb of memory, and Spanning Tree support. Other advanced features include 802.1p/IPv4/IPv6 traffic classification, 802.1Q VLAN, extensive RMON counters and special power management techniques for lowest power dissipation. The 88E6083 switch has optimizations for faster packet routing and is an ideal product for low cost enterprise-class desktop switches, advanced broadband gateway routers and Multi-Tenant Unit (MTU) gateways. The flexibility of the 88E6083 switch comes from its configuration options and integration. The device supports an optional EEPROM to override any desired QoS default settings. The 88E6083 switch contains PHYs, LED drivers, voltage regulator logic, QoS switch logic, and memory. The only active components required to implement a complete 88E6083 10/100 Ethernet switch are a 25 MHz crystal clock source and two low cost PNP transistors used by the 88E6083 device's voltage regulator to generate 1.5V and 2.5V from 3.3V.

THE MARVELL ADVANTAGE: The Marvell Link Street 88E6083 FE switch comes 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.

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