

Mobiveil RapidIO Controller (GRIO™)

Highly Configurable

Technology Independent

System Validated

Overview

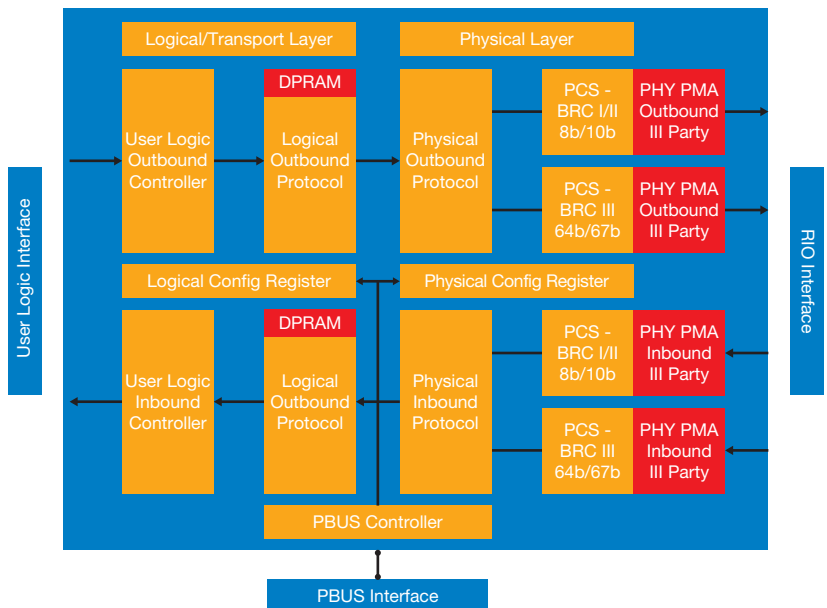
Mobiveil’s RapidIO Controller solution (GRIO™) is a highly flexible and configurable IP. The Mobiveil RapidIO Controller Solution can be used as a Host or device. The RapidIO Controller when used along with Mobiveil’s RapidIO to AXI Bridge (RAB) provides high speed multi-channel DMA Data Message and Data streaming functionality to match the bandwidth requirements of the RapidIO interface.

The Mobiveil RapidIO Controller has a simple, configurable and layered architecture, independent of applications, implementation tools, PHY Designs or most importantly target technology. The controller architecture is carefully tailored to optimize latency, power consumption, and silicon footprint, making it ideal for cost and performance sensitive applications. The RapidIO solution provides highly scalable bandwidth through a configurable data path width and clock frequency.

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.

Key Features

- Compliant to RapidIO Specifications revision 4.0
- Compliant with RapidIO Error Management Extension specification, Revision 4.0
- Implements Logical, Transport and Physical layers functions
- Architected for high link utilization and low latency
- Efficient receive and transmit buffering scheme
- Implements receiver controlled flow control
- Provides Packet oriented user logic interface



- Status : Gold (Gen4)
- Availability : Now
- Language : Verilog
- Synthesis : Synopsys DC, Cadence Genus, Quartus, Vivado
- Simulation : Cadence, Synopsys, Mentor
- Technology : 40nm ASIC or better, FPGA

Specification

Features

- Serial and Parallel Interfaces supported
- 1x, 2x and 4x serial interface
- 64/128/256-bit internal data path
- PBUS interface for configuration register access
- Up to 256 bytes data payload
- Hardware error recovery
- Exhaustive error reporting and handling
- Pass-Through mode of operation for RIO packets up to 288 bytes
- Accept all Mode of operation for fall over support
- 34/50/66b addressing, 8/16/32b Device ID

Configurable Options

- PIO, DMA, Message, Data streaming or mixed mode of operation
- Parallel/Serial mode of operation
- Bypass support

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

About Mobiveil

Mobiveil is a fast-growing technology company that specializes in development of Silicon Intellectual Property (SIP), platforms and solutions for AI/ML, Flash Storage, Data Center, 5G Telecom, Automotive and Industrial IOT applications. The Mobiveil team leverages decades of experience to deliver high-quality, production-proven, high-speed serial interconnect SIP cores, and custom and standard form factor embedded platforms to leading companies worldwide. With a highly motivated engineering team, dedicated integration support, a flexible business model, strong industry presence through strategic alliances and key partnerships, Mobiveil solutions add value to users by matching their product goals on time and within budget. Mobiveil is headquartered in Silicon Valley with engineering development centers located in Milpitas, CA, Chennai, Bangalore and Hyderabad, in India, and sales offices and representatives located in the U.S., Europe, Israel, Japan, Taiwan and the People's Republic of China.

Contact Sales and Support

Mobiveil, Inc
 890 Hillview Court, Suite 250
 Milpitas, CA - 95035
 email: sales@mobiveil.com
 www.mobiveil.com

Mobiveil, Inc. reserves the right to change this document without prior notice and disclaim all warranties. It is the recipients duty to confirm with Mobiveil, Inc.'s Engineering Department specifications before proceeding with a product design. This document is confidential and should not be reproduced without Mobiveil, Inc.'s approval.

APR 2021 | Version 1.5