Abstracts

Analysis and Design of Four-Port and Five-Port Microstrip Disc Circuits

K.C. Gupta and M.D. Abouzahra. "Analysis and Design of Four-Port and Five-Port Microstrip Disc Circuits." 1985 Transactions on Microwave Theory and Techniques 33.12 (Dec. 1985 [T-MTT] (1985 Symposium Issue)): 1422-1428.

A generalized method for evaluating the S-parameters of a multiport circular microstrip disc circuit is presented. The method is based on the planar circuit approach in which the two-dimensional Green's function of a circular segment is used. Three different applications of multiport circular disc structures are illustrated by designing, i) a broadband (44 percent bandwidth for |S/sub 11/| < 0.2) five-port network suitable for six-port network analyzers, ii) a broad-band three-way power divider with -3 dB, -6 dB, and -6 dB outputs, and iii) a four-port microstrip "cross-over." Experimental results verify the design methodology in all of these three cases.

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