
USB Video Class Device

This application note shows how to create a USB device compliant to the standard USB Video Class (UVC) on an XMOS multicore microcontroller.

The code associated with this application note provides an example of using the XMOS USB Device Library (XUD) and associated USB class descriptors to provide a framework for the creation of USB video devices like webcam, video player, camcorders etc.

This example USB video class implementation provides a video camera device running over high speed USB. It supports standard requests associated with the class. The application doesn't connect a camera sensor device but emulates it by creating simple video data which is streamed to the host PC. Any host software that supports viewing UVC compliant video capture devices can be used to view the video streamed out of the XMOS device. This demonstrates the simple way in which USB video devices can easily be deployed using an xCORE-USB device.

Note: This application note provides a standard USB video class device and as a result does not require external drivers to run on Windows, Mac or Linux.

Required tools and libraries

- xTIMEcomposer Tools - Version 14.0.0
- XMOS USB library - Version 2.0.0

Required hardware

This application note is designed to run on an XMOS xCORE-USB series device.

The example code provided with the application has been implemented and tested on the xCORE-USB sliceKIT (XK-SK-U16-ST) but there is no dependency on this board and it can be modified to run on any development board which uses an xCORE-USB series device.

Prerequisites

- This document assumes familiarity with the XMOS xCORE architecture, the Universal Serial Bus 2.0 Specification and related specifications, 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 Glossary¹.
- For the full API listing of the XMOS USB Device (XUD) Library please see the document XMOS USB Device (XUD) Library².
- For information on designing USB devices using the XUD library please see the XMOS USB Device Design Guide for reference³.



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