

Application Note: AN01024

xCONNECT dynamic configuration demo

xCONNECT is a proprietary interconnect technology that facilitates data communication across different xCORE to create a fully scalable system. It is possible to achieve high bandwidth communication of up to 400 Mbits/sec for each xCONNECT link making it suitable for things like light weight industrial back-plane busses. No additional hardware is required for the xCONNECT communication.

Using xCONNECT over longer distances can introduce bit errors due to noise, xCONNECT is dependent on the application layer to recover from such communication errors. This application note demonstrates handling of transmit timeouts, receive timeouts and receive exceptions (e.g. unexpected control tokens) using software to ensure robustness of the communication.

Required tools and libraries

- xTIMEcomposer Tools - Version 14.0.0 and above
- XMOS try_catch exception handling module - Version 1.0.5 and above

Required hardware

This application note is designed to run on an XMOS xCORE General Purpose (L-series) device.

The example code provided with the application has been implemented and tested on the xCORE L-series sliceKIT core board 1V2 (XP-SKC-L2) but there is no dependency on this board and it can be modified to run on any development board which uses an xCORE General Purpose (L-series), xCORE-USB series or xCORE-Analog series device.

Prerequisites

- This document assumes familiarity with the XMOS xCORE architecture, xCONNECT interconnect communication, the XMOS tool chain and the xC language. Documentation that is not specific to this application note is listed in the references appendix.
- For descriptions of XMOS related terms found in this document please see the XMOS Glossary¹.



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¹<http://www.xmos.com/published/glossary>