Abstracts

Arbitrary termination impedances, arbitrary power division, and small-sized ring hybrids (Dec. 1997, Part II [T-MTT])

Hee-Ran Ahn, I. Wolff and Ik-soo Chang. "Arbitrary termination impedances, arbitrary power division, and small-sized ring hybrids (Dec. 1997, Part II [T-MTT])." 1997 Transactions on Microwave Theory and Techniques 45.12 (Dec. 1997, Part II [T-MTT] (1997 Symposium Issue)): 2241-2247.

If a ring hybrid is terminated by arbitrary impedances, design equations cannot be derived with conventional methods because symmetry planes for even- and/or odd-mode excitation are not available. Therefore, under these conditions, new design equations for ring hybrids were derived. They can be applied to ring hybrids with both arbitrary termination impedances and arbitrary power-division ratios. Also, new design equations for small-sized ring hybrids have been developed. They allow the design of arbitrary power division, arbitrary termination impedances, and especially small-sized ring hybrids. On the basis of these derived equations, a theoretical evaluation was made using microstrip ring hybrids, and experiments are demonstrated using a coplanar ring hybrid.

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