论文

用谱域导抗法计算铁氧体加载鳍线的传输特性

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摘要
本文从Maxwell方程出发,经过Fourier变换和坐标旋转,将铁氧体中的非寻常波分解成TE和TM波,并给出它们的波导纳。利用边界条件,忽略TE和TM波间耦合的影响后,将鳍线用一等效网络表示。本文方法与T. Itoh 提出的谱域导抗法比较,在等效网络中引入了理想变压器元件。最后对铁氧体加载单侧鳍线的正反向传播常数进行了数值计算,其结果与有关文献中数据吻合得很好。
关键词   电波传播   铁氧体   鳍线   谱域异抗法
分类号

A SPECTRAL-DOMAIN IMMITTANCE APPROACH FOR PROPAGATION CHARACTERISTICS OF FINLINE LOADED WITH FERRITE MEDIUM

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Abstract
The extraordinary waves of the ferrite medium are decomposed into TE and TM modes, through the Fourier transformation and a coordinate rotaion of Maxwell s equations. The wave admittances of TE and TM modes is neglected, the finline with magnetized fer-used and the coupling between TE and TM modes is neglected, the finline with magnetized fexrite substrate can equally he represented by a network. Comparing this approach with T. Itch s spectral domain immittance approach, the ideal transformers are used in the network. Finally, the forward and backward propagation constants for the unilateral finline loaded with magnetized ferrite have been calculated numerically. Numerical results agree weit with that given by Geshiro and Itoh.(1987).
Key words   Wave propagation   Ferrite   Finline   Spectral domain immituce approach

DOI :

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