

Abstracts

Analysis and Closed-Form Solutions of Circular and Rectangular Apertures in the Transverse Plane of a Circular Waveguide

G.B. Eastham and K. Chang. "Analysis and Closed-Form Solutions of Circular and Rectangular Apertures in the Transverse Plane of a Circular Waveguide." 1991 Transactions on Microwave Theory and Techniques 39.4 (Apr. 1991 [T-MTT]): 718-723.

An analysis has been carried out to determine the discontinuity susceptance of a circular or rectangular aperture in the transverse plane of a circular waveguide. Closed-form solutions based on the scattered amplitude calculation and aperture coupling theory have been derived. The theoretical results agree very well with the experiments. The results should have many applications in the design of circular waveguide components and circular waveguide-backed aperture antennas.

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