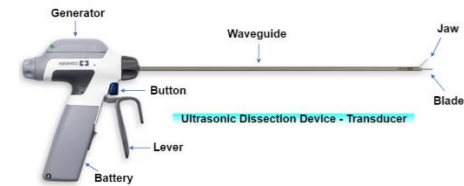# Myosine
Ultrasonic Transducer Test Platform
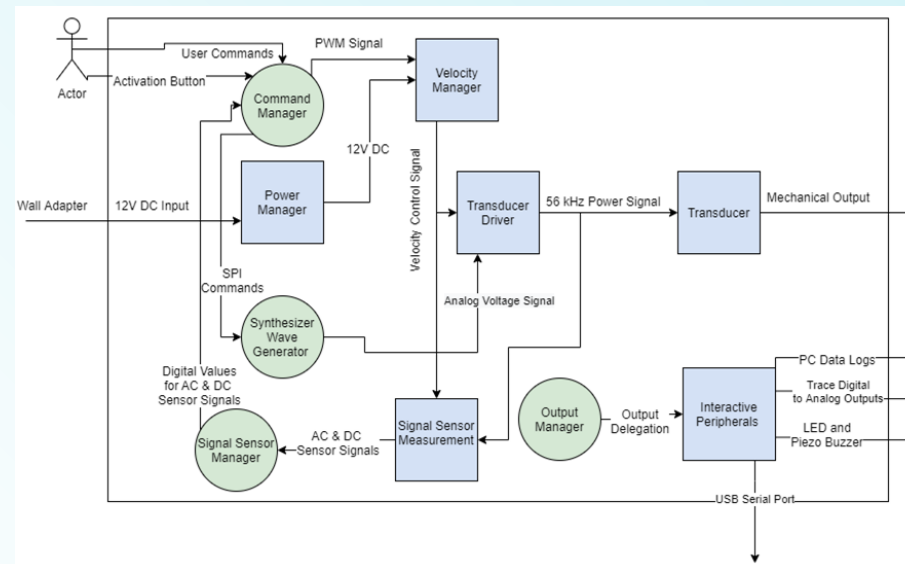
Ambrina Abbasi | Abenezer Argaw | Eric Dahl | Selasi Etchey | Andy Hsu | Jiabin Lin
University of Colorado Boulder

Ultrasonic Dissection Device - Transducer

Background

The Medtronic Sonicision product uses longitudinal ultrasonic vibration produced by an electromechanical piezo-driven transducer in order to not only dissect tissue, but to also perform the function of vessel sealing. Medsonic, in collaboration with Medtronic, have designed and modified a test platform for the Sonicision product for rapid prototyping of different apparatus' '

Objectives

- **Hardware**:
  - Class B amp which takes input from velocity & frequency modules and outputs proper output to drive transducer
  - Variable Buck Converter that variably scales down input voltage into Class B
- **Software**:
  - Software PI Loops to Close Velocity and Frequency Control Loops
  - System can sweep, calculate, and display, and modulate relevant system parameters via a Python Graphic User Interface

System Design

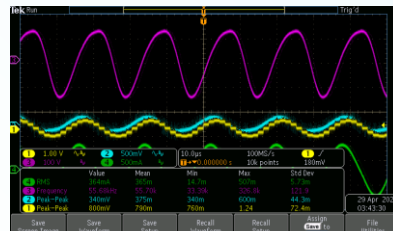## Special Acknowledgements
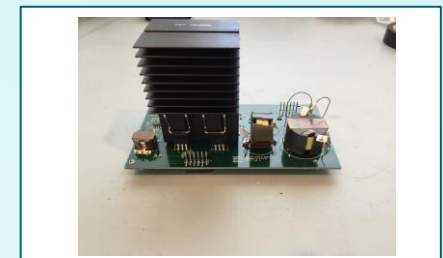
Class B Amplifier
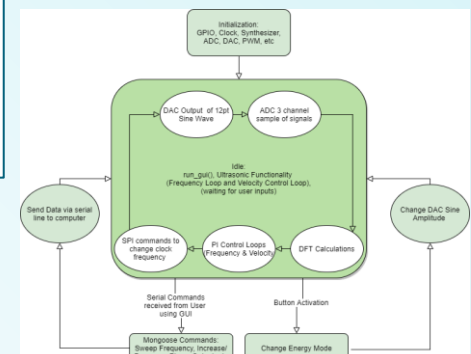
Results

Buck Regulation

Frequency and Velocity Loop Closure

Variable Buck

Software Flow Diagram