Overview

Mobiveil’s 10GMAC Controller is a highly flexible and configurable design targeted for desktop, server, mobile, networking and telecom applications. The controller architecture is carefully tailored to optimize link utilization, latency, reliability, power consumption, and silicon footprint.

10GMAC Controller is part of Mobiveil’s Ethernet family of IP solutions which also includes 10/100/1G Ethernet MAC IP.

The controller’s simple, configurable and layered architecture is independent of application logic, PHY designs, implementation tools and, most importantly, the target technology. Mobiveil solution allows the licensees to easily migrate among FPGA, Gate array and Standard cell technologies optimally. Its flexible backend interface makes it easy to be integrated into wide range of applications. Mobiveil solution provides highly scalable bandwidth through configurable lanes, widths and frequencies.

10GMAC controller leverages Mobiveil’s years of experience in PCI, PCI-X and HyperTransport technologies and the expertise in creating system validated IP solutions with RTL, synthesis, simulation, board and software elements to offer lowest risk in terms of compliance and inter operability.

Features

- Compliant to IEEE 802.3ae-2002 specification
- Supports full duplex flow control - IEEE 802.3x
- Supports VLAN - compliant to IEEE 802.3ac, 802.1Q at 1.25/2.5/3.125/5/6.25Gbps
- Link fault signalling – generation and detection, as per clause 46.3.4 (IEEE 802.3ae)
- Host-based, in-band and automatic PAUSE frame control
- Jumbo and Short frame support
- Supports OC-192c PHY devices in WAN mode
- Supports MDIO for PHY management
- Management counters for RMON, SNMP, 802.3ae
- Maskable interrupts for major hardware events
- Highly Configurable : Hardware & Software options
About Mobiveil

Mobiveil is a fast growing Technology company that specializes in creation of Intellectual Properties, Frameworks and Solutions for the Networking, Enterprise and Device Mobility markets. The Mobiveil team leverages decades of experience in delivering high-quality, production-proven, high-speed serial interconnect Silicon IP cores to the leading customers worldwide. With a highly motivated engineering team, dedicated integration support, flexible business models, strong industry presence through strategic alliances and key partnerships, Mobiveil solutions have added tremendous value to the customers in executing their marketing and engineering goals within budget and on time.

Mobiveil is headquartered in the Silicon Valley with engineering development centers located in Milpitas, CA, Chennai and Bangalore, India, and sales offices and representatives located in US, Europe, Israel, Japan, Taiwan and Peoples Republic of China.

Specifications

Configurable Options

- Inclusion of MDIO and RMON blocks
- Configurable RMON Statistics Counter widths: 32/48 bits
- Configurable depth for Tx and Rx FIFOs
- Optional FIFO or Data Transfer interface (DTI) on system side.
- Configurable and Programmable Receive Filtering options

Design Attributes

- Highly modular and configurable design
- Layered architecture
- Fully synchronous design
- Supports both sync and async reset
- Clearly demarked clock domains
- Software control for key features
- Multiple loop backs for debug

Product Package

- Configurable RTL Code
- HDL based test bench and behavioral models
- Test cases
- Protocol checkers, bus watchers and performance monitors
- Configurable synthesis shell

Documentation

- Design Guide
- Verification Guide
- Synthesis Guide

Specifications

Status: Gold / Silicon Proven
Availability: Available
Language: Verilog
Synthesis: Synopsys DC, Synplify-Pro
Simulation: Cadence, Synopsys, Mentor
Technology: 90nm ASIC or better, FPGA