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MAC-PCI

Gigabit/Fast Ethernet MAC-PCI Host Combo IP

MAJOR FEATURES - MAC

- IEEE 802.3 CSMA/CD standard compliance enables 10/100/1000 Mbps Ethernet modes
- Support for half- and full-duplex Ethernet links
- Compatible with a wide range of PHY interfaces - GMII/MII, RGMII/RMII
- Advanced mechanism for flexible address filtering against physical addresses and/or hash table
- Scatter-gather DMA controller with a 32-bit data bus
- Low power capabilities

MAJOR FEATURES - PCI

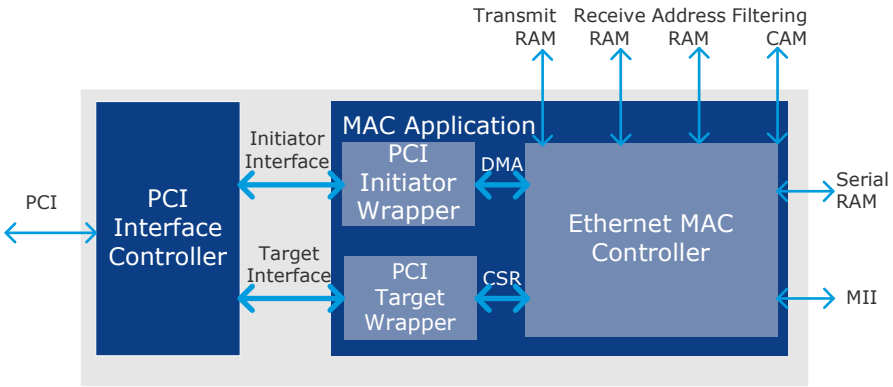
- PCI specification 2.3 compliant
- 33 MHz performance
- 32-bit data path
- Zero wait states burst mode
- Full bus master/target functionality
- Single interrupt
- Type 0 Configuration Space

OVERVIEW

The **MAC-PCI** IP core is a combination of the Gigabit or Fast Ethernet MAC IP and a third-party 32-bit 33 MHz Master/Slave PCI Host interface component. The solution simplifies development of Ethernet networking functionality in PCI-based systems and applications.

A variety of available PHY interfaces facilitates the controller's integration with a wide range of third-party transceivers. While the implementation of the most common PCI local bus interface guarantees seamless integration with a large number of PCI-equipped hardware devices, an available Linux driver allows users to skip basic software development stages and concentrate on designing the main application. Both the integrated scatter/gather DMA controller and extended filtering features decrease CPU overhead, whereas advanced interrupt mitigation lowers the number of necessary interrupt support routines. Configurable internal FIFO's architecture and low power capabilities make **MAC-PCI** a perfect solution for both resource and power limited applications.

BLOCK DIAGRAM



MAC-PCI

BENEFITS

- Easy integration with third-party PHYs and PCI devices
- Native Linux support through a dedicated driver
- Configurable architecture
- Low power consumption

APPLICATIONS

- PCI-based systems
- Network Interface Controllers

STANDARD DELIVERABLES

- VHDL/Verilog source code
- Synthesis support for Synopsys® and Cadence® tools with a set of synthesis scripts
- Simulation support for Mentor Graphics® and Cadence® tools with a set of scripts and macros
- Extensive test bench
- Documentation:
  - Design Specification
  - Verification Specification
  - Integration Manual
- 30 days of technical support
- 90 days of warranty against defects

CONFIGURABILITY

The following parameters allow adjusting the **MAC-PCI** to the requirements of target application or technology:

- PHY interface
- Transmit/receive FIFO size
- Statistical counters
- Flow control
- Serial management interface
- Single/advanced address filtering
- Interrupt mitigation

RELATED PRODUCTS

MAC-PCI Linux Driver - a Linux-optimized driver for the **MAC-PCI** controller.

DELIVERY OPTIONS

- EDIF netlist for FPGA and low volume production
- Evaluation system
- One-year maintenance
- On-site support and training

TÜV CERT EN ISO 9001 | TÜV NORD PN-EN ISO 9001 AC 090/46/812/2006

For more information on our IP portfolio visit www.evatronix-ip.com

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