Abstracts

Theory and Application of Coupling Between Curved Transmission Lines

M. Abouzahra and L. Lewin. "Theory and Application of Coupling Between Curved Transmission Lines." 1982 Transactions on Microwave Theory and Techniques 30.11 (Nov. 1982 [T-MTT]): 1988-1995.

An analytical method for deriving the fields, the reflection, and the directivity of two coupled curved transmission lines is described. The fields on both lines are found to be accurately in quadrature. The directivity and reflection are very small. The accuracy of the theoretical results for a 3 dB dielectric line coupler (designed at 94 GHz) is confirmed by experiment. Well-balanced outputs and a directivity of better than 40 dB are obtained. Though a substantial amount of insertion loss in the experimental model is found, this loss is believed to be largely dielectric loss. Design and performance data are presented.

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