Abstracts

Analysis of N-furcation in elliptical waveguides via the generalized network formulation

M. Mongiardo, P. Russer, C. Tomassoni and L.B. Felsen. "Analysis of N-furcation in elliptical waveguides via the generalized network formulation." 1999 MTT-S International Microwave Symposium Digest 99.1 (1999 Vol. I [MWSYM]): 27-30 vol.1.

We consider the problem of an N-furcated elliptical waveguides, i.e. the problem of the junction between an elliptical waveguide of larger cross-section and a few elliptical waveguides of smaller cross-section. This problem is relevant for several applications since it allows full-wave modeling of a thick iris containing multiple elliptical apertures, and by proper selection of such an iris, it is possible to control mode excitation and coupling. In order to deal with the above problem we employ the recently introduced generalized network formulation which allows one to solve the N-furcation problem not only in the standard manner, but also via scattering superposition. Extensive numerical and experimental comparisons are provided in order to validate the theory.

❑ Return to main document.