Abstracts

Propagation in Broadside-Coupled Suspended-Substrate Stripline in E-Plane

H. Mizuno, C.J. Verver, R.J. Douville and M.G. Stubbs. "Propagation in Broadside-Coupled Suspended-Substrate Stripline in E-Plane." 1985 Transactions on Microwave Theory and Techniques 33.10 (Oct. 1985 [T-MTT] (Special Issue on Numerical Methods)): 946-950.

The spectral-domain analysis is applied to the derivation of the propagation characteristics of the even and odd mode, for the broad-sidecoupled suspended-substrate stripline (BCSSS). The characteristic impedance, based on the current-power definition, as well as the effective permittivity are evaluated. Numerical results are presented illustrating the effects of several different dimensional parameters. Numerical results indicate a large spread between even- and odd-mode impedance for thin substrates (D/A < 0.045) and stripwidths ranging 0.046<= W/B<= 0.47, suggesting tight coupling. Negligible frequency dependence on odd-mode impedance is evident, as well as significant frequency effects on even-mode impedance. Considerable dispersion is shown to be present in the odd mode for wider strips. Measured results for a low-pass filter and cascaded transitions are presented.

❑ Return to main document.