



PRODUCT OVERVIEW

The 88E3082/88E3083 devices are third generation Marvell® DSP-based 8-port 10/100BASE-T Fast Ethernet (FE) transceivers. The devices offer the industry's lowest power consumption at only 150mW per port resulting in higher port density, lower cost FE switches. Additionally, the 88E3082/88E3083 devices integrate the industry's most advanced feature set, such as Virtual Cable Tester™ technology for remote cable diagnostics and the support for very low power modes.

The 88E3082/88E3083 devices contain all of the active circuitry to convert data streams to and from eight Media Access Controllers (MACs) and the physical media. The 88E3082 device incorporates IEEE 802.3u Auto-Negotiation in support of both 100BASE-TX and 10BASE-T networks over twisted-pair cable in full-duplex or half-duplex mode.

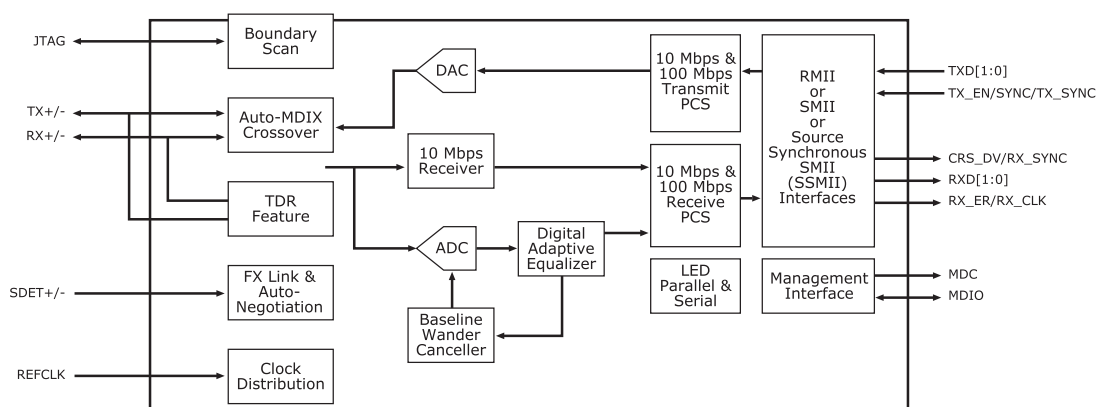


Fig 1. 88E3082 (Single-Port) Functional Block Diagram

FEATURES

- Eight independent IEEE 802.3 compliant 100BASE-TX and 10BASE-T ports
- PECL interface supporting 100BASE-FX applications on a per port basis (88E3082 only)
- Reduced MII (RMII) or Serial MII (SMII) with Source Synchronous option for reduced pin count (RMII supported on 88E3082 only)
- Lower power dissipation, 150mW/port
- Power management modes
- Virtual Cable Tester feature
- Auto-MDI/MDIX crossover for 100BASE-TX and 10BASE-T ports
- Jumbo frame support to 10 KB with up to +/- 150 ppm clock jitter
- IEEE 802.3u Auto-Negotiation support for automatic speed and duplex selection
- Far End Fault Indication (FEFI) support for 100BASE-FX applications
- 100BASE-TX performance over 150 meters

BENEFITS

- Enable higher port density switch system design
- Support of FE over fiber applications (88E3083 supports one fiber port)
- Provides user configurable digital interfaces, and the Source Synchronous SMII option extends the distance between the PHY and SW/MAC chip on the PCB design
- Yields higher port density and lower cost
- Reduced system power
- Remote cable diagnostics for fault detection
- Auto-MDI/MDIX simplifies and reduces the cost of networking installation
- Supports applications that demand larger packet sizes
- Plug-and-play network system
- Improved network reliability
- Advanced DSP design tolerates more cable mismatch and extends the receiving distance over 150 meters on standard CAT 5 cable



FEATURES

- Flexible serial and parallel LED support
- IEEE 1149.1 standard test access port and boundary scan compatible
- Small outline packaging; 88E3082 in 224-pin TFBGA, 88E3083 in 128-pin PQFP

BENEFITS

- Comprehensive LED support eliminates cost of external LED latches and drivers
- Implement JTAG function to make board level debugging easier
- Flexible package options for reduced PCB real estate

APPLICATIONS

To reduce the number of input/output (I/O) pins between the MAC and the Physical Layer (PHY), the 88E3082 device supports the Reduced Media Independent Interface (RMII), the Serial Media Independent Interface (SMII) as well as the Source Synchronous option of SMII (SSMII). The SSMII interface extends the allowed PCB trace distance between the PHY and the MAC, thereby facilitating more robust, higher port density, FE switch designs. The 88E3083 device supports the SMII and SSMII interfaces, and 100BASE-FX fiber on a single port.

The 88E3082 also features a mode of operation supporting IEEE compliant 100BASE-FX fiber-optic networks. The device includes a PECL interface that is selectable on a per port basis for 100BASE-FX applications.

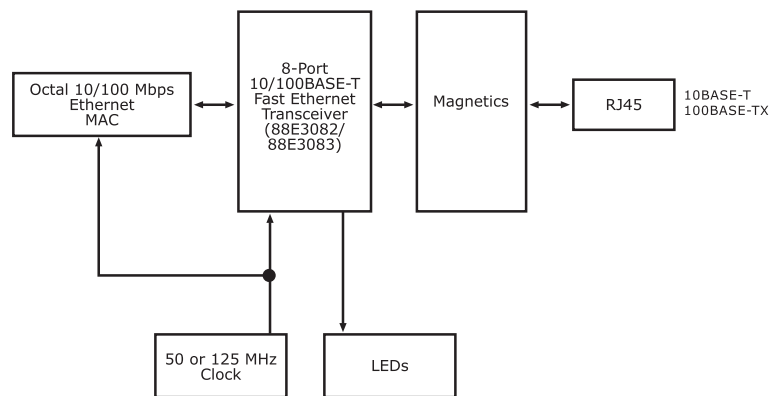


Fig 2. 88E3082/88E3083 System Diagram

THE MARVELL ADVANTAGE: The Marvell 8-port 10/100BASE-T FE transceiver comes with a complete set of hardware and software development tools to assist network hardware engineers with product evaluation. Marvell's worldwide field applications engineers collaborate closely with network equipment vendors to develop and deliver new competitive products to market on time. Marvell utilizes recognized world-leading semiconductor foundry and packaging services to reliably deliver high-volume and low cost total solutions.

For more information, visit our website at www.marvell.com.



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