

# Abstracts

## Rigorous Analysis of Mixed Transmission Line Interconnects Using the Frequency-Domain TLM Method

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*H. Jin, R. Vahldieck, J. Huang and P. Russer. "Rigorous Analysis of Mixed Transmission Line Interconnects Using the Frequency-Domain TLM Method." 1993 Transactions on Microwave Theory and Techniques 41.11 (Dec. 1993 [T-MTT] (1993 Symposium Issue)): 2248-2255.*

A rigorous analysis of mixed transmission line interconnects is presented using an improved version of the frequency-domain TLM method. Direct via hole through connections and indirect coupling effects between layered microstrip and coplanar waveguides are investigated as well as the effect of bonding wire transitions between MMIC modules and the microstrip substrate carrier. This investigation is extended to include the abrupt transition from a GaAs-based microstrip line to a rib-type microstrip line, which has not been analyzed before. In the context of this work new developments of the frequency domain TLM method will be discussed. In particular it will be shown that the transmission line nodes used in the FD TLM can be obtained either by modifying the existing time-domain TLM nodes or directly in the frequency domain. The latter approach leads to a faster algorithm.

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