Abstract

Satellite industry almost completely dependent on centralized Electrical Power System (EPS) designs. Maximum EPS is custom designed. There are a few manufactures that make their designs available for commercial use. Most of these designs conform to the most common standard that uses three distributed buses. Today large satellite follows single bus voltage distributed architecture. Therefore single bus voltage distributed architecture is now become a mainstream architecture for small cube satellite. Power system unit has distributed voltage which is more than one, such as a low voltage bus and a high voltage bus. There is generally one bus voltage within a subsystem. Every subsystem module is accountable for additional regulation or point-of-load regulation. With the developments of small, very efficient, monolithic dc-dc converters, this paper shows the design and simulation of possible implementation of distributed architecture at the cube satellite scale. The goal of this paper is to design an efficient electrical power system (EPS) with a great utility, capable of being used for several missions, without having to redesign the system every time.
References


Index Terms

Computer Science
Circuits and Systems
Keywords

Power system of cube satellite, small satellite power system, power system model, satellite power system.