

Overview

The USB Device Charger Detection(DCD) function is integrated with this example and based on Battery Charging Specification, the example will print the charger type.

The USB HID mouse application is a simple demonstration program based on the MCUXpresso SDK. It is enumerated as a mouse. Users can see the mouse arrow moving on the PC screen according in a rectangular fashion.

System Requirements

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 files are in:
<MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_device_hid_mouse/<rtos>/<toolchain>.
For lite version, the project files are in:
<MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_device_hid_mouse_lite/<rtos>/<toolchain>.

Note

The <rtos> is Bare Metal or FreeRTOS OS.

Getting Started

Note

By default, the USB_DEVICE_CONFIG_DETACH_ENABLE and USB_DEVICE_CONFIG_CHARGER_DETECT is enabled to enable the Device Charger Detection function.

Hardware Settings

Note

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

Prepare the example

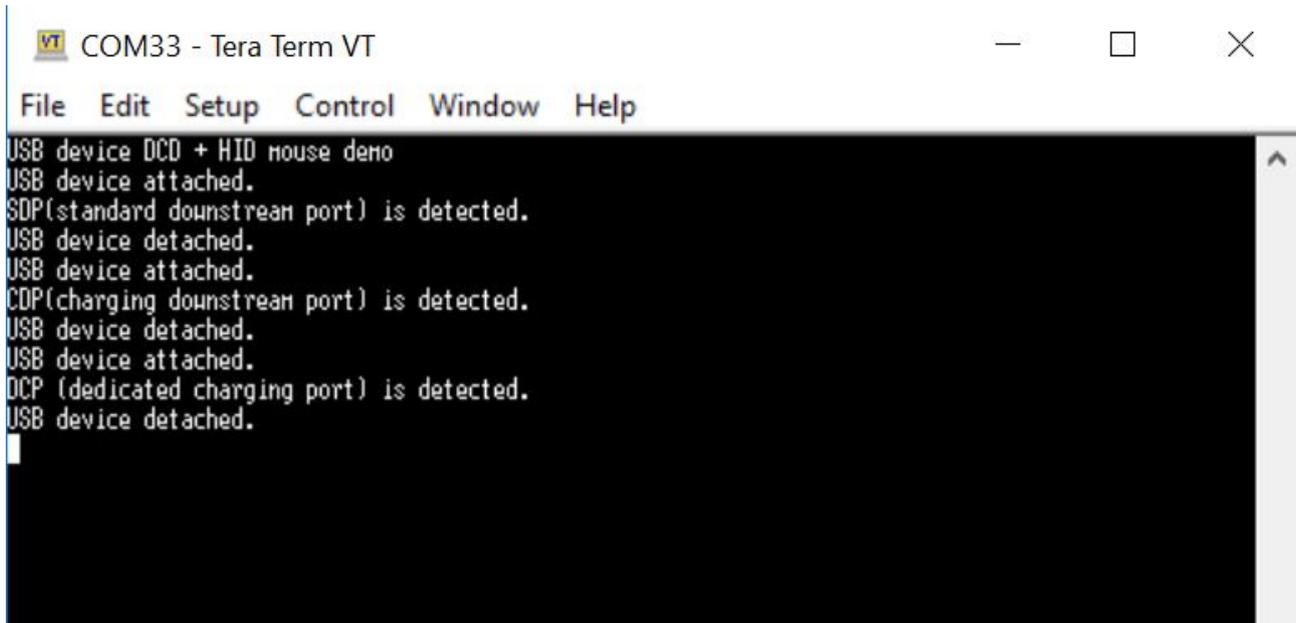
1. Download the program to the target board.
2. Connect the target board to the external power source (the example is self-powered).
3. Power off the target board. Then power on again.
4. Connect a USB cable between the PC and the USB device port of the board.

Note

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

Run the example

-After step 1, the example will show the following log. the detection type is decided by whether the host is CDP/SDP or DCP.

The image shows a screenshot of a terminal window titled "COM33 - Tera Term VT". The window has a menu bar with "File", "Edit", "Setup", "Control", "Window", and "Help". The terminal output displays a sequence of USB device connection and disconnection events. The log starts with "USB device DCD + HID mouse demo" and "USB device attached.". It then shows "SDP(standard downstream port) is detected.", followed by "USB device detached." and "USB device attached.". Next is "CDP(charging downstream port) is detected.", followed by "USB device detached." and "USB device attached.". Finally, it shows "DCP (dedicated charging port) is detected." and "USB device detached.". The terminal has a black background with white text and a vertical scrollbar on the right side.

```
COM33 - Tera Term VT
File Edit Setup Control Window Help
USB device DCD + HID mouse demo
USB device attached.
SDP(standard downstream port) is detected.
USB device detached.
USB device attached.
CDP(charging downstream port) is detected.
USB device detached.
USB device attached.
DCP (dedicated charging port) is detected.
USB device detached.
```

Figure 1: DCD Detection Result

1. Plug-in the device, which is running HID mouse example, into the PC. A HID-compliant mouse is enumerated in the Device Manager.
2. The mouse arrow is moving on PC screen in the rectangular rotation.