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LIST OF ABBREVIATIONS

AES Advanced Encryption Standard -ALU -Arithmetic Logic Unit ASIC -Application Specific Integrated Circuit ASIP -Application Specific Instruction set Processor CPU -**Central Processing Unit** DLP -Discrete Logarithm Problem DSA -Digital Signature Algorithm ECC -Elliptic Curve Cryptography EC-AES-Elliptic Curve – Advance Encryption Standard ECDLP-Elliptic Curve Discrete Logarithm Problem ECDSA-Elliptic Curve Digital Signature Algorithm ECDSC-Elliptic Curve Digital Signature Cryptosystem ECP -Elliptic Curve Processor Core FPGA -Field Programmable Gate Array GUI -Graphic User Interface GPPs -General Purpose Processor HDL -Hardware Description Language I/O -Input/Output IOWR -I/O Write IORD -I/O Read IDE -Integrated Development Environment IC _ **Integrated Circuit** IFP _ **Integer Factorization Problem** IEEE -Institute of Electrical and Electronics Engineers IP _ Intellectual Property JTAG -Joint Action Test Group LC _ Logic Cell

- LCH Loosely Coupled Hardware
- LE Logic Element
- LSD Least Significant Digit
- LUT Lookup Table
- MAP Modular Arithmetic Processor
- MUX Multiplexer
- PIO Parallel Input/Out
- PKI Public-Key Infrastructure
- RAM Random Access Memory
- RSA Rivest, Shamir, Adleman
- RTL Register-Transfer-Level
- SDK Software Development Kit
- SHA-1 Secure Hash Algorithm
- SoC System-on-Chip
- SOPC System-on-a-Programmable-Chip
- TCH Tightly-Coupled Hardware
- UART Universal Asynchronous Receiver/Transmitter
- UTM Universiti Teknologi Malaysia
- VHDL Very High Speed Integrated Circuit Hardware Description Language

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