

Abstracts

An Eigenvalue Equation Analysis of a Symmetrical Coax Line to N-Way Waveguide Power Divider

E.L. Holzman. "An Eigenvalue Equation Analysis of a Symmetrical Coax Line to N-Way Waveguide Power Divider." 1994 Transactions on Microwave Theory and Techniques 42.7 (Jul. 1994, Part I [T-MTT]): 1162-1166.

We present an eigenvalue equation analysis of a TEM coaxial line to N-way waveguide power divider. Applied to this particular structure for the first time, the analysis provides the scattering matrix of the power divider in terms of the eigenvalues of the structure. Because there are fewer unknown eigenvalues than S-parameters, we are able to determine for a given value of N 1) if all the divider's ports can be matched perfectly, 2) if not all the ports can be matched, then how well a given port can be matched, and 3) the values of the other S-parameters.

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