

## Scope

This document describes how to test USB Host speaker example.

## Preparation

### Host

A board, i.e. twrk22f120m, which is running host\_audio\_speaker example.

### Device

A USB audio speaker.

### Libraries dependency

The libraries dependency for various RTOS lists as following,

#### BM

Library project path:

- `<install_dir>/usb/usb_core/host/lib/bm/<tool_chain>/<soc_name>`
- `<install_dir>/lib/ksdk_platform_lib/<tool_chain>/<platform>`

#### FreeRTOS

Library project path:

- `<install_dir>/usb/usb_core/host/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/host/lib/mqx/<tool_chain>/<soc_name>`
- `<install_dir>/lib/ksdk_mqx_lib/<tool_chain>/<platform>`

#### uCOSii

Library project path:

- `<install_dir>/usb/usb_core/host/lib/ucosii/<tool_chain>/<soc_name>`
- `<install_dir>/lib/ksdk_ucosii_lib/<tool_chain>/<platform>`

## uCOSiii

Library project path:

- `<install_dir>/usb/usb_core/host/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

Follow the steps to run the speaker demo.

1. Run the `host_audio_speaker` example and you will see “USB Audio Speaker Host Demo” debug message printed out.
2. Plug-in the USB speaker device and you will see some attach information printed out.
3. Once the USB speaker device is plug-in the host, the USB application will automatically transfer the audio data to USB audio speaker device, then the sound can be heard from the audio speaker device.
4. If you run the demo in MQX system, you can type string “help” to get shell command. And according to the prompt information, you can do something. For example, you can input string “dir” to get the file list of the SD card. You can use bellow command to play a wave file:  
`play a:\48k_8bit_1ch.wav`

## Known Issues

- Due to the speed of SPI driver is not high enough, so there are noises when running USB audio host example in MQX system on platforms which communicate with SD card via SPI module.