



lib_xtcp: TCP/IP library (README)

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vendor	XMOS
version	6.2.0
scope	General Use
description	TCP/IP Library
category	Networking
keywords	Ethernet, MAC, MII, RMII, RGMII, SMI, TCP, UDP
hardware	xcore.ai, xcore-200

1 Summary

lib_xtcp is a library providing implementations of the Ethernet transport layer, designed to support host-to-host network communication by handling data exchange typically using TCP or UDP protocols. It provides a software defined Ethernet transport stack implementation that connects to and runs on the XMOS Ethernet library **lib_ethernet** to support layer-4 traffic over Ethernet via MII or RGMII, at 10/100/1000 Mb/s Ethernet data rates.

The library provides two alternative TCP/UDP/IP protocol stacks for XMOS devices. See the following section for further details.

1.1 Stacks

This library provides two different TCP/IP stack implementations ported to the xCORE architecture.

uIP stack

The first stack ported is the uIP (micro IP) stack. The uIP stack has been designed to have a minimal resource footprint. As a result, it has limited performance and does not provide support for TCP windowing.

LwIP stack

The second stack ported is the LwIP (lightweight IP) stack. The LwIP stack requires more resources than uIP, but is designed to provide better throughput and also has support for TCP windowing.

2 Features

- ▶ TCP and UDP connection handling
- ▶ Common API to selectable TCP stack, uIP/LwIP
- ▶ TCP, UDP, DHCP, IP4LL, ICMP, IGMP
- ▶ Low level, event based interface for efficient memory usage
- ▶ Supports IPv4 only, not IPv6

3 Known issues

- ▶ psock.c does output ftpgroup warnings. This does not affect operation. This is due to the stack not being calculable on code paths with a function pointer.

4 Development repo

- ▶ [lib_xtcp](#)

5 Required tools

- ▶ XMOS XTC Tools: 15.3.1

6 Required libraries (dependencies)

- ▶ [lib_ethernet](#)
- ▶ [lib_board_support](#)

7 Related application notes

- ▶ [AN00120: 100Mbps RMII ethernet application note](#)
- ▶ [AN00199: XMOS Gigabit Ethernet application note \(XK_EVK_XE216\)](#)

The following application notes use this library:

- ▶ [AN00121: A UDP loopback demo running on lib_xtcp application note](#)
- ▶ [AN02044: A UDP loopback demo running on lib_xtcp on XCORE-200-EXPLORER application note](#)

8 Support

This package is supported by XMOS Ltd. Issues can be raised against the software at <http://www.xmos.com/support>



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