

RA Ecosystem Partner Solution

ORYX EMBEDDED - CycloneTCP Embedded TCP/IP Stack (IPv4 & IPv6)



1. Solution Summary

CycloneTCP is a dual IPv4/IPv6 stack dedicated to embedded applications. CycloneTCP conforms to RFC standards and offers seamless interoperability with existing TCP/IP systems. The stack is distributed as a full ANSI C and highly maintainable source code. CycloneTCP supports several Renesas products including [RA MCUs](#).

2. Features/Benefits

- Dual stack (IPv4 and/or IPv6)
- Built-in support for multiple network interfaces
- Flexible memory footprint (built-time configuration to embed only the necessary features)
- Configurable memory model (static memory pool or heap memory allocation)
- Portable architecture (no processor dependencies)
- Straightforward port to any RTOS
- Highly maintainable source code
- Debugging and trace functionality to ease development and integration
- BSD style socket API

3. Diagrams/Graphics

HTTP	HTTP/2	MQTT	MQTT-SN	CoAP	FTP	7 - Application
SMTP	SNTP	DNS	NetBIOS	SNMPv3	TFTP	
WebSocket		mDNS	DNS-SD	DHCP	DHCPv6	
Socket						5 - Session
TCP			UDP		RAW	4 - Transport
IPv4			IPv6			3 - Network
ARP	Auto-IP		NDP	SLAAC		
ICMP	IGMPv2		ICMPv6	MLDv1		
Ethernet	Wi-Fi	PPP	USB/RNDIS	G3-PLC		2 - Data Link

4. Target Markets and Applications

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

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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