Abstracts

Analysis of an N-Way Radial Cavity Divider with a Coaxial Central Port and Waveguide Output Ports

M.E. Bialkowski and V.P. Waris. "Analysis of an N-Way Radial Cavity Divider with a Coaxial Central Port and Waveguide Output Ports." 1996 Transactions on Microwave Theory and Techniques 44.11 (Nov. 1996 [T-MTT]): 2010-2016.

A field matching technique is used to analyze an N-way divider which includes a radial cavity with a coaxial central port and H-plane coupled rectangular waveguide output ports. Dielectric coated and disc ended probes at the central port are considered. The analysis is divided into two parts. Part one is associated with the modeling of the central port and part two is concerned with the modeling of the waveguide peripheral ports. The analysis is simplified by assuming that the interaction between the central port and the peripheral ports is by means of axially symmetric radial waves which are uniform with cavity's height. Based on this analysis, algorithms are developed for calculating the scattering parameters of this structure using a PC. These algorithms show good agreement when tested against a finite element package (HFSS) and against measurements.

❑ Return to main document.