SDSU SOLAR BATTERY SYSTEM

WEBSITE: https://sdsuteam19.wordpress.com/

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SDGE
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PROJECT OVERVIEW

This project is a renewable micro-grid which consists of an independent, rechargeable battery power bank and a solar PV charging system. The system can supply power to DC and AC loads on demand. The battery is charged by the solar panel, and monitored by a microcomputer. The sensors' data is stored and processed through the microcomputer which can be used to display system information to the user through a laptop or on its integrated screen. We built the system at a scaled down-level for this project, however, it will allow multiple inverters and batteries to be added on for scalability.

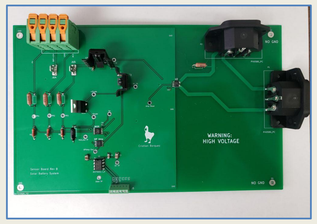
PROJECT FEATURES

- Independent Charging System
- Advanced GUI System Display
- Collects, stores, and displays system data
- Shut Down protocols self and user enabled
- Voltage/ Current Sensor PCB
- 24V to 12V Step Down Buck Converter

COMPONENTS


200W PV Panel


Raspberry Pi


Sensor PCB

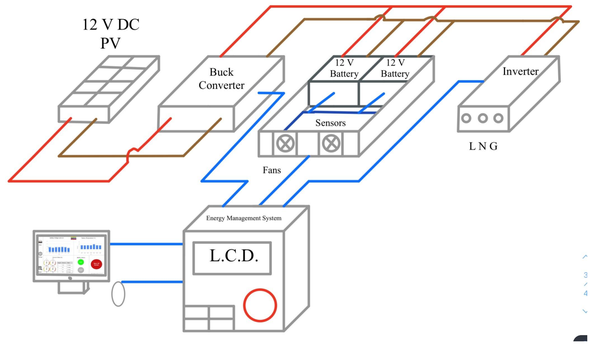
Buck Converter


500W Inverter

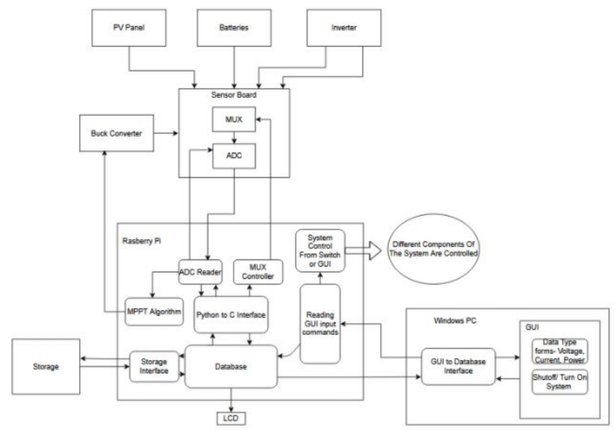
12V Batteries


GUI on Laptop

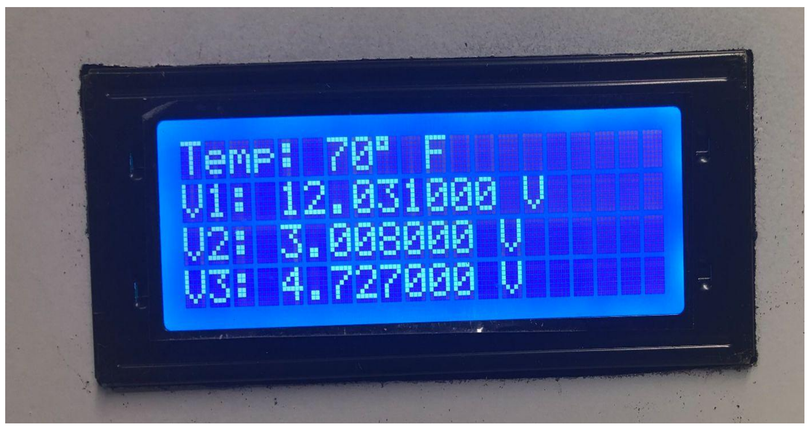
TOP LEVEL DIAGRAM



SOFTWARE DIAGRAM

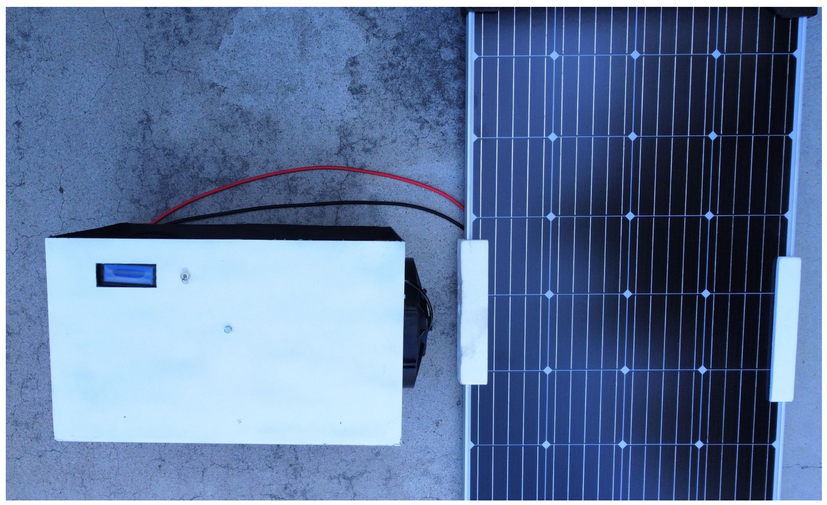


TEST DATA



Data display of sensor output

FINAL PRODUCT



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