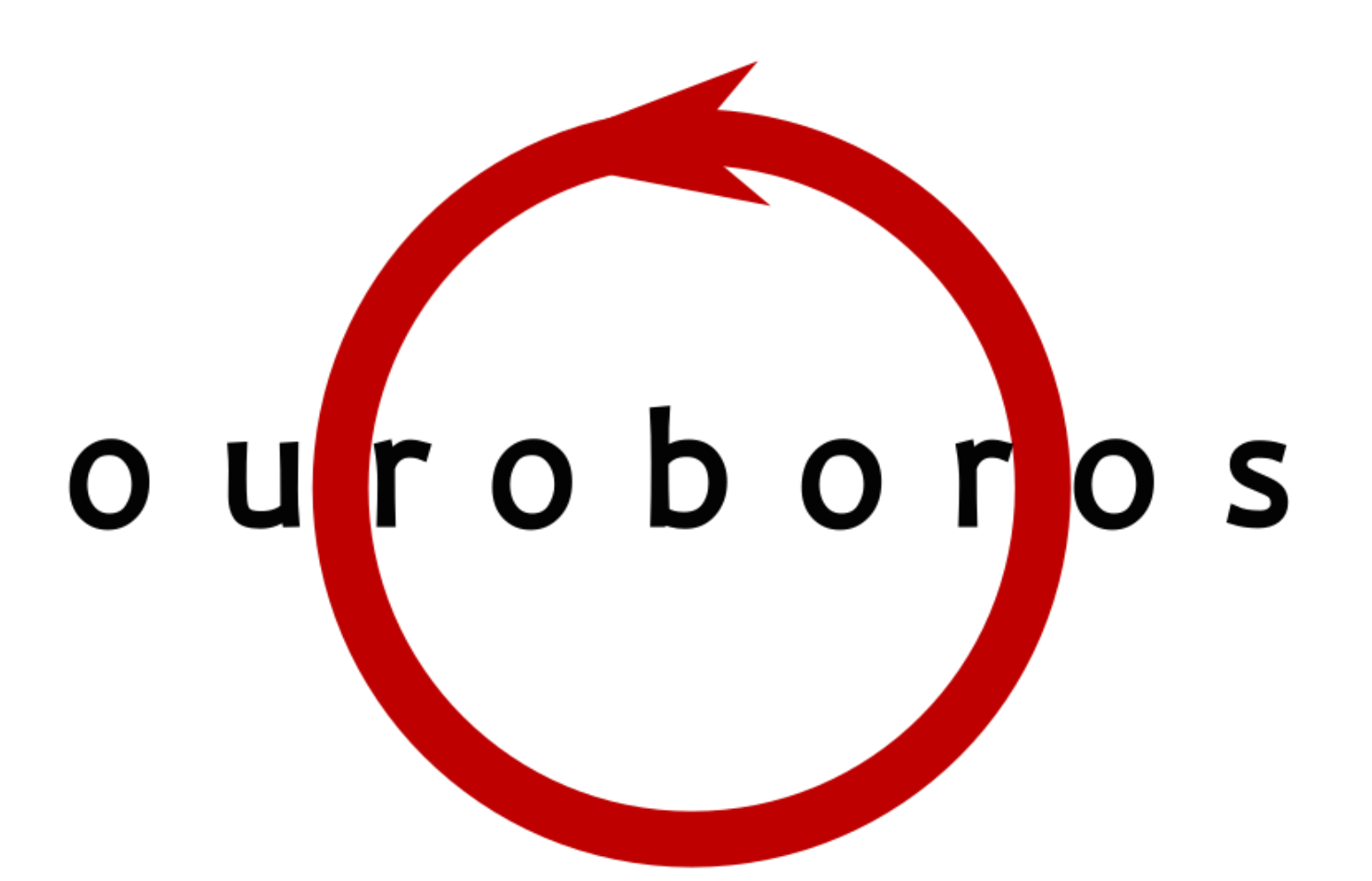


E1.06 – Ouroboros Looper Pedal

Kyle Ratcliff (PM), Renee Aguilar, David Landeros, Brandon Markham



Meet the Team



Brandon David Kyle Renee

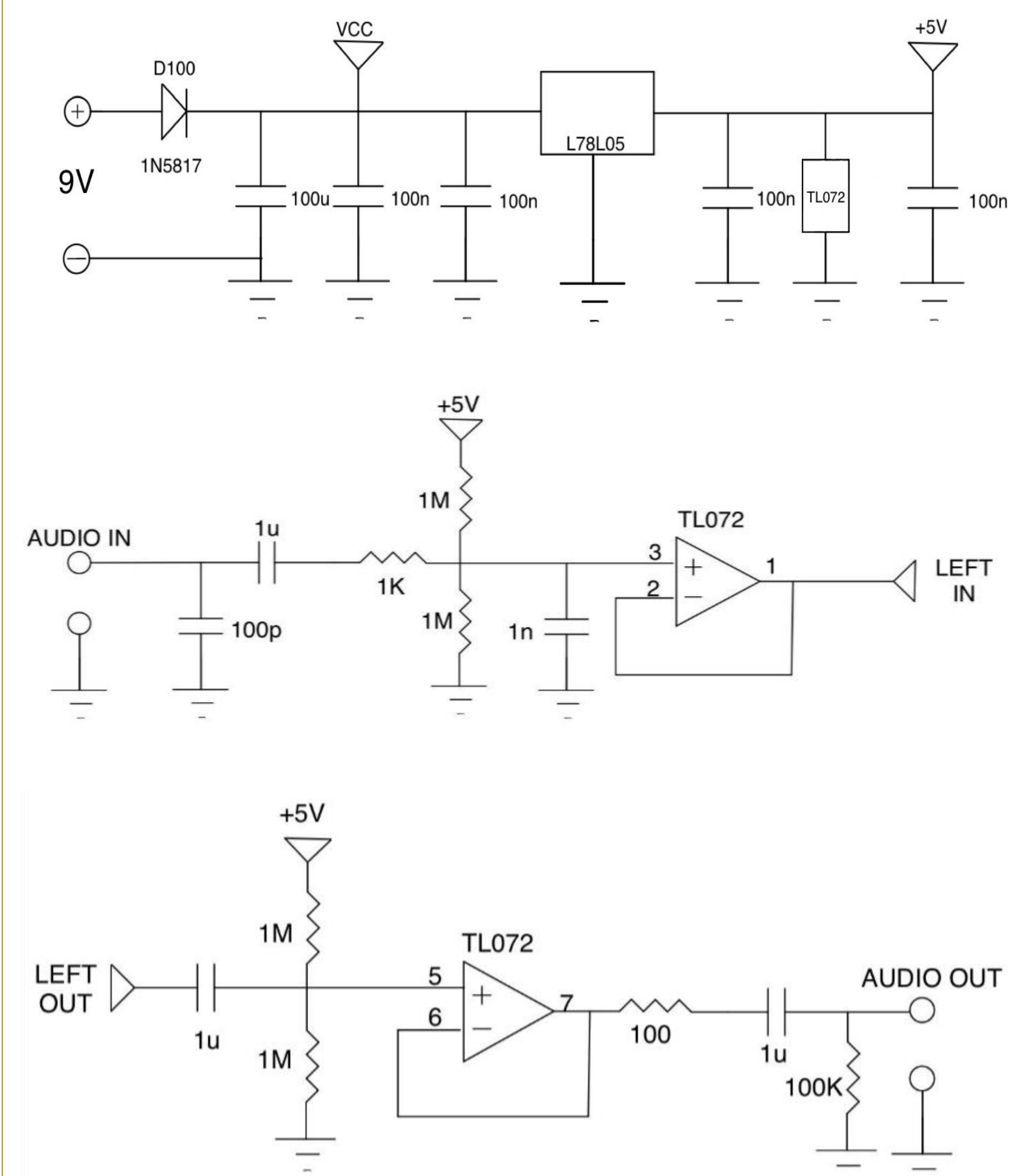
D1 Achievements

- Developed a characterization plan
- Completed Looping algorithm
- Completed SD card communication protocol
- Completed OLED connectivity and Initial UI
- Input Buffer and Power system Prototype

D2 Goals

- Complete PCBs
- Complete Characterization Plan
- Completed UI Menu with FFT display on OLED
- Demonstrate Fully functional looper with undo/redo feature and overdub capabilities

Circuit Schematics



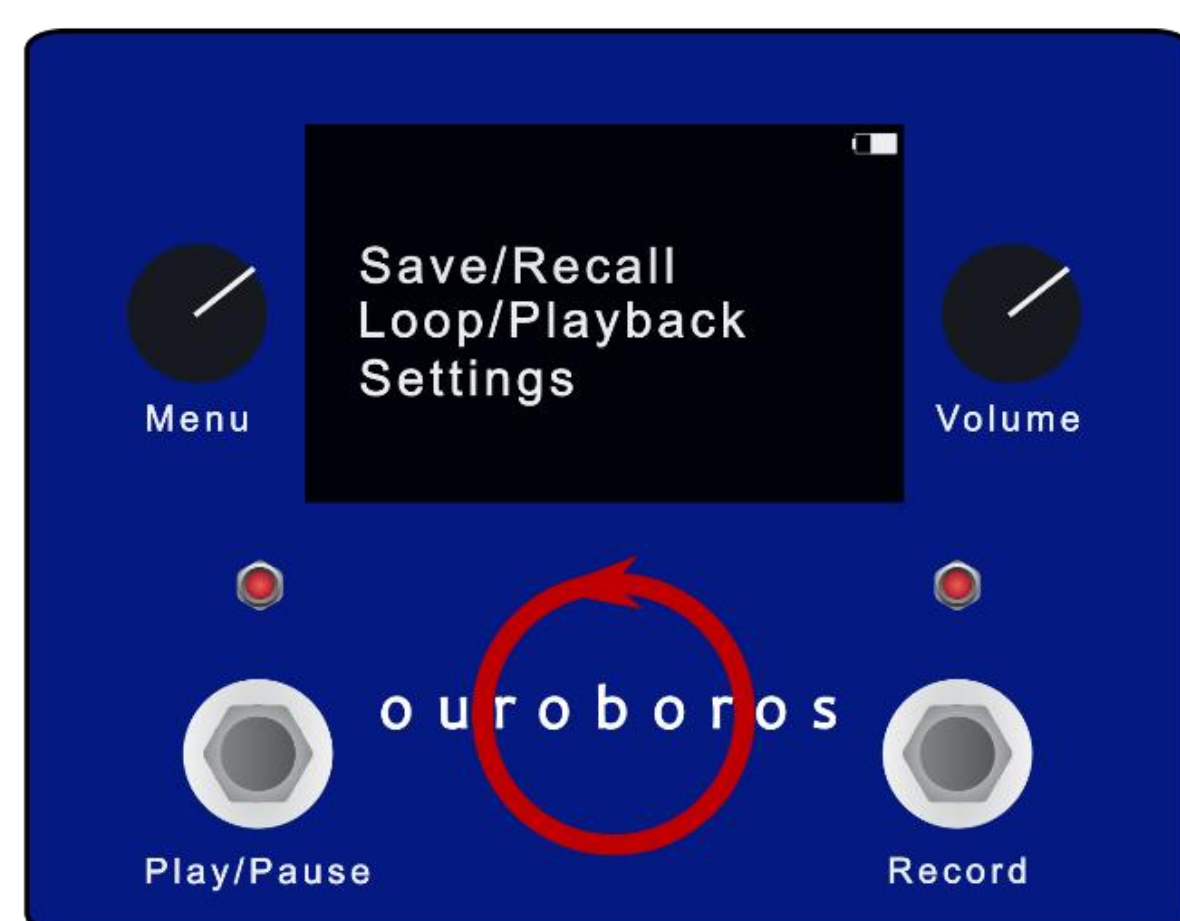
Overview

The Ouroboros Looper Pedal enables users to record and loop up to 10 five-minute sessions, offering unlimited overdubs and Undo/Redo functionality for real-time modification. Users can play over imported or newly recorded loops. Ouroboros provides an open-source and cost-effective alternative to traditional pedal offerings on the market.

Feature Requirements

- 9VDC Operated
- 1 Hour runtime with Battery
- A/D-D/A conversion
- Stores and Recalls 10 loops
- 5-minute recording time
- USB import/export capabilities
- Unlimited Overdubs and Undo/Redo function
- 12-bit uncompressed audio quality
- Real-time looping display

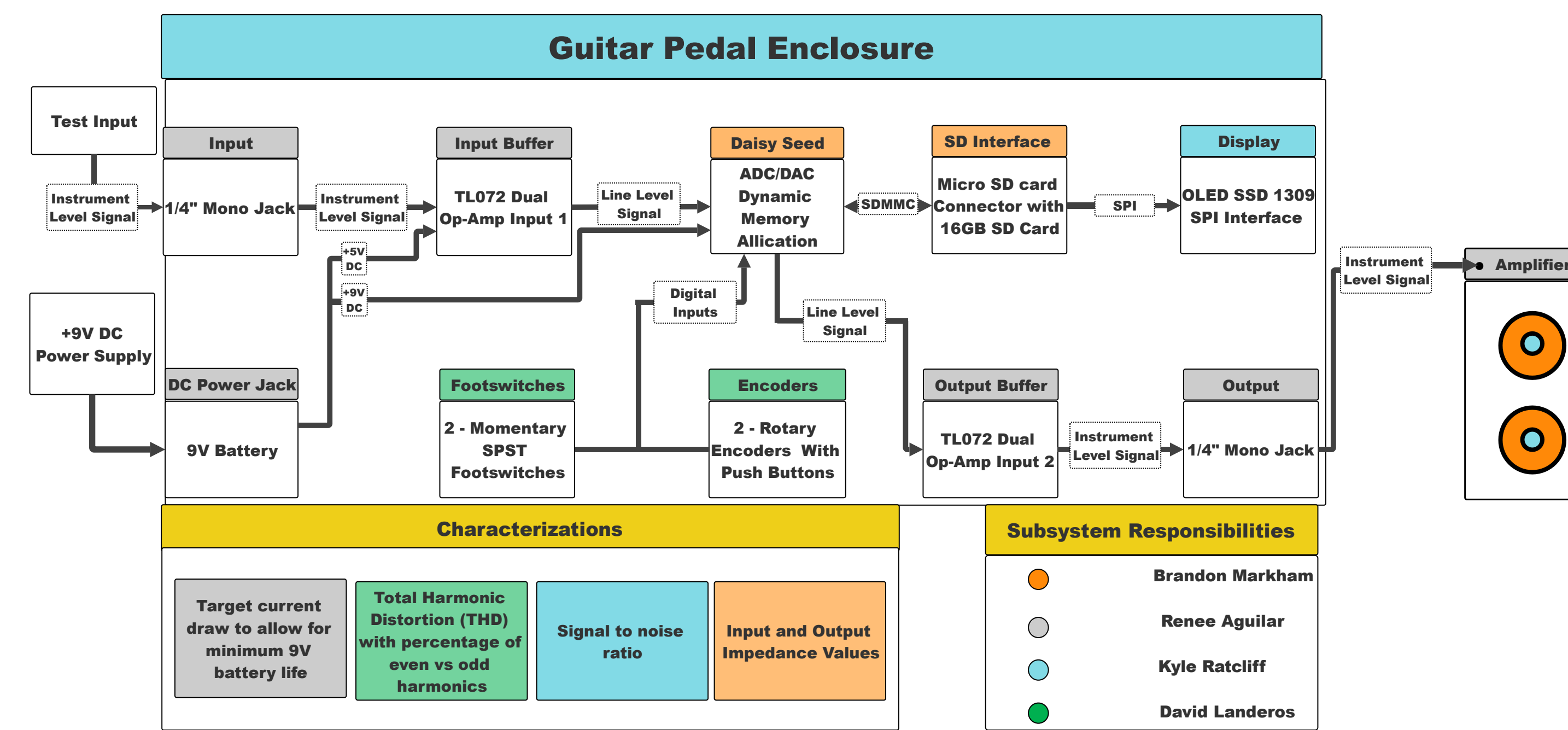
OLED/Enclosure Mock -Up



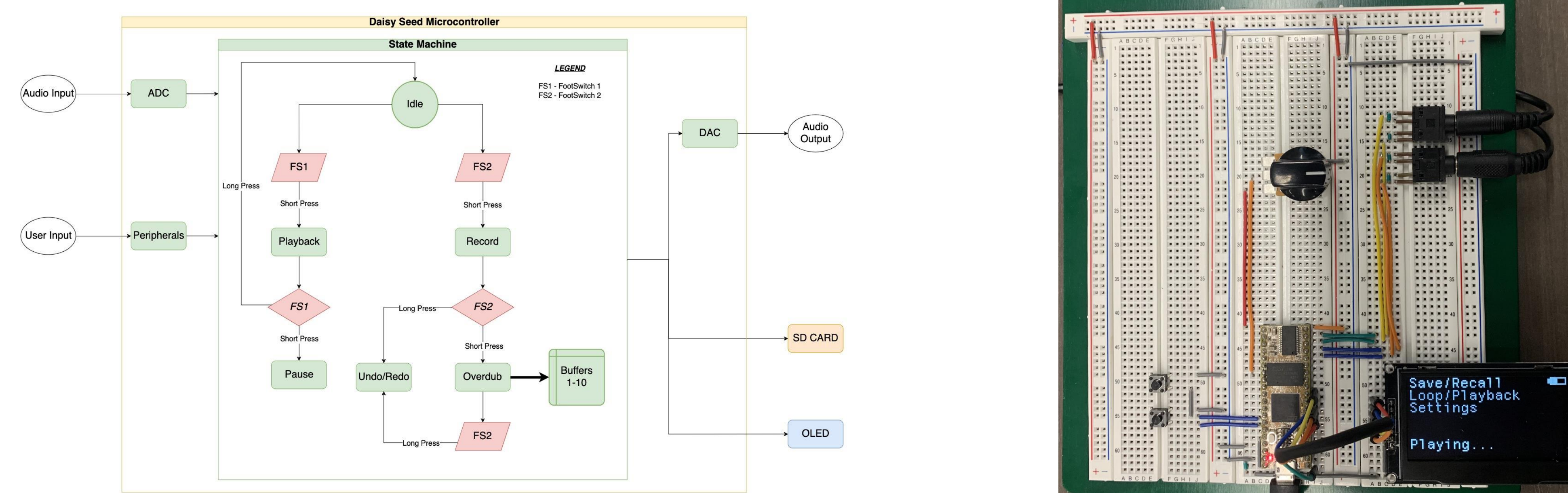
Acknowledgements

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Special Thanks to our D2 Mentors, PCBInnovate

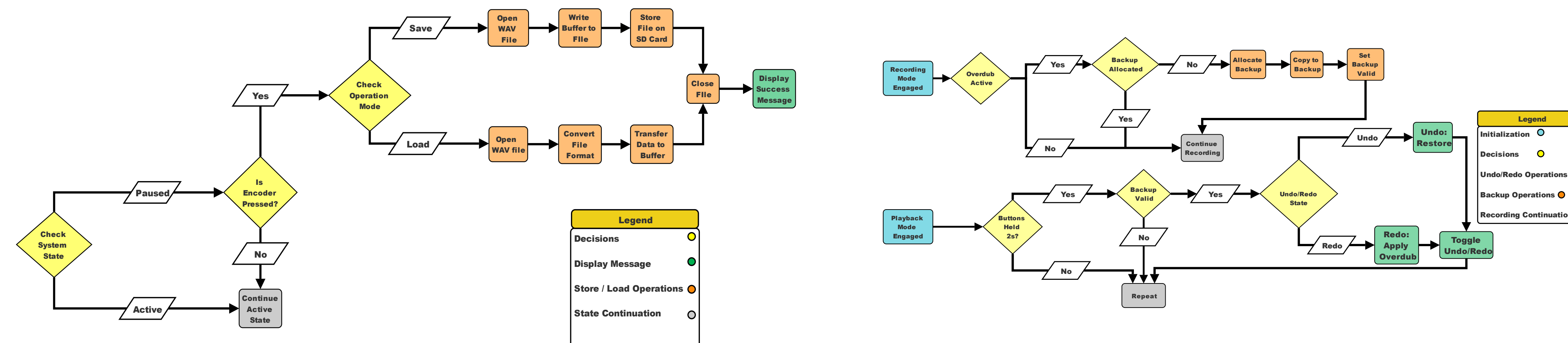
Top Level Block Diagram



Main Looping Program



Audio Processing & Dynamic Memory Management



Enclosure Design & UI

