

EXPERIMENTAL STUDIES OF THERMAL CONDITIONS FOR POWERFUL ELECTRONIC DEVICES WITH MINIATURE HEAT PIPES AND UNPACKAGED HEAT ACCUMULATORS INTEGRATED INTO THEM

V. A. Alexeev¹, R. H. Arifullin¹, L. V. Karaban¹, A. E. Karabin¹, O.A. Eliseev², Y.A.Bryk², A.V. Sergeev², V. V. Maziuk³, A. V. Voronkevich⁴

¹Thermal conditions Laboratory

Open Joint Stock Company "Research Institute of Precision Instruments"

51 Dekabristov st., Moscow, 127490

Tel. (499) 202-95-27, fax (499) 204-93-63, e-mail: Vladimir.Alekseev@niitp.ru

²28 Laboratory

17 Radio st., Moscow, 105005, Russia

Tel. +7(499)261-86-77, fax +7(499)267-86-09, E-mail: yana-86@bk.ru

³SSI "Powder Metallurgy Institute"

41 Platonov st., 220005, Minsk, Belarus

Tel. +375 (0)17 290-99-92, fax +375 (0)17 210-05-74; E-mail: maziuk@tut.by

⁴Open Joint Stock Company «Research Institute for Electromechanics»
JSC «NIEM»

11 Panfilov st., Istra, Moscow Region, 143502, Russia

Tel: +7(496) 314-51-70, fax: +7(499) 254-53-75, E-mail: otd25@niem.ru

Abstract

The present work is devoted to the experimental studies of the thermal conditions for high-power electronic devices, containing new thermal means. Miniature heat pipes and unpackaged heat accumulators have been used as the new thermal means within the basic load-bearing structures. The goal of these studies was to increase the functionality and improve the existing basic load-bearing structures, operated as part of unpressurized compartments of spacecraft .