Scope

This document describes how to test USB Device speaker example.

Preparation

Host

Personal computer running Windows Xp or Windows 7 for USB audio class 1.0.

MAC for USB audio class 2.0.

Device

A board, i.e. twrk22f120m, which is running dev_audio_speaker example.

A SigmaTel audio codec board, TWR-Audio board

Libraries dependency

The libraries dependency for various RTOS lists as following,

BM

Library project path:

- *<install_dir>/usb/usb_core/ device/lib/bm/<tool_chain>/<soc_name>*
- *<install_dir>/lib/ksdk_platform_lib/<tool_chain>/<platform>*

FreeRTOS

Library project path:

- *<install_dir>/usb/usb_core/ device/lib/freertos/<tool_chain>/<soc_name>*
- *<install_dir>/lib/ksdk_freertos_lib/<tool_chain>/<platform>*

MQX

Library project path:

- *<install_dir>/rtos/mqx/mqx/build/<tool_chain>/mqx_<board>*
- *<install_dir>/rtos/mqx/mqx_stdlib/build/<tool_chain>/mqx_stdlib_<board>*
- *<install_dir>/usb/usb_core/ device/lib/mqx/<tool_chain>/<soc_name>*
- *<install_dir>/lib/ksdk_mqx_lib/<tool_chain>/<platform>*

uCOSii

Library project path:

- *<install_dir>/usb/usb_core/ device/lib/ucosii/<tool_chain>/<soc_name>*
- *<install_dir>/lib/ksdk_ucosii_lib/<tool_chain>/<platform>*

uCOSiii

Library project path:

- *<install_dir>/usb/usb_core/ device/lib/ucosiii/<tool_chain>/<soc_name>*
- *<install_dir>/lib/ksdk_ucosiii_lib/<tool_chain>/<platform>*

Refer to **Integration of the USB Stack and Kinetis SDK_review.pdf(***<install_dir>/doc***)** on how to build the corresponding libraries.

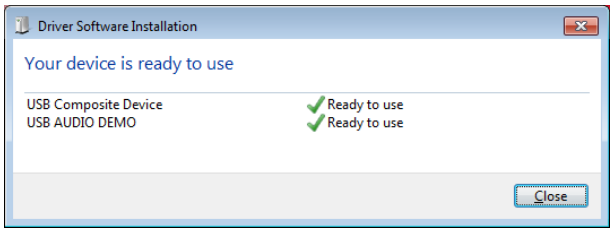
Steps(USB Class 1.0)

Follow the steps to run the USB Device speaker demo.

1. Plug in the TWR-Audio to elevator system and use J3 on TWR-Audio as headphone out connector.

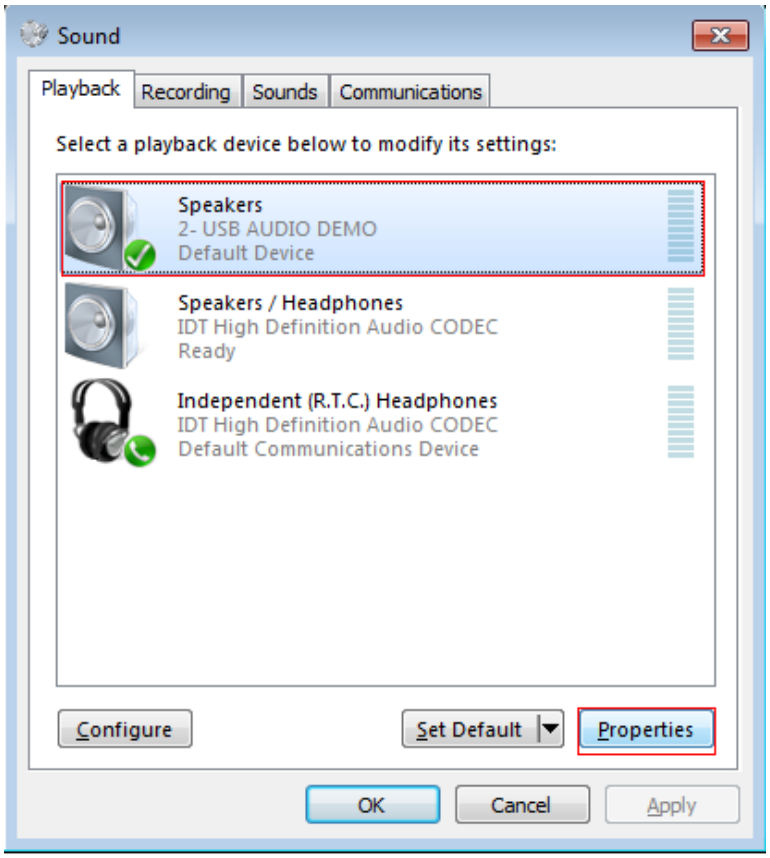
2. Plug-in the FSL audio speaker device which is running dev_audio_speaker example into PC.

3. After running the application, Windows will show a popup message indicating new hardware detected. Click on this message and a window showing the installation progress will be shown. Wait until the 'Ready to use' flags on both components are shown:

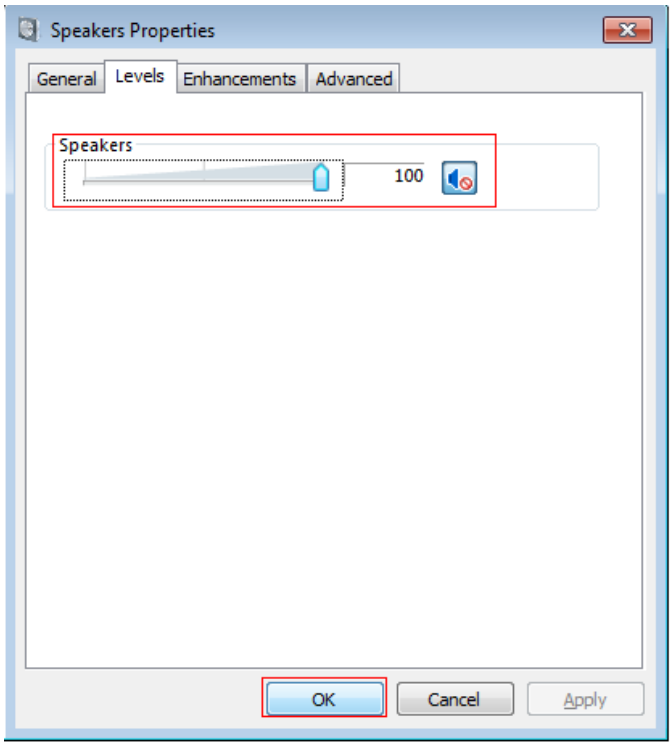


4. Now, right click on the Sound control icon of the Start bar (near to clock) and select 'Playback devices').

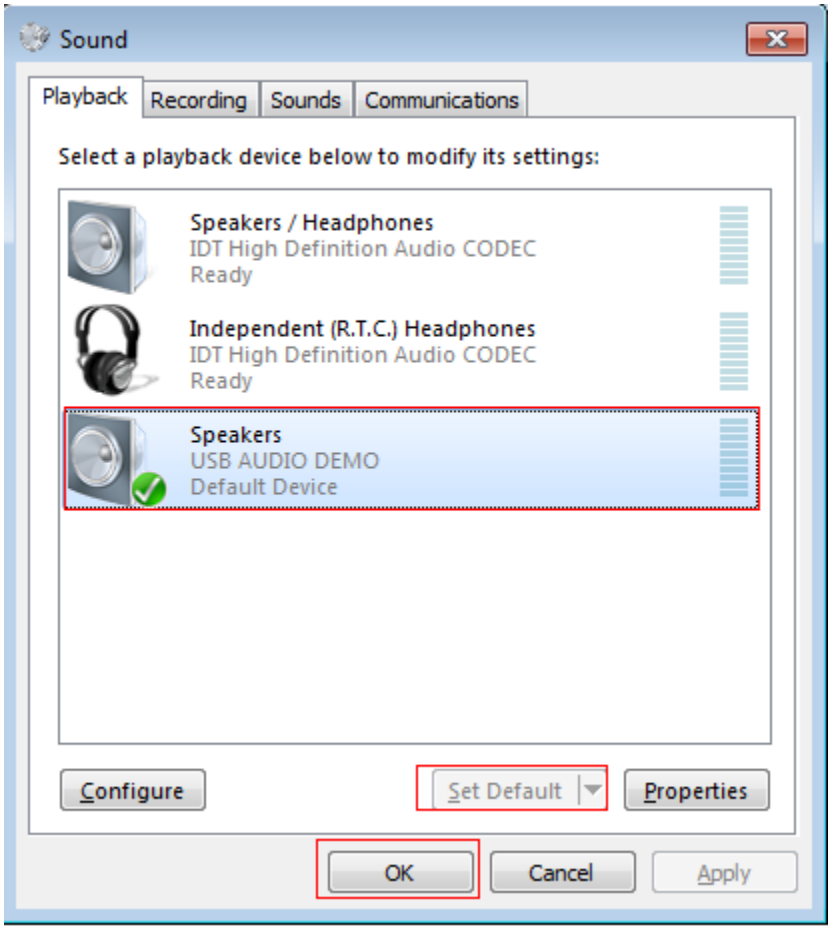
5. On the opened window, select the 'Playback' device with the description 'USB Audio Device' and click on the 'Proprieties' button.



6. On the new window, go to ‘Levels’ tab, and move the slide until 100%, then, click on ‘OK’.



7. Back on the previous window be sure that ‘USB Audio Device’ is still selected, then click on the ‘Set Default’ button and finally, click on ‘OK’ button.



8. Open the Window Media Player application, select and play your favorite song, you can hear the song clearly.

Steps(USB Class 2.0)

Follow the steps to run the USB Device speaker demo.

1. Plug in the TWR-Audio to elevator system and use J3 on TWR-Audio as headphone out connector.

2. Plug-in the audio speaker device which is running dev_audio_speaker example into MAC. You will see a USB audio device enumerated in sound catalog under System Preferences.

3. You can select USB audio speaker device as the default audio device in sound catalog under System Preferences.

4. Open the quicktime application, select and play your favorite song, you can hear the song clearly.

Note:

1. Change USBCFG_AUDIO_CLASS_2_0 from 0 to 1 in usb_audio_config.h to enable audio class 2.0.
2. Since there is clock conflict in k64 TWR-SER board, so should keep J3 connects 2 - 3 or no shunt to test speaker example in k64 TWR-SER board.
3. Since I2S pin conflict with CAN bus in K64 TWR board, so should disable CAN bus module by disconnected J5 3 - 4, J5 5 - 6 and J5 7 - 8 to test speaker example in k64 TWR-SER board.