



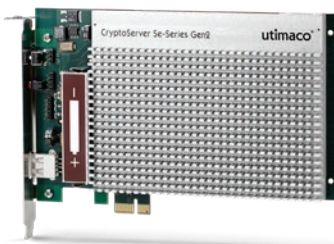
Block-safe



Utimaco Block-safe is a hardware security module (HSM) for protecting sensitive data and associated keys for blockchain systems using distributed ledger technology (DLT) and wallets.

Key Features

- Built-in Post-Quantum safe Dual TRNG + PRNG entropy source, and NIST SP800-90 compliant RNG
- Asymmetric Key derivations including BIP-32, NIST SP800-108, ECDSA (NIST SP800-56A), DSA (ANSI X9.42)
- Fingerprint for public key address generation
- Consensus signing and verification using MultiSign
- SDK for customization by your own developers involving sensitive code and IP
- Built-in support for several models for HA redundancy and performance scalability
- Role based access control (RBAC) with multi factor authentication for segregation of duties



Product Highlights

- Utimaco Block-safe secures sensitive identity; keys and data used in blockchain-based distributed computing platforms
- The FIPS 140-2 L3 compliant Utimaco Block-safe HSM provides unrivaled key generation and protection for Blockchain specific elliptic curves. The HSM protects and manages encryption keys needed for key derivation within the tamper-resistant hardware device.

Key Benefits

- Utimaco Block-safe provides you built-in security required for:
- Generation of Private and Public Key Pairs
- Secure Storage for Private Keys both inside the HSM and secure storage outside the HSM
- Consensus model requiring M keys for digital signature before addition on the ledger

HSM Functionalities

Features

- Secure key storage and processing
- Extensive key management
- Secure key storage inside HSM or as external encrypted key files
- 2-factor authentication with smartcards
- “m out of n” authentication (e.g. 3 out of 5)
- Configurable role-based access control and separation of functions
- Multi-tenancy support
- Remote management
- Software simulator for evaluation and integration testing
- Supported operating systems: Windows and Linux
- Multiple integrations with PKI applications, database encryption, etc.
- All features included in product price



Cryptographic algorithms

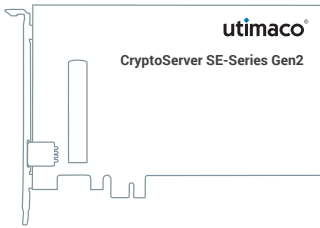
- RSA, DSA, ECDSA with NIST and Brainpool curves
- DH, ECDH with NIST and Brainpool curves
- AES, Triple-DES, DES
- MAC, CMAC, HMAC
- SHA-1, SHA2-Family, SHA3, RIPEMD
- Hash-based deterministic random number generator (DRG.4 acc. AIS 31)
- True random number generator (PTG.2 acc. AIS 31)
- Up to 10,000 RSA or 6,000 ECDSA signing operations in bulk processing mode
- All algorithms included in product price

Application programming interfaces (APIs)

- PKCS#11
- Java Cryptography Extension (JCE)
- Microsoft Crypto API (CSP), Cryptography Next Generation (CNG) and SQL Extensible Key Management (SQLEKM)
- Cryptographic eXtended services Interface (CXI) – Utimaco’s high performance interface ensures easy integration of cryptographic functionality into client applications



Technical specifications PCIe card



Physical Dimensions

- **Form factor:** Half-length, full-height single lane PCI Express card
- **Compatibility:** PCIe 1.1, PCIe 2.0 and PCIe 3.0 slots
- **Height:** 111.15 mm ("full" height)
- **Weight:** 400 g



Electrical

- **Power Supply:** 3 V lithium battery, Ø 12 mm, length 600 mm, FDK CR 12600 SE or VARTA CR2NP
- **Operating voltage:** 3.3 V



Operating Environment

- **Operating temperature:** +10°C to +45°C (+50°F to +113°F)
- **Storage temperature:** -10°C to +55°C (+14°F to +131°F)
- **Relative humidity:** 10% to 95%, non-condensing
- **MTBF:** 360,000 hours at 25°C / 77°F



Certification/Compliance

- **Safety:** FIPS 140-2 Level 3, UL, IEC/EN 60950-1, CB certificate
- **Emissions:** CE, FCC Class B
- **Environmental:** RoHS II, WEEE



Connectivity

- **Interface:** USB



Technical specifications Network appliance



Physical Dimensions

- **Form factor:** 19" 1U
- **Width:** 446 mm excluding brackets
- **Depth:** 533.4 mm excluding handles
- **Height:** 44 mm
- **Weight:** 10 kg



Electrical

- **Power Supply:** 3 V lithium battery, Ø 12 mm, length 600 mm, FDK CR 12600 SE or VARTA CR2NP
- **Power consumption:** typically 45 W / 66 VA, max. 50 W / 70 VA
- **Heat dissipation:** max. 171 BTU/h



Operating Environment

- **Operating temperature:** +10°C to +50°C (+50°F to +122°F)
- **Storage temperature:** -10°C to +55°C (+14°F to +131°F)
- **Relative humidity:** 10% to 95%, non-condensing
- **MTBF:** 100,000 hours at 25°C / 77°F, environment GB, GC – Ground Benign, Controlled



Certification/Compliance

- **Safety:** FIPS 140-2 Level 3, UL, IEC/EN 60950-1, CB certificate
- **Emissions:** CE, FCC Class B
- **Environmental:** RoHS II, WEEE



Connectivity

- **Interfaces:** 2 RJ45, 1 Gb/s





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