

Master Thesis

Design (HW) of an Electrical Power System (EPS) for Small Satellites

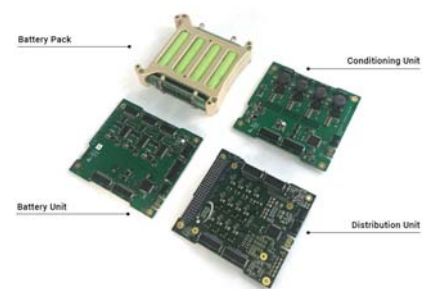
Designing the hardware for an Electrical Power System (EPS) in small satellites, such as CubeSats, is a critical aspect of mission success, requiring compact, efficient, and reliable solutions. These miniature spacecraft face unique challenges due to their limited size, mass, and power budget. EPS components—like solar panels, batteries, and power distribution units—must be optimized to fit within tight constraints while still delivering consistent energy under varying orbital conditions. CubeSats often operate in harsh environments with fluctuating temperatures, radiation exposure, and eclipse periods, which can strain power generation and storage. Additionally, balancing power demands across subsystems and ensuring fault tolerance in such a small form factor adds complexity to the design.

Your Tasks

- Review of state-of-the-art EPS systems used in small satellites
- Design and schematics of a power management unit compatible with the CubeSat standard
- Design of a array conditioning unit and power distribution unit
- Component selection and hardware layout

Your Profile

- Completed bachelor's degree in electrical engineering, electronics or a related field
- Interest in space activities and power systems
- Willingness to actively engage in research work
- Strong problem-solving skills and critical thinking
- Team-oriented and organised



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Contact

Manuela Wenger
manuela.wenger@tugraz.at