Application Note: AN01009

Optimizing USB Audio for stereo output, battery powered devices

This application note characterizes the expected power usage of the XMOS USB Audio reference design running on the XS1-U6 device, configured for stereo out applications. The second part of this document outlines optional changes to the hardware and firmware, with the goal of reducing power consumption and extending battery life.

The USB Audio reference design is optimized for performance, configurability and low resource usage. The standard reference design running on the XS1-U6 comfortably fits within the USB bus power envelope with plenty of power available for support components and audio CODECs.

When powering systems from a battery, a fixed amount of energy is available. Reduction of power dissipation allows the designer to increase battery life or keep the same battery life for a smaller battery, bringing cost and form factor savings. By making different design choices and constraining the original XMOS USB Audio reference design, various power optimizations can be applied to help achieve these goals.

This application note assumes that the reader is familiar with the XMOS architecture[1] and the XMOS USB Audio reference design[2]

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[1]http://www.xmos.com/published/xcore-architecture?version=latest
[2]http://www.xmos.com/products/reference-designs/di

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