

Derek Hinsey & Shawn Fitzgerald

## Modular Analog Synthesizer Abstract

Today, popular music incorporates a wide variety of sounds. To stand out in such a saturated field, a musician needs to provide something fresh to the listener. Here we design a modular analog synthesizer, and by incorporating a unique set of modules, our synthesizer can create a new, exciting sound. The design of the synthesizer consists of a combination of modules. Each module is a circuit that contributes to the final waveform. However, not all modules are necessary at all times, and new modules can be added easily in the future. The circuits used here were found online, but the amalgamation of the circuits is unique. The project resulted in a functional synthesizer, played via keyboard input. The end user has selection of a variety of waveforms, with options to control the attack, delay, sustain, pitch, and noise. However, there are occasionally small errors and fluctuations in the waveform. This is due to the unideal nature of analog electronics. Also, it was found that our synthesizer was not cost-effective when compared to retail options.