

Abstracts

Asymmetric, Multi-Conductor Low-Coupling Structures for High-Speed, High-Density Digital Interconnects (Dec. 1991 [T-MTT])

J.P.K. Gilb and C.A. Balanis. "Asymmetric, Multi-Conductor Low-Coupling Structures for High-Speed, High-Density Digital Interconnects (Dec. 1991 [T-MTT])." 1991 Transactions on Microwave Theory and Techniques 39.12 (Dec. 1991 [T-MTT] (1991 Symposium Issue)): 2100-2106.

Small interline spacings and high switching speeds emphasize the problems of crosstalk and coupling distortion in high-speed, high-density digital interconnects. The use of substrate compensation allows the design of structures where crosstalk and coupling can be essentially eliminated, even for inter-line spacings of less than one center conductor width. Some of the characteristics of this novel method are presented for both symmetric and asymmetric multi-line geometries. Pulse distortion and crosstalk on a four-line, symmetric structure is analyzed, showing how crosstalk and coupling distortion is reduced by substrate compensation. Pulse distortion on symmetric coupled lines is also studied, showing that it is possible to choose a substrate combination which significantly reduces coupling and crosstalk for a wide range of conductor configurations.

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