Abstracts

Guided Waves in a Class of Stripline and Other Parallel-Plate Structures (Correspondence)

R.E. Eaves, Jr. and D.M. Bolle. "Guided Waves in a Class of Stripline and Other Parallel-Plate Structures (Correspondence)." 1970 Transactions on Microwave Theory and Techniques 18.1 (Jan. 1970 [T-MTT]): 66-68.

The dominant mode of the open-sided shielded stripline is TEM and has rightly received considerable attention. Few analyses of its non-TEM properties are available. Oliner and Samuilov have assumed the existence of higher order modes and calculated cutoff frequencies through a transverse resonance approach. Brackelmann et al. have made computations through series-matching, and report that non-TEM modes do not exist for open-sided shielded stripline. Bolle and Eaves, through a Wiener-Hopf technique, have made calculations that substantiate this. Ilenborg and Pregla have made calculations through series matching for a stripline of two strips and report H modes. However, such numerical results allow strict conclusions only for the specific parameters chosen, and, furthermore, the conclusions are subject to computational error. These practical considerations along with the aesthetic make a non-numerical investigation desirable. It will be shown that the shielded stripline, and indeed a general class of parallel-plate waveguide structures, do not support non-TEM modes.

❑ Return to main document.