

## Z121b VERTECS: Electrical Power System and Power Management

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Extragalactic Background Light (EBL), the cumulative light from outside the Milky Way, is a crucial observational target for understanding the history of the universe. We are developing a CubeSat: VERTECS (Visible Extragalactic background RadiaTion Exploration by CubeSat) with a 6U size (approximately  $10 \times 20 \times 30$  cm). Our mission is to conduct extensive observation of the visible EBL. The satellite is based on the electrical power system developed by Kyushu Institute of Technology. However, it is necessary to upgrade the existing power system to supply sufficient power especially to new devices (CMOS Sensor: Max. 3.1W, attitude control device: Max. 3W, observation data transmitter: Max. 15W) adopted to meet the high system requirements for this mission. We completed the design of a power system that meets the satellite's system requirements by incorporating newly installed solar array wings. Additionally, efficient power management and budget prediction through a simulation are essential to achieve this mission. Therefore, we construct a simulation of power generation and consumption dependent on attitude, orbit and missions. The simulation shows that the satellite can carry out the mission with the current operational scenario and power management. In this presentation, we will report the results of VERTECS's power system and power simulations.