

CryoBod Team



Megan Kojima
ME Team Lead
Thermal Systems Lead



Nolan Conrad
ECE Team Lead
Hardware Integration Lead



Ian Mexas
CAD Manufacturing Lead



Joshua Arjona
Procurement Lead



Madeline MacDonald
Physiology and Bio Lead



Chelsey Manlangit
Documentation Lead



Calvin Viriyavong
Integration and Risk Lead



Nate Muttera
PCB Design Lead



Serena Nguyen
Fabrication Lead



Micah Davis
Web Design Lead

Acknowledgements

Team CryoBod would like to express their gratitude to our sponsor Ken Arnold from HTE for providing us with the opportunity to learn and grow as engineers. We would also like to thank Dr. Shaffar and Dr. Paolini support, guidance, and assistance throughout this project.



Scott Shaffar, Ph. D.

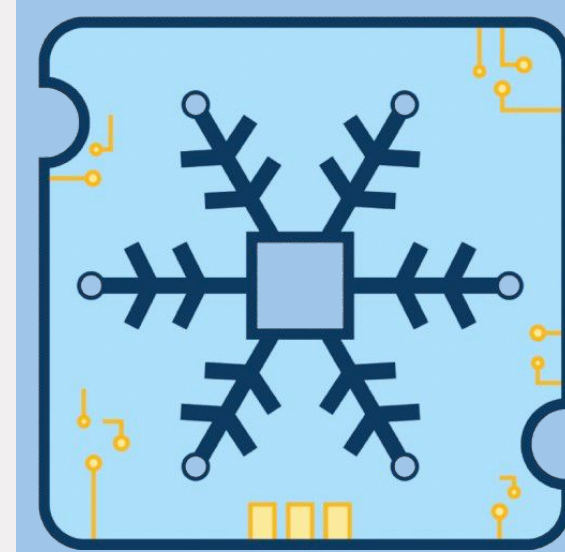


Ken Arnold



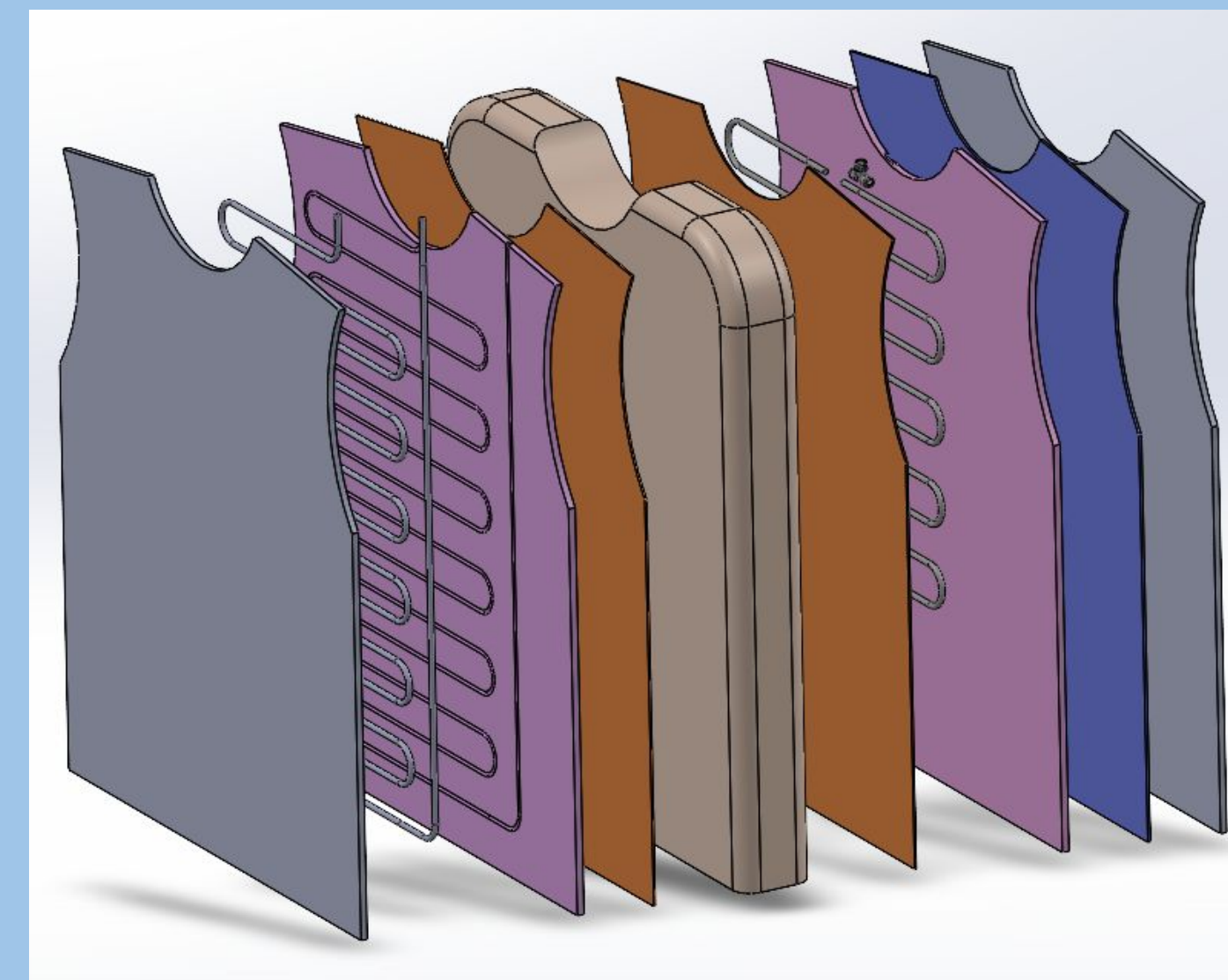
Christopher Paolini, Ph. D.

Project Overview

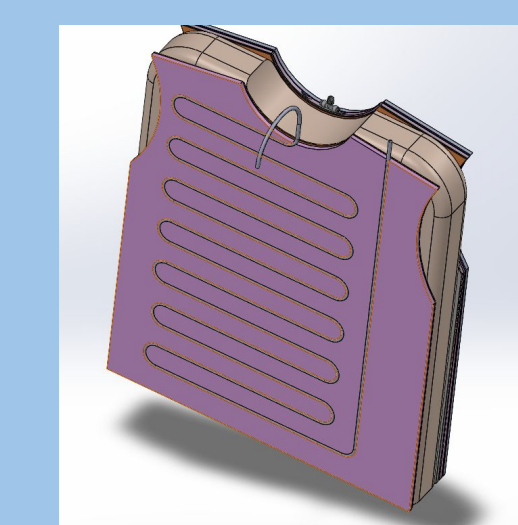
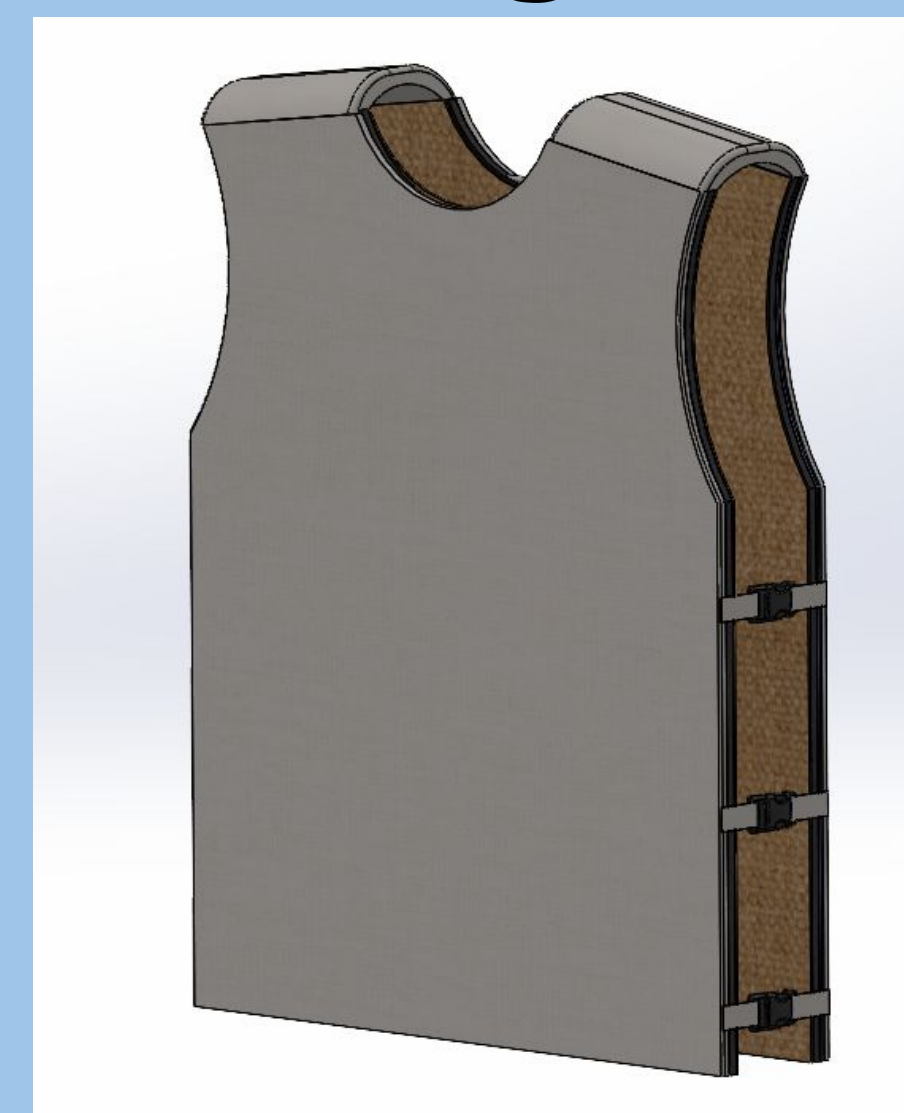


The Human Cooler project has the goal of creating a wearable personal cooling device that is capable of shedding enough heat to allow the user to perform activities of moderate to high levels of physical exertion while maintaining a core body temperature of 100.4°F.

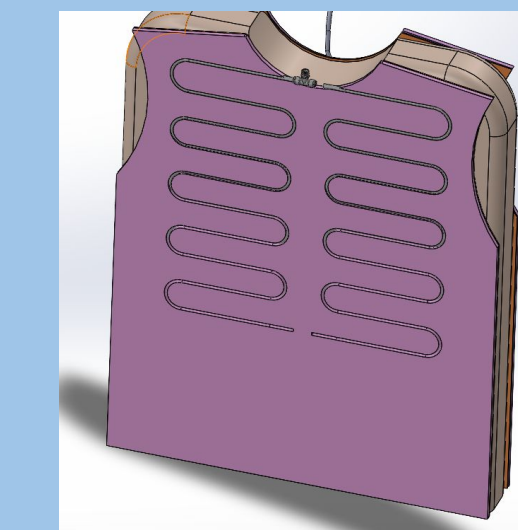
Final Design



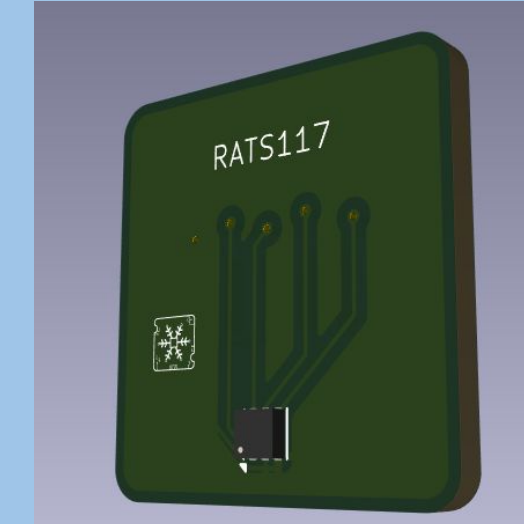
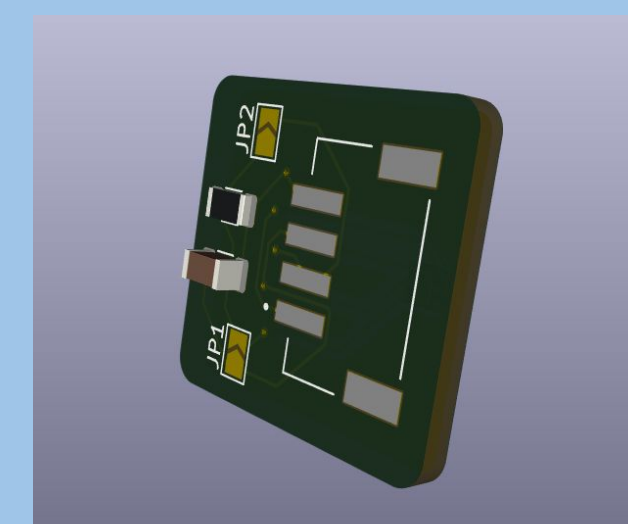
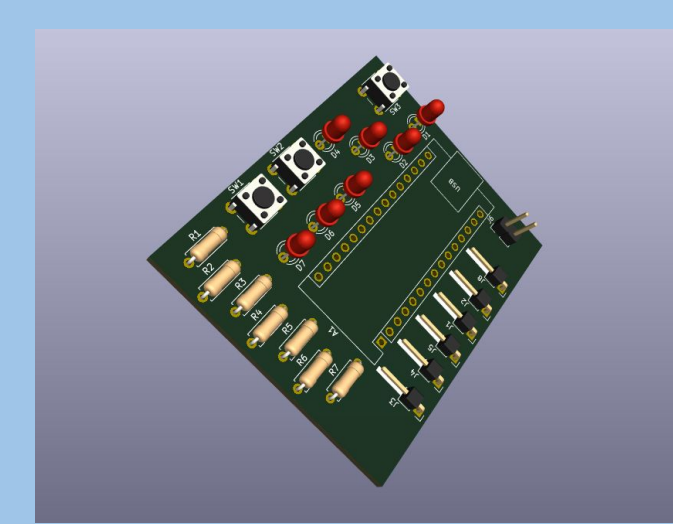
Vest Exploded View



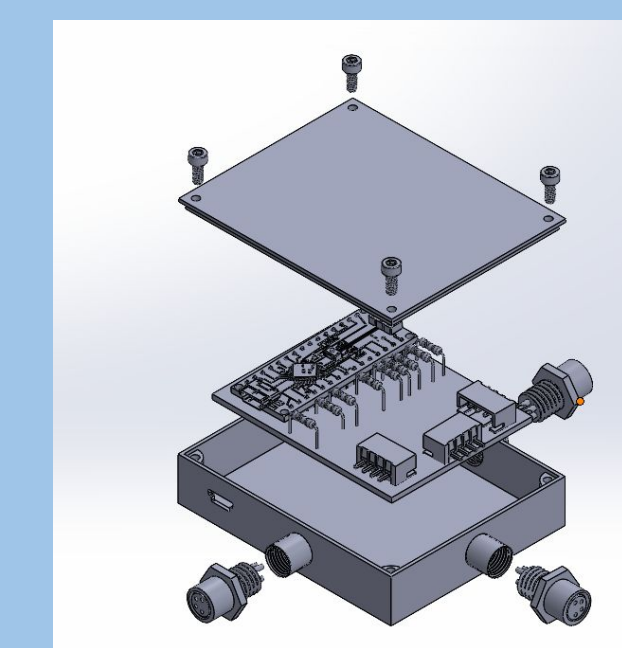
Vest Back View



Vest Back View

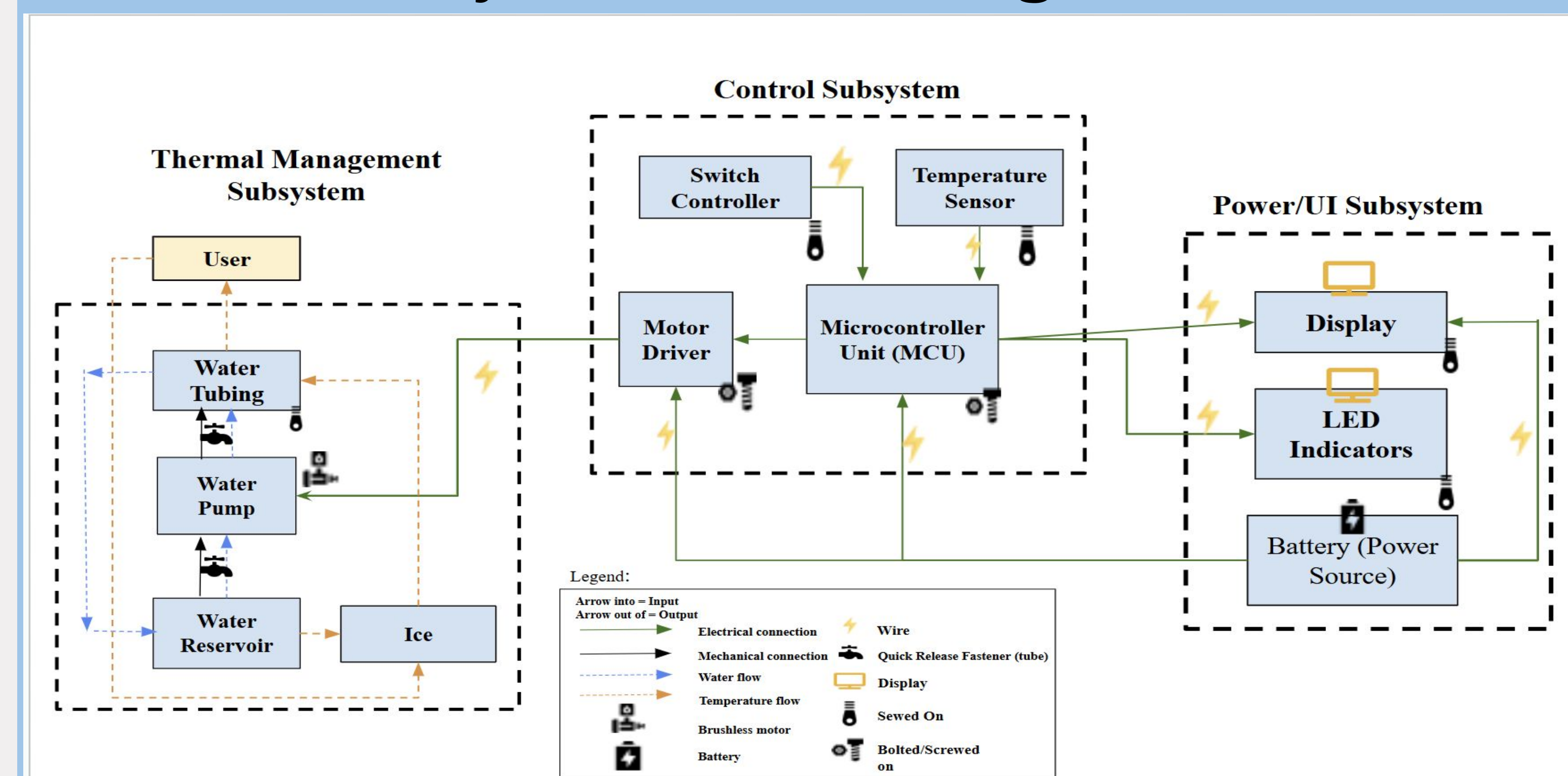


PCB Design

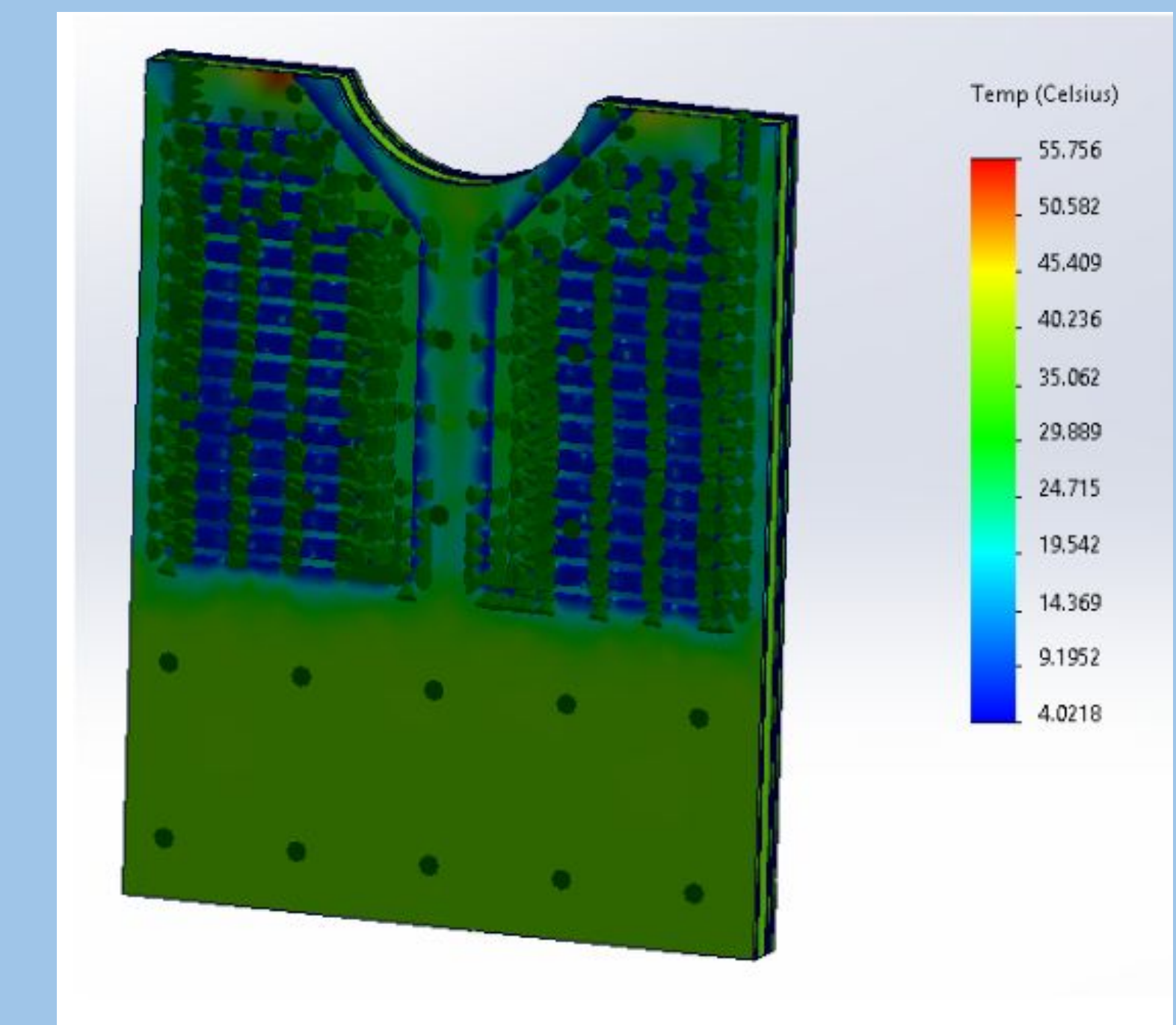


Electronics Housing

System Level Diagram

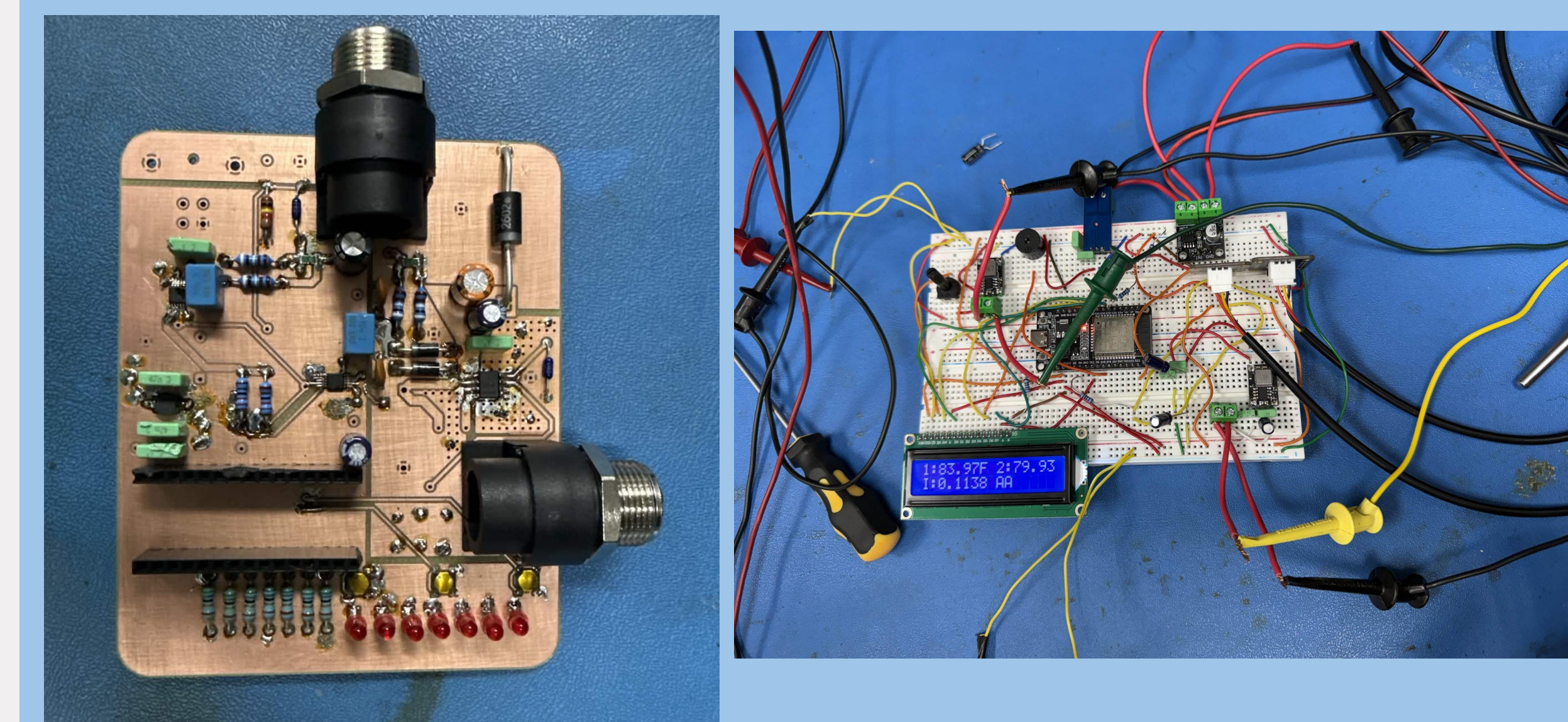


Thermal Simulation



Power into the vest: 100 W
Power absorbed by the tubing: 28.29 W (front)
+27.1 W (back) = 55.39 W
Efficiency: ~56%
Goal: 60-70% efficiency

Manufacturing



Spring 2026