

## RA Ecosystem Partner Solution

# ORYX EMBEDDED - CycloneCRYPTO Embedded Crypto Library



### 1. Solution Summary

CycloneCRYPTO is a cryptographic toolkit designed for use in embedded systems. It provides a comprehensive set of cryptographic primitives (hash functions, stream and block ciphers, public key cryptography) that can be used to add security features to your embedded application. CycloneCRYPTO supports several Renesas products including [RAMCUs](#).

### 2. Features/Benefits

- Symmetric cryptography (cipher, hash and MAC algorithms).
- Asymmetric cryptography (RSA, DSA, Diffie-Hellman, ECDH, ECDSA)
- AEAD cipher modes (GCM and CCM)
- Advanced cryptographic algorithms from Daniel J. Bernstein (EdDSA, X25519, X448, ChaCha20Poly1305)
- X.509 certificate parsing and generation
- Flexible memory footprint. Built-time configuration to embed only the necessary features
- Portable architecture (supports little-endian and big-endian architectures)
- Extensive test suite available on request (for commercial licenses)
- The library is distributed as a full ANSI C and highly maintainable source code

### 3. Diagrams/Graphics



### 4. Target Markets and Applications

- Industrial IoT Systems
- Home & Building Automation
- Security & Defence Systems
- Smart Meters & Energy Storage

<https://www.oryx-embedded.com/products/CycloneCRYPTO>

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<b>Date of Creation</b>	2014
<b>Business Description</b>	Secure Networking Solutions for Embedded Systems
<b>Product Offering</b>	<p> <a href="#">CycloneTCP</a> (Embedded TCP/IP Stack, IPv4 &amp; IPv6)  <a href="#">CycloneSSL</a> (Embedded TLS 1.3 / DTLS 1.2 Library)  <a href="#">CycloneSSH</a> (Embedded SSH / SFTP / SCP Library)  <a href="#">CycloneCRYPTO</a> (Embedded Crypto Library)  <a href="#">CycloneSTP</a> (STP &amp; RSTP Protocols)  <a href="#">CycloneACME</a> (ACME client Library)         </p> <p>Our products are available either as open source (GPLv2 license) or under a royalty-free commercial license (non-GPL license). We also propose an evaluation license (90-day license in source form) with technical support for an easier onboarding and effective evaluation of our software: <a href="https://www.oryx-embedded.com/download/">https://www.oryx-embedded.com/download/</a></p>
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