

Marvell® Link Street® 88E6341

6 Port Ethernet Switch with 2500Base-X SerDes and Four 10/100/1000Mbps PHYs

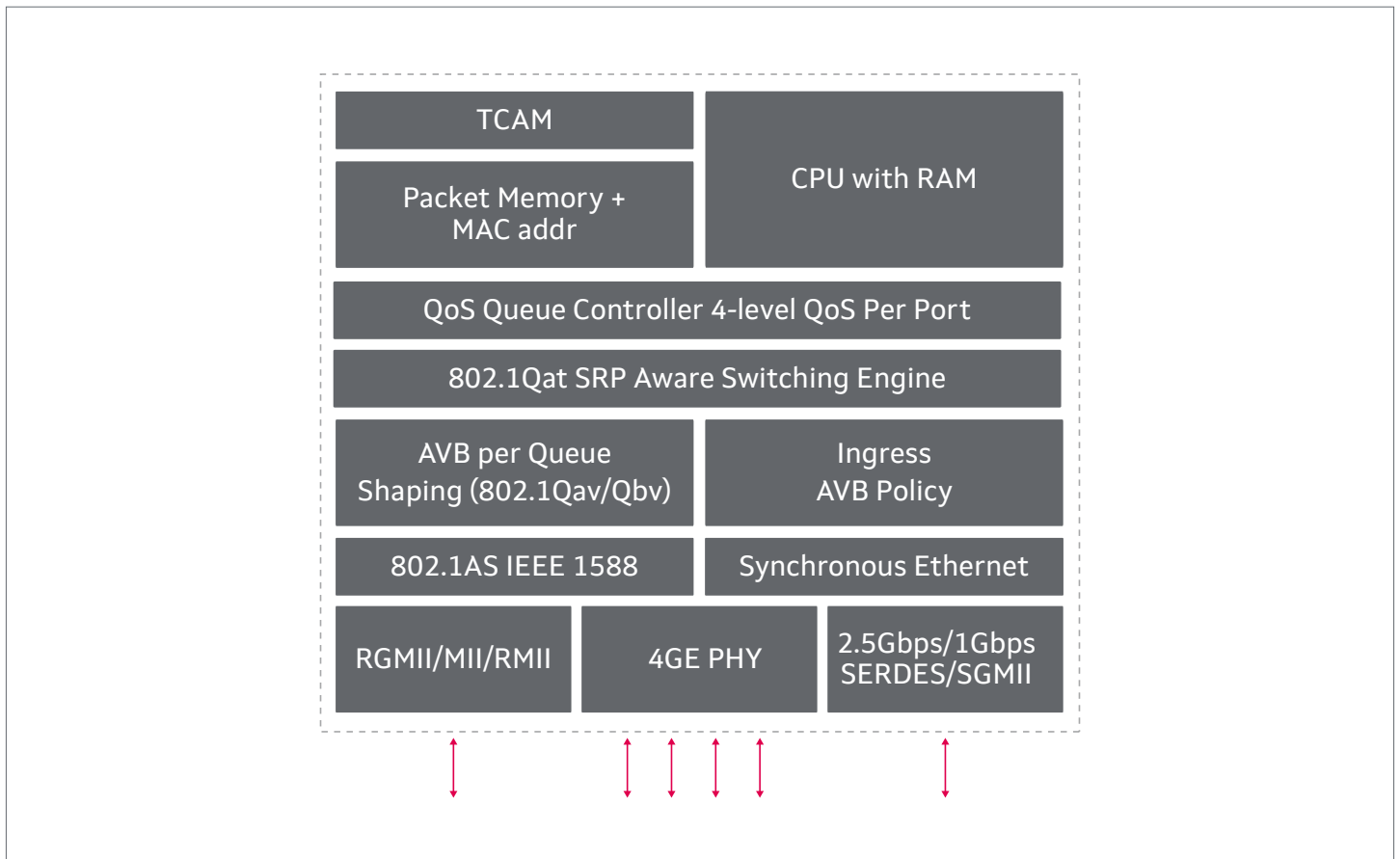
Overview

The Marvell® Link Street® 88E6341 device is single-chip, 6-Port Ethernet Switch with four integrated 10/100/1000Mbps Ethernet transceivers and one high speed SerDes interfaces supporting 2500-BaseX, 1000Base-X, and SGMII. The device also includes an integrated microprocessor with internal memory to enable smart or lightly managed switches without the need of an external CPU.

The high performance switch fabric provides line rate switching on all ports simultaneously while providing advanced switch functionality and QoS. The device includes a TCAM to enable flexible switch policing, including Access Control Lists (ACLs) and Policy Control Lists (PCLs). The 88E6341 also supports the

latest IEEE 802.1 Audio Video Bridging (AVB) identify and reserve the network resources for AVB/TSN traffic streams and supports precise isochronous streaming capability for reliable and quality audio/video transmission over Ethernet for today's real-time, high definition information and entertainment options. The AVB protocols enable timing sensitive streams (such as digital video, audio, or industrial control traffic) to be sent over the Ethernet network with low latency and robust quality of Service guarantees.

Block Diagram



Key Features

Features	Benefits
<p>High performance, non-blocking, 6-port Ethernet Switch integrating:</p> <ul style="list-style-type: none"> - Four 10/100/1000Mbps PHYs with Advanced Virtual Cable Tester (VCT) diagnostic features - One 2.5Gbps/1Gbps SerDes - One RGMII/MII/RMII interface 	<ul style="list-style-type: none"> • Provides a complete Gigabit Ethernet switching solution for SOHO routers and gateways. • The 2.5Gbps interface provides non-blocking uplink for latest DOCSIS and PON solutions. • Energy Efficient Ethernet PHYs reduce power consumption while VCT provides qualitative cable-plant diagnosis, lowering OpEx
<p>Microprocessor</p> <ul style="list-style-type: none"> - Includes integrated memory 	<ul style="list-style-type: none"> • Enables managed switch designs with the addition of a low cost EEPROM
<ul style="list-style-type: none"> • Supports IEEE 1588v2 PTP • Cut-through switch fabric for low latency applications • Synchronous Ethernet for 1000Base-T or 100Base-TX 	<ul style="list-style-type: none"> • Advanced timing features support clock synchronization and reduced latency for time sensitive content
<p>TCAM</p>	<ul style="list-style-type: none"> • Enables intelligent switching and policing of packets by looking beyond Layer 2 packet information
<p>Supports 802.1 Audio Video Bridging (AVB) and Time Sensitive Networking (TSN) Standards</p> <ul style="list-style-type: none"> - 802.1AS – Precise Timing Protocols - 802.1Qat – Stream Reservation Protocol - 802.1Qav – Egress Pacing and Jitter Shaping - 802.1Qbv – Time Aware Shaping 	<ul style="list-style-type: none"> • Provides the latency, bandwidth and Quality of Service guarantees required to deliver today's multimedia entertainment and information over the Ethernet network.
<p>Quality of Service (QoS) support with 4 traffic classes</p> <ul style="list-style-type: none"> - QoS determined by 802.1p, port, Source or Destination MAC address, 802.1Q VLAN ID, Frame Type (e.g., ARP, Ethertype, etc.), IPv4 Type of Service (TOS), Differentiated Service (DiffServ), or IPv6 Traffic Class 	<ul style="list-style-type: none"> • Best in Class QoS features enable prioritization of all types of traffic (e.g. video, voice, data) to ensure efficient use of network bandwidth. Provides guaranteed delivery of time-sensitive Audio/Video content when used in conjunction with AVB standards.
<p>Advanced Features</p> <ul style="list-style-type: none"> - High performance switch fabric - Supports 10KByte Jumbo Frames - Per port ingress rate limiting and broadcast storm prevention - Per port egress rate shaping - Three LEDs per port 	<ul style="list-style-type: none"> • Provides high-speed, non-blocking, Gigabit performance for cost sensitive consumer applications. Advanced rate limiting, egress shaping and storm prevention improve traffic management and network performance, and reduce unwanted flooding of ports. • Glueless interface for up to 16 LEDs including special LED functions, including WAN or LAN link/activity indication by combining the link/activity indication of 1 or more ports to a single LED function.
<p>Management and Security:</p> <ul style="list-style-type: none"> - Supports 802.1Q VLANs - Supports 802.1D/s/w Spanning Tree Protocols - IPv4 IGMP and IPv6 MLD snooping - 802.1x MAC Authentication - Remote (In-band) Management 	<ul style="list-style-type: none"> • Built-in network management and security features, support fully managed switches and truly isolated WAN vs. LAN firewall applications. The device supports 802.1Q VLAN IDs, which can be enabled on a per port basis. • Three levels of 802.1Q security is supported with error framed trapping and logging.

Target Applications

Broadband Gateways: 2.5Gbps SerDes uplink provides bandwidth the latest high speed broadband technologies

Wireless Routers: Energy Efficient Ethernet PHYs provide aggressive power savings with 2.5Gbps uplink to support 802.11ac data rates

Industrial Switches: Synchronous Ethernet, IEEE 1588v2, and 802.1 TSN support enable timing critical industrial networks



To deliver the data infrastructure technology that connects the world, we're building solutions on the most powerful foundation: our partnerships with our customers. Trusted by the world's leading technology companies for 25 years, we move, store, process and secure the world's data with semiconductor solutions designed for our customers' current needs and future ambitions. Through a process of deep collaboration and transparency, we're ultimately changing the way tomorrow's enterprise, cloud, automotive, and carrier architectures transform—for the better.

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Marvell_88E6341_PB Revised: 07/20