

LDPC

Encoder/Decoder (LDPC)

Highly Configurable

Technology Independent

System Validated

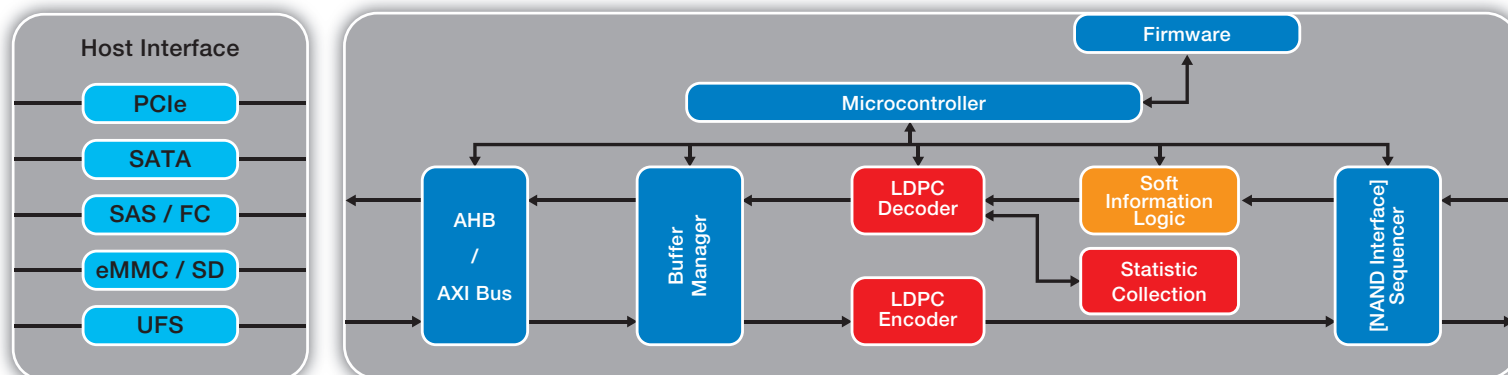
Overview

Mobiveil's LDPC Encoder / Decoder is a flash reliability solution delivering industry-leading flash endurance and retention through advanced LDPC error correction at the lowest power and smallest footprint.

LDPC incorporates these advanced technology into a highly scalable flash media-side platform that can be tailored to customers specific application requirements: from smartphones and tablets that require ultra-low power consumption to SSDs for enterprise computing applications that demand the absolute-highest performance.

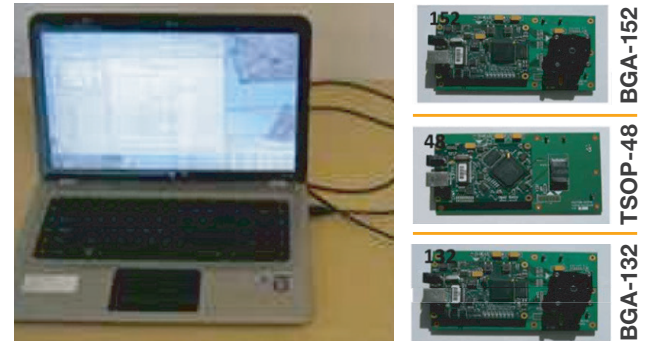
Features

- LDPC IP scalability
 - Supporting a wide range of data-rates
 - 50MB/s to 9.0GB/s for a single LDPC instance
 - Scalable platform provides the basis for customer specific custom-LDPC cores
- Each LDPC IP is optimized for
 - Codeword size, supports wide range of codewords
 - Maximum amount of supported parity
 - High degree of parallelism for high data-rate applications
 - Different Memory access options
 - Platform specific options (eASIC, FPGA, 40nm ASIC, 28nm ASIC, 16nm ASIC, 10nm ASIC)
- All LDPC IP Cores share the following features
 - Simultaneous support for different amounts of parity
 - Simultaneous support for several LDPC codes
 - On-the-fly switching from one LDPC code to another
 - Low area and power



This is a reference block diagram, whereas **LDPC Decoder**, **LDPC Encoder**, **Statistic collection** will only be part of Mobiveil delivery and Soft Information logic will be based on NAND flash controller.

- Status : Gold
- Availability : Available
- Contact : ip@mobiveil.com

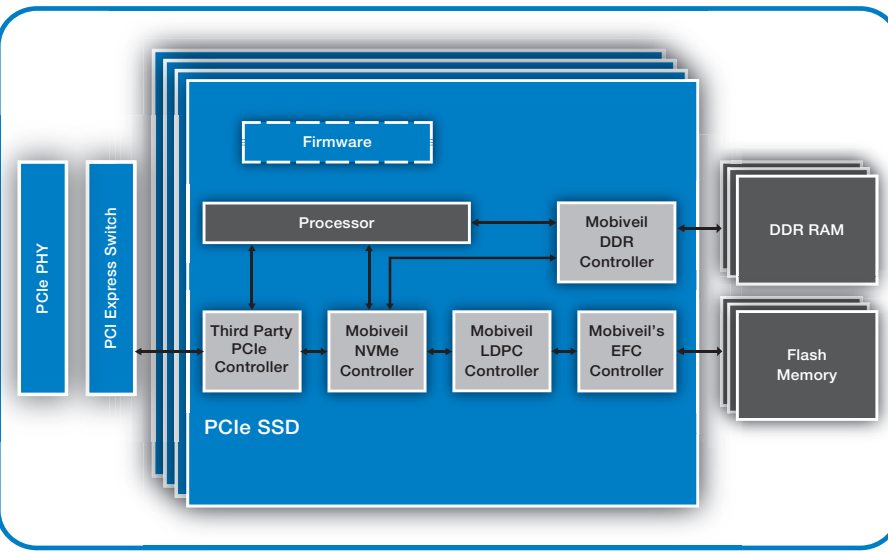


About Mobiveil

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.

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Benefits

- Patented technology delivers the industry's highest reliability, highest performance, and lowest power for next-generation flash controllers
- Dramatic increases in P/E cycles significantly extends the life of flash memory
- Addresses the reliability challenges of MLC, TLC and 3D Flash at 1y and 1z nm geometries
- Access to flash manufacturer's test mode commands to enable the generation of soft information for optimal reliability performance

Specification

Product Package

- Source Code for LDPC Compiler
- Source Code for LDPC Matrix Generation Software
- FPGA based LLR generation reference design with MATLAB interface
- UVM verification env with encoder, error injector and decoder instantiated

Documentation

- IP User Guide
- Synthesis Guide

Licensing Options

- LDPC
- NVMe (UNEX) + LDPC + Enterprise Flash Controller

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