Abstracts

Prediction of Surface Wave Radiation Coupling on Microwave Planar Circuits

D. Vanhoenacker and I. Huynen. "Prediction of Surface Wave Radiation Coupling on Microwave Planar Circuits." 1995 Microwave and Guided Wave Letters 5.8 (Aug. 1995 [MGWL]): 255-257.

A theoretical and experimental study is presented for spurious radiation coupling induced by radiated surface waves on planar circuits, at frequencies up to 20 GHz. The radiation coupling phenomenon generated by a planar line containing a discontinuity is modelled by an equivalent E-field planar radiation pattern associated with the current waveform along this line in the presence of the discontinuity. It is observed that the direction of the main and side lobes of this pattern varies with frequency. The model is validated by measurements of radiation coupling obtained on microstrip configurations, up to 20 GHz. Theory and measurements agree very well. The model yields for instance the directions of maximum spurious radiation coupling on a planar line in the vicinity of a radiating line.

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