Enabling DSD256 in the USB Audio 2.0 Device Reference Design Software

The XMOS USB Audio 2.0 device software reference design software supports stereo DSD64 and DSD128 streaming output as standard. This application note describes how, through a few code modifications, support can be extended to DSD256.

Related documents

- USB Audio Software Design Guide[1]

Required tools and libraries

This application note assumes a baseline firmware of the XMOS USB Audio Reference design, version 6.6.1. Later versions of the reference design are likely applicable, however it is possible that code refactoring may alter the code changes required to implement DSD256.

A firmware build with DSD enabled is required as the starting point. A suitable firmware image is 2xoxxd (USB Audio 2.0, no input, output enabled, no midi/SPDIF and DSD enabled), which can be found in the app_usb_aud_xk_u8_2c application folder.

xTIMEcomposer Tools Suite version 13.2 or later is required.

Required hardware

XMOS offers the Mulit-Function Audio platform[2] which supports DSD64 and DSD128. XMOS does not currently provide any development hardware capable of DSD256. It is assumed that the reader has access to either a modified development board connected to suitable DAC, or custom hardware with the appropriate XMOS device, DAC and associated support components.

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[1] https://www.xmos.com/download/public/USB-Audio-Software-Design-Guide(6.6.0rc5.a).pdf
[2] https://www.xmos.com/products/reference-designs/mfa