

Overview

This Host MSD example supports the UFI and SCSI U-disk device.

The application prints the attached device information when the U-disk device is attached. The application executes UFI commands to test the attached device.

System Requirement

Hardware requirements

- Mini/micro USB cable
- USB A to micro AB cable
- Hardware (Tower module/base board, and so on) for a specific device
- Personal Computer (PC)

Software requirements

- The project path is:
`<MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_host_msdc_command/<rtos>/<toolchain>.`

Note

The <rtos> is Bare Metal or FreeRTOS OS.

Getting Started

Hardware Settings

- Jumper settings for REV B:
J17 1-2 and 3-5. Besides, two 33ohm resistors (R225 and R227) have to be populated on nets K21_MICRO_USB_DP and K21_MICRO_USB_DN and two 33ohm resistors (R224 and R226) on nets USB0_DP and USB0_DN have to be removed for using micro USB connector. 1-2 and 3-5. Besides, two 33ohm resistors (R224 and R226) have to be populated on nets USB0_DP and USB0_DN and two 33ohm resistors (R225 and R227) on nets K21_MICRO_USB_DP and K21_MICRO_USB_DN have to be removed for using TWR-SER board's mini USB connector.
- The Jumper settings REV C:
J17 1-2 and 3-5, J24 1-2 for micro USB connector. 1-2, J24 2-3 for using TWR-SER mini USB connector.

Note

Set the hardware jumpers (Tower system/base module) to default settings.

Prepare the example

1. Download the program to the target board.
2. Power off the target board and power on again.
3. Connect devices to the board.

Note

For detailed instructions, see the appropriate board User's Guide.

Run the example

1. Connect the board UART to the PC and open the COM port in a terminal tool.
2. Plug in the hub or U-disk device to the board. The attached information prints out in the terminal.
3. The test information prints in the terminal, "success" prints when one command succeeds and "fail" prints when one command fails. The test completes when there is a command fail or all the tests are done.

The following figure is an example for attaching one U-disk device.

```
host init done
mass storage device attached:pid=0x312bvid=0x125f address=1
.....test start.....
get max logical units....success, logical units: 0
test unit ready....success, unit status: ready
request sense....success
inquiry...success
read capacity...success, last logical block:30344191 block length:512
read(10)...success
write(10)...success
.....test done.....
```

Figure 1: Attach U-disk device

4. To test throughput, set the MSD_THROUGHPUT_TEST_ENABLE to (1) in the file host_msd_command.h. An additional 64 K RAM is required to test the throughput. The macro is only supported on the TWR-K65F180M Tower System module and IAR.

The following figure is a throughput test example for attaching one U-disk device.

```
host init done
mass storage device attached:pid=0x312bvid=0x125f address=1
.....test start.....
get max logical units....success, logical units: 0
test unit ready....success, unit status: ready
request sense....success
inquiry...success
read capacity...success, last logical block:30344191 block length:512
read(10)...success
write(10)...success
throughput test:
  write 51200KB data the speed is 18102 KB/s
  read 51200KB data the speed is 38011 KB/s
  write 51200KB data the speed is 17993 KB/s
  read 51200KB data the speed is 37904 KB/s
.....test done.....
```

Figure 2: Throughput test

Note

Throughput test only supports the TWR-K65F180M Tower System module.