Scope

This document describes how to test USB MSD command example.

Preparation

Host

A board, i.e. twrk22f120m, which is running host_msd_cmd_twrk22f120m example.

Device

A U-disk.

Libraries dependency

The libraries dependency for various RTOS lists as following,

BM

Library project path:

- *<install_dir>/usb/usb_core/host/build/<tool_chain>/usbh_sdk_<board>_bm*
- *<install_dir>/lib/ksdk_platform_lib/<tool_chain>/<platform>*

FreeRTOS

Library project path:

- *<install_dir>/usb/usb_core/host/build/<tool_chain>/usbh_sdk_<board>_freertos*
- *<install_dir>/lib/ksdk_freertos_lib/<tool_chain>/<platform>*

MQX

Library project path:

- *<install_dir>/rtos/mqx/mqx/build/<tool_chain>/mqx_<board>*
- *<install_dir>/rtos/mqx/mqx_stdlib/build/<tool_chain>/mqx_stdlib_<board>*
- *<install_dir>/usb/usb_core/host/build/<tool_chain>/usbh_sdk_<board>_mqx*
- *<install_dir>/lib/ksdk_mqx_lib/<tool_chain>/<platform>*

uCOSii

Library project path:

- *<install_dir>/usb/usb_core/host/build/<tool_chain>/usbh_sdk_<board>_ucosii*

- *<install_dir>/lib/ksdk_ucosii_lib/<tool_chain>/<platform>*

uCOSiii

Library project path:

- *<install_dir>/usb/usb_core/host/build/<tool_chain>/usbh_sdk_<board>_ucosiii*
- *<install_dir>/lib/ksdk_ucosiii_lib/<tool_chain>/<platform>*

Refer to **Integration of the USB Stack and Kinetis SDK_review.pdf(***<install_dir>/doc***)** on how to build the corresponding libraries.

Steps

Follow the steps to run the MSD cmd demo.

1. Run the host_msd_cmd_twrk22f120m and you will see the printed guide note.
2. Plug-in the U-disk and you will see some attach information printed out. And then you will see the command test result. Such as:

   ================ START OF A NEW SESSION ================

   Testing: GET MAX LUN Command...OK
   Testing: TEST UNIT READY Command...OK
   Testing: REQUEST SENSE Command...OK
   Testing: INQUIRY Command...OK
   Testing: REQUEST SENSE Command...OK
   Testing: READ FORMAT CAPACITIES Command...OK
   Testing: REQUEST SENSE Command...OK
   Testing: READ CAPACITY Command...OK
   Testing: REQUEST SENSE Command...OK
   Testing: READ(10) Command...OK
   Testing: MODE SENSE Command...OK
   Testing: PREVENT-ALLOW MEDIUM REMOVAL Command...OK
   Testing: REQUEST SENSE Command...OK
   Testing: VERIFY Command...OK
   Testing: WRITE(10) Command...OK
   Testing: REQUEST SENSE Command...OK
   Testing: START-STOP UNIT Command...OK

   Test done!

3. If you want to test throughput, you should set TEST_SECTOR_READ_WRITE_SPEED as (1) in file msd_commands.h. Then an additional 64K ram is required to test the throughput, the macro is unsupported for the board that doesn't have the enough ram. Note: This macro is unsupported in Vybrid series board. Then run the demo the result is as follows:

   ================ START OF A NEW SESSION ================

   ......

   Testing: Start Test READ Throughput...(Test data size: 102400 KB(104857600B). Read n sectors at a time.)

   Test results: Time = 206248ms, Speed = 508KB/s

   Testing: Start Test READ Throughput... Test data size: 102400 KB(104857600B) :

   Testing: REQUEST SENSE Command...OK

   Testing: REQUEST SENSE Command...OK

   Testing: REQUEST SENSE Command...OK

   Testing: Start Test WRITE Throughput... Test data size: 102400 KB(104857600B).

   Testing: REQUEST SENSE Command...OK

   Testing: REQUEST SENSE Command...OK

   Testing: REQUEST SENSE Command...OK

   Testing: Start Test WRITE Throughput...(Test data size: 102400 KB(104857600B). Write n sectors at a time.)

   Test results: Time = 209453ms, Speed = 500KB/s

   Testing: REQUEST SENSE Command...OK

   Testing: WRITE(10) Command...OK

   Testing: REQUEST SENSE Command...OK

   Testing: START-STOP UNIT Command...OK

   Test done!