



USMC SMALL GROUND SENSOR

Team Argus

Problem Statement

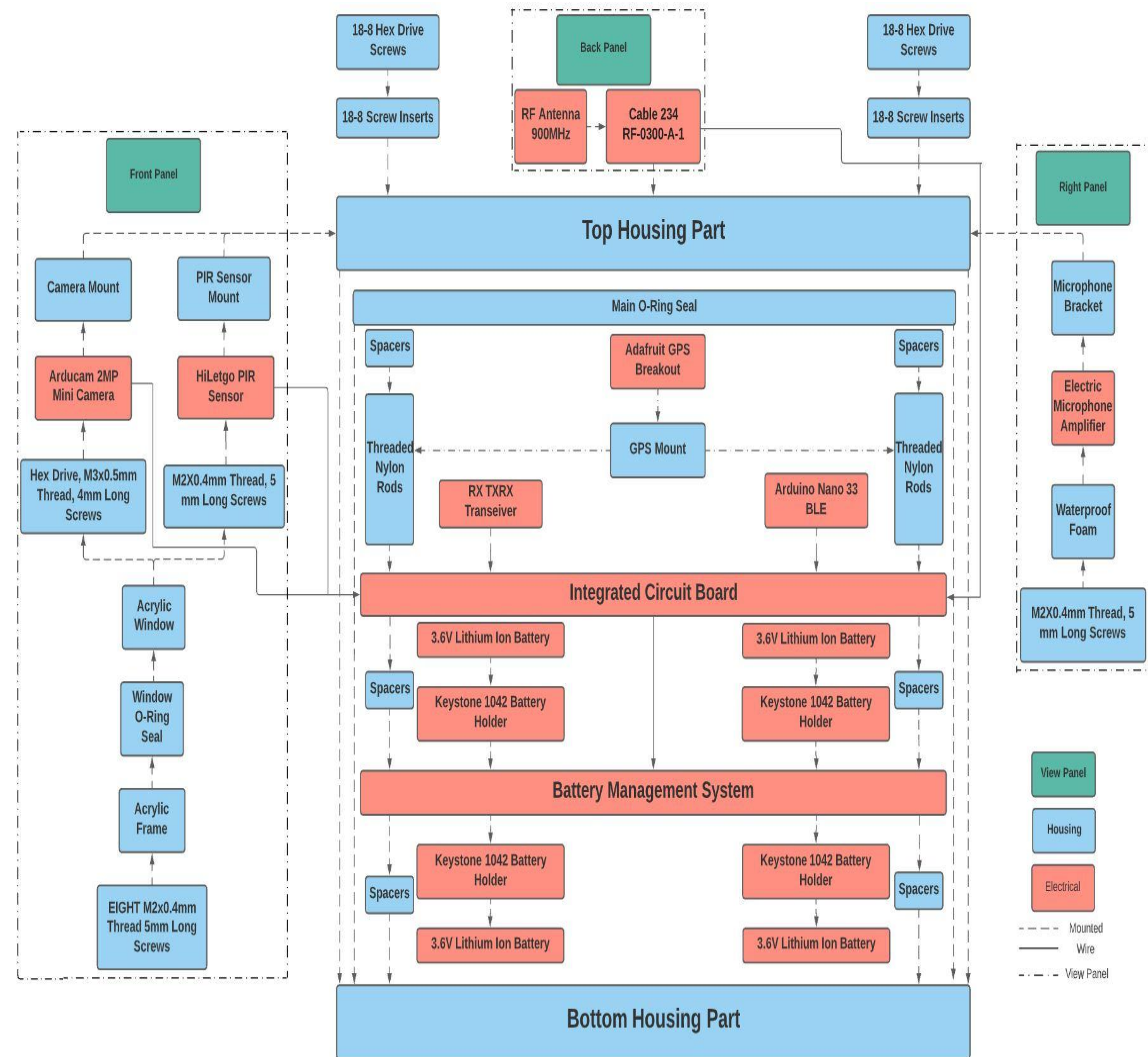
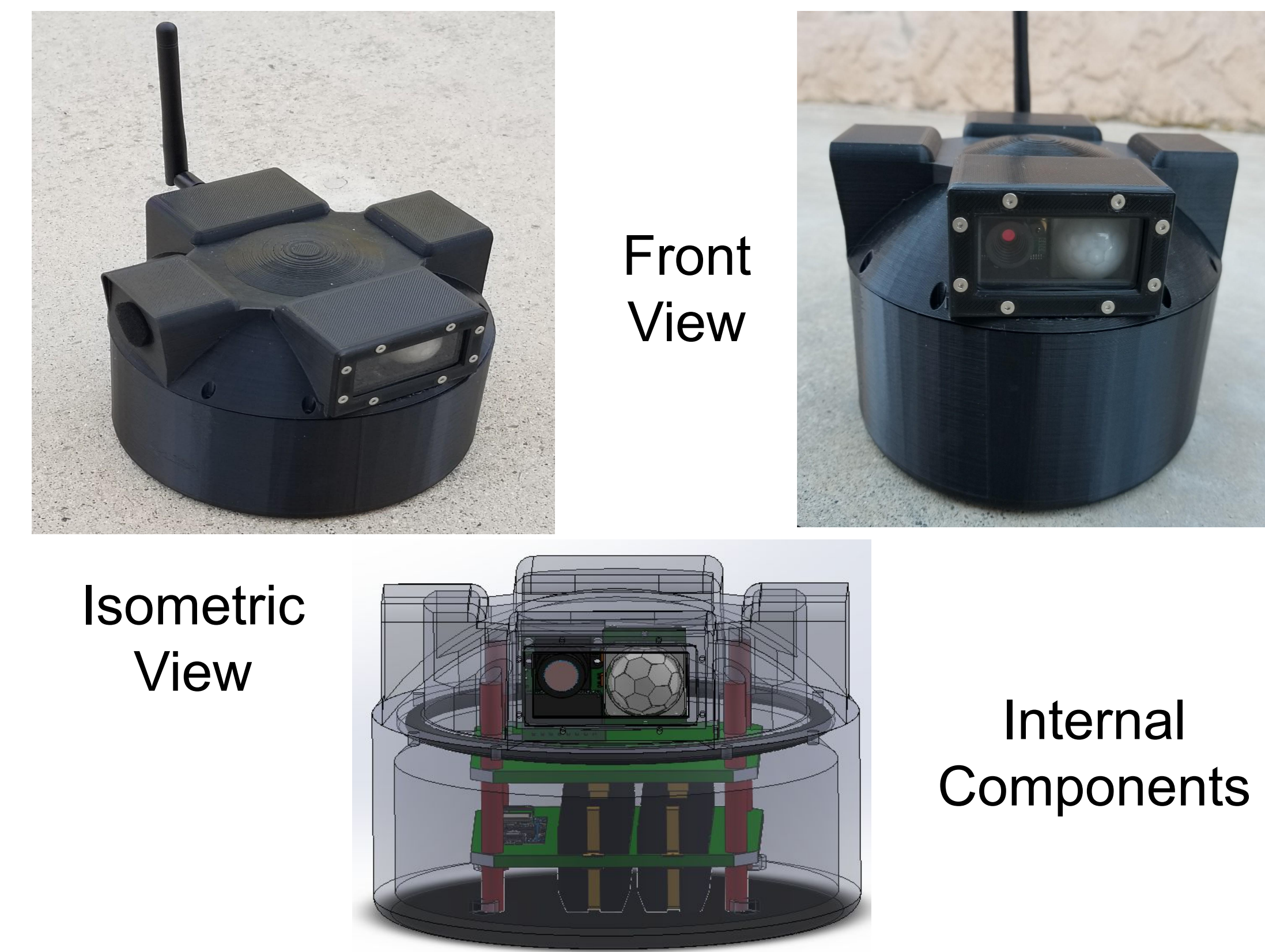


Design and build a small ground sensor for the United States Marine Corp 1st Battalion that is capable of covertly monitoring remote areas in real-time with wireless user accessibility. Marines require a networkable, lightweight, disposable and user-friendly device that is capable of monitoring an evolving battlespace. These ground sensors shall be dispersed by hand along key locations to detect possible adversaries by methods of acoustics, visuals and motion. This device shall provide key information to the user to aid in their decision-making.

Prototype

3D CAD Design

System Level Diagram

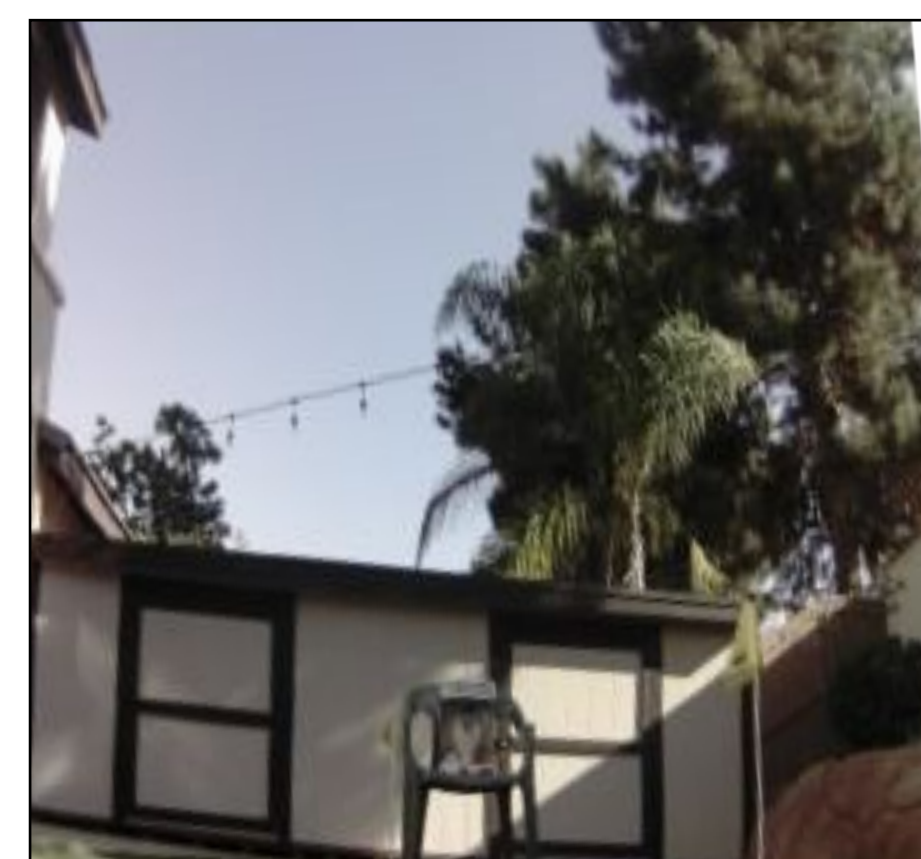
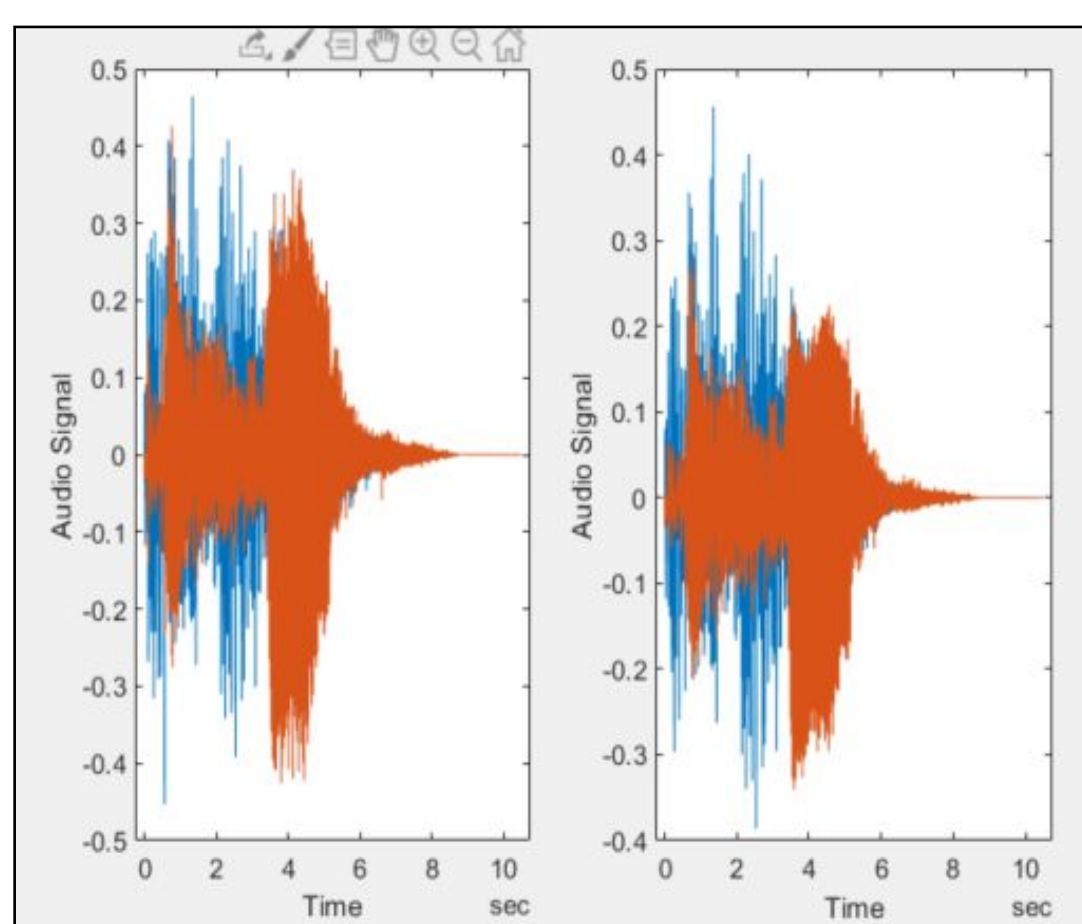


Testing

Design Specification

Below are two pictures of early testing of the subsystems. Team Argus wanted to confirm that the camera and microphone were the proper choices to meet the requirements stated in the problem statement.

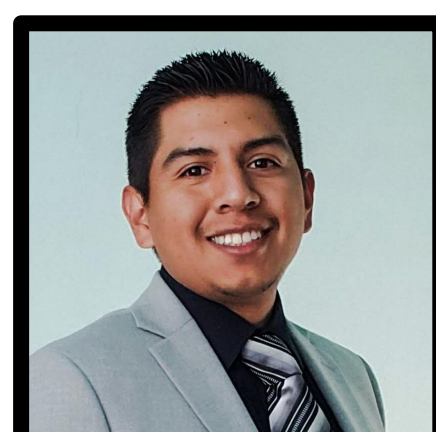
Housing Material: PC-ABS Blend
Size: 6.5in X 4.5in
IP rating: IP65
Weight: 1.5 lbs
Subsystems: Microphone, 2MP Camera, PIR Sensor, GPS
Battery life: up to 7 days
Communication: This sensor follows a breadcrumbing approach to monitoring a large amount of area with wifi capabilities to alert and relay information back to the user.



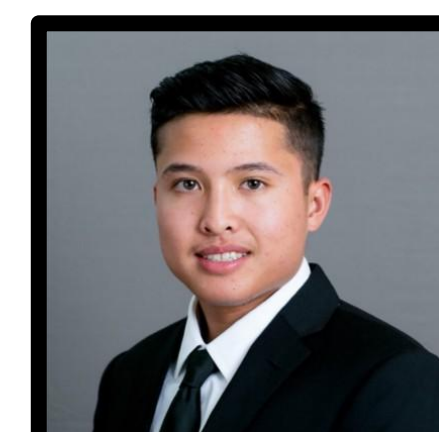
Car Engine Turning on & off Audio Signature

Camera Trial in Daylight

Team Members



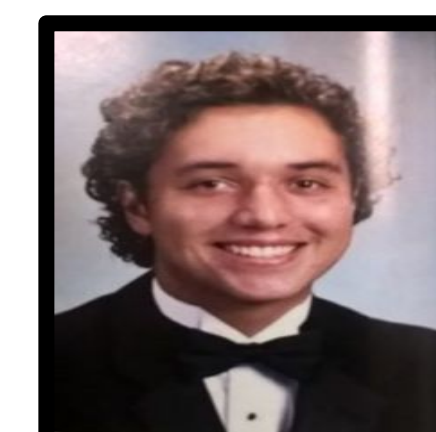
Henry Segura
Team Lead



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Design Engr.



Nicholas Balagtas
Test Engr.



Joshua Barnard
Manufacturing Engr.



Blake Borskey
Systems Engr.



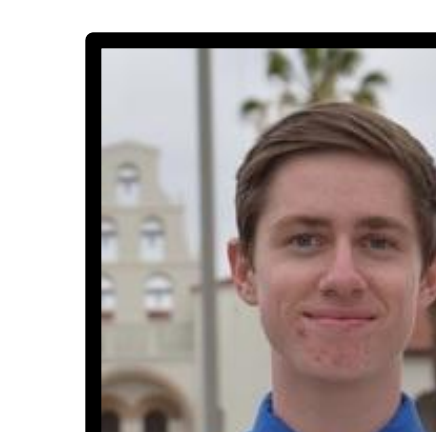
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