Power Supply Electrical Design

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Objectives:

• Design solar panel system for power generation.

• Generate power through solar panels positioned on the exterior of the CubeSat; this power will be transferred and stored in onboard batteries.

• Develop circuitry to convert the battery source into multiple voltage supplies, including 3.3 V, 5 V, and 12 V.

• Implement circuitry to distribute and maintain power to various systems and components located throughout the spacecraft.

• Create circuitry to verify the voltage output from the regulators to monitor for faults.

• Optimize system to conserve power by implementing efficient techniques to reduce power loss throughout system circuitry and components.

• Create a development plan to clearly document procedures that led to the successful completion of this project for others to follow.

• Conduct tests to verify the functionality of the completed system and troubleshoot.

• Research and implement a space rated lithium polymer battery pack

• Reduce the physical dimensions of the circuit board through an iterative design process