

E1.05 - FuzzBreaker Stompbox

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Project Overview

Our project is a guitar pedal with two solid-state analog distortion effects featuring blend control and equalizer inside of a shielded enclosure. The purpose of this project is to produce unique guitar distortion that is unattainable from standard guitar play.

Requirements

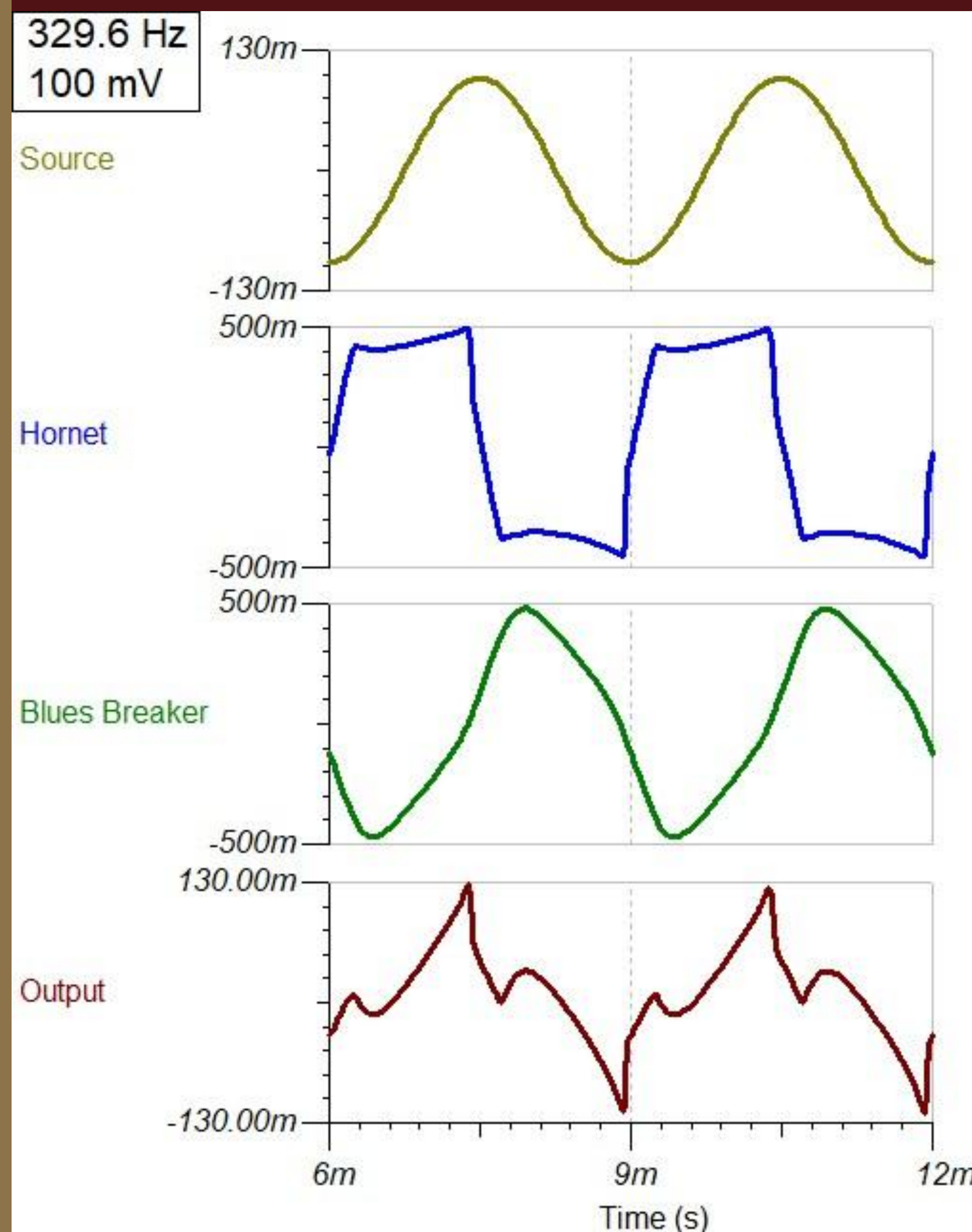
Features

- Bass and Treble control
- Blend control
- Custom PCB
- 1/4" TRS Jack Input/Output
- 9V DC Wall adapter / 9V Battery Supply
- Foot-switch for true bypass of guitar effects

Characterization Plan

- Crosstalk
- Current Draw
- Distribution of Harmonics
- Frequency Response
- Input & Output Impedance
- Signal to Noise Ratio

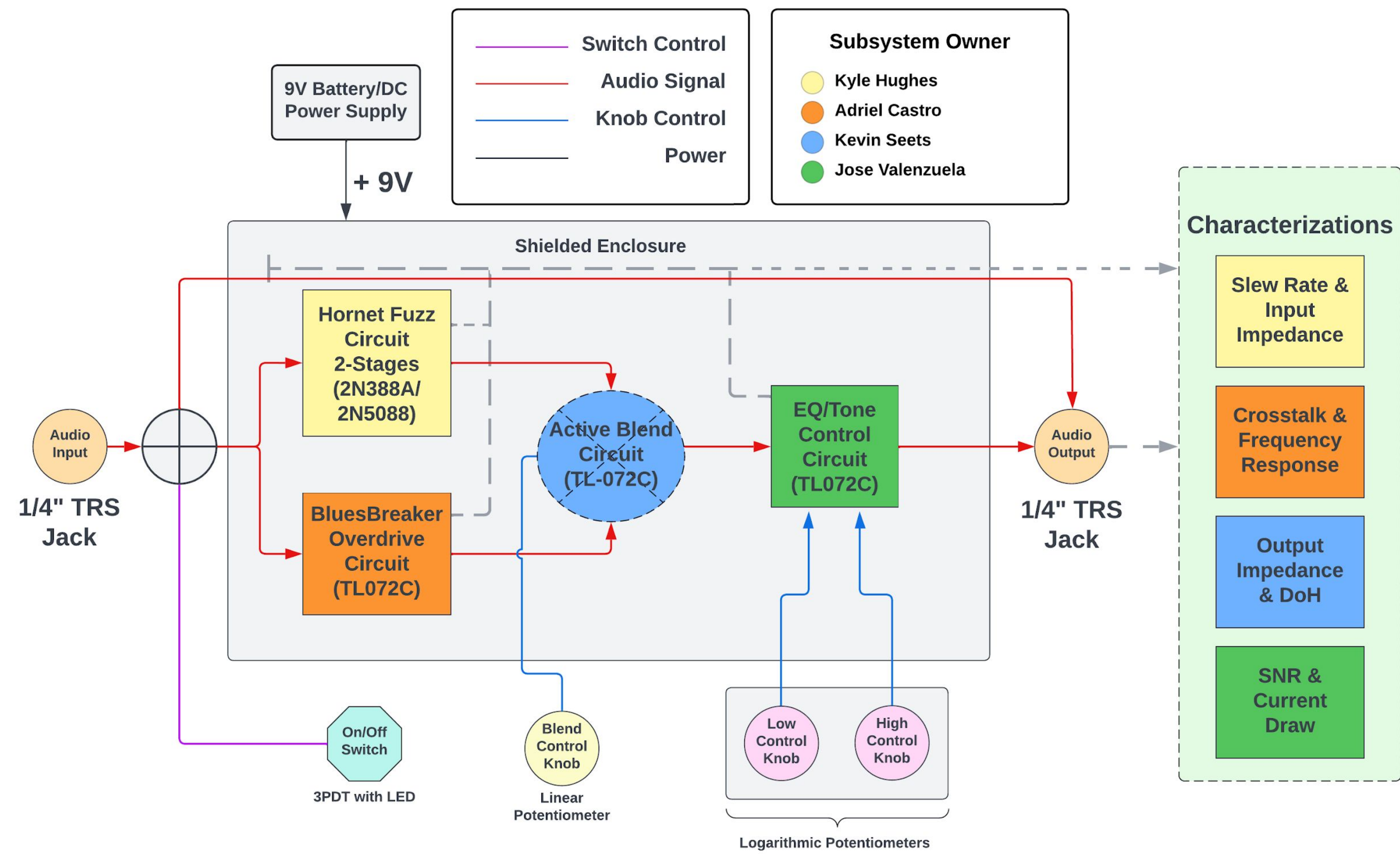
Simulation Results



Acknowledgements

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Top Level Block Diagram



FuzzBreaker Team



Kyle Hughes Adriel Castro Kevin Seets Jose Valenzuela

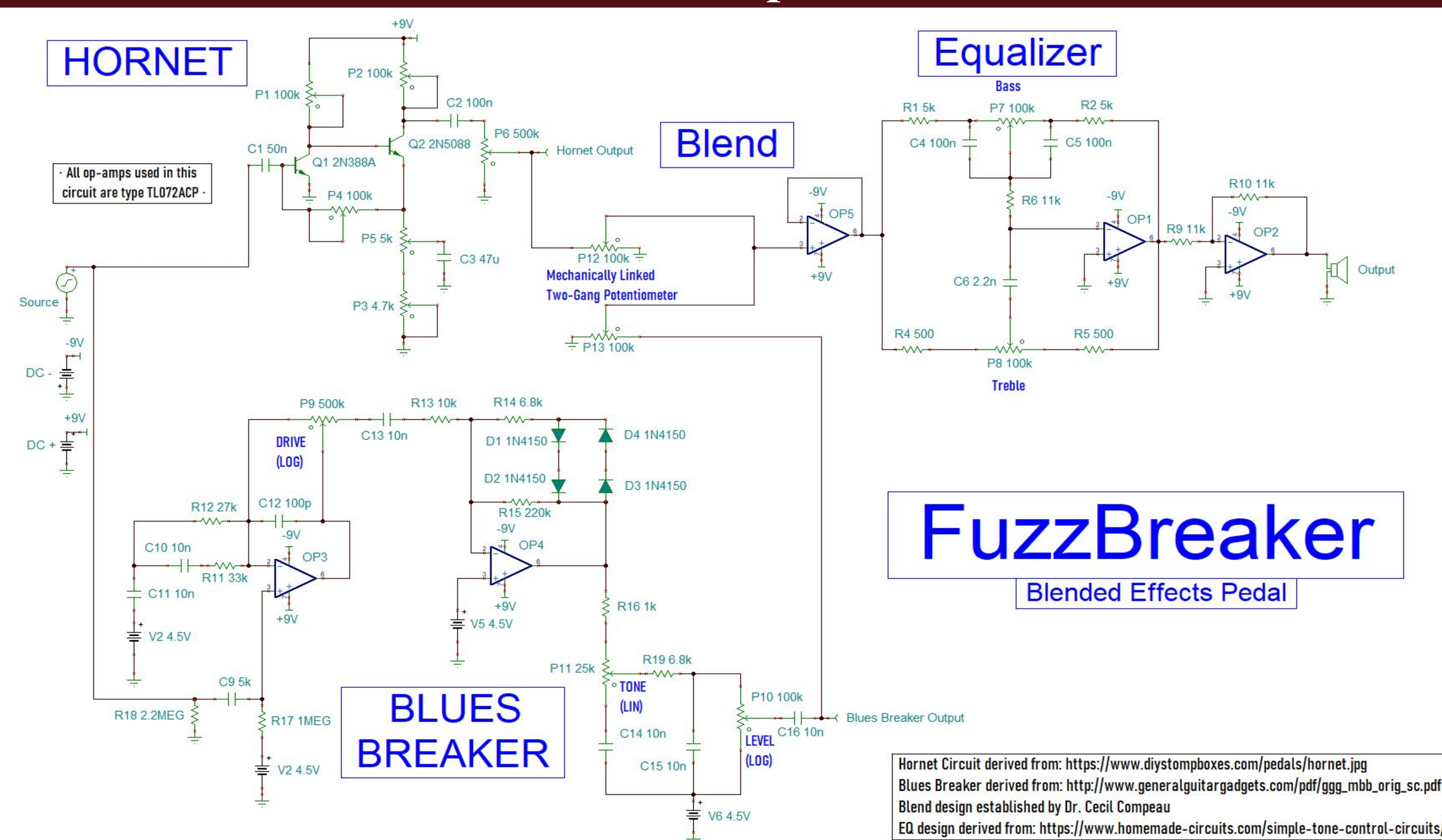
First Semester Results

- Construction of characterization plan.
- Prototyping and testing of Bluesbreaker and Hornet effect circuits.
- Completion of EQ/Blend circuit design and simulation.
- Custom PCB design with circuits in cascade.
- Prototype demonstrations at Senior Design Day.

Second Semester Plans

- Construct custom FuzzBreaker PCB.
- Complete characterization of guitar pedal system.
- Construct shielded enclosure and secure custom PCB inside.
- Demonstrate guitar pedal with amp on Senior Design Day.

FuzzBreaker Stompbox Schematic



EQ Simulation Results

