Overview

The USB Audio Speaker application is a simple demonstration program based on the MCUXpresso SDK. It is enumerated as a playback device and users can play music using the device.

System Requirement

Hardware requirements

- Mini/micro USB cable
- USB A to micro AB cable
- Specific hardware which has codec presented
- Personal Computer(PC)

Software requirements

- The path for the project files for lite version example is:

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

  For non-lite version example, the path is:

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

  Note

  The <rtos> is Bare Metal or FreeRTOS OS.

Getting Started

Hardware Settings

- The Jumper settings:

  J4 1-2, J27 1-2 and remove all jumpers from J35 for micro USB connector. 1-2, J27 2-3, and remove all jumpers from J35 for using TWR-SER mini USB connector.

- The Jumper J6 on Audio SGTL board should be connected to make sure the SAI MCLK is selected as codec sys_mclk clock.

  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. Either press the reset button on the board or launch the debugger in the IDE to start running the demo.
4. Connect a USB cable between the PC host and the USB device port on the board.

For detailed instructions, see the appropriate board User's Guide.

Run the example in Windows (USB AUDIO CLASS 1.0)

1. Plug-in the audio speaker device which is running the Audio Speaker example into the PC.
2. A USB AUDIO DEMO device shows up as enumerated in the Device Manager.
3. Right click on the sound control icon of the Start bar (close to the clock) and select "Playback devices".

Figure 1: Sound control icon

4. In the pop-up window, select the "Playback" device with the description "USB Audio Device" and click on the "Properties" button.

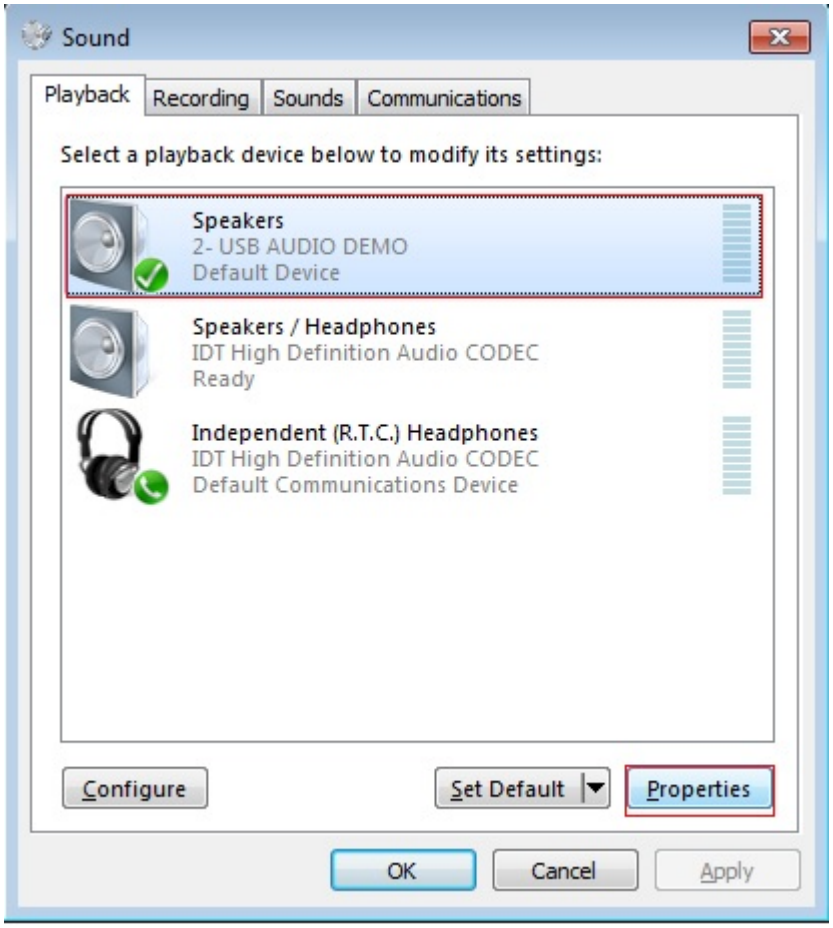

Figure 2: Select properties

5. In the new window, go to "Levels" tab and move the slide until 100%. Click "OK".

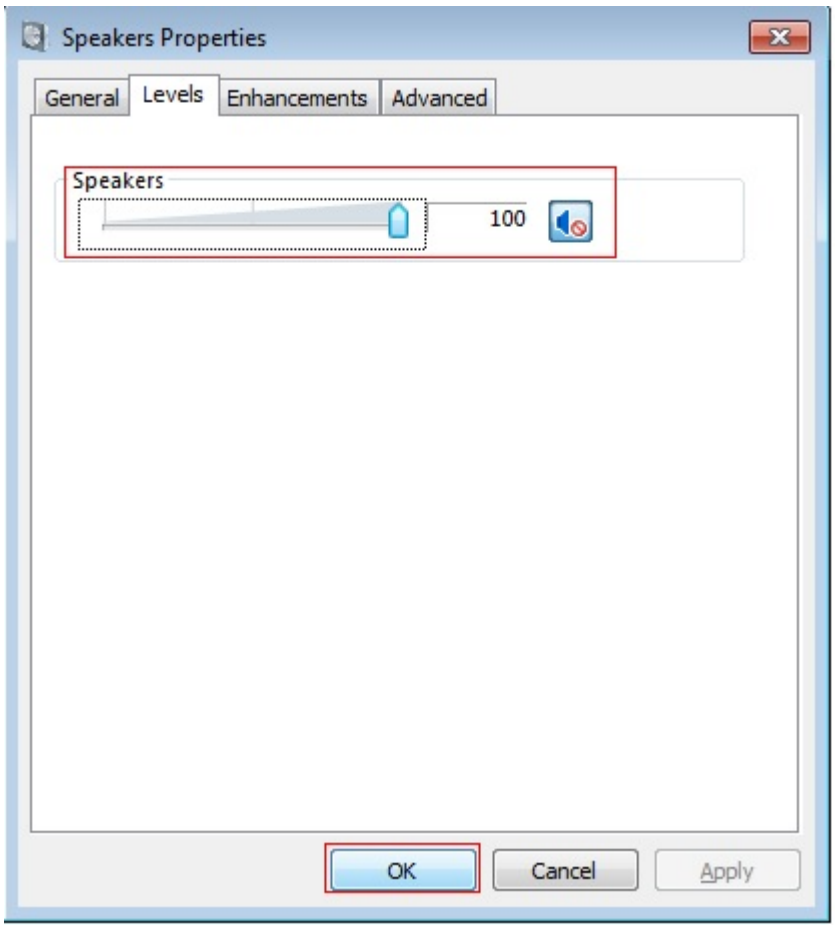

Figure 3: Change level

6. In the previous window, ensure that the "USB Audio Device" is still selected and click on the "Set Default" button. Click on the "OK" button.

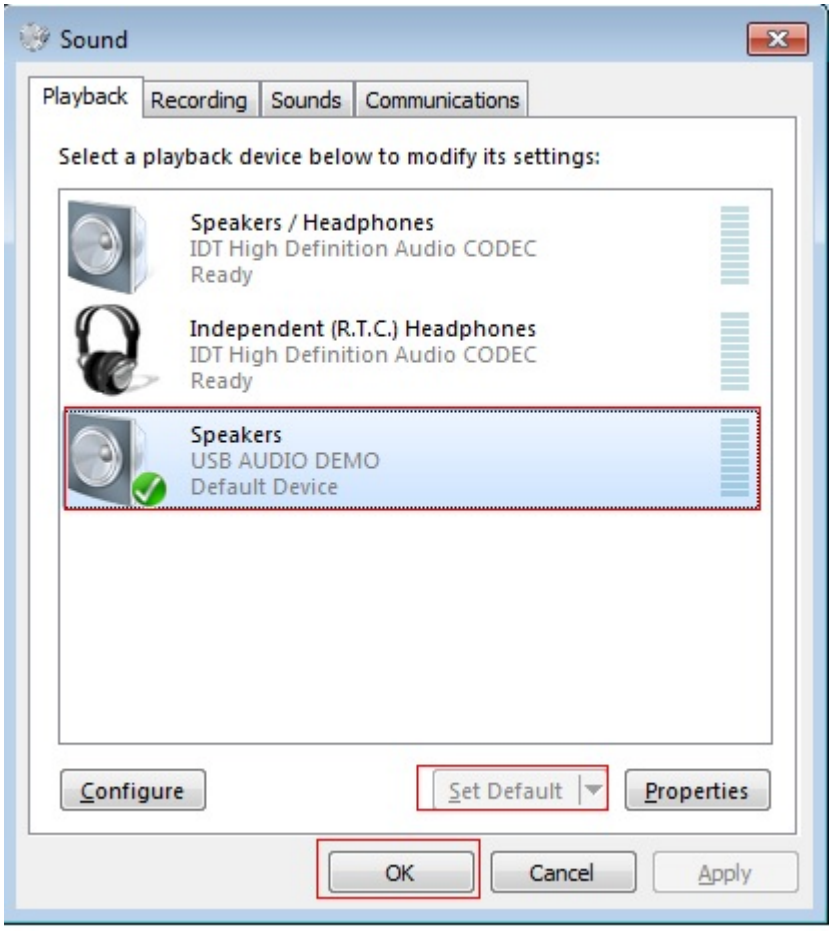

Figure 4: Set default

7. Open the Window Media Player application, select, and play your favorite song.

Run the example on a Mac® (USB AUDIO CLASS 2.0)

1. Plug-in the audio speaker device which is running the Audio Speaker example into the Mac.
2. A USB audio device shows up as enumerated in the sound catalogue under the System Preferences.
3. Select the USB audio speaker device as the default audio device in the sound catalogue under System Preferences.
4. Open the QuickTime application. Select and play your favorite song.

Overview

The USB Audio Speaker application is a simple demonstration program based on the MCUXpresso SDK. It is enumerated as a playback device and users can play music using the device.

System Requirement

Hardware requirements

- Mini/micro USB cable
- USB A to micro AB cable
- Specific hardware which has codec presented
- Personal Computer(PC)

Software requirements

- The path for the project files for lite version example is:
  <MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_device_audio_speaker_lite/<rtos>/<toolchain>.
  For non-lite version example, the path is:
  <MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_device_audio_speaker/<rtos>/<toolchain>.

  Note

  The <rtos> is Bare Metal or FreeRTOS OS.

Getting Started

Hardware Settings

- The Jumper settings:
  J29 3-4, Remove all jumpers from J19.
- Since I2S pin conflict with CAN bus in K64 TOWER board, so should disable CAN bus module by disconnected J5 3-4, 5-6 and 7-8 on SER board.
- The Jumper J6 on Audio SGTL board should be connected to make sure the SAI MCLK is selected as codec sys_mclk clock.

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. Either press the reset button on the board or launch the debugger in the IDE to start running the demo.
4. Connect a USB cable between the PC host and the USB device port on the board.

For detailed instructions, see the appropriate board User's Guide.

Run the example in Windows (USB AUDIO CLASS 1.0)

1. Plug-in the audio speaker device which is running the Audio Speaker example into the PC.
2. A USB AUDIO DEMO device shows up as enumerated in the Device Manager.
3. Right click on the sound control icon of the Start bar (close to the clock) and select "Playback devices".

Figure 5: Sound control icon

4. In the pop-up window, select the "Playback" device with the description "USB Audio Device" and click on the "Properties" button.

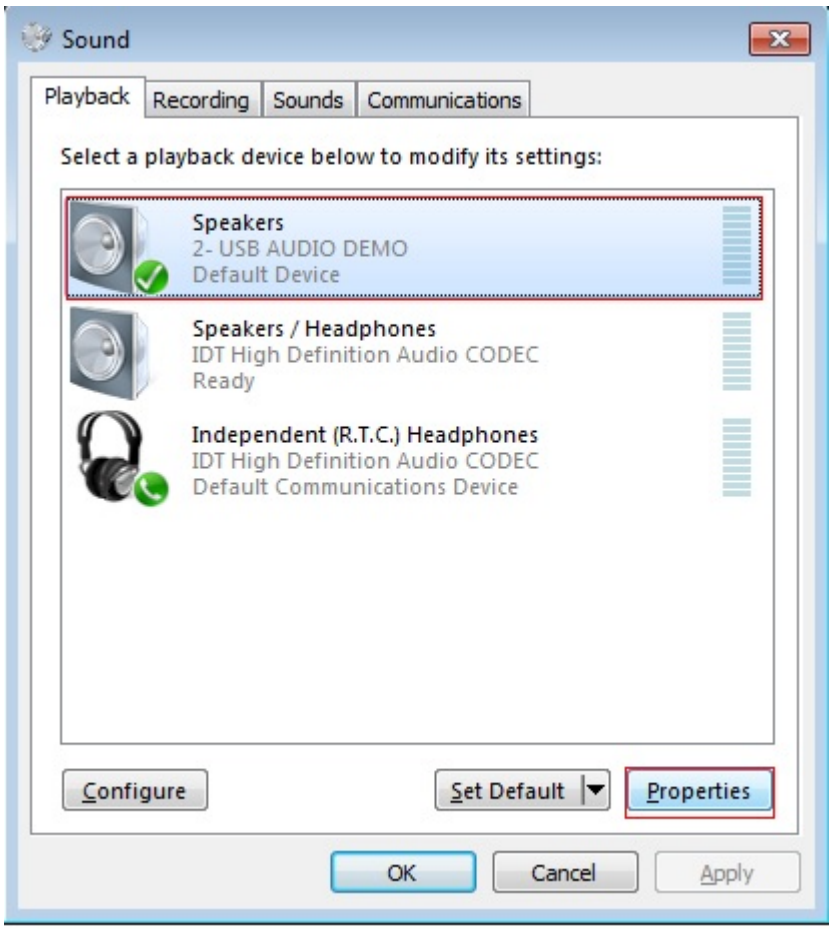

Figure 6: Select properties

5. In the new window, go to "Levels" tab and move the slide until 100%. Click "OK".

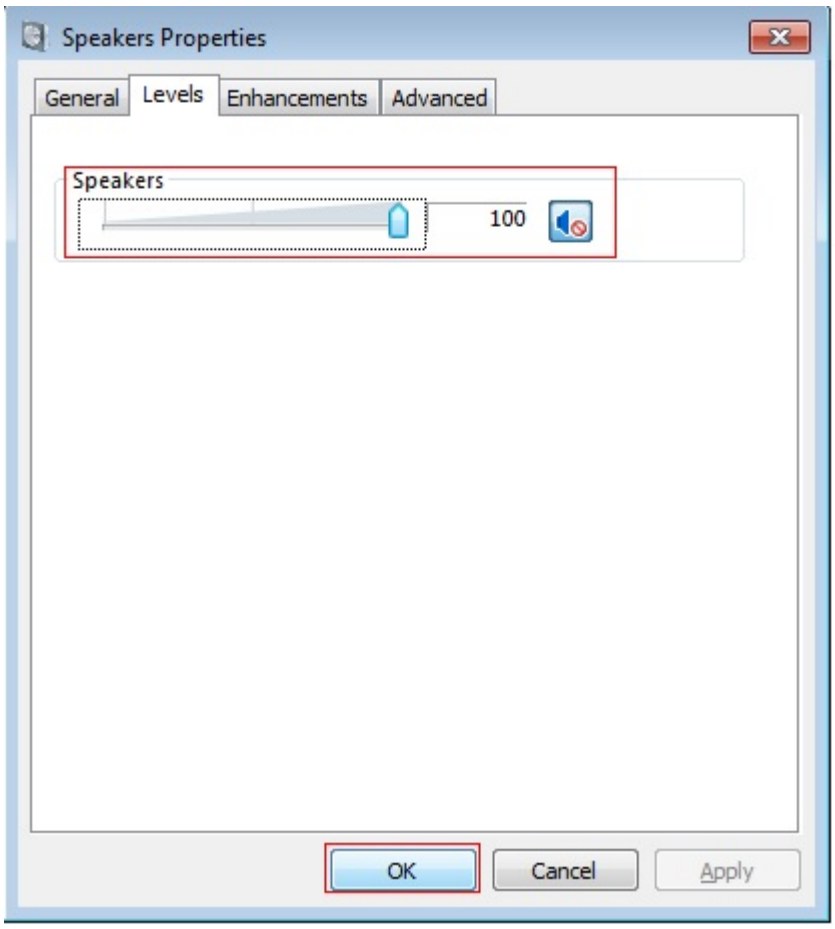

Figure 7: Change level

6. In the previous window, ensure that the "USB Audio Device" is still selected and click on the "Set Default" button. Click on the "OK" button.

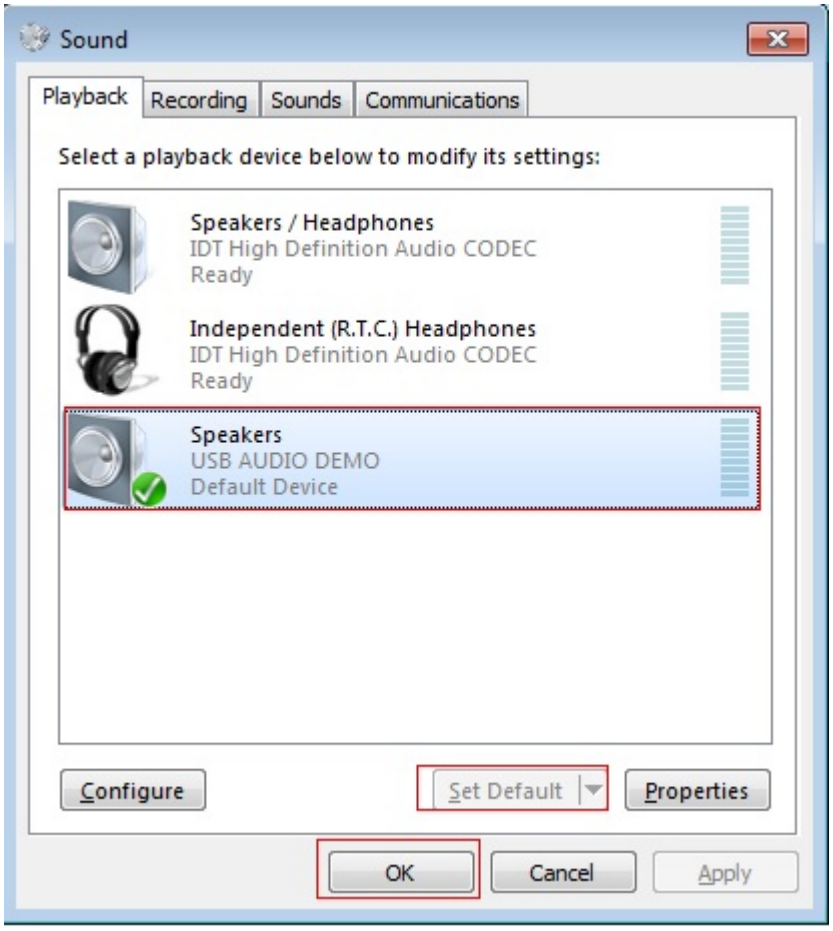

Figure 8: Set default

7. Open the Window Media Player application, select, and play your favorite song.

Run the example on a Mac® (USB AUDIO CLASS 2.0)

1. Plug-in the audio speaker device which is running the Audio Speaker example into the Mac.
2. A USB audio device shows up as enumerated in the sound catalogue under the System Preferences.
3. Select the USB audio speaker device as the default audio device in the sound catalogue under System Preferences.
4. Open the QuickTime application. Select and play your favorite song.