Abstracts

Coaxial-probe to parallel-plate dielectric waveguide transition: analysis and experiment

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In this paper, we present a rigorous analysis and experimental results of a coaxial to "parallel plate dielectric waveguide" transition. Coaxial probe has been used in microstrip lines and rectangular waveguides. The present study shows that it is also an effective method to excite the parallel-plate dielectric waveguide. We use here a spectral domain analysis. Applying the method of image, the probe is modeled as an infinitely long thin strip inside a dielectric slab. As experimental results show, efficient excitation can be achieved for such a transition with an insertion loss of about 0.055 dB.

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