

Abstracts

Combined Differential and Common-Mode Analysis of Power Splitters and Combiners

D.E. Bockelman and W.R. Eisenstadt. "Combined Differential and Common-Mode Analysis of Power Splitters and Combiners." 1995 Transactions on Microwave Theory and Techniques 43.11 (Nov. 1995 [T-MTT]): 2627-2632.

Power splitter/combiner phase and magnitude imbalance is analyzed in terms of simultaneous orthogonal modes of propagation. These simultaneous modes are defined as differential and common-mode. A new measure of splitter imbalance is suggested in the common-mode rejection ratio (CMRR). Measured response of 180° hybrid splitter is represented in terms of the differential and common-mode responses, and the CMRR is calculated. Combiner imbalance is also analyzed in terms of differential and common-mode responses, and response metrics are suggested. Analytical expressions for CMRR of several common splitters is given as functions of phase and magnitude imbalance.

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