Abstracts

New Uniplanar Transitions for Circuit and Antenna Applications

N.I. Dib, R.N. Simons and L.P.B. Katehi. "New Uniplanar Transitions for Circuit and Antenna Applications." 1995 Transactions on Microwave Theory and Techniques 43.12 (Dec. 1995, Part II [T-MTT] (1995 Symposium Issue)): 2867-2872.

New uniplanar microstrip-to-slotline, microstrip-to-coplanar strips (CPS) and microstrip-to-coplanar waveguide (CPW) transitions for MIC/MMIC and slotline antennas for phased array applications are described. Such transitions are compact and suitable to be used in an open environment or inside a package or a multichip module. The transitions share the concept of using a balun which consists of two microstrip lines connected to a slotline through a pair of coupled microstrips. In this paper, the transitions are studied theoretically using the Finite Difference Time Domain (FDTD) technique and measured experimentally using an HP8510C Network Analyzer. For a back-to-back microstrip-to-slotline transition, an insertion loss of less than 1.3 dB per transition is achieved over a 49% bandwidth with a minimum of 0.6 dB around the design frequency.

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