Abstracts

Design and modeling of twin-spiral coplanar-waveguide-to-slotline transitions

Yo-Shen Lin and Chun Hsiung Chen. "Design and modeling of twin-spiral coplanar-waveguide-to-slotline transitions." 2000 Transactions on Microwave Theory and Techniques 48.3 (Mar. 2000 [T-MTT]): 463-466.

A novel reduced-size twin-spiral coplanar-waveguide-to-slotline transition is proposed in this paper. This twin-spiral transition is based on a modification of quarter-wavelength transformer structure. For design purposes, a hybrid equivalent-circuit model combining transmission-line theory and full-wave simulation is established. Based on this model, various twin-spiral transition structures are carefully examined theoretically and experimentally. Specifically, a twin-spiral transition with 2.26:1 bandwidth and one-quarter the size of conventional ones is achieved. Being simple in fabrication and small in size, the proposed twin-spiral coplanar-waveguide-to-slotline transition is a useful component in uniplanar microwave integrated circuit/monolithic-microwave integrated-circuit applications.

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