# Overview

The USB Composite device application is a simple demonstration program that uses the KSDK software. It is enumerated as a recording device. Users can record the sound from this device via the "Sound Recorder" in the Windows Accessories with an HID mouse device.

# System Requirement

## Hardware requirements

- J-Link ARM
- P&E Micro Multi-link universal
- Mini/micro USB cable
- USB A to micro AB cable
- Hardware (tower/base board, ...) for a specific device
- Personal Computer

## Software requirements

- The project files for the lite version example are in:
  <SDK_Install>/boards/<board>/usb_examples/usb_device_composite_hid_audio_lite/<RTOS>/<toolchain>.
  The project files for a non-lite version example are in:
  <SDK_Install>/boards/<board>/usb_examples/usb_device_composite_hid_audio/<RTOS>/<toolchain>.
  Note
  The RTOSes are bare metal, FreeRTOS OS, µCOSII OS, and µCOSIII OS.

# Getting Started

## Hardware Settings

- The Jumper settings:
  J11 5-6, J24 1-2 for micro USB connector. 1-2, J24 2-3, and remove J11 5-6 for using TWR-SER mini USB connector.

## 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 your IDE to begin 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 composite example into PC.
2. For the HID mouse, the mouse arrow is moving on the PC screen.
3. For the Audio generator, a USB AUDIO DEMO device is enumerated in the Device Manager.

4. Right click on the sound control icon in the Start bar (near the clock) and select "Recording devices".

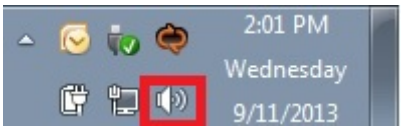


Figure 1: Sound control icon

5. In the opened window, select the "Microphone" device with the description "USB Audio Device" and click on the "Properties" button.

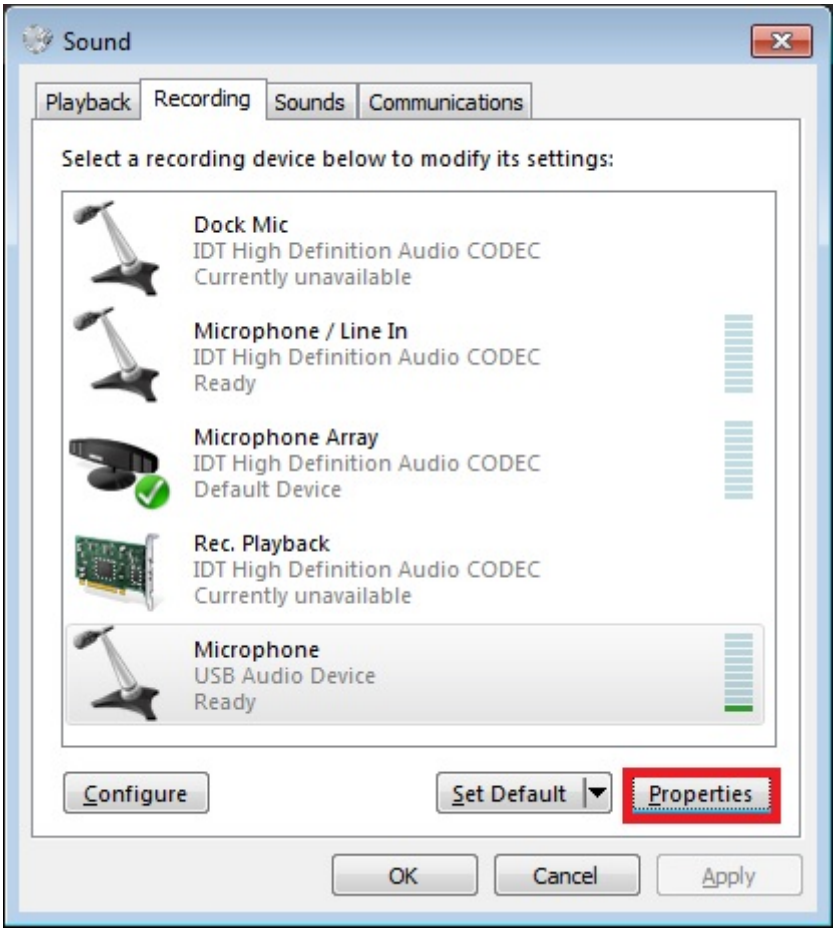


Figure 2: Select properties

6. In the new window, go to "Levels" tab, move the slide until 100%, and click on "OK".

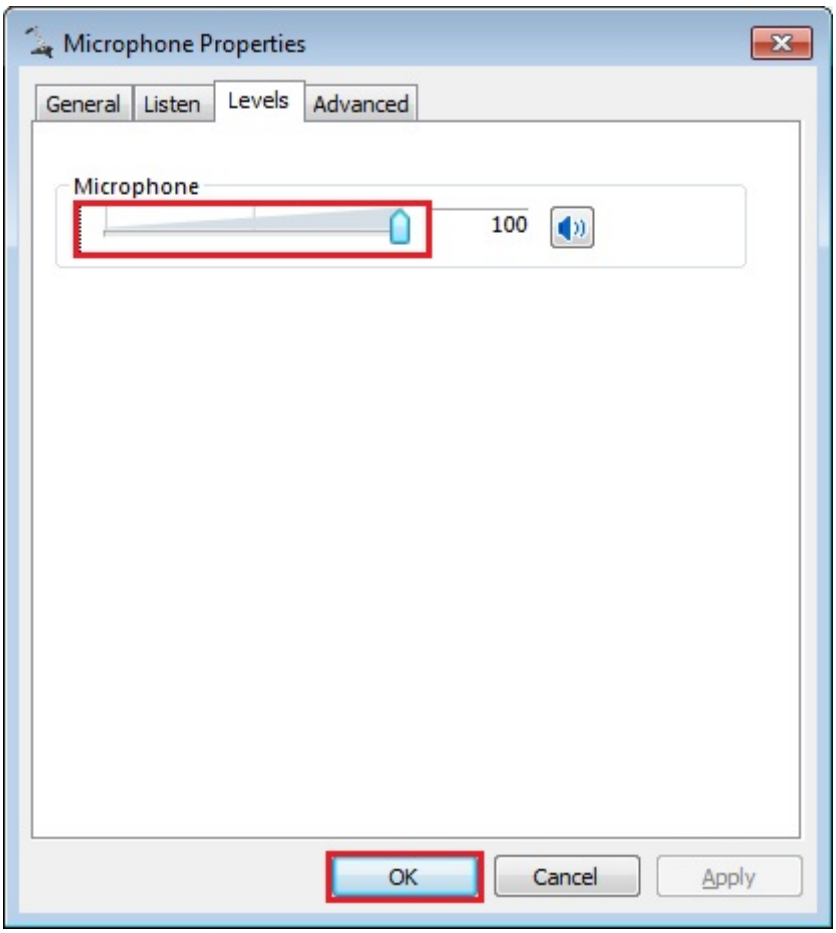


Figure 3: Change level

7. Ensure that "USB Audio Device" is still selected in the previous window and click on the "Set Default" button. Finally, click on the "OK" button.


Figure 4: Set default

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

Note

When connected to Mac OS, 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 has noise when recording with the QuickTime® player because the sampling frequency and bit resolution are not matched.