

Marvell AVANTA 88F6510 SoC

True System-on-a-Chip Solution for Universal PON Network



▶ PRODUCT OVERVIEW

The first member of the Marvell® AVANTA™ family, the 88F6510, addresses the EPON/GPON broadband network with single-chip for Single-Family-Unit (SFU) products, with unprecedented levels of integration and performance, and a radically reduced energy footprint, providing optimal solutions for mass-deployment of next-generation video-centric and interactive Internet.

The 88F6510 family of devices for SFU delivers Universal PON MAC, and support for GPON, EPON and China-specific EPON. Other features include line rate performance, a powerful GHz-grade Sheeva™ application CPU, Voice Processor, Programmable Packet Processor, cellular-like power management, non-blocking GbE switch with Audio-video bridging, full IPv6 support and Energy Efficient Ethernet support.

With integration, low power and high performance, the 88F6510 family of devices provides Operators with a cost-effective way to deploy optical broadband that enhances user experience for video, interactive and cloud-centric applications. The Sheeva application CPU at 1.2GHz speed allows Operators to provide current and future revenue-generating applications and services, while leveraging the software eco-system around ARM, ARMADA and Plug Computer.

The Programmable Packet Processor not only supports line rate performance to enhance user experience, but also future-proofs the platform for new services and protocols. The advanced power management allows an 88F6510-based SFU multiple-level power-down modes-of-operations similar to laptops and cellphones. It also includes low-power DDR3 SDRAM, and Energy-Efficient-Ethernet for dynamic power management of active Ethernet link.

Marvell Avastar™ high-performance Wireless LAN solution complements AVANTA to add WiFi for SFU.

▶ BLOCK DIAGRAM

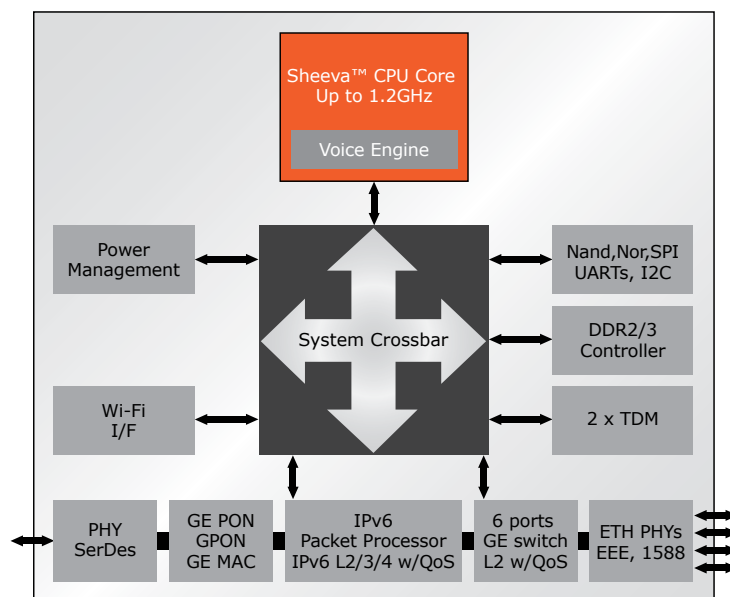


Fig 1. AVANTA 88F6510 SoC Block Diagram

▶ **KEY FEATURES AND BENEFITS**

FEATURES	BENEFITS
<ul style="list-style-type: none"> Fully integrated SoC solution Universal PON MAC: GPON, EPON and China-EPON 	<ul style="list-style-type: none"> Enables a cost-effective solution for mass deployment of optical broadband Allows the Operator to seamlessly support both EPON and GPON Brings economy of scale and leverages unified development and combined volumes.
<ul style="list-style-type: none"> 1.2GHz Sheeva™ CPU Programmable Line Rate Packet Processor 	<ul style="list-style-type: none"> Enables revenue-generating services and applications Future-proofs the broadband access platform L2/3/4, NAPT and PPPoE handling at wire-speed with very low power consumption Future-proofs the platform for upcoming standard
<ul style="list-style-type: none"> Cellular-like Power Management Audio-Video Bridging and IPv4/v6 Multicast 	<ul style="list-style-type: none"> Seamless and aggressive power saving mode reduces carbon footprint. Best delivery for audio/video applications at line rate enhances the user experience.
<ul style="list-style-type: none"> Integrated Voice Processor 	<ul style="list-style-type: none"> Connects traditional Phones to PON SFU Enables operators to converged Video, Data and Voice networks into single IP infrastructure

▶ **APPLICATIONS**

The AVANTA 88F6510 SFU packet processor family provides a complete set of SFU solutions in the GPON and EPON space access technology. The family includes:

- 88F6511 – Ideal for Universal SFU ONT with 4 Fast Ethernet and 2 Voice ports
- 88F6512 – Ideal for Universal SFU ONT with 4 Gigabit Ethernet and 2 Voice ports

Complete software suite and hardware reference designs are provided as part of the Marvell AVANTA Eco-System.

THE MARVELL ADVANTAGE: Marvell chipsets come with complete reference designs which include board layout designs, software, manufacturing diagnostic tools, documentation, and other items to assist customers with product evaluation and production. Marvell’s worldwide field application engineers collaborate closely with end customers to develop and deliver new leading-edge products for quick time-to-market. Marvell utilizes world-leading semiconductor foundry and packaging services to reliably deliver high-volume and low-cost total solutions.

ABOUT MARVELL: Marvell is a leader in storage, communications, and consumer silicon solutions. Marvell’s diverse product portfolio includes switching, transceiver, communications controller, processor, wireless, power management, and storage solutions that power the entire communications infrastructure, including enterprise, metro, home, storage, and digital entertainment solutions. For more information, visit our Web site at www.marvell.com.



Marvell Semiconductor, Inc.
5488 Marvell Lane
Santa Clara, CA 95054
Phone 408.222.2500
www.marvell.com

Copyright © 2010. Marvell International Ltd. All rights reserved. Marvell, Moving Forward Faster, the Marvell logo, Alaska, AnyVoltage, DSP Switcher, Fastwriter, Feroceon, Libertas, Link Street, PHYAdvantage, Prestera, TopDog, Virtual Cable Tester, Yukon, and ZJ are registered trademarks of Marvell or its affiliates. Armada, Avastar, Avanta, CarrierSpan, LinkCrypt, Marvell Smart, PowerSmart PFC, Powered by Marvell Green PFC, Qdeo, QuietVideo, Sheeva, TwinD, and VCT are trademarks of Marvell or its affiliate. All other trademarks are the property of their respective owners.
AVANTA_88F6510-01 2/10