

Automated Insect Trap Monitor

1 INTRO

- Insect density monitoring has historically been done by trapping and counting insects by hand
- The Graduate Research Team implemented a solution to automate this process using computer vision
- We've been tasked with a complete hardware redesign with some additions

2 PROBLEMS

- The previous system consumed more power than it generated
- The microcontroller drew power continuously
- The device was inoperable between 8 pm and 5 am due to lighting

3 METHODS

- The reimagined the power system provides:
 - Improved power regulation to accommodate new and legacy devices
 - A hardware timer to manage when power is distributed
 - Properly sized storage and generation
 - Protection for overcurrent events

4 ADDITIONS

- A variety of new modules were implemented:
 - Humidity and Temperature sensing to monitor field conditions
 - Light module for night time operations
 - GNSS module to handle locational data
 - Modular stand assembly to accommodate a variety of crops and insects

5 RESULTS

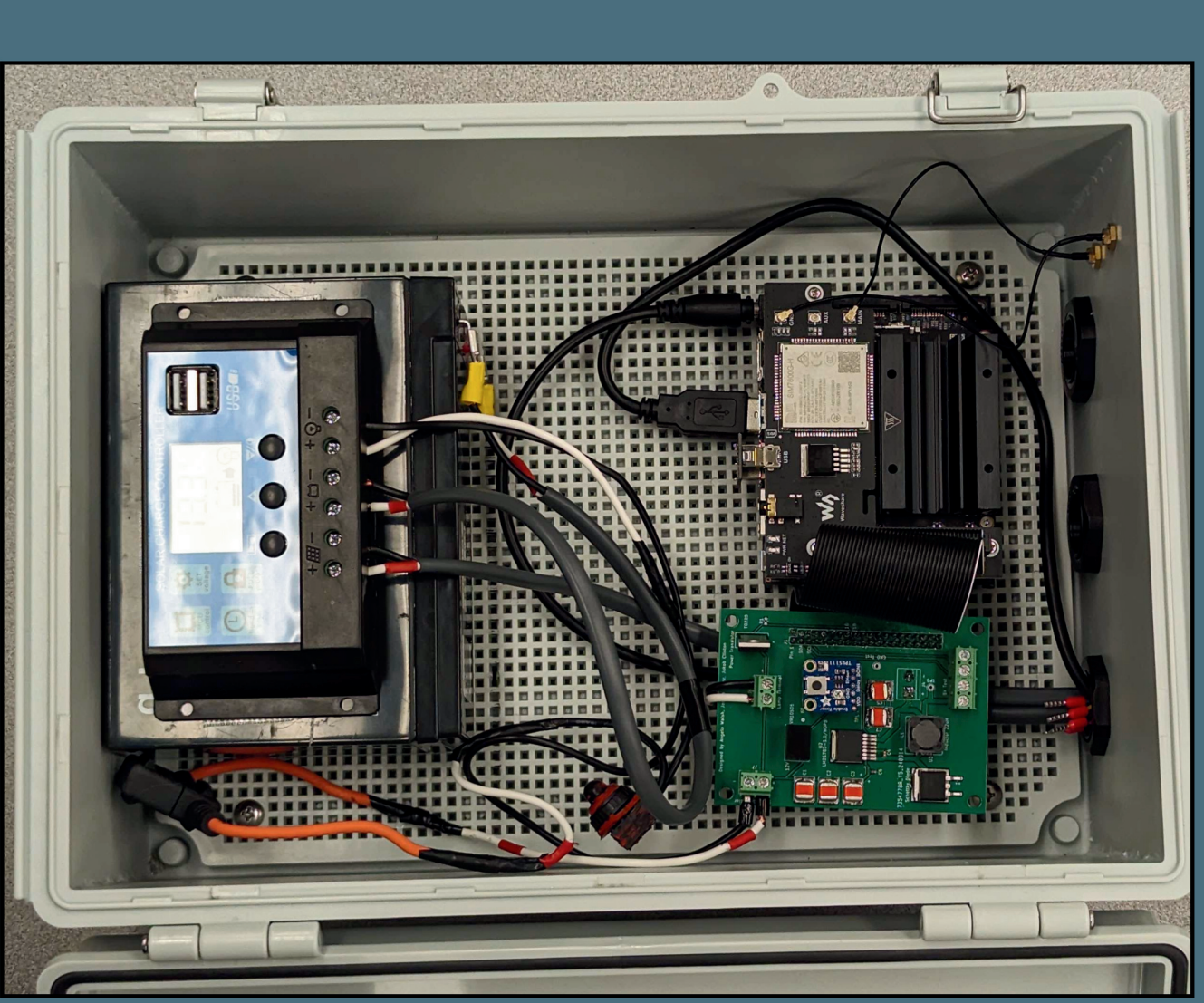
- Power management allows for continuous operation
- Field condition monitoring
- Nighttime functionality
- Able to orient stand in different ways to trap different bugs and aid research



CAMERA



ENCLOSURE



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