Abstracts

Normal-Mode Analysis of Ferrite-Coupled Lines Using Microstrips or Slotlines

C.S. Teoh and L.E. Davis. "Normal-Mode Analysis of Ferrite-Coupled Lines Using Microstrips or Slotlines." 1995 Transactions on Microwave Theory and Techniques 43.12 (Dec. 1995, Part II [T-MTT] (1995 Symposium Issue)): 2990-2997.

A normal-mode analysis of a pair of axially-magnetized ferrite-coupled lines (FCL) is presented for the first time. This normal-mode method, as opposed to the coupled-mode method, will permit optimization of propagation characteristics and impedance-matching. Also, the finite element solution of the normal modes can be used to obtain the field distribution to assist suitable placement of ferrite for device applications. Potential applications include a novel 4-port distributed microstrip circulator which may have advantages over junction devices at millimetric wavelengths. Optimum normal-mode conditions for the use of the FCL as a component in the distributed circulator are derived, and the design procedure for microstrip FCL is presented for the first time.

❑ Return to main document.