Abstracts

Impedance-Transforming 3-dB 90° Hybrids (Dec. 1987 [T-MTT])

R.K. Gupta, S.E. Anderson and W.J. Getsinger. "Impedance-Transforming 3-dB 90° Hybrids (Dec. 1987 [T-MTT])." 1987 Transactions on Microwave Theory and Techniques 35.12 (Dec. 1987 [T-MTT] (1987 Symposium Issue)): 1303-1307.

Design techniques and performance results for impedance-transforming branch-line and coupled-line 3-dB 90° hybrids are discussed, and designs equations for a single-section impedance-transforming branch-Iine coupler are presented. Test results for a 50- to 25-Omega branch-line hybrid show approximately 20-percent bandwidth at a 5.4-GHz center frequency with 3.15±0.25-dB amplitude balance. A. broad-band hybrid with 50- to 20-Omega impedance transformation has also been realized by tandem connection of coupled-line sections. Measured results show an amplitude balance of 3.7±0.68 dB over the 3-5-GHz range for a section coupling of 11.44 dB. The amplitude balance is improved to ±0.2 dB for a design with section coupling of 12.1 dB. Test results for a 50-Omega tandem hybrid are also presented.

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