Abstracts

Synthesis of superwide-band matching adapters in round coaxial lines

B.M. Kats, V.P. Meschanov and A.L. Khvalin. "Synthesis of superwide-band matching adapters in round coaxial lines." 2001 Transactions on Microwave Theory and Techniques 49.3 (Mar. 2001 [T-MTT]): 575-579.

An algorithm for modeling stepped axially symmetrical discontinuities in round coaxial transmission lines (RCTLs) based on the numerical solution of an integral equation is proposed in this paper. The algorithm has been tested and the results of discontinuity parameter computations have been compared with those of the other researchers. High efficiency of the algorithm allowed us to realize the procedure of the numerical synthesis of the devices on RCTLs. The tabulated and graphical results of the synthesis of superwide-band adapters for 50-/spl Omega/-to-50-/spl Omega/ RCTLs with air medium are presented. The coaxial adapter for the line of 2.4/1.042 mm in cross section to that of 7.0/3.04 mm has been tested over the frequency range from dc to 50 GHz.

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