IAF SPACE POWER SYMPOSIUM (C3)
Advanced Space Power Technologies (3)

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DESIGN AND IMPLEMENTATION OF AN ADVANCED POWER SUPPLY SYSTEM FOR 10KW PAYLOAD COMMUNICATION SATELLITE

Abstract

The high-power communication satellite platform developed by CAST has been widely used and experienced many in-orbit flight verification of satellites. With the increasing of the payload power and the wide application of electric propulsion technology, the traditional power supply and distribution technology can no longer meet the requirements of satellite applications. Enhanced communication satellite platform research and development came into being.

Compared with the traditional communication satellite platform, the power supply and distribution subsystem of the enhanced satellite platform adopts many advanced technologies and products, achieving significant performance improvement. Through the use of high integrated power density power controller, high specific energy lithium battery and management, high efficiency triple junction gallium Arsenide solar cell technology and FDIR management some advanced technologies, the power supply and distribution system optimization, performance improvement and weight reduction. The new generation power system can support more than 10KW of payload power and electric propulsion system applications, and achieve in-orbit applications, performing well.