

Ensuring Energy Characteristics of Large-Scale Dish Antennas by Antenna Fields

D. D. Gabriel'yan, *Dr. Sci. (Engineering)*, rniirs@rniirs.ru

FSUE "Rostov-on-Don Research Institute of Radio Communications", Rostov-on-Don, Russia

V. I. Demchenko, *Cand. Sci. (Engineering)*, rniirs@rniirs.ru

FSUE "Rostov-on-Don Research Institute of Radio Communications", Rostov-on-Don, Russia

A. E. Korovkin, rniirs@rniirs.ru

FSUE "Rostov-on-Don Research Institute of Radio Communications", Rostov-on-Don, Russia

A. V. Shipulin, rniirs@rniirs.ru

FSUE "Rostov-on-Don Research Institute of Radio Communications", Rostov-on-Don, Russia

Yu. I. Poltavets, *Cand. Sci. (Engineering)*, contact@spacecorp.ru

Joint Stock Company "Russian Space Systems", Moscow, Russian Federation

Abstract. The paper studies the issues of providing high-energy characteristics by means of changing large aperture antennas with antenna fields. It is offered to form an antenna field on a unified construction declined at the 45° angle to the horizontal plane, which ensures scanning of a ray within the limits of the upper hemisphere. Moreover, the article suggest employing a positioning mount of a roller type allowing erecting a supporting structure of an antenna filed in the required operating sector in the azimuth angle. In addition, it is offered to apply own positioning mounts providing accurate pointing of each parabolic system as a part of an antenna field both in elevation and in azimuth.

Keywords: large-scale dish antenna, antenna and waveguide transmission line, antenna field