Cypherbridge® Systems uCrypt™ CryptographicToolkit

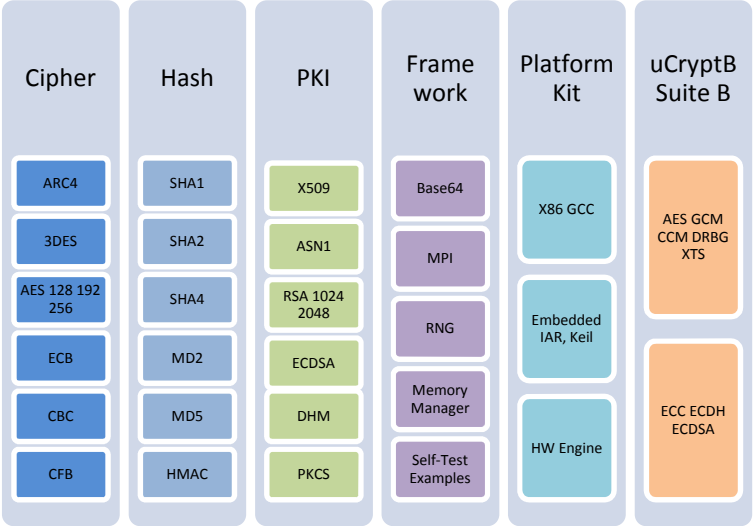
Cypherbridge Systems

Overview

Add electronic data privacy, authentication, and integrity to your product. The Cypherbridge Systems uCrypt Toolkit can be used for a wide variety of applications such as stream and block ciphers, hashing, RSA asymmetric raw key, file based encryption, and PKI based authentication.

The uCrypt Toolkit is a compact ANSI C software library for cryptographic and hash processing, targeted for small and medium memory models where CPU, RAM and flash resources are carefully allocated and balanced. The uCrypt Library uses a proven non-threaded, run-to-completion synchronous execution design for fast, efficient cryptographic operations.

The uCrypt library is integrated with the Cypherbridge Systems SDK family, including uSSL, and uLoad boot loader. This offers an upgrade path to a full-function SSL/TLS network based encryption solution for data-in-flight, uFTPs file transfer, and secure boot loader, and more.



Supported Standards

The uCrypt and uCryptB library functions implement standards based algorithms including:

- ✓ Symmetric: Stream Ciphers: RC4, Block Ciphers: DES & 3DES (FIPS 46-3) ECB & CBC, AES (FIPS 197) ECB CBC & CFB
- ✓ PKI Asymmetric Algorithms: Encryption: RSA (PKCS #1 v2.0); Elliptic Curve Integrated Encryption Scheme (ANSI X9.63-2001/IEEE P1363); Digital Signatures: DSS (FIPS 186-2); RSA (PKCS #1 v2.0); ECDSA (ANSI X9.62/IEEE P1363)
- ✓ Message Digest (Hashing) Algorithms: SHA1 (FIPS 180-1), SHA-256, SHA-384, and SHA-512 (FIPS 180-2); MD2, MD5; HMAC-SHA
- ✓ Key Agreement Algorithms: Diffie-Hellman (PKCS #3 v1.4); Elliptic Curve Diffie-Hellman (ANSI X9.63)

Features

- ✓ *Commercial grade standards based cryptographic algorithms*
- ✓ *X.509 PKI processing*
- ✓ *uCryptB Suite B high-strength option including NIST ECC curves*
- ✓ *Integrated framework includes integrated memory manager, and full self-test examples to integrate with your application*
- ✓ *Platform kit interfaces to run-time resources*
- ✓ *Optional hardware engine acceleration uses same APIs to seamlessly switch between software and hardware.*
- ✓ *Hardware engine yields faster throughput and lower memory footprint*
- ✓ *Diagnostic trace log output for debug and support*
- ✓ *Lightweight ANSI C toolkit has compact footprint for embedded systems*
- ✓ *Thread-free and RTOS independent*
- ✓ *Supports IAR, Keil, GCC and all other toolchains*

For Pricing and Availability

Cypherbridge Systems, LLC
7040 Avenida Encinas #104211
Carlsbad CA 92011 USA +1 (760) 814-1575
www.cypherbridge.com
sales@cypherbridge.com

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