

Embedded Systems- Project Proposal

Mark Aligbe- ma2799

Sabina Smajlaj- ss3912

Equalizer/Visualizer

Our proposed project is for an integrated audio equalizer/visualizer. We plan to take audio from the input audio jack and output a waveform on the audio output jack. This waveform will contain the equalized audio and will be used for creating a visual to display on a screen. The user will be able to modify the typical equalizer setting, a 20 band equalizer ranging from 20hz to 20khz. We will connect the audio jacks to the FPGA, providing an audio driver for Linux. To compute the FFT of the audio waveform that we read in, we're going to use either the KISSFFT or the FFTW library. We will use this FFT to perform the equalization and then take the inverse FFT and send that to the output jack via the FPGA. This will be the equalized audio. To create the visualizer, we will take the equalized FFT, and following a similar routine to Lab 2, send that to a display.