Abstracts

Microstrip Open-End Discontinuity on a Nonreciprocal Ferrite Substrate (Dec. 1994, Part II [T-MTT])

H.-Y. Yang. "Microstrip Open-End Discontinuity on a Nonreciprocal Ferrite Substrate (Dec. 1994, Part II [T-MTT])." 1994 Transactions on Microwave Theory and Techniques 42.12 (Dec. 1994, Part II [T-MTT] (1994 Symposium Issue)): 2423-2428.

A full-wave analysis of the microstrip open-end discontinuity on a nonreciprocal ferrite substrate is presented. The moment method is employed to find the current distribution over a semiinfinite microstrip line. The possible asymmetry of the longitudinal current due to nonreciprocity is considered. The length extension due to the fringing field at the open end is found through a nonreciprocal transmission line analysis. In the analysis, the direction of the bias field is either transverse, longitudinal, or normal to the microstrip open end. The effects of the direction and the strength of the bias field are investigated. It is found that the direction of the bias, not its strength, has significant effect on the open-end discontinuity. Also, the asymmetry of the higher-order longitudinal transmission line current is found important in determining the excess length.

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