

SMALL SATELLITE MISSIONS SYMPOSIUM (B4)  
Small Satellites Potential for Future Integrated Applications and Services (4)

Author: Mr. Abhishek Jain  
SRM Institute of Science and Technology, India, abhishek.jain.srm@gmail.com

Mr. Kumar Kshitiz  
SRM Institute of Science and Technology, India, kshitiz.kumar@live.com

Mr. Lalit Kumar Agarwal  
SRM Institute of Science and Technology, India, agarlalit@gmail.com

NOR FLASH MEMORY RELIABILITY IN LOW EARTH ORBIT

**Abstract**

This paper provides a way of testing reliability of commercial of the shelf Nor flash memory in space. Nor Flash memory is the most widely used memory in embedded system at this time as it has low power consumption, high memory density and low cost. But still it is not being used in space due its high susceptibility to radiations which causes bit flipping and permanent damage to its read/write circuitry. Approximate radiation exposure to the satellite in low earth orbit has been calculated. Radiation Tests on ground will be performed by producing different degree of radiation dosage. SRMSAT is going to be launched with a near IR Spectrometer as payload for detecting water vapor and carbon dioxide. Payload data will be stored in this memory module. An algorithm is going to be incorporated for error detection in this flash device. The result of this test is going to be stored in the house keeping data in an EEPROM. This data will be transmitted to the ground station. This data will be evaluated in the ground which will provide the reliability of flash memory in space. The result of this test will provide the degree of reliability for use of flash memory in low earth orbit. If this test is successful high storage density will be available at low power and cost.