Abstracts

Spectral-Domain Analysis of E-Plane Waveguide to Microstrip Transitions

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The spectral-domain technique and a residue calculus theorem are used to compute the input impedance of a microstrip transition to a rectangular waveguide. The transition consists of a printed circuit board inserted into a waveguide housing along the E plane. The effects of the dielectric layer are considered in the present analysis. The behavior of the input impedance of the transition is studied with respect to the critical dimensions of the probe length and backshort location. Calculated results by the new formulation agree well with those computed using an integral equation and those measured at Ku-band frequencies.

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