

SMALL SATELLITE MISSIONS SYMPOSIUM (B4)  
Design and Technology for Small Satellites - Part 1 (6A)

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INTRODUCTION TO MICRO-SATELLITE STSAT-3 DEVELOPMENT

**Abstract**

STSAT-3 (Science and Technology Satellite-3) succeeding the previous KITSAT (Korea Institute of Technology Satellite) and STSAT (Science and Technology Satellite) series was developed from 2007, which has a weight of 150 kg and a required power of 300 W at the end of mission life. STSAT-3 will be launched in the end of 2010. The main purpose of STSAT-3 is observing Earth and space environments using payloads such as MIRIS (Multi-purpose InfraRed Imaging System) and COMIS (COMpact Imaging Spectrometer). In addition to two payloads, there are several core technologies to demonstrate its own performance in space such as advanced spacecraft bus technologies, a on-board computing system based on a LEON processor, an intelligent battery control and management system using lithium-ion cells including a compact solar power regulator, and a hall-effect electrical propulsion system and multi-functional composite structures. To validate our novel and core technologies which was analyzed, implemented and developed in STSAT-3 program, we have, therefore, performed several experiments and tests based on each development phase such as SRR (System Requirement Review), SDR (System Design Review), and PDR (Preliminary Design Review). Currently, we are developing a QM (Qualification Model) since implementing proto-type models through PDR. In these studies, we are introducing micro-satellite STSAT-3 and presenting a quantitative analysis and the test results with several experimental outputs.