

Abstracts

Modal Analysis of the Magic Tee

T. Sieverding and F. Arndt. "Modal Analysis of the Magic Tee." 1993 Microwave and Guided Wave Letters 3.5 (May 1993 [MGWL]): 150-152.

The full wave modal S-matrix of the magic-T-junction is derived by applying the mode-matching technique. Four standing wave solutions in suitably chosen subregions for the four side arms are superimposed in the common cavity region in the middle section. This yields rapid convergence and accurate results since the electric wall boundary conditions in the waveguide ports are met rigorously. The theory is verified by measurements at a magic-T-junction with standard X-band (WR 90) rectangular waveguide ports.

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