

DSP Lab 2

Equipment Required: Texas Instruments eZdsp USB Stick
Male-to-Male Audio Cable
Audio Source (e.g. computer, mp3 player, microphone)
Headphones (or speakers)

Lab 2

(1.) Follow the slides for Chapter 2, “Improved Audio Template”. **Again, make sure the 5515 chipset is still selected.**

(2.) This lab introduces the use of a small surface mount LED. Pay close attention to this LED, as it will indicate what the program is doing. Its behavior is noted in the console window of the debug screen.

(3.) Note that the formula for decibel gain.

$$\text{Gain in } dB = 20 * \log_{10}(\text{input} / \text{reference})$$

Input is actually the output voltage, and reference is the input voltage. This is because we are dealing with amplification prior to input.

(4.) Questions:

- a. What is a codec, and how is it used?
- b. Give the setup for a PLL mode frequency of 60 MHz for the C5505/15.
- c. What registers control the ADC gain?
- d. Find the gain in decibels of a system with an input voltage of 1.5 V and a reference voltage of 0.5 V.