

# Marvell Alaska 88E1512

Integrated 10/100/1000 Mbps Energy Efficient Ethernet Transceiver



## PRODUCT OVERVIEW

Marvell® Alaska® 88E1512 Gigabit Ethernet (GbE) transceiver is a physical layer device containing a single Gigabit Ethernet transceiver. The transceiver implements the Ethernet physical layer portion of the 1000BASE-T, 100BASE-TX, and 10BASE-T standards. The device supports RGMII (Reduced pin count GMII for direct connection) to Copper/Fiber/SGMII with Auto-Media Detect, RGMII to Copper, RGMII to SGMII/Fiber, and SGMII to Copper.

The device also integrates MDI interface termination resistors into the PHY. This resistor integration simplifies board layout and reduces board cost by reducing the number of external components. The new Marvell calibrated resistor scheme will achieve and exceed the accuracy requirements of the IEEE 802.3 return loss specifications.

The 88E1512 device has an integrated switching voltage regulator to generate all required voltages and can run off a single 3.3V supply; the device supports 1.8V, 2.5V, and 3.3V LVCMOS I/O Standards. This device uses advanced mixed-signal processing to perform equalization, echo and crosstalk cancellation, data recovery, and error correction at a gigabit per second data rate. The 88E1512 achieves robust performance in noisy environments with very low power dissipation.

The Alaska family of transceiver products provides the ideal solution for rapid development and deployment of gigabit standalone and switching systems for the Enterprise, embedded, consumer, and Metro/service provider market segments.

## APPLICATION BLOCK DIAGRAMS

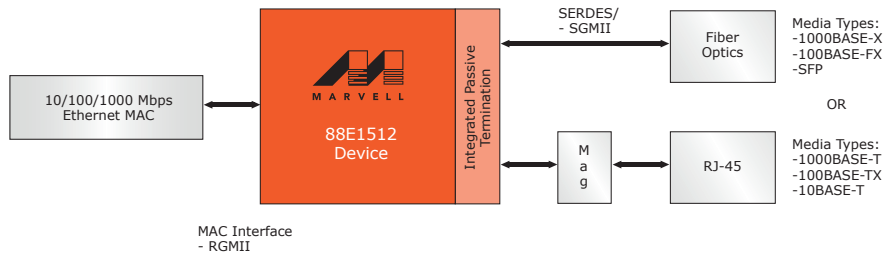


Fig 1. Alaska 88E1512 Application

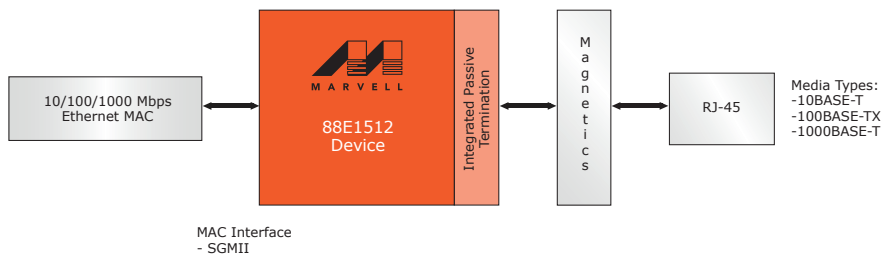


Fig 2. Alaska 88E1512 Application

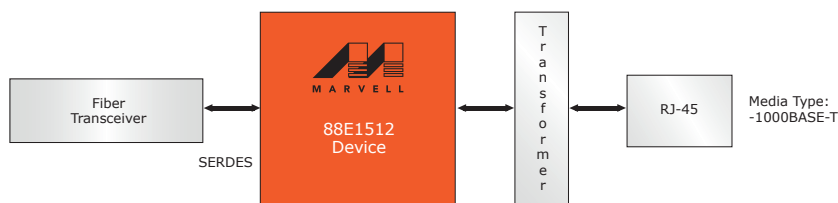


Fig 3. Alaska 88E1512 Application

## ▶ KEY FEATURES AND BENEFITS

FEATURES	BENEFITS
<ul style="list-style-type: none"><li>• Four RGMII timing modes including integrated delays</li></ul>	<ul style="list-style-type: none"><li>• This eliminates the need for adding additional trace delays on the PCB</li></ul>
<ul style="list-style-type: none"><li>• Supports Energy Efficient Ethernet (EEE)<ul style="list-style-type: none"><li>- Including EEE buffering for legacy MAC devices</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Extended energy savings through incorporation of the IEEE 802.3az standard<ul style="list-style-type: none"><li>- Additional support added to allow EEE enablement on non-EEE MACs</li></ul></li></ul>
<ul style="list-style-type: none"><li>• IEEE1588 version 2 Time Stamping and Synchronous Ethernet (SyncE) Clock Recovery</li></ul>	<ul style="list-style-type: none"><li>• Enabling frequency and/or clock synchronization for time sensitive applications and environments</li></ul>
<ul style="list-style-type: none"><li>• Advanced Virtual Cable Tester® (VCT™)</li></ul>	<ul style="list-style-type: none"><li>• Detects and reports potential cabling issues to within one meter of the distance to the fault</li></ul>
<ul style="list-style-type: none"><li>• 56-pin QFN 8mm x 8mm Green package</li></ul>	<ul style="list-style-type: none"><li>• Environmentally friendly, small form factor for minimal real estate requirements</li></ul>

## ▶ APPLICATIONS

The Alaska 88E1512 Transceivers deliver optimal physical layer interfacing and features for a broad range of applications within the Enterprise, embedded, consumer, and Metro/service provider market segments.

The Alaska 88E1512 family provides complete GbE transceiver solutions with complete software compatibility. To shorten system manufacturers design cycles and accelerate time-to-market, Marvell provides complete Alaska reference designs and supporting docs with schematics, layout files and other documentation.

**THE MARVELL ADVANTAGE:** Marvell products 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, processors, 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 website at [www.marvell.com](http://www.marvell.com).



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