TABLE OF CONTENTS

Abstract	1
1. Introduction and Background	1
2. System Overview	
a. Final Pin Assignment	3
b. Signal Properties	4
c. Transducer	4
d. Precondition / Amplification / Buffer	5
e. ADC	5
f. BPM LED Display (BCD)	5
g. Data Processing	5
h. Control / Communication	5
i. Esduino Extreme Hardware	6
j. Esduino Extreme – Program	6
3. Results / Design Process	7
a. CodeWarrior	7
b. MATLAB	9
4. Discussion	10
5. Conclusion	12
6. References	12