

# Freescall KSDK USB Stack Porting New Platform User's Guide

## 1 Read Me First

This document provides the detailed steps to port the USB Unified Stack to a new platform. There are two main steps for porting:

- Porting the USB Stack
- Porting examples

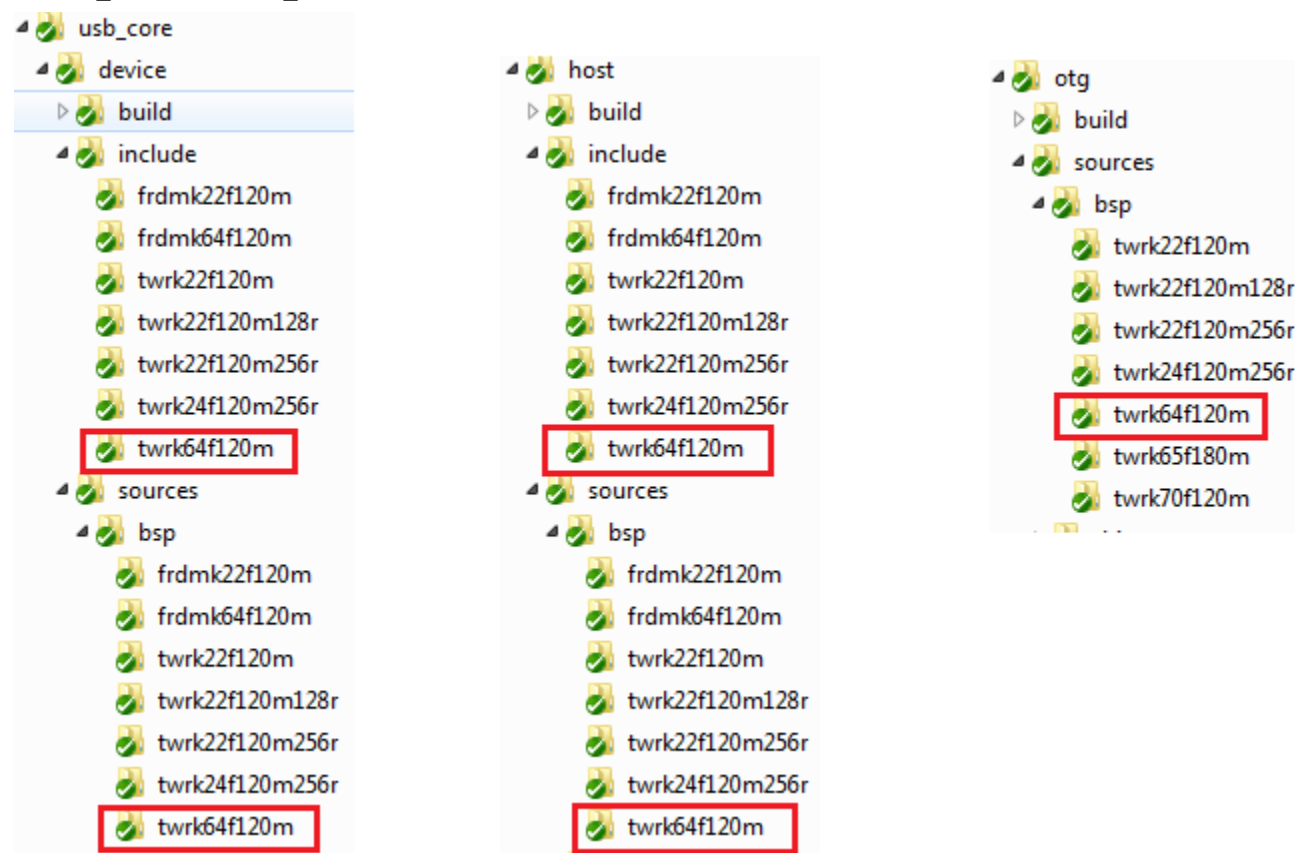
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## 2 Porting the USB Stack

### 2.1 Porting USB driver

The following figure shows the folder structure and all the files that need to be ported after this step. The folders marked with red borders contain the files that need to be ported. The directory of `usb_core` is `.../KSDK_ROOT/usb/usb_core`.



#### 2.1.1 Device

- BSP code
  - Port `/usb/usb_core/device/sources/bsp/{BOARD_NAME}/usb_dev_bsp.c`. This file contains the functions:
    - `bsp_usb_dev_io_init()`: initializes GPIO and generates 48 MHz clock for the USB module
    - `bsp_usb_dev_init()`: initializes the register in the USB module
- Configuration file

- Defines the configuration for this platform in  
`/usb/usb_core/device/include/{BOARD_NAME}/usb_device_config.h.`

## 2.1.2 Host

- BSP code
  - Port `/usb/usb_core/host/sources/bsp/{BOARD_NAME}/usb_host_bsp.c`. This file contains the functions:
    - `bsp_usb_host_io_init()`: initializes GPIO and generate the 48 MHz clock for the USB module
    - `bsp_usb_host_init()`: initializes the register in the USB module
- Configuration file
  - Define the configuration for this platform in  
`/usb/usb_core/host/include/{BOARD_NAME}/usb_host_config.h`

## 2.1.3 OTG

- BSP code
  - Port `/usb/usb_core/otg/sources/bsp/{BOARD_NAME}/usb_otg_bsp.c`. This file contains the functions:
    - `bsp_usb_host_io_init()`: initializes GPIO and generate the 48 MHz clock for the USB module
    - `bsp_usb_host_init()`: initializes the register in the USB module

## 2.2 Creating a library project

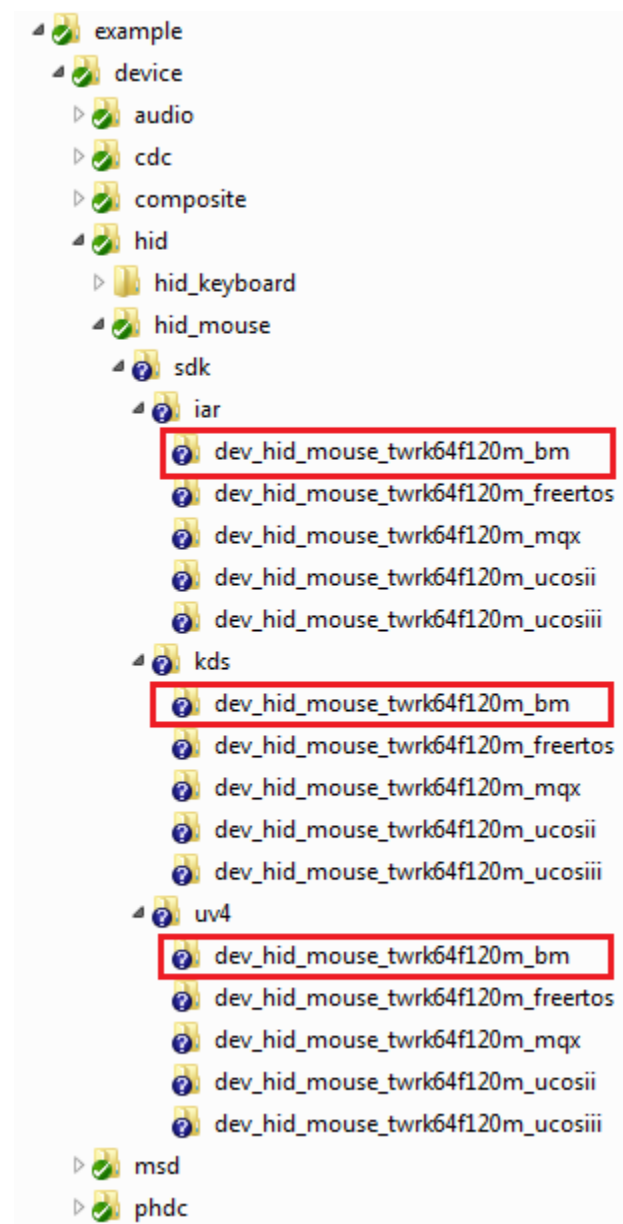
Create a new library project for the new platform. For example, the library file for twrk64f120m is kept in:

- `/usb/usb_core/device/build/iar/usbd_sdk_twrk64f120m_bm`
- `/usb/usb_core/host/build/iar/usbh_sdk_twrk64f120m_bm`
- `/usb/usb_core/otg/build/iar/usbotg_sdk_twrk64f120m_bm`

## 3 Porting Examples

### 3.1 Creating an example project

List all the examples for each IDE that you want to port for new platform. The project file will be kept in the following folder structure:



The steps for creating a new project are as follows:

1. Create a new empty project.
2. Choose a device.
3. Add all the source code into project based on the existing platform.

4. Change the linker file.
5. Change the include path.
6. Change the debug configuration.

## 4 Revision History

This table summarizes revisions to this document.

| Table 1 Revision History |         |                           |
|--------------------------|---------|---------------------------|
| Revision number          | Date    | Substantial changes       |
| 1                        | 04/2015 | Kinetis SDK 1.2.0 release |
| 0                        | 12/2014 | Kinetis SDK 1.1.0 release |

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