Abstracts

Full-Wave Analysis of a Strip Crossover

A full-wave analysis of a strip crossover above a conducting plane is carried out. Higher order modes are excited in the form of evanescent waves in the vicinity of the discontinuity, while further away only the dominant (TEM) modes exist. The higher order mode currents are modeled by triangle functions and the dominant modes by outgoing traveling waves. The method of moments is employed to reduce the integral equations on the surface of each strip to matrix equations whose solution determines the currents on each strip. Then the impedance and scattering matrices of the four-port follow along with the equivalent circuit. The results obtained using this full-wave solution are in agreement with results obtained using a quasi-static analysis, which at low frequencies is a very good approximation.

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