Abstracts

Improved CPW to Slotline Transitions

K. Hettak, J.P. Coupez, T. Le Gouguec, S. Toutain, P. Legaud and E. Penard. "Improved CPW to Slotline Transitions." 1996 MTT-S International Microwave Symposium Digest 96.3 (1996 Vol. III [MWSYM]): 1831-1834.

The paper presents a new approach for designing an ultra broadband coplanar to slotline transition. The procedure is carried out in three steps: design, modeling and fabrication of two new broadband uniplanar CPW to slotline transitions, in the 1 GHz to 50 GHz frequency range. The advantages of these transitions are discussed. Both transitions are modeled using one approach which consists of building a model, based on physical considerations, that is compatible with usual CAD software (discontinuities effects are not taken into account except short/open circuits-end effects). This allows the design and optimization of very broadband transitions in uniplanar technology. The overall agreement between the measured and modeled insertion-loss and return-loss of two back-to-back transitions is good. A maximum relative bandwidth of 7.7:1 is achieved with 10 dB return loss, and the corresponding insertion loss is less than or equal to 2 dB.

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