Abstracts

Investigation of Multiple Rectangular Aperture Irises in Rectangular Waveguide Using TE/sup x over sub mn/-Modes

R. Yang and A.S. Omar. "Investigation of Multiple Rectangular Aperture Irises in Rectangular Waveguide Using TE/sup x over sub mn/-Modes." 1993 Transactions on Microwave Theory and Techniques 41.7 (Aug. 1993 [T-MTT]): 1369-1374.

With the use of proper aperture basis functions in conjunction with the moment method and TE/sup x//sub mn/-modal expansion, the coupling effect of transverse irises with multiple rectangular coupling apertures in a rectangular waveguide has been investigated. Numerical studies carried out for twin- and triple-aperture coupling irises have been confirmed by the experiments. The simulation result for a Ka-band bandpass filter realized with triple-aperture irises gives a higher stop-band attenuation than that of a filter with single-aperture irises. The use of TE/sup x//sub mn/-modal expansion is characterized by the reduction of both computer memory and CPU time requirements during the numerical study as compared with the commonly used TE/sub mn/ - TM/sub mn/ modal approach.

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