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研究简报

天线开关管频率特性的计算机辅助设计

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摘要
该文以集总参数元件为理论模型，给出天线开关(TR)管频率特性的理论表达方程组，用FORTRAN语言对它们进行了模拟计算；给出了参差调谐、非四分之一波导波长耦合线以及元件损耗等一些非标准因素对频带特性的影响，给出了四元件TR管的参差调谐及耦合线长度的最佳值，并与试验结果进行了比较；在程序设计中采用了计算机自动选择最佳参数以及屏幕图形方式技术直接显示计算曲线的方法。该文所采用的理论模型及计算方法也适用于一般微波滤波器的分析模拟。

关键词 天线开关管（TR管） 微波放电器件 微波滤波器

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CAD of Bandpass Characteristics of Microwave Duplexer Tube (TR Tube)

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Abstract
The simulation calculation with the computer using FORTRAN language for frequency characteristics of the microwave duplexer tube (TR tube) is described in this pa-per. It is based on the theory of microwave four terminal networks with lumped parameter elements. The theoretical equations expressing the frequency charcteristics of TR. tube is given firstly. Then the effects of some factors, such as the staggered tuning, the length of coupling transmission line, and the element loss on the frequency characteristics are calcu-lated and discussed. The optimum values of staggered timing and optimum length of the line of a i’our-resonate-elemeiit TR tube are given, and compared with the experimental data. In the program, the optimum parameters of the TR tube can be chosen automatically, and the curve of frequency characteristics is directly shown in the screen. The calculating model and method are also suitable for conventional microwave filter.

Key words Microwave duplexer tube （TR tube） Microwave discharge device Microwave filter

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