

## EE / CprE / SE 491 - sdmay18-13

### Determining voltage and Wire Continuity

#### Report #

3/23 - 4/6

Client: Grace Engineering

Faculty Advisor: Nathan Neihart

#### Team Members:

Mohamed Almansoori - Report Manager

Aaron Eaton - Chief Engineer

Matt Kelly - Meeting Scribe

Sam Kline - Meeting Facilitator

Chris Williams - Test Engineer

#### Accomplishments

- Sam - voltage detection software testing and wire continuity software
  - Tested rms calculation software in 201 lab, outputted result within .1V of expected value, lights up LED when result is above 3V
  - Tested Energia PWM (pulse width modulation) software in 201 lab, outputted low frequency wave that is insufficient for needs of wire continuity design
  - Started writing code in Code Composer for PWM instead of Energia, provides lower level control of microcontroller, may be able to produce a higher frequency wave
- Chris - Assembled PCB Board
  - Soldered components as best possible
  - Tested DC voltages in lab with multimeter
  - Tested AC RMS voltages with Sam using the function generator

#### Pending Issues

- Frequency of output wave provided by microcontroller insufficient for the needs of our wire continuity design (can currently provide 500Hz, multiple kHz at minimum needed)

#### Individual Contributions

Team Member	Contribution	Hours Worked	Total Hours
Mohamed	We got the parts early this	6	28

Almansoori	week and started working on building the circuit and getting it done. Also, we conducted some tests and got the expected results.		
Aaron Eaton			
Matt Kelly		0	22
Sam Kline	Voltage detection software testing and wire continuity software	6	31
Chris Williams	Assembled PCB board and conducted some initial tests with equipment in the EE lab	5	46

### Plans for Coming Week

#### Fix PCB Errors - Chris

- PCB has unidentified output on the third difference circuit
- PCB has no voltage offset on outputs 4-6
- Sam
  - Test rms software with pcb if any modifications to the pcb are made
  - Test pwm software to see if higher frequency is possible



