Overview

The USB PHDC WeighScale application is a simple demonstration program based on the MCUXpresso SDK. It is enumerated as a weight scale device and the HealthLink software is used to interact with this device to simulate the personal weight scale data, such as body mass and body mass index.

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 files for lite version example are in:
  <MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_device_phdc_weighscale_lite/<rtos>/<toolchain>.
  For non-lite version example, the path is:
  <MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_device_phdc_weighscale/<rtos>/<toolchain>.

  Note

  The <rtos> is Bare Metal or FreeRTOS OS.
- The HealthLink software installed in Personal Computer(PC)

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. Connect the target board to the external power source (the example is self-powered).
3. Power off the target board. And then power on again.
4. Connect a USB cable between the Host and the USB device port of the board.

Note

For detailed instructions, see the appropriate board User's Guide.
this example could be tested with the "usb_host_phdc_manager" example in pairs.

Run the example in Windows

1. Prepare one board that run usb_host_phdc_manager example work as host.
2. Prepare one target board which is running the "usb_device_phdc_weighscale" example to work as device, plug into the host . The state of the device and the received data will show up on host phdc serial terminal.Open the host serial terminal, the data received from device phdc will be printed as following.

```
host init done
phdc device attached:pid=0x96vid=0x1fc9 address=1
phdc device attached
11073Manager: Enter Connected Unassociated state11073Manager: Received Association request.
11073Manager: Enter Associated Configuring Waiting state11073Manager: Received a configuration
event report.11073Manager: ------------------------------------------------11073Manager:
Configuration Report Id: 16384.11073Manager: Number of configuration Objects: 3.11073Manager:  >
Object Handle 1: Class = 6  Num Attributes = 4.11073Manager:  > > Attribute0: Id = ID type
11073Manager:  > > Attribute1: Id = Small metric specification 11073Manager:  > > Attribute2: Id
= Unit code11073Manager:  > > Attribute3: Id = Value map11073Manager:  > Object Handle 2: Class
= 6  Num Attributes = 4.11073Manager:  > > Attribute0: Id = ID type11073Manager:  > >
Attribute1: Id = Small metric specification 11073Manager:  > > Attribute2: Id = Unit code
11073Manager:  > > Attribute3: Id = Value map11073Manager:  > Object Handle 3: Class = 6  Num
Attributes = 5.11073Manager:  > > Attribute0: Id = ID type11073Manager:  > > Attribute1: Id =
Small metric specification 11073Manager:  > > Attribute2: Id = Unit code11073Manager:  > >
Attribute3: Id = 263111073Manager:  > > Attribute4: Id = Value map11073Manager: Enter Associated
Configuring Checking state11073Manager: Enter Associated Operating state11073Manager: Received a
RORS_CMIP_GET_CHOSEN.11073Manager: ------------------------------------------------
11073Manager: Number of attributes = 611073Manager: Type = Scale, Version = 111073Manager:
Model: Freescale WeightScale 11073Manager: Received a MDC Noti Scan Report Fixed event.
11073Manager: ------------------------------------------------11073Manager: Scan Report
Number: 0  Number Observations: 411073Manager: Object Type : Body Weight, Partition: SCADA
11073Manager: Observation Value = 76.800003 kg11073Manager: Absolute Time Stamp = 2007-12-06
12:10:0611073Manager: Object Type : BMI, Partition: SCADA11073Manager: Observation Value =
24.900000 kg/m211073Manager: Absolute Time Stamp = 2007-12-06  12:10:0611073Manager: Object Type
: Body Weight, Partition: SCADA11073Manager: Observation Value = 76.599998 kg11073Manager:
Absolute Time Stamp = 2007-12-06  20:05:0611073Manager: Object Type : BMI, Partition: SCADA
11073Manager: Observation Value = 24.799999 kg/m211073Manager: Absolute Time Stamp = 2007-12-06
20:05:0611073Manager: ------------------------------------------------11073Manager: Send back
MDC Noti Scan Fixed response.11073Manager: Received a MDC Noti Scan Report Fixed event.
11073Manager: ------------------------------------------------11073Manager: Scan Report
Number: 1  Number Observations: 411073Manager: Object Type : Body Weight, Partition: SCADA
11073Manager: Observation Value = 76.900002 kg11073Manager: Absolute Time Stamp = 2007-12-06
12:10:0711073Manager: Object Type : BMI, Partition: SCADA11073Manager: Observation Value =
25.000000 kg/m211073Manager: Absolute Time Stamp = 2007-12-06  12:10:0711073Manager: Object Type
: Body Weight, Partition: SCADA11073Manager: Observation Value = 76.699997 kg11073Manager:
Absolute Time Stamp = 2007-12-06  20:05:0711073Manager: Object Type : BMI, Partition: SCADA
11073Manager: Observation Value = 24.900000 kg/m211073Manager: Absolute Time Stamp = 2007-12-06
20:05:0711073Manager: ------------------------------------------------11073Manager: Send back
MDC Noti Scan Fixed response.11073Manager: Enter Disconnected statephdc device detached
```