Product Brief

Marvell® Alaska® 88E1545

Quad Port 10/100/1000 Mbps Energy Efficient Ethernet Transceivers

Overview

Marvell® Alaska® 88E1545 Gigabit Ethernet Transceiver is a physical layer device containing four independent Gigabit Ethernet transceivers. Each transceiver performs all the physical layer functions for 1000BASE-T, 100BASE-TX and 10BASE-T standards. The device supports Quad-Serial Gigabit Media Interface (QSGMII) to Copper.

In addition to supporting Energy Efficient Ethernet (EEE) on the new generation of enabled MACs, these products are also capable of implementing EEE with legacy or non-EEE devices by incorporating EEE buffering. 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 Alaska 88E1545 device has an integrated switching voltage regulator to generate all required voltages and can run off a single 3.3V supply. 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 device achieves robust performance in noisy environments with very low power dissipation.

The Marvell 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.

Block Diagram

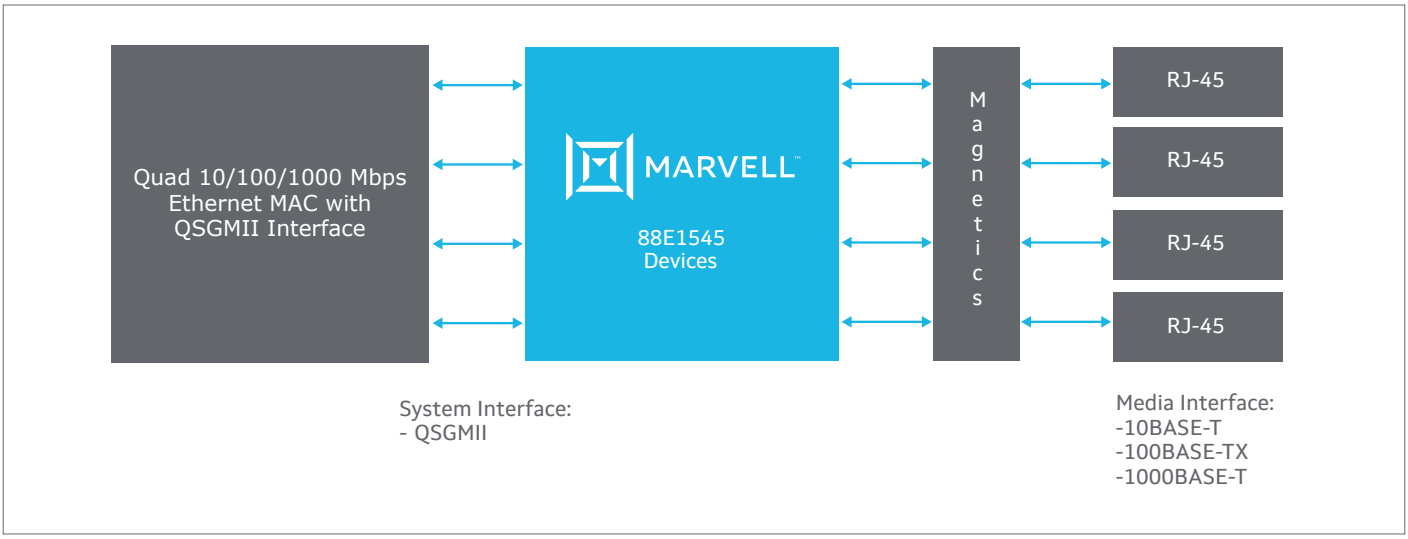

Figure 1. QSGMII to Copper Application

Key Features

Features	Benefits
• Supports EEE (IEEE 802.3az) – Implements EEE with legacy or non-EEE MAC	• Extended energy savings through incorporation of the IEEE 802.3az standard – Additional support added to allow EEE enablement on non-EEE MACs
• Supports QSGMII MAC Interface	• Lower pin count - Simplifies board layout
• Wake on LAN (WoL)	• Provides programmable lower power (S5) event/pattern and link change detection
• Integrated Switching Voltage Regulator	• Allows devices to run off single 3.3V supply
• Advanced Virtual Cable Tester® (VCT™)	• Detects and reports potential cabling issues to within one meter of the distance to the fault
• 14mm x 20mm 128-pin LQFP with EPAD	• Green, environmentally friendly, small form factor for minimal real estate requirements with efficient heat dissipation

Target Applications

The Alaska 88E1545 Transceiver delivers 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 88E1545 family provides a complete GbE transceiver solution with complete software compatibility. To shorten system manufacturers' design cycles and accelerate time-to-market, complete Marvell Alaska reference designs and supporting docs with schematics, layout files and other documentation are provided.

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