Overview

The Host PHDC Manager Example is a simple demonstration program based on the MCUXpresso SDK. The application supports the USB weight scale device. It prints out the body mass and body mass index information when the USB weight scale 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

Software requirements

• The project files are in:

<MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_host_phdc_manager/<rtos>/<toolchain>.

Note

The <rtos> is Bare Metal or FreeRTOS OS.

• Terminal tool.

Getting Started

Hardware Settings

• Jumper settings for REV B:

J17 1-2 and 3-5. Besides, two 330hm resistors (R225 and R227) have to be populated on nets K21_MICRO_USB_DP and K21_MICRO_USB_DN and two 330hm 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 330hm resistors (R224 and R226) have to be populated on nets USB0_DP and USB0_DN and two 330hm 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. For detailed instructions, see the appropriate board User's Guide.

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 a USB weight scale device to the board.

Note

this example could be tested with the "usb_device_phdc_manager" example in pairs.

Run the example

- 1. Connect the board UART to the PC and open the COM port in a terminal tool.
- 2. Plug in a hub or the USB weight scale device to the board that is running the PHDC manager example. The attached information prints out in the terminal.
- 3. The weight scale data (body mass and body mass index) is automatically sent to the host. The scan report number, time, value, and unit of each field is shown in terminal tool.

The following figure is an example for attaching one USB weight scale device.

```
File Edit Setup
                         Control Window
                                                 Help
host init done
phdc device attached:pid=0x400vid=0x15a2 address=1
phdc device attached
11073Manager: Enter Connected Unassociated state
11073Manager: Received Association request.
11073Manager: Enter Associated Configuring Waiting state
11073Manager:
                        Received a configuration event report.
11073Manager:
11073Manager:
                        Configuration Report Id: 16384.
                        Number of configuration Objects: 3.

> Object Handle 1: Class = 6 Num
11073Manager:
11073Manager:
                                                                             Num Attributes = 4.
                             > Attribute0: Id = ID type
> Attribute1: Id = Small metric specification
11073Manager:
11073Manager:
                             > Attribute2: Id = Unit code
> Attribute3: Id = Value map
Object Handle 2: Class = 6 Num Attributes =
> Attribute0: Id = ID type
> Attribute1: Id = Small metric specification
11073Manager:
11073Manager:
11073Manager:
                                                                             Num Attributes = 4.
11073Manager:
11073Manager:
11073Manager:
                             > Attribute2: Id = Unit code
                             > Attribute3: Id = Value map
Object Handle 3: Class = 6 Num Attributes = 1
> Attribute0: Id = ID type
> Attribute1: Id = Small metric specification
11073Manager:
11073Manager:
                                                                             Num Attributes = 5.
11073Manager:
11073Manager:
11073Manager:
                             > Attribute2: Id = Unit code
11073Manager:
                                Attribute3: Id =
                                                             2631
11073Manager:
                          > Attribute4: Id = Value map
11073Manager: Enter Associated Configuring Checking state
11073Manager: Enter Associated Operating state
11073Manager: Received a RORS_CMIP_GET_CHOSEN.
11073Manager:
11073Manager:
                        Number of attributes = 6
                        Type = Scale, Version = 1
Model: Freescale WeightScale
Received a MDC Noti Scan Report Fixed event.
11073Manager:
11073Manager:
11073Manager:
11073Manager:
11073Manager:
                        Scan Report Number: 0 Number Observations: 4
                       Object Type: Body Weight, Partition: SCADA Observation Value = 28.100000 kg
Absolute Time Stamp = 2007-12-06 12:10:01
Object Type: BMI, Partition: SCADA Observation Value = 28.100000 kg/m2
11073Manager:
11073Manager:
11073Manager:
11073Manager:
11073Manager:
                       Absolute Time Stamp = 2007-12-06 12:10:01
Object Type: Body Weight, Partition: SCADA
Observation Value = 76.300003 kg
Absolute Time Stamp = 2007-12-06 20:05:01
Object Type: BMI, Partition: SCADA
Observation Value = 24.400000 kg/m2
11073Manager:
11073Manager:
11073Manager:
11073Manager:
11073Manager:
11073Manager:
11073Manager:
                        Absolute Time Stamp = 2007-12-06
11073Manager:
11073Manager:
                        Send back MDC Noti Scan Fixed response.
Received a MDC Noti Scan Report Fixed event.
11073Manager:
11073Manager:
11073Manager: Scan Report Number: 1 Number Observations: 11073Manager: Object Type: Body Weight, Partition: SCADA 11073Manager: Observation Value = 28.200001 kg 11073Manager: Absolute Time Stamp = 2007-12-06 12:10:02 11073Manager: Object Type: BMI, Partition: SCADA 11073Manager: Observation Value = 28.200001 kg/m2
                                                               Number Observations:
11073Manager:
```

Figure 1: Attach USB weight scale device