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DEVELOPMENT OF A RADIAL STRAP-ON ANTENNA FOR A SUBORBITAL SOUNDING ROCKET

Abstract

Antennas' performance depend critically on their surrounding working environment. This paper discuss the application of usage of an antenna assembled to a rocket for communication fucntions. The challenges faced of choosing the antenna's location not to interfere with the rocket's aerodynamic performance and preserving the functionality of the antenna. To avoid any intereferences and gurantee a high quality of signal transfer lots of other considerations have been taken into account.

This paper presents the innovative solution of manufacturing and mounting the antennas in order not to disturb the aerodynamic shape of the rocket and not to offer any extensions out of the main body. This approach helped keep the rocket performance as designed while also decreasing the probability of any accidents or damages affecting the antenna upon landing.

The design, analysis and manufacturing processes of the antenna are presented in this paper. Comparisons of performance is also presented in detail from the technical operational point of view and also from the overall performance point of view of how it affects other rocket subsystems.