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METHOD FOR CUBESAT THERMAL-VACUUM TESTING SPECIFICATIONS

Abstract

The CubeSat is a type of a Small satellite developed for specific missions: space science, communications, technology verification, earth observation, military applications and others. To survive the harsh launch and space environments, the CubeSats shall pass through a series of tests such as vibration, thermal-vacuum bakeout and visual inspection. These tests are settled as minimum testing requirements in the CubeSat Design Specification document. Therefore, this general reference document for CubeSat developers doesn't establishes how the thermal-vacuum test (different than Bakeout) should be specified according to launch provider requirements. This test is necessary to determine the satellite thermal balance and check its capacity for physical conservation under the space environment. The objective this paper is to describe a method to establish the thermal-vacuum specifications which allows to evaluate the system capability to undertake the space environment in order to ensure a significant increase in system reliability rates and mission success.