Abstracts

Electromagnetic Field and Transmission Characteristics of a Parallel Two-Wire Line Covered with a Three-Layer Media

Y. Kuboyama, T. Shibuya and R. Sato. "Electromagnetic Field and Transmission Characteristics of a Parallel Two-Wire Line Covered with a Three-Layer Media." 1995 Transactions on Microwave Theory and Techniques 43.1 (Jan. 1995 [T-MTT]): 69-77.

Electromagnetic field and transmission characteristics of a parallel two-wire line (PTWL) covered with a three-layer media were analyzed. It becomes clear that the PTWL mode will strongly couple to the natural HE/sub 1m/ or EH/sub 1m/ modes. At the resonance frequencies, most of the electromagnetic energy is stored in medium II region, while propagation takes place in both medium II and III. Off resonance, most of the energy is concentrated close to the PTWL. Numerical results are in good agreement with experimental results. Such a line could possibly be used as a dielectric tube antenna or, alternatively, as a band elimination filter and so on.

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