Abstracts

A Rigorous Analysis of a Shielded Microstrip Asymmetric Step Discontinuity (Short Papers)

C.N. Capsalis, N.K. Uzunoglu, C.P. Chronopoulos and Y.D. Sigourou. "A Rigorous Analysis of a Shielded Microstrip Asymmetric Step Discontinuity (Short Papers)." 1993 Transactions on Microwave Theory and Techniques 41.3 (Mar. 1993 [T-MTT]): 520-523.

In this paper microstrip asymmetric step discontinuities are analyzed using a mode-matching technique leading to the frequency-dependent characteristics of the structure. On both sides of the discontinuity the fields are expanded in terms of the normal even and odd hybrid modes of shielded microstrip lines, taking into account not only the propagating modes but also higher order even and odd modes, which are evanescent-type waves. The propagation constants of the even and odd hybrid modes are computed using a previously developed method. Then a mode-matching technique is applied in order to obtain the reflection and transmission coefficients of the discontinuity. Numerical results are also given for several asymmetric step discontinuities.

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