

Overview

This Host HID example is a simple demonstration program based on the MCUXpresso SDK. The application supports the mouse device. It prints the mouse operation when the mouse device is attached.

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_hid_mouse/<rtos>/<toolchain>.`

Note

The <rtos> is Bare Metal or FreeRTOS OS.

Getting Started

Hardware Settings

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.

Host hid example doesn't support HID report descriptor analysis, this example assume that the device data are sent by specific order.

For more detail, please refer to the code. For the device list we tested, please refer to chapter "Peripheral devices tested with the USB Host stack" in "SDK Release Notes xxxx(board name)".

Run the example

Note

This hardware supports battery charger and USB_HOST_CONFIG_BATTERY_CHARGER is enabled, The charger type can be changed by pressing one button.

- (1) Press the button one time to change the charger type and turn off vbus.
- (2) Press the button again to turn on vbus, then the attached device can detect the changed charger type.
- (3) The button name will be printed after initialization.

```
turn on vbus  
hid mouse attached:pid=0x91vid=0x1fc9 address=1  
mouse attached
```

```
Down  
Down  
Down  
Down  
Down  
Down  
Down
```

```
change charger type as SDP and turn off vbus
```

```
UP  
UP  
UP  
UP  
UP  
UP  
UP  
UP  
UP  
UP  
UP  
UP
```

```
mouse detached
```

```
change charger type as CDP and turn off vbus
```

```
Right  
Right  
Right  
Right  
Right  
Right  
Right  
Right  
Right  
Right  
Right  
Right  
Right
```

```
mouse detached
```

Figure 1: host output result

Device side output log if device supports DCD.

```

USB device attached.
SDP(standard downstream port) is detected.
USB device detached.
USB device attached.
CDP(charging downstream port) is detected.
USB device detached.

```

Figure 2: device output result

1. Connect the board UART to the PC and open the COM port in a terminal tool.
2. Plug in the HUB or the mouse device to the board. The attached information prints out in the terminal.
3. The mouse operation information prints in the terminal when you operate the mouse.

The application prints the mouse operation information in one line. Each line contains the following sequential string: "Left Click", "Middle Click", "Right Click", "Right"/"Left" movement, "UP"/"Down" movement and "Wheel Down"/"Wheel Up" movement. White space replaces the above string if the mouse doesn't have the corresponding operation.

For example, when the mouse moves right and up,

" Right UP "

prints in the terminal.

The following figure is an example to attach one mouse device.

```

host init done
hid mouse attached:pid=0x2510vid=0x93a address=1
mouse attached
control transfer error
                                Wheel Down
                                Right Click
Left Click
                                Right Down
                                UP
                                UP
                                Right UP
                                UP
                                UP
                                Right UP
                                Left UP
                                Left
                                Left Down
                                Left Down
                                Left Down
                                Left Down

```

Figure 3: Attach mouse