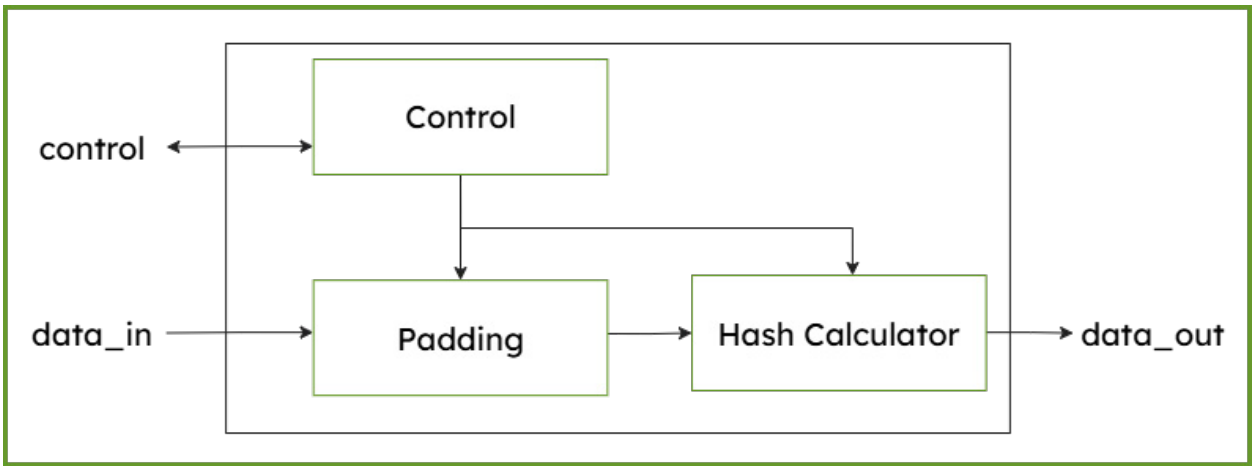
KiviHash-SHA512/384

KiviCore

IP Core Product Brief 20260408

KiviHash-SHA3 Secure Hash Algorithm (512/384)

KiviHash-SHA-512/384 is an IP core implementing the SHA-384, SHA-512 and SHA512/256 cryptographic algorithm, an one-way hash function compliant to NIST's FIPS 180-4 standard. It is optimized for high speed designs and easy integration with any FPGA and ASIC designs. Automatic byte padding is included. It features a standard AMBA® AXI4-Lite interface for straightforward hardware integration and HAL, and software driver (C-code, platform independent) for simple software integration.



Key Features

- NIST FIPS 180-4 compliant
- Supports cryptographic hashing for SHA-384, SHA-512 and SHA512/256
- automatic padding
- High-speed design
- AMBA® AXI4-Lite interface
- Fully synchronous design
- HAL and software driver (C-code, platform independent)
- For any FPGA and ASIC

Applications

- Firmware Updates: Detecting tampered or corrupted update packages
- FPGA bitstreams: Ensuring only trusted configurations are loaded
- Communication protocols: TLS, IPsec, MAC-based authentication
- External memory integrity: Protecting stored data in flash or external RAM

Test and Verification

- NIST CAVS test vectors for SHA hash functions
- Extended verification through simulation
- FPGA integration and implementation tests
- Unity tests for driver and whole IP Core

Licensing & Services

- Product license
  - One-time license fee
  - Single or multi project license
- Evaluation license available
- Technical support by email
- Maintenance & updates

Easy integration

- AMBA® AXI4-Lite interface
- Platform agnostic C source code HAL, API and software driver
- Software examples included
- Software user guide

Deliverables

- Product license
  - System Verilog RTL Source Code or Netlist format
- Evaluation license
  - Netlist format, time bombed
- Testbenches
- Integration examples
- Software HAL & driver source code
- Software example source code
- Documentation

FPGA Implementation Results

Efinix	Logic (XLR)	fmax (MHz)	Max. Throughput (Gbps)
Titanium	6018	285.1	4.56
Topaz	6018	198.7	3.18
Trion	6018	79.3	1.27