Abstracts

A Full Wave Analysis of Microstrip-to-Waveguide Transitions

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A wide band, low insertion loss transition from rectangular waveguide to shielded microstrip line is analyzed using a full wave mode-matching technique. The transition consists of a discontinuity between a ridge waveguide and the microstrip line and a ridge waveguide impedance transformer. The microstrip eigenmodes, including complex modes, are obtained by mode-matching method with LSE and LSM mode expansion. Computed results of a 17-22GHz transition agree well with available experimental results. This rigorous approach provides a useful tool for the optimum design of microstrip to air filled waveguide or dielectric filled waveguide transitions.

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