Abstracts

Dynamic Analysis of a Microstrip Line Over a Perforated Ground Plane

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A full wave analysis is presented to compute the characteristic impedance and propagation constant of a microstrip line over a perforated ground plane. The perforations in the ground plane are modeled by equivalent magnetic currents. The method of moments is applied to solve the coupled integral equations for the unknown electric current on the microstrip line and the unknown magnetic currents in the apertures. The fields are formulated using the space domain Sommerfeld type Green's functions. The matrix pencil technique is used to obtain the amplitude and the propagation constant of the fundamental modes for both current and the voltage on the microstrip line. Typical numerical results are given.

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