

Abstracts

Suspended Broadside-Coupled Slot Line with Overlay

R.N. Simons. "Suspended Broadside-Coupled Slot Line with Overlay." 1982 *Transactions on Microwave Theory and Techniques* 30.1 (Jan. 1982 [T-MTT]): 76-81.

This paper presents a rigorous analysis of symmetric, broad-side-coupled slot line with overlay. The structure is assumed to be suspended inside a conducting enclosure of arbitrary dimensions. The dielectric substrate and the overlay are assumed to be isotropic and homogeneous and are of arbitrary thickness and relative permittivity. The conducting enclosure and the zero thickness metallization on the substrate are assumed to have infinite conductivity. The computed results illustrate a) the dispersion characteristics and characteristic impedance of the coupled slot line structure, b) the variation of the even-mode and also the odd-mode relative wavelength ratio and characteristic impedance with slot width, and c) the effect of shielding on the even-mode and also the odd-mode dispersion and characteristic impedance. This structure should find application in the design and fabrication of MIC components such as magic-T's and directional couplers.

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