

20th SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
Generic Technologies for Nano/Pico Platforms (6B)

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THE SWISSCUBE'S TECHNOLOGIES RESULTS AFTER FOUR YEARS OF FLIGHT

Abstract

SwissCube: the first entire Swiss satellite is now on orbit; planned to operate for at least twelve months, it will have four years in the 23th of September; four years of data and results from the space and from its payload and operations. As cubesat made by students it is a good result: more than 200 students worked on it before and after the launch in 2009, designing, testing and validating the data from the instruments on board. In this paper it is presented a general description of the cheap technology used for SwissCube, giving a particular attention to the tests done before and after flight, describing the payload mounted and the results achieved. This study wants to show the good results and the errors made, the good operations and the malfunctions during the flight in order to spread the technology used for future CubeSats. As example, results obtained by a cheap and an easy B-dot controller using magento-torquers are here presented; camera's pictures, gyros, magneto-meters, sun-sensors and thermometers results are also shown, giving particular relevance to the performances and to the difficulties had during the years. The goal of SwissCube was mainly educational, teaching and showing to students how to built a Nano/Pico satellite with available just 10x10x10cm and 1kg and this study wants to show the results achieved during the design and the test according to the flight data, in order to increase the technology and the "know-how" experience of CubeSats platforms.