Overview

The Suspend/Resume USB Host HID example is a simple demonstration program based on the KSDK. The host will release the USB bus and enter into the VLPS mode when user needs to suspend the USB bus. The host can be waked up by a switch or the resume signal delivered by the device if the remote wake-up feature is enabled. The host will wake up the device by delivering the resume signal if it is waked up by a switch.

The application supports the mouse 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:
  <SDK_Install>/boards/<board>/usb_examples/usb_suspend_resume_host_hid_mouse/<rtos>/<toolchain>.

  Note

  The <rtos> is Bare Metal or FreeRTOS OS.

Getting Started

Hardware Settings

- The Jumper settings:
  J13 1-2, J9 7-8, Remove all jumpers from J23.

  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 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.

4. Suspend Start to suspend the bus by entering character 's'. And then select whether enable the remote wake-up feature and set/clear the feature if the device supports the feature. And then release the USB bus and enter into the VLPS mode.

```
host init done, the host stack version is 1.0.0.
Please Enter 's' to start suspend test
hid mouse attached:pid=0x7cvid=0x1fc9 address=1
mouse attached
                                    Down
                                    Down
...
                                    UP
Start suspend USB BUS...

Please Enter:
    1. Enable remote wakeup feature.
    2. Disable remote wakeup feature.
                                    UP
...
                                    UP
                                    UP
1Remote wakeup feature set.
BUS has been suspended.
Please Press wakeup switch(SW3) to start resume test.
Or, wait for device sends resume signal.
```

5. Resume The host is waked up and starts to deliver the resume signal when the wake up source is the wakeup switch.

```
BUS has been suspended.
Please Press wakeup switch(SW3) to start resume test.
Start resume the device.
BUS has been resumed.
                                    UP
                                    UP
```

Or the host is waked up when the resume signal is detected on the bus.

```
BUS has been suspended.
Please Press wakeup switch(SW3) to start resume test.
Or, wait for device sends resume signal.
BUS has been resumed.
                                    Down
                                    Down
```