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LOW-PROFILE HIGH GAIN CONICAL BEAM NAVIGATION ANTANNA FOR GEO SATELLITE

Abstract

In order to receive the signal from GPS satellites, the navigation antenna on the satellite, which is running in geostationary earth orbit, should have conical beam to avoid the effect of earth. The antenna must have low gain where θ is from -8.7deg to 8.7deg , at the same time, high gain from -23deg to -8.7deg and 8.7deg to 23deg . We designed and produced a radial line slot antenna which has axisymmetric arrangement of slot pairs. The performance of antenna is consistent with the simulation result. The structure of antenna is very simple and low-profile. The antenna has only four metal parts, easy for processing and installation.