Abstracts

Comparative Studies of Discontinuities in Single and Double Layered Conductor-Backed Coplanar Waveguides

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Comparative studies of discontinuities in conductor-backed coplanar waveguides (CBCPWs) with single and double layered dielectric substrates are implemented by using the FDTD method. Frequency dependence of the scattering parameters and losses associated with a variety of discontinuities are investigated, with emphasis on the comparison between the loss characteristics of the studied two types of CBCPWs. The presented results indicate clearly that losses associated with discontinuities in non-leaky coplanar (NLC) waveguides are significantly smaller than those in conventional CBCPWs over a certain frequency range. The leakage control theory of NLC waveguides is examined in all of the three-dimensional discontinuities under consideration, and the application potential of NLC waveguides at high frequencies is validated.

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