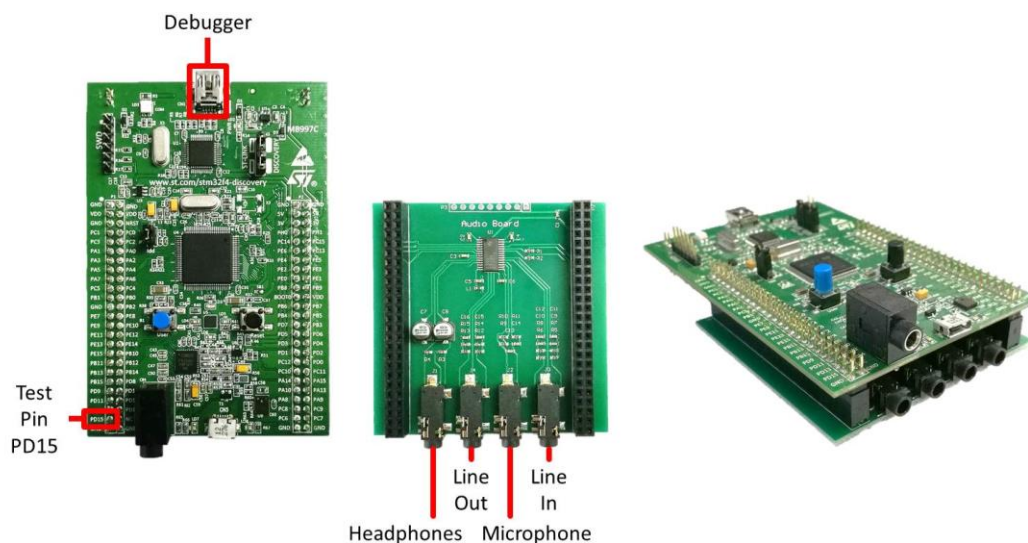# GETTING STARTED WITH AUDIO BOARD

This document shows you how to run an audio loop-back demo using the Audio Board.

HARDWARE REQUIREMENT

To carry out this demo you will need a STM32F4-Discovery board, a microphone and a headphone connected following the figure below.

INSTALL THE FAMILY SOFTWARE PACK ON KEIL

Double-click the *AUP_DSP.uvprojx* file to open the µVison project which is provided in the download pacage. The program will use the Pack Installer tool to download the latest family software packs and drivers as in the figure below.

If the Pack Installer tool doesn't install the correct software pack you will need to remove it and install the correct one manually. If so, go to http://www.keil.com/dd2/pack/ and search for the STMicroelectronics **STM32F4 Series Device Support, Drivers and Examples.** Left-click into the title to open it, scroll down to find the latest version 1.0.8, and **download** the file Keil.STM32F4xx_DFP.x.x.x.pack. Double-click the file to start the installation.
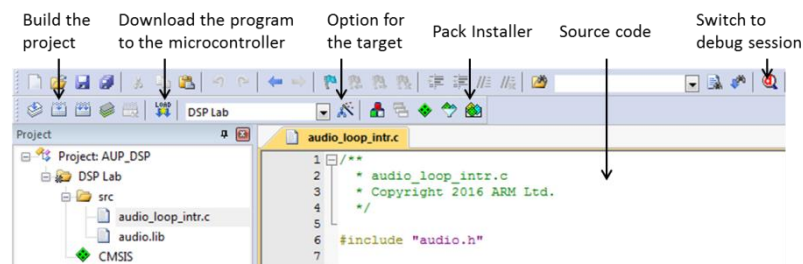
INSTALL THE STLINK DRIVER

Install the driver which enables correct recognition of the device. It can be found in **Local disk(C:) -> Keil_v5 -> ARM -> STLink -> USBDriver**.

To install the driver on a 64-bit edition of windows, install **dpinst_amd64**. On a 32-bit edition, install **dpinst_x86** instead.

Now you can connect the STM32F4 board to your computer using a USB type A to Mini-B cable and the device will be recognized with the name *STM32 STLink.*

RUN THE DEMO PROJECT

The provided project has the entire configuration set. If you have completed the above steps, then you can follow the below steps to test the program:

1. Connect the *Discovery* to the host PC using a USB cable (it is assumed that you have already connected the *Audio Board* to the *Discovery*).
2. Plug headphones or a headset into the headset jack socket on the *Audio Board*.
3. Build the project by selecting *Build target* from the *Project* menu or by clicking on the *Build* toolbar button. See that builds with no errors.
4. Download the executable code into the microcontroller flash memory.
5. Press the reset button on the Discovery board.

The program is now running. You should be able to hear the sounds picked up by the on-board digital microphones and played via the headphones. Depending on the characteristics of the headset or headphones you are using, the sound may be louder or quieter.