# Abstracts

## On the Quasi-TEM and Full-Wave Approaches Applied to Coplanar Multistrip on Lossy Dielectric Layered Media

*F.L. Mesa, G. Cano, F. Medina, R. Marques and M. Horno. "On the Quasi-TEM and Full-Wave Approaches Applied to Coplanar Multistrip on Lossy Dielectric Layered Media." 1992 Transactions on Microwave Theory and Techniques 40.3 (Mar. 1992 [T-MTT]): 524-531.*

The characteristic parameters of coplanar multistrip lines embedded in multilayered lossless/lossy substrates are commonly computed by using either quasi-TEM or full-wave models: Several methods are provided in the literature to deal with this type of structure. In this paper a comparative study of quasi-TEM and rigorous solutions is carried out in order to establish criteria for the validity of the quasi-TEM approach. Reliable quasi-TEM and full-wave numerical data have been properly generated by applying an enhanced spectral domain analysis. We conclude that the quasi-TEM model yields satisfactory results for many MIC and MMIC practical cases. However, significant errors arise when high conductivity substrates are involved in MMIC applications. A discussion about the computation of the dynamic modal characteristic impedance is also reported, showing how the insertion of the modal orthogonality can save computational effort in a lossy multiport system.

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