Application Note: AN00203

Gigabit Ethernet AVB endpoint example using TDM master

This application note demonstrates a Gigabit Ethernet AVB endpoint that streams uncompressed audio over an Ethernet AVB network with guaranteed Quality of Service, low latency and time synchronization. It shows how to interface with a high performance audio codec via the I2S/TDM library.

The application is configured to provide four Talker and Listener streams of 8 audio channels each, at 48 kHz sampling rate.

The example also shows plug-and-play multichannel recording and playback with Apple Mac hardware running OS X 10.10.

Required tools and libraries

The code in this application note is known to work on version 14.1.1 of the xTIMEcomposer tools suite, it may work on other versions.

The application does not have any dependencies (i.e. it does not rely on any libraries).

Required hardware

The application note is designed to run on the XMOS xCORE-200 Multichannel Audio platform version 2.

There is no dependency on this hardware and the firmware can be modified to run on any xCORE XE/XEF series device with the required external hardware.

The firmware was interoperability tested with a Late 2013 MacBook Pro running OS X version 10.10.3.

Prerequisites

- This document assumes familiarity with the XMOS xCORE architecture, the IEEE AVB/TSN standards, the XMOS tool chain and the xC language. Documentation related to these aspects which are not specific to this application note are linked to in the references appendix.
- For descriptions of XMOS related terms found in this document please see the XMOS Glossary[1].
- The example uses various libraries, full details of the functionality of a library can be found in its user guide[2].

[1] http://www.xmos.com/published/glossary
[2] http://www.xmos.com/support/libraries