ELEC 327 Final Project Report

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Concept: Our idea for this project was to create a design utilizing the ADC module on an MSP430 to create an LED system that responded to the audio being inputted. Inspired by the ELEC 244 final project, we wanted our LEDs to respond differently to different frequency ranges of the audio that the user was playing. Our ultimate goal was to create a light up speaker that users could plug an aux cord into, and watch as the LEDs put on a light show in response to the volume levels of the different instruments being played in the song.

Design: For our input, we used a 3.5mm through hole aux connector. This is the standard input for computers and phones, so it allows the user to easily connect their device to the module. The inputted audio signal was then passed through 3 different bandpass filters that were constructed from 3 ADA4098 op-amps, resistors, and capacitors, as shown in Fig. 1. The output of each of these filters led to a different input of the MSP430G2553. We chose to use the G2553 version for its easier implementation of ADC samples