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ON BOARD ELECTRONIC DEVICES SAFETY SUBJECT TO HIGH FREQUENCY
ELECTROMAGNETIC RADIATION EFFECTS

Abstract

Spacecraft on board electronic devices are subjected to the effects of Space environment, in particular, electromagnetic radiation. The weight limitations for spacecraft pose an important material and structures problem: developing effective protection for on board electronic devices from high frequency electromagnetic radiation. In the present paper the problem of the effect of external high frequency electromagnetic field on electronic devices shielding located on orbital platforms is investigated theoretically. It is demonstrated that the characteristic time for the unsteady stage of the process is negligibly small as compared with characteristic time of electromagnetic field diffusion into a conductor for the studied range of governing parameters. A system of governing material parameters is distinguished, which contribute to protecting electronic devices from induced electrical currents.