KSZ8081MLX

10Base-T/100Base-TX Physical Layer Transceiver

Description

The KSZ8081MLX is a single-supply 10Base-T/ 100Base TX Ethernet physical-layer transceiver for transmission and reception of data over standard CAT-5 unshielded twisted pair (UTP) cable.

The KSZ8081MLX is a highly-integrated, compact solution. It reduces board cost and simplifies board layout by using on-chip termination resistors for the differential pairs, by integrating a low-noise regulator to supply the 1.2V core, and by offering 1.8/2.5/3.3V digital I/O interface support.

The KSZ8081MLX offers the Media Independent Interface (MII) for direct connection with MII-compliant Ethernet MAC processors and switches.

The KSZ8081MLX provides diagnostic features to facilitate system bring-up and debugging in production testing and in product deployment. Parametric NAND tree support enables fault detection between KSZ8081MLX I/Os and the board. Micrel LinkMD® TDR-based cable diagnostics identify faulty copper cabling.

The KSZ8081MLX is available in the 48-pin, lead-free LQFP package.

Applications

- Game console
- IP phone
- IP set-top box
- IP TV
- LOM
- Printer

For more information, contact your local Micrel sales representative, or visit Micrel at:

www.micrel.com

Micrel Inc., is a leading global manufacturer of IC solutions for the worldwide analog, Ethernet and high bandwidth markets. The Company's products include advanced mixed-signal, analog and power semiconductors; high performance communication, clock management, Ethernet switch and physical layer transceiver ICs. Company customers include leading manufacturers of enterprise, consumer, industrial, mobile, telecommunications, automotive, and computer products. Corporation headquarters and state-of-the-art wafer fabrication facilities are located in San Jose, CA with regional sales and support offices and advanced technology design centers situated throughout the Americas, Europe and Asia. In addition, the Company maintains an extensive network of distributors and reps worldwide.

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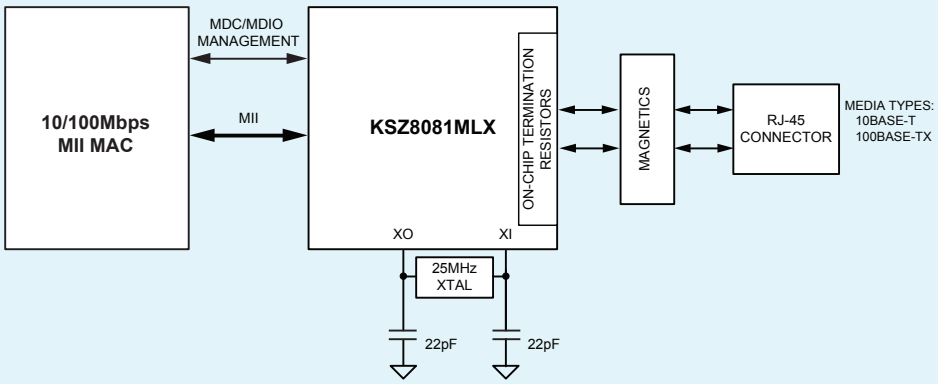
Functional Diagram



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KSZ8081RNA/KSZ8081RND - 10Base-T/100Base-TX PHY WITH RMII SUPPORT

Key Features	Benefits
Single-chip 10Base-T/100Base-TX IEEE 802.3-compliant Ethernet transceiver	Standard compliance ensures that the device will work with other standard-compliant, already deployed devices
MII interface support	Provides flexible options for the 50MHz RMII reference clock as the input or output
Back-to-back mode supportt	Allows creation of low-cost 100Mbps copper repeater using only two KSZ8081 PHY
MDC/MDIO management interface for PHY register configuration	Allows the MAC processor complete access to the KSZ8081 control and status registers
On-chip termination resistors for the differential pairs	On-chip termination (eliminating four external resistors) simplifies PCB design, reduces system BOM, and improves overall signal integrity and EMI emission
On-chip regulator	Reduces BOM cost by eliminating external regulator for 1.2V core
HP Auto MDI/MDI-X to reliably detect and correct straight-through and crossover cable connections with disable and enable option	Easy-to-use feature eliminates the need for crossover cable, which reduces installation costs
Multiple loopback options	Allows diagnostic testing for RMII and line side data paths
Single 3.3V power supply with VDD I/O options for 1.8V, 2.5V, or 3.3V	Enables low-power and flexible I/O design
Power-down and power-saving modes	Optimizes power consumption based on the status of the link or the device
LinkMD TDR-based cable diagnostics	Identifies common cable faults in production testing and in deployment

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01/11/2013