Abstracts

An equivalent circuit approach for microstrip component analysis using the FDTD method

L.L. Liou, M. Mah and J. Cook. "An equivalent circuit approach for microstrip component analysis using the FDTD method." 1998 Microwave and Guided Wave Letters 8.10 (Oct. 1998 [MGWL]): 330-332.

The conventional analysis of waveguide parameters for microstrip components using the finite-difference time-domain (FDTD) method is based on monitoring the traveling wave at multiple locations. The dispersion relations of the effective dielectric constant and the characteristic impedance usually exhibit oscillatory behavior. An equivalent circuit approach was utilized for these parameters. Together with the FDTD results, the inductance and the capacitance were evaluated. The phase velocity and the characteristics impedance were then calculated at a single monitor location. With this method, the oscillatory features in the dispersion relations were minimized.

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