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Title:

Abstract: The purpose of this project was to design a reliable, highly adaptable Cube Sat EPS that does not require input from a microcontroller to function properly, outputs its status to a data logging system, is plug-and-play, and has comparable efficiency to off-the-shelf solutions. Our system uses circuits based on MAX1771 switching regulators to convert the variable DC voltage coming off of the solar panels to a usable constant five volt. A LTC4053 circuit is used to store excess energy harvested from the solar panels to charge 2 Li-Po batteries. The system was designed around a Cube Sat with 9 solar arrays (4 deployed after launch) with a peak power input of 12 watts, and an average power input 5 watts (1 watt if solar panel deployment fails). System specifications will be discussed, but overall this system should be suitable for most Cube Sat power buses.