Overview

The USB Audio Generator application is a simple demonstration program based on the MCUXpresso SDK. It is enumerated as a recording device and users can record the sound from this device via the "Sound Recorder" in the Windows Accessories.

System Requirement

Hardware requirements

- Mini/micro USB cable
- USB A to micro AB cable
- Hardware (Tower System/base module) for a specific device
- Personal Computer(PC)

Software requirements

- The project files for lite version examples are in the following path:
  <MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_device_audio_generator_lite/<rtos>/<toolchain>.

  For non-lite version examples, the path is:
  <MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_device_audio_generator/<rtos>/<toolchain>.

  Note

  The <rtos> is Bare Metal or FreeRTOS OS.

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. Either press the reset button on your 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

1. Plug-in the device which is running the Audio Generator 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 the "Recording devices" option.

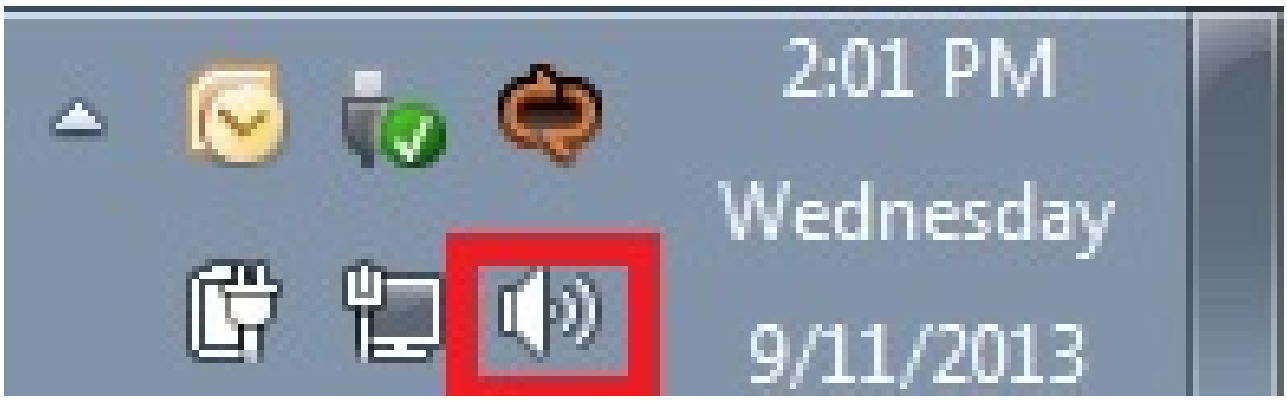

Figure 1: Sound control icon

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

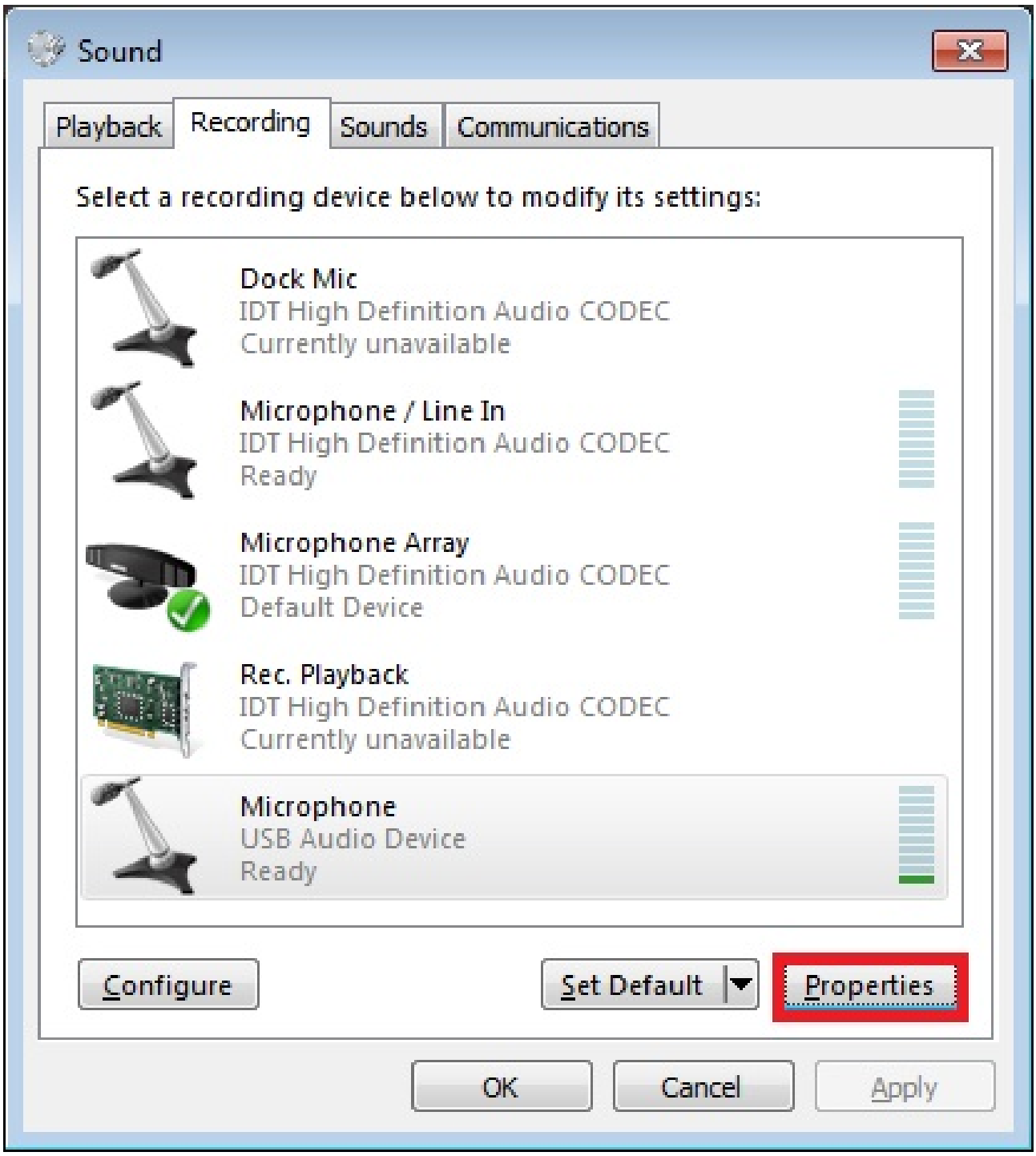

Figure 2: Select properties

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

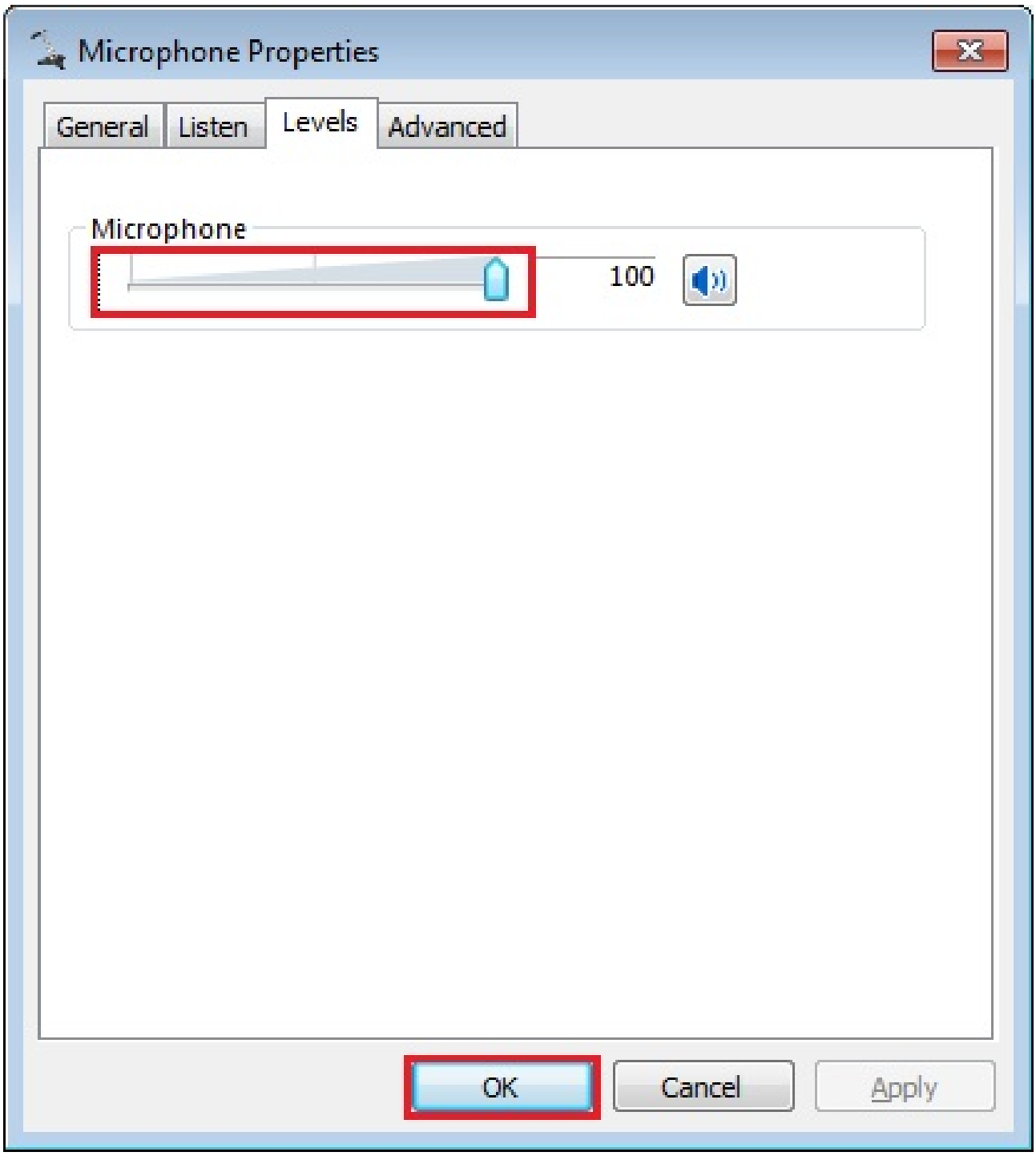

Figure 3: Change level

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

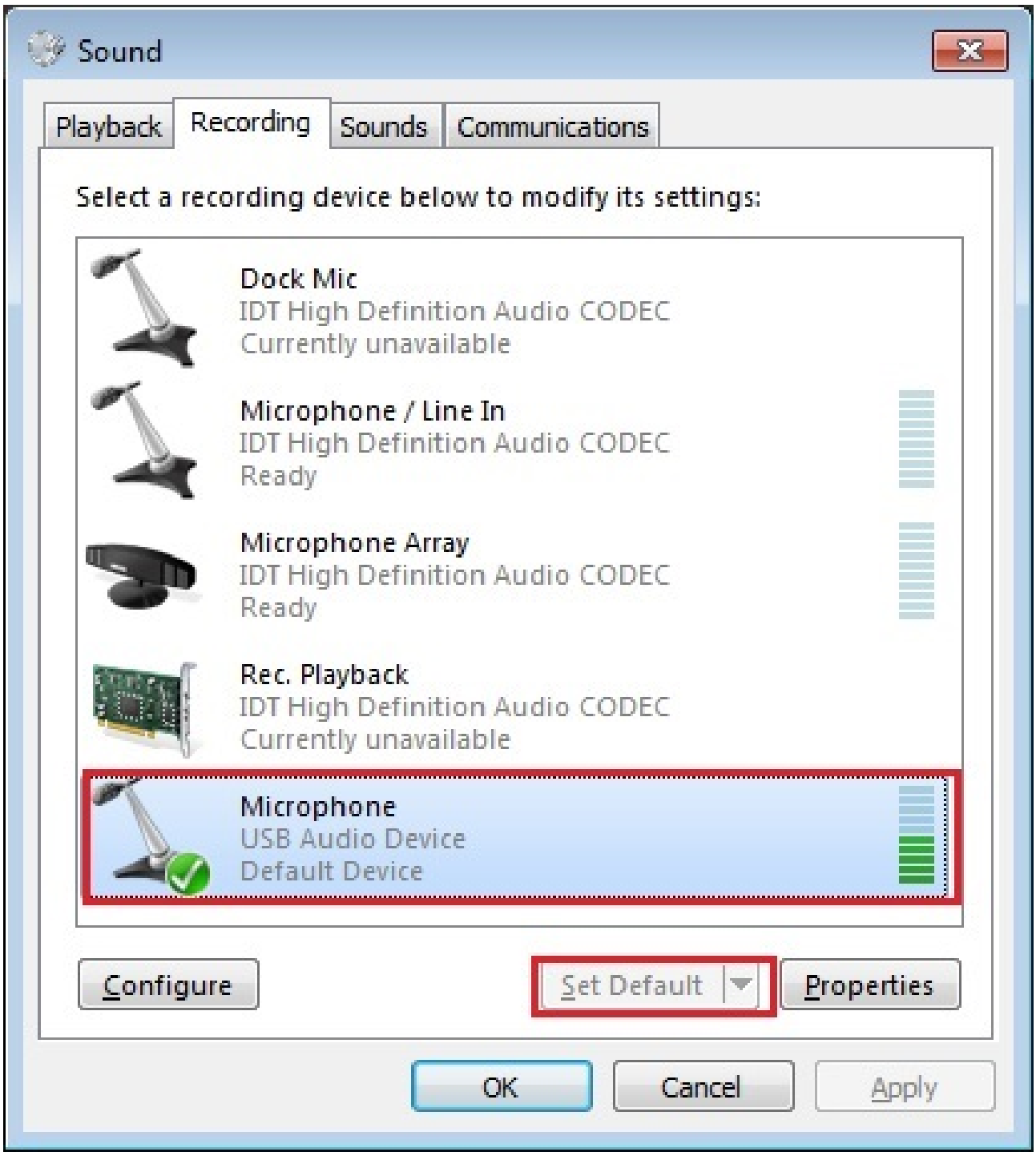

Figure 4: Set default

7. Open the "Sound Recorder" application and record audio for about 5-10 seconds.
8. After recording, open the recorder file with any media player. The sound is identical to the instance sound located in the memory.

Note

On Aruba which has DMIC module, please speaker to the DMIC when recording, the recorder file is the sound which is recorded by DMIC.
When connected to MacBook®, change the PCM format from (0x02,0x00,) to (0x01,0x00,) in g_config_descriptor[CONFIG_DESC_SIZE] in the usb_descriptor.c. Otherwise, it can't be enumerated and noise is present when recording with the QuickTime® player because the sampling frequency and bit resolution do not match. This example doesn't support AUDIO CLASS 2.0.