

DESIGN OF 30 W DC/DC CONVERTER FOR 3U CUBESAT (MEDITERRANÉE)

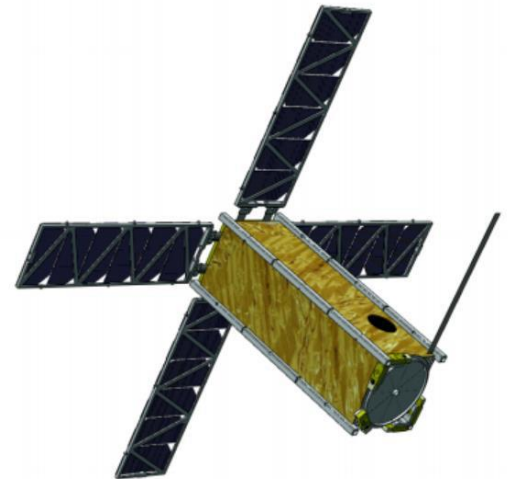
1. Background

The mission objective of ROBUSTA-3A (ROB3A) Méditerranée is to demonstrate the ability of a 3U CubeSat based system to collect meteorological data onboard ships located in the western Mediterranean Sea (between France, Spain, Italy and North Africa) and rapidly transfer this data to Météo France for storm forecasting.

The Cubesat is developed by Student at the CSU (Centre Spatial Universitaire de Montpellier). One important part of the satellite development is the design of an efficient 30 W DC/DC convertor that will provide power to the satellite subsystems.

2. Internship Objectives

- In interaction with a team of students, engineers and scientists, the intern will need an important understanding of system level engineering.
- This internship focusing on power management design will allow the student to tackle many aspects of spacecraft design.
- Perform a small bibliographic research on the specific aspect of satellite power generation and power management system design.
- Perform modeling and simulation (temporal and transient simulation) of a 30W DC/DC convertor.
- Specify and justify the choice of the devices and the design of a 30W DC/DC convertor.
- Specify and justify the choice of the microcontroller chosen for the design and the implementation of the power management system.
- Implement the developed design and perform ambient testing.



3. Internship Condition

- The internship will be of 3 months (June to August)
- The internship will take place in Montpellier
- A report shall be written to document the work