TCP/IP Library

A library providing two alternative TCP/UDP/IP protocol stacks for XMOS devices. This library connects to the XMOS Ethernet library to provide layer-3 traffic over Ethernet via MII or RGMII.

Features

- TCP and UDP connection handling
- DHCP, IP4LL, ICMP, IGMP support
- Low level, event based interface for efficient memory usage
- Supports IPv4 only, not IPv6

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.

Typical Resource Usage

This following table shows typical resource usage in some different configurations. Exact resource usage will depend on the particular use of the library by the application.

Configuration	Pins	Ports	Clocks	Ram	Logical cores
UIP	0	0	0	~25.7K	1
LWIP	0	0	0	~63.6K	1

Software version and dependencies

This document pertains to version 6.0.0 of this library. It is known to work on version 14.2.4 of the xTIMEcomposer tools suite, it may work on other versions.

This library depends on the following other libraries:

- lib_otpinfo (>=2.0.0)
- lib_ethernet (>=3.2.0)

Related application notes

The following application notes use this library:

- AN00121 - Using the XMOS TCP/IP library