

DESIGN OF A CARDSAT FLEXIBLE PANELS MICROSATELLITE WITH OPENING IN CLOSED ARCHITECTURE

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Rezumat. În această lucrare sunt prezentate două soluții pentru configurarea unui microsatelit alcătuit din mai multe panouri de tip CardSAT. În faza de lansare, microsatelitul este pliat astfel încât să ocupe un spațiu minim în lansator. După lansare din rachetă, structura se deschide într-o configurație prestabilită. Pentru acționarea panourilor, în faza de deschidere, au fost concepute două soluții de acționare: una cu arcuri lamelare și a doua cu un set de arcuri de torsiune și compresiune.

Abstract. In this paper are presented two solutions for microsatellite configuration consisting of several CardSAT panels. In the launch phase, the microsatellite is folded so that it occupies a minimum space in the launcher. After launching from the rocket, the structure opens in a preset configuration. For the operation of the panels in the opening phase, two drive solutions were designed: one with lamellar springs and the second with a set of torsion and compression springs.

Keywords: Microsatellite, CardSAT, unfolded configuration.

1. Introduction

The aerospace field is one of the research priorities worldwide. An important segment of it is represented by microsatellites.

Microsatellites have been the focus of numerous research projects in recent years.

Microsatellites and nanosatellites are fast and cheap solutions compared to conventional satellites for space exploration, having modularized configurations and respecting the standard structures recommended by European and American space agencies.

These are also accessible to individuals, universities, and small research groups due to low costs and flexibility.

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