



Solar Mini-Blind with DC-DC Converters for 5V Charging Applications

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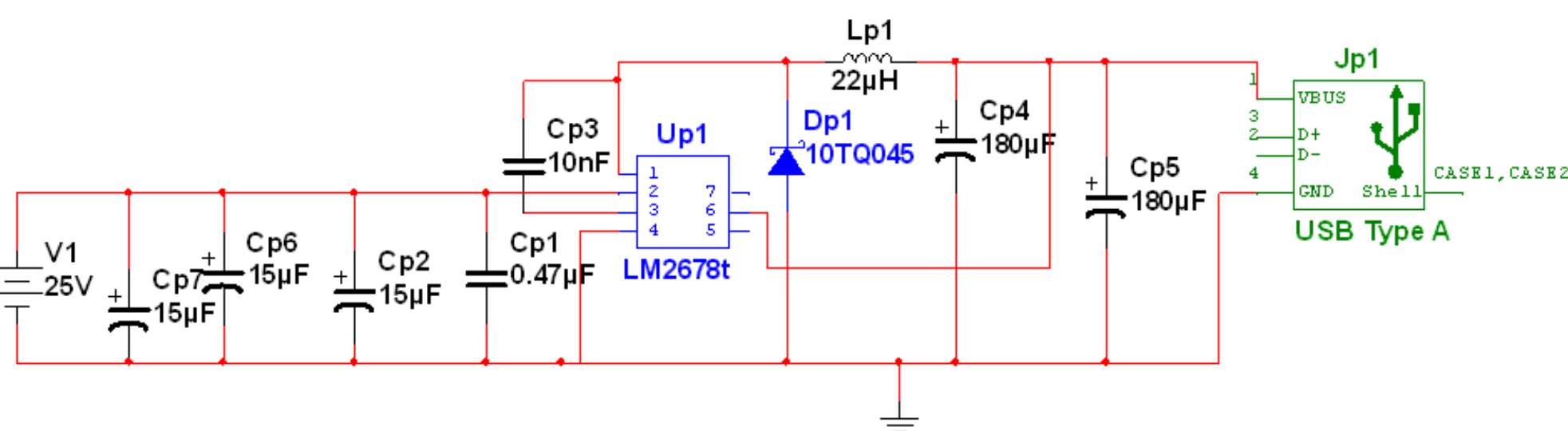
College of Engineering, Technology and Computer Science

Abstract

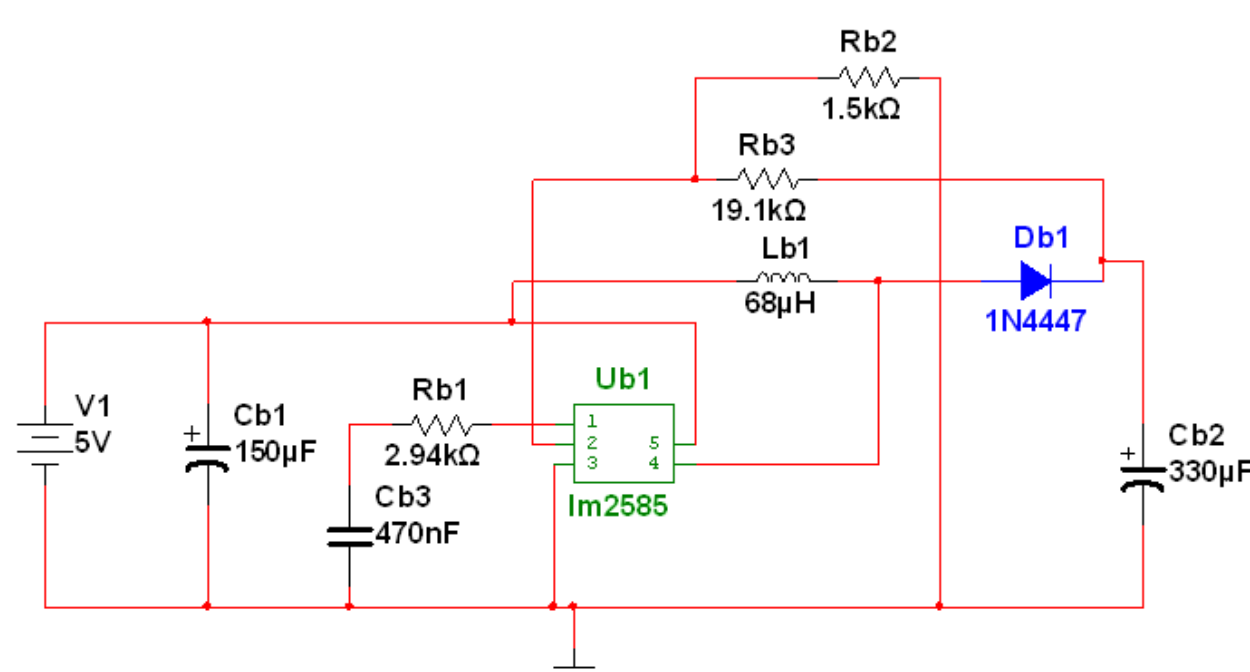
A solar power charging system consisting of solar cells mounted on a mini-blind with DC-to-DC converters and super capacitor storage with voltage regulation circuit was designed for 5V charging applications such as smartphones or any USB powered devices.

PURPOSE: The purpose of my project is to eliminate some of the strain put on the electrical grid by removing the daily charging of my cell phone from it, and instead utilizing solar energy for this purpose.

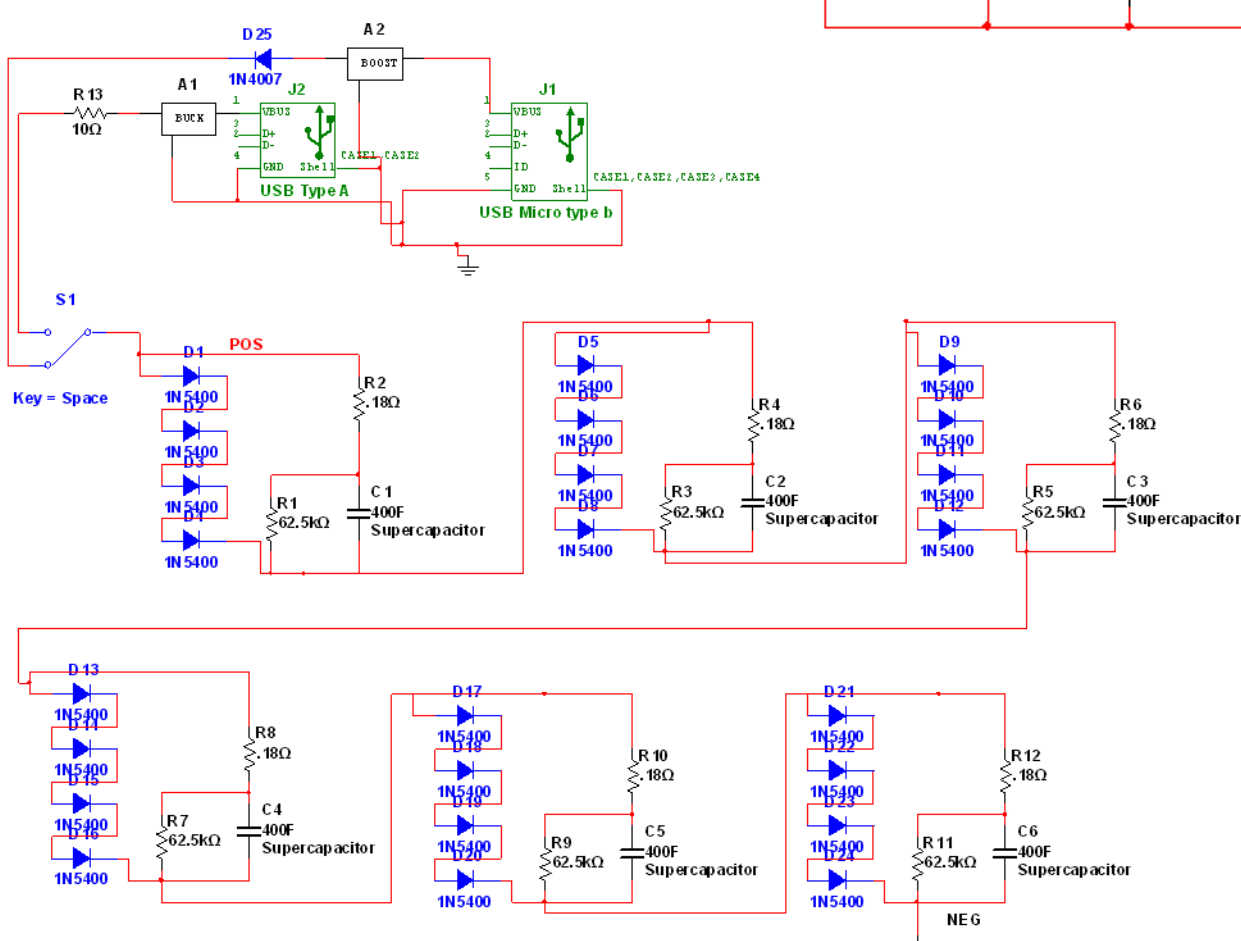
CIRCUIT DESIGN Buck Converter



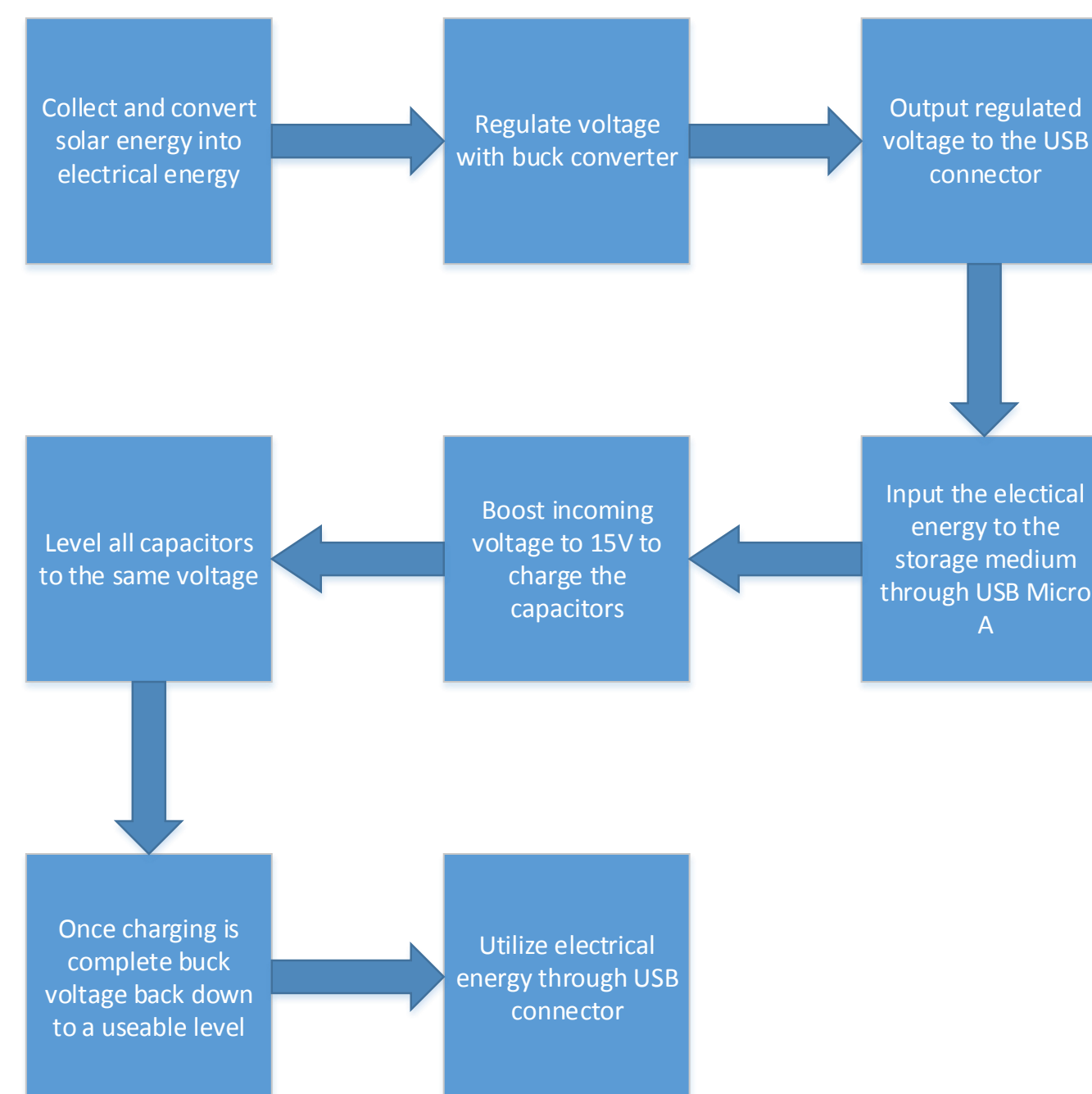
Boost Converter



Supercapacitor Pack



HARDWARE SUBSYSTEM



SOLAR Mini-Blinds INTEGRATION AND TESTING



Voltage	Current	Load resistance
10V	300mA	35Ω
12V	280mA	41Ω
24V	200mA	165Ω
25V	170mA	193Ω
26V	130mA	260Ω
26V	100mA	355Ω

CONCLUSION

Currently solar panels and supercapacitors are too expensive to be practical for this application, however, as the manufacturing processes become refined and materials can be made cheaper and more efficiently, these technologies could become viable in the near future.