

FPGA-capella: A Real-Time Audio FX Unit

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1 Abstract

For our final project, our goal is to implement real-time audio effects for use in live music performance. Musicians using the unit will be able to choose from various effects, such as reverberation, delay, distortion, and equalization, and arrange the signal chain for the desired final effect. By doing so, the performance experience will be greatly enhanced. To go about this, we plan to design modules corresponding to each effect. A visual component will allow the user to change parameters of the effect, as well as display the signal chain, which the user can customize to fit their desired sound. Based on the displayed signal chain, the input sound will go through each module in the specified order.