Abstracts

Excitation of Waveguide by Stripline- and Microstrip-Line-Fed Slots

B.N. Das, K.V.S.V.R. Prasad and K.V.S. Rao. "Excitation of Waveguide by Stripline- and Microstrip-Line-Fed Slots." 1986 Transactions on Microwave Theory and Techniques 34.3 (Mar. 1986 [T-MTT]): 321-327.

This paper presents investigations on coupling between stripline/microstrip line and a rectangular waveguide coupled through a slot in the ground plane which is fixed in the cross-sectional plane of the waveguide. A closed-form expression for the impedance loading on stripline/microstrip line is evaluated from knowledge of the complex power flowing down the rectangular waveguide supporting the dominant mode and discontinuity in the modal voltage in stripline/microstrip line. The reactance cancellation is obtained by terminating the stripline/microstrip tine exciting the slot in a short-circuited stub. The structure under this condition forms a transition between stripline/microstrip line and a waveguide. The design curves on slot length versus frequency are presented for different values of dielectric constants. The variation of coupling as a function of frequency and also the location of the slot is evaluated. Numerical results for slot coupling useful for the design of waveguide simulators are also presented.

❑ Return to main document.