Marvell Alaska 88E1310/88E1310S/88E1318/88E1318S
Integrated 10/100/1000 Mbps Energy Efficient Ethernet Transceivers

▶ PRODUCT OVERVIEW

Marvell® Alaska® 88E1310, 88E1310S, 88E1318 and 88E1318S Gigabit Ethernet (GbE) transceivers are physical layer devices each 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 88E1310S and 88E1318S devices support Synchronous Ethernet (SyncE) and Precision Time Protocol (PTP), which is based on IEEE1588 version 2 and IEEE802.1AS.

The devices support RGMII (Reduced pin count GMII for direct connection) to Copper/Fiber/SGMII with Auto-Media Detect. The devices also integrate MDI interface termination resistors into the PHYs. 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 devices have an integrated switching voltage regulator to generate all required voltages and can run off a single 3.3V supply with the 88E1310/88E1310S supporting 2.5V/3.3V and the 88E1318/88E1318S supporting 1.8V only LVCMOS I/O Standards. The devices use advanced mixed-signal processing to perform equalization, echo and crosstalk cancellation, data recovery, and error correction at a gigabit per second data rate. They achieve 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.
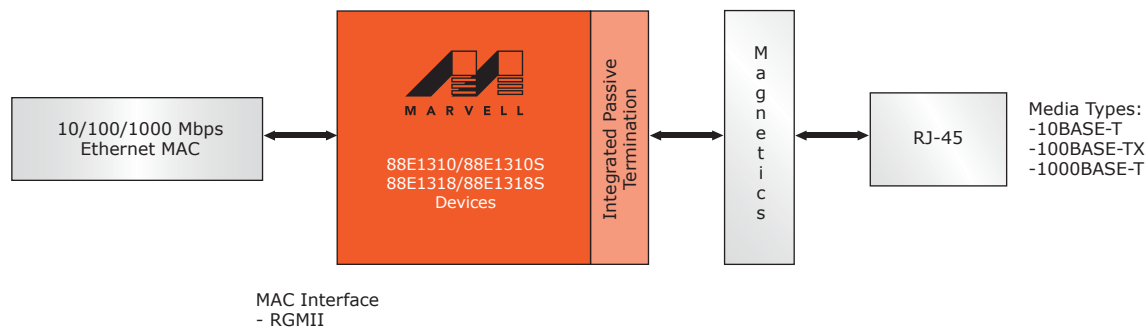
▶ APPLICATION BLOCK DIAGRAM

Fig 1. Alaska 88E1310/88E1310S/88E1318/88E1318S Application

▶ KEY FEATURES AND BENEFITS

FEATURES	BENEFITS
• Four RGMII timing modes including integrated delays	• This eliminates the need for adding additional trace delays on the PCB
• IEEE1588 version 2 Time Stamping and Synchronous Ethernet (SyncE) Clock Recovery (88E1310S and 88E1318S Transceivers Only)	• Enabling frequency and/or clock synchronization for time sensitive applications and environments
• Advanced Virtual Cable Tester® (VCT™)	• Detects and reports potential cabling issues to within one meter of the distance to the fault
• 48-pin QFN 7mm x 7mm Green package	• Environmentally friendly, small form factor for minimal real estate requirements

APPLICATIONS

The Alaska 88E1310/88E1310S/88E1318/88E1318S 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 88E1310 and 88E1318 families provide 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.

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