Abstracts

Resonant Phenomena in Conductor-Backed Coplanar Waveguide (CBCPW) (1993 Vol. III [MWSYM])

W.-T. Lo, C.-K.C. Tzuang, S.-T. Peng, C.-C. Chang, J.-W. Huang and C.-C. Tien. "Resonant Phenomena in Conductor-Backed Coplanar Waveguide (CBCPW) (1993 Vol. III [MWSYM])." 1993 MTT-S International Microwave Symposium Digest 93.3 (1993 Vol. III [MWSYM]): 1199-1202.

The resonant phenomena found in CBCPW integrated through line are investigated in details both experimentally and theoretically. Two CBCPW through-line test circuits are built and tested. One has uniform side planes and the other contains two slits in the middle of side planes. Three techniques are applied to investigate the resonant phenomena, namely, the patch antenna cavity model, the multi-mode model, and the full-wave space-domain integral equation approach. The measured transmission (|S/sub 21/|) and reflection (|S/sub 11/|) characteristics of the through lines are reported. At a representative resonant frequency of the measured data, the electric current distributions are displayed to demonstrate the fact that the side planes of the CBCPW contribute to the resonance in a way similar to planar patch antenna or two-dimensional planar circuits.

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