Keytar Hero

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Project Abstract

The purpose of this project is to build a functional "keytar". A keytar is a small keyboard, spanning about three octaves, that is worn on a strap around the neck like a guitar. Each key on the keytar plays a tone of a particular frequency. The tones will be generated by modules created in Verilog, building on the work done in the audio lab project in Lab 4. Once tone generation is functional, additional options will be added to allow the player to select different synthesized instruments. Instrument sounds differ only in the harmonic content of each note, which can be simulated by using different summations of the higher harmonics. If there is enough time, several extensions to the project may be attempted. Additional sound effects, such as reverberation and pitch bending, can be accomplished through digital signal processing in Verilog. If there is an excess of time, it may be possible to create other electronic instruments, such as a drum set.