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titre:

Realisation and Optimization the System of Ridge WaveguidePolarizer by Genetic Algorithms for Telecommunication Satellite Antennas

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Résumé

The ridged waveguide polarizer is considered as the better way to get right-hand and left-hand circular polarization in the antennas of telecommunications satellites. In fact, it is a system of three ports used to feed a square waveguide antenna in order to achieve high purity in the right-hand and left-hand circular polarization. Obtaining a great purity of polarization results by the addition from screw from adaptation and blades from correction. A solution with this problem is obtained by the optimization of dimensions of the various ridges. The object of work consists in determining optimal dimensions of the ridges of the polarizer by using the "Genetic Algorithms". The structure is modeled in 3 dimensions then simulated and optimized in order to obtain a 90° phase shift between the two orthogonal components in the system output and this in the waveband [11-13] GHz. The results of simulation and optimization are outlined using the HFSS software.

Mots clés

Polarizer, Ridged waveguide, Simulation, Optimization, discontinuities.

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