

RA Ecosystem Partner Solution

ORYX EMBEDDED - CycloneSSL

Embedded TLS 1.3 / DTLS 1.2 Library



1. Solution Summary

CycloneSSL is a lightweight TLS / DTLS implementation targeted for use by embedded application developers. It provides the ability to secure communications over the Internet (e.g. IoT protocols, electronic mail, web server, file transfer, VoIP). CycloneSSL supports several Renesas products including [RA MCUs](#).

2. Features/Benefits

- Server and/or client operation
- Supports TLS 1.0, TLS 1.1, TLS 1.2 and TLS 1.3 protocols
- Supports DTLS 1.0 and DTLS 1.2 (Datagram Transport Layer Security)
- Robust and efficient implementation
- Supports ECC (Elliptic Curve Cryptography)
- Rich set of TLS cipher suites (including Suite B profile)
- RSA, Diffie-Hellman and ECDH key exchange algorithms
- Compliant with BSD socket API
- Flexible memory footprint. Built-time configuration to embed only the necessary features
- Consistent application programming interface (API)
- Portable architecture (no processor dependencies)
- The library is distributed as a full ANSI C and highly maintainable source code

3. Diagrams/Graphics

HTTP	HTTP/2	MQTT	MQTT-SN	CoAP	FTP	SMTP	7 - Application
TLS Handshake Protocol		TLS Change Cipher Spec Protocol		TLS Alert Protocol		Application Data	6 - Presentation
TLS Record Protocol				DTLS Record Protocol			5 - Session
Socket							

4. Target Markets and Applications

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

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

Company Name	ORYX EMBEDDED
Address	165 rue Louis Barran, ZA Centr'Alp 2, 38430 Saint-Jean-de-Moirans - FRANCE
Date of Creation	2014
Business Description	Secure Networking Solutions for Embedded Systems
Product Offering	<p> CycloneTCP (Embedded TCP/IP Stack, IPv4 & IPv6) CycloneSSL (Embedded TLS 1.3 / DTLS 1.2 Library) CycloneSSH (Embedded SSH / SFTP / SCP Library) CycloneCRYPTO (Embedded Crypto Library) CycloneSTP (STP & RSTP Protocols) CycloneACME (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: https://www.oryx-embedded.com/download/</p>
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