DATA SHEET

United Cryptography, Ready for What's Next

The Excrypt HSM - Revolutionary payment and general-purpose cryptography together in one powerful platform. Scale to 75 fully isolated virtual HSMs per device. Move to PQC when you're ready. And manage it all without rewriting your existing applications.

EXCRYPT HSMS

- 1U Appliance
- PCIe Card
- Cloud

Still the World's Fastest HSMs

Performing up to **40,000 signatures per second (RSA-2048) and 100,000 payment operations per second**, Excrypt HSMs deliver industry-leading speed.

Beyond enterprise speed, Excrypt HSMs scale cryptographic capacity as workloads grow, with unmatched virtualization and multitenancy.

Throughput that lets organizations consolidate high-volume payments, large-scale PKI, real-time tokenization, and application security onto a single platform.

United Cryptographic Capabilities

Converged HSM: One platform. All your cryptography. Excrypt HSMs handle payment and general-purpose workloads, so you can do more with less.

Future-Ready and Crypto-Agile: The cryptography you use today won't be enough tomorrow. Futurex HSMs are already built for PQC and future standards, so you stay ahead without the scramble.

Ease of Use: Modern UI, where most HSMs are outdated and complex. Excrypt HSMs are built to be simple to deploy, easy to manage, and powerful in operation.

Multitenancy: One Excrypt HSM can host up to 75 fully isolated virtual HSMs. Each has its own independent firmware, configuration, keys, policies, network stack, and dedicated throughput allocation. Your architecture stays **secure, predictable, and flexible.**

Migration from Legacy Platforms:
No rip-and-replace. No code rewrites. No vendor lock. Excrypt HSMs support standard payment and general-purpose APIs so you can replace legacy HSMs without changing your software.

Modernize, Migrate, or Expand

Excrypt HSMs fit into your environment today. They also extend Futurex CryptoHub deployments with additional speed, capacity, and resilience when needed. Whether you're replacing legacy systems or building new ones, the Excrypt HSMs keep cryptography at scale simple and secure.

Use Cases

Payment Use Case

PIN translation & verification	EMV validation	EMV key generation & derivation
CVV generation & validation	Apple, Google, Samsung tokens	Cardholder data decryption (FPE & DUKPT)
Message authentication code (MAC) generation & verification	PIN & offset generation	Cardholder data translation
	Mobile & web PIN management	P2PE key management

General-Purpose Use Case

Data encryption	PKI and certificate authority	Digital signatures
Data privacy and confidentiality	IoT device authentication	Code signing
Database encryption	5G subscriber authentication	IoT provisioning and 5G
Data integrity	Blockchain and distributed ledger	AI weight & model integrity

Specifications and Compliance

1U Appliance Dimensions:
- Height: 1U – 1.72 in / 4.37 cm
- Width: 19 in / 48.26 cm
- Depth: 25.25 in / 64.14 cm
- Weight: 34 lb / 15.42 kg

PCIe Card Dimensions:
- PCIe standard height, full-length
- Height: 4.376 in / 111.15 mm
- Length: 12.394 in / 314.81 mm

Physical Interfaces/Connectivity:
- PCI Express Gen 3.0 x4
- Ethernet over PCIe Connectivity
- Dual 10 Gbit Ethernet RJ45
- Supports up to 1,000 concurrent TCP socket connections for high-density application integration
- USB 3.1 Gen 1 Type A

Onboard Battery:
- User-replaceable, with a 10-year lifetime
- Capable of retaining keys/CSPs for 2 years unpowered
- Internal supercapacitor for 2 hours of standby power when replacing the primary battery

Electrical Power Draw:
- Idle: 35 W, Typical: 55 W, Maximum: 91 W

User-Serviceable Components:
- User-serviceable fans, battery, and power supplies

Operating Environment:
- Operating temperature range: 10°C to 50°C with 55 CFM air flow rate
- Storage temperature range: -20°C to 65°C
- Relative humidity: non-condensing 10 to 95%

Supported Platforms:
- Windows, Linux, VMware ESXi, KVM

Cryptographic Interfaces:
- PKCS #11, Java JCA/JCE, Microsoft CNG/CAPI/EKM, OpenSSL, Excrypt (Futurex-native), RESTful (Futurex-native), Excrypt Universal Interface (legacy HSM compatibility), Command line interface for automation of management activities

Compliance:
- FIPS 140-3 Level 3 (in progress), PCI PTS HSM v4, Common Criteria, Cartes Bancaires, Bancontact, AS2805 AusPayNet, GBIC, ASC X9.24, and other standards

Cryptography Support:
- Symmetric: 3DES, AES up to 256-bit, FPE
- Asymmetric: RSA up to 8192, ECC P-521, ECDSA, ECDH
- Hash: SHA-2, SHA-3
- Payments and standards: TR-31/TR-34/X9.143 Key Blocks, DUKPT, Master/Session, Fixed Key, X9.17/X9.24, X.509, OBKM, ISO 9564
- PQC: ML-KEM, ML-DSA
- QRNG: Quantum Random Number Generator
- Additional regional and proprietary schemes supported; contact Futurex for the complete list

By The Numbers:
- Deployment models: 1U appliance, PCIe Card, Cloud
- IAM support: Role-based access control with granular, function-level permissions for administrators, applications, and tenants
- Secure Code Environment (SCE): Up to 20 SCEs; an isolated environment in which to develop and run custom applications within the crypto boundary
- Throughput: Up to 40,000 RSA signatures per second and 100,000 payment operations per second

Virtualization and Multitenancy:
- Virtual HSMs: Up to 75 per physical HSM
- Partitions: Up to 250 per host or virtual HSM with policy-level API blocking

For over 40 years, Futurex has been an award-winning leader and innovator in the encryption market, delivering uncompromising enterprise-grade data security solutions. Over 15,000 organizations worldwide trust Futurex to provide groundbreaking PQC-ready hardware security modules, key management, PKI and CA, data protection, and cloud HSM solutions.

Futurex is headquartered outside of San Antonio, Texas, with regional offices worldwide and over a dozen data centers across five continents. Futurex delivers unmatched support for its clients' mission-critical data encryption and key management requirements.

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