

# Marvell Avanta 88F6510/30/50/60

True System-on-Chip (SoC) Solution for Universal PON Network



## ▶ PRODUCT OVERVIEW

The Marvell® Avanta™ family addresses the Ethernet Passive Optical Network (EPON), Gigabit Passive Optical Network (GPON), and Ethernet Point-2-Point broadband market with a single and unique System-on-Chip (SoC) for Single-Family-Unit (SFU), Multi-Dwelling-Unit (MDU), and Home-Gateway-Unit (HGU) products.

Marvell's advanced patent-pending technology turns dreams in to reality with a proven implementation of Protocol Auto Detection and Auto Switching, which enables deployment of the single ONT type of devices in EPON/GPON/Ethernet network clouds.

The Avanta family of Universal PON devices presents a fully featured programmable VoIP and Control Processor, integrated—up to 1.6GHz ARM CPU, 2.5GE line-rate performance, energy-efficient Ethernet power management compliance, and full IPv6 support. Interoperability with most GPON and EPON leading OLT vendors and compatibility with China Telecom EPON requirements turns the idea of unified PON technology to industry preference.

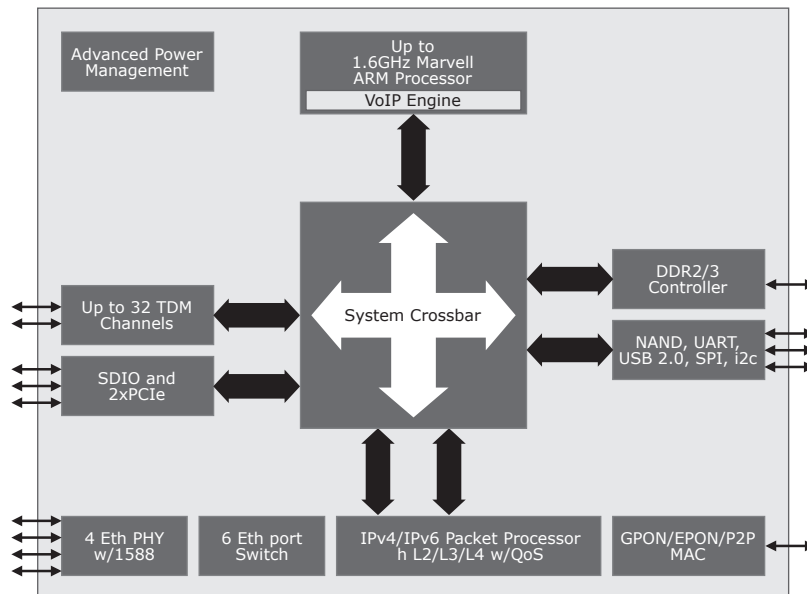
The low-power and high-performance Marvell Avanta family provides an ultimate way for cost-effective optical green-fields deployments, presenting users with interrupt-less, unprecedented performance for video and other multicast applications. Built with an integrated Marvell application CPU, the Avanta family allows easy integration of widely used Marvell ARM, ARMADA®, and Plug Computer eco-system applications.

Implemented advanced power management allows automatic dynamic power reduction on less used cache entries and 4-state power management with run, throttle, idle, and deep sleep modes of operation, including double triggered, both HW and SW, enter/resume power modes.

In addition, the Avanta programmable packet processor not only supports line-rate performance to enhance user experience, but also future-proofs the platform for new services and protocols.

Marvell's Avastar™ high-performance Wireless LAN solution complements the Avanta family to add Wi-Fi for HGU products.

## ▶ BLOCK DIAGRAM



## ▶ KEY FEATURES AND BENEFITS

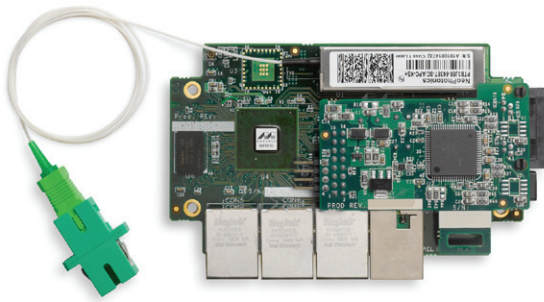
SPECIAL FEATURES	BENEFITS
<ul style="list-style-type: none"> <li>Fully integrated SoC solution</li> <li>Universal PON MAC: GPON, EPON, Ethernet and China-EPON with auto detection</li> </ul>	<ul style="list-style-type: none"> <li>Enables a cost-effective solution for mass deployment of optical broadband</li> <li>Allows the operator to seamlessly support both EPON and GPON</li> <li>Brings economy of scale and leverages unified development and Combined volumes.</li> </ul>
<ul style="list-style-type: none"> <li>1.6GHz Marvell CPU</li> <li>Programmable line-rate packet processor</li> </ul>	<ul style="list-style-type: none"> <li>Enables revenue-generating services and applications</li> <li>Future-proofs the broadband access platform</li> <li>L2/3/4, NAPT and PPPoE handling at wire-speed with very low power consumption</li> </ul>
<ul style="list-style-type: none"> <li>Advanced power management</li> <li>Audio/Video bridging and IPv4/v6 multicast</li> </ul>	<ul style="list-style-type: none"> <li>Seamless and aggressive power saving mode reduces carbon footprint</li> <li>Best delivery for audio/video applications at line-rate enhances the user experience</li> </ul>
<ul style="list-style-type: none"> <li>Integrated voice processor</li> </ul>	<ul style="list-style-type: none"> <li>Connects traditional phones to PON ONT/MDU</li> <li>Enables operators to converge video, data and voice networks into single IP infrastructure</li> </ul>

## ▶ APPLICATIONS

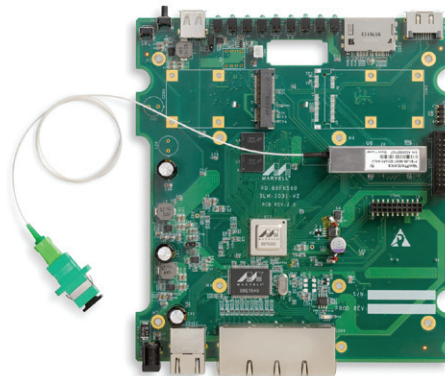
The 88F6510 family of devices for SFU provides operators with a cost-effective way to deploy optical broadband that enhances user experience for video, interactive, and cloud-centric applications.

The 88F6530 is designed for MDU products, targeted to provide the optimal solution for latest requirements in video/audio-centric interactive environments in modern, high-speed, Internet networks.

The 88F6550/60 is tailored to fulfill advanced requirements in the modern residential gateway market and equipped with a rich set of essential interfaces for Wi-Fi, networked attached storage (NAS), and setop box connectivity with USB 2.0, eSATA, 2 x PCIe interfaces, and more.



Avanta 6510 – SFU Reference Design



Avanta 6560 – Application Gateway Reference Design

**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](http://www.marvell.com).



Marvell Semiconductor, Inc.  
5488 Marvell Lane  
Santa Clara, CA 95054  
Phone 408.222.2500  
[www.marvell.com](http://www.marvell.com)

Copyright © 2012. Marvell International Ltd. All rights reserved. Marvell, the Marvell logo and Armada are registered trademarks of Marvell. Avanta and Avastar are trademarks of Marvell. All other trademarks are the property of their respective owners.

Marvell\_88F65xx-001 05/12