SD card Demo Quickstart Guide

1 sc_sdcard demo : Quick Start Guide

▶ XP-SKC-L16 sliceKIT

▶ xTAG2

▶ XA-SK-FLASH 1V0 Flash slice

▶ module_FatFs

▶ module_sdcardSPI,

▶ module_spi_master,

together to read/write files on SD card through SPI interface. This application showcases some of the key software features of SD card module and Fat filesystem module. At the end it prints read/write performances of Fat Filesystem on SD card using SPI interface

1.1 Hardware Setup

The XP-SKC-L16 sliceKIT Core board has four slots with edge connectors: SQUARE, CIRCLE, TRIANGLE and STAR.

To setup up the system:

1. Connect XA-SK-FLASH 1V0 Slice Card to the XP-SKC-L16 sliceKIT Core board using the connector marked with the TRIANGLE.

2. Connect the xTAG Adapter to sliceKIT Core board, and connect xTAG-2 to the adapter.

3. Connect the xTAG-2 to host PC. Note that the USB cable is not provided with the sliceKIT starter kit.

4. Set the XMOS LINK to OFF on the xTAG Adapter(XA-SK-XTAG2).

5. Make sure the SD card slot in XA-SK-FLASH slice has a Class-4 SD card in it.

6. Switch on the power supply to the sliceKIT Core board.

1.2 Import and Build the Application

1. Open xTIMEcomposer and check that it is operating in online mode. Open the edit perspective (Window->Open Perspective->XMOS Edit).

2. Locate the `'SD card demo'` item in the xSOFTip pane on the bottom left of the window and drag it into the Project Explorer window in the xTIMEcomposer. This will also cause the modules on which this application depends to be imported as well.

3. Click on the app_sdcard_test item in the Explorer pane then click on the build icon (hammer) in xTIMEcomposer. Check the console window to verify that the application has built successfully.

1.3 Run the Application

Now that the application has been compiled, the next step is to run it on the sliceKIT Core Board using the tools to load the application over JTAG (via the xTAG-2 and xTAG Adapter card) into the xCORE multicore microcontroller.

1. Select the file `app_sdcard_test.xe` in the `app_display_controller_demo` project from the Project Explorer.

2. Click on the `Run` icon (the white arrow in the green circle).

3. At the `Select Device` dialog select `XMOS xTAG-2 connect to L1[0..1]` and click `OK`.

4. The application starts executing and reads/writes contents into SD card.

1.4 Next Steps

1. Try altering the size of file and make sure file sizes during write/read operations are still accurate. You can do so by reducing the size of Buff which is initialized with 40 blocks (each 512 bytes).

2. You can vary the speed of SPI clock and see if that makes any difference. You can do so by changing the second parameter in spi_master_init() function called in disk_initialize() in module_sdcardSPI/src/SDCardHostSPI.xc.

XMOS®

Copyright © 2013, All Rights Reserved.