

BLOCKCHAIN HARDWARE ACCELERATOR

INTRODUCTION

Blockchain has a wide range of applications on the internet. As it is decentralized by design, it is an alternative to the many traditional transactional systems. For a blockchain system to be viable (scalability, interoperability and sustainability), the complex and time/power consuming cryptographic operations associated with the blockchain should be offloaded to an accelerating system. Just like our Blockchain Hardware Accelerator which is a secure public key infrastructure engine.

APPLICATIONS

- > Digital (crypto) currency > Online voting
- > Transaction verification > Data storage
 - Governance
- > Healthcare
- Insurance

> IoT



Offload the compute intensive operations

 > Wide variety of ECC curves supported (Weierstrass, Edwards, Montgomery, Twisted-Edwards, ...)

Adaptable. Intelligent.

- > Easy Integration
- > Proven Solution

BLOCKCHAIN HARDWARE ACCELERATOR For Xilinx Alveo Cards





SOLUTION OVERVIEW

The blockchain hardware accelerator uses a combination of a load dispatcher and a configurable number of instances of our <u>Public Key Crypto Engine (BA414EP)</u>. This saves time and space as the transaction load is distributed among several components, thereby increasing the overall transaction speed and output. The architecture allows for high performance offloading and supports all the cryptography algorithms such as ECC. ECDSA operations that are used by popular blockchain applications like Ethereum, Ripple and Bitcoin and Hyperledger are supported next to EdDSA using the Edwards25519 curve as used in the Libra blockchain.

The unique architecture of our solution enables high scalability that in turn provides a trade-off between throughput, area and latency. This flexibility allows for an optimal performance for any application. It supports a wide range of applications in blockchain scaling, cryptocurrency transactions, cloud computing and data centers. Our drivers provide an asynchronous API (or non-blocking API) which is integrated in OpenSSL Async.



RESULTS

Learn more about Silex Insight <u>Blockchain Hardware Accelerator</u> Reach out to <u>contact@silexinsight.com</u>

Learn more about Xilinx Alveo accelerator cards

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