Abstracts

Analysis of a Thin Slot Discontinuity in the Reference Plane of a Microstrip Structure

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This paper presents a perturbational approach based upon the spectral domain technique for the analysis of the discontinuity effects introduced by a thin slot in the ground plane of a microstrip line. The discontinuity problem is formulated in terms of the unknown slot field by using the notion of equivalent half-space problems, using a new rigorous procedure for deriving the TE-TM decomposition of the fields and equivalent transmission line models. The perturbation current on the infinite microstrip is computed once the electric field in the slot has been derived, and an equivalent circuit for the discontinuity is obtained from this perturbation current for the Iow-frequency regime. Computed results are presented and compared to the measured data.

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