Application Note: AN00111

Optimizing start-up time in AVB endpoints

This application note provides background information and step-by-step instructions for minimizing the time from power on to streaming (start-up time) in AVB endpoints.

Using static configuration along with various boot time optimisations, this application note shows how a start-up time comfortably less than 500 milliseconds can be achieved.

The application note is based the XMOS Ethernet AVB Endpoint software. The code changes and experiments were conducted using two XMOS AVB-LC Kits connected back to back.

Information about the AVB Endpoint software and development boards used can be found on the XMOS website.[1]

Required tools and libraries

- xTIMEcomposer Tools - Version 13.2
- XMOS AVB Endpoint software - Version 6.1.1
- Start-up time optimized modified source files, to augment version 6.1.1 of the AVB Endpoint software. These are included in this application note.

Required hardware

The software described within this note is designed to run on an XMOS xCORE-L series devices.

The example firmware provided in the AVB Endpoint software has been implemented and tested using the low-cost AVB Audio Endpoint Platform hardware (XR-AVB-LC-BRD). Dual XR-AVB-LC-BRD boards are available as a kit from part number XK-AVB-LC-SYS.

Prerequisites

- This document assumes familiarity with the XMOS xCORE architecture, the IEEE AVB/TSN standards, the XMOS tool chain and the xC programming language. Documentation related to these aspects which are not specific to this application note are linked to in the references appendix at the end of this application note.
- For descriptions of XMOS related terms found in this document please see the *XMOS glossary*[2].
- For the full API listing of the XMOS AVB Audio Endpoint software please see the *AVB Endpoint Design Guide*[3].

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[1] http://www.xmos.com/applications/audio/avb
[2] http://www.xmos.com/published/glossary
[3] https://www.xmos.com/published/avb-design-guide

1 Overview