Abstracts

Design of compact multilevel folded-line RF couplers

R.K. Settaluri, A. Weisshaar, C. Lim and V.K. Tripathi. "Design of compact multilevel folded-line RF couplers." 1999 Transactions on Microwave Theory and Techniques 47.12 (Dec. 1999 [T-MTT] (Special Issue on 1999 International Microwave Symposium)): 2331-2339.

A new design methodology for compact multilevel multiconductor folded-line couplers is presented in this paper. The approach is based on a general network representation of folded-line structures as interconnected coupled lines in a multilayered environment. Simple design equations are presented for compact directional couplers using two-level C-sections, and branch-line hybrids with single and cascaded C-sections. The new folded-line couplers exhibit a significant reduction in foot print compared to the conventional designs. The directional and hybrid folded-line coupler designs are validated by full-wave electromagnetic simulation. Also, a 3-dB branch-line hybrid using three folded-line sections is fabricated. The measured response is found to be in good agreement with the proposed theory.

❑ Return to main document.