

# 利用叉指电容减小微带线间串扰

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**摘 要:** 针对目前减小 PCB 板上微带线间串扰的方法效果有限的问题, 提出一种利用叉指电容来减小微带线间串扰的方法. 该方法在微带线两端对称加入叉指电容进行电容补偿来平衡不相等的容性耦合和感性耦合进而实现串扰减小. 并先后用电磁仿真软件 (HFSS) 和矢量网络分析仪对远端串扰和插入损耗进行仿真和实际测量, 结果表明: 仿真和实测吻合良好, 加入叉指电容可以使远端串扰减小 9 dB 以上, 且制作成本较低, 易于实现.

**关键词:** 串扰; 叉指电容; 微带线; PCB

## Using interdigital capacitance to reduce crosstalk between microstrip lines

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**Abstract:** In view of the limited effect of current methods to reduce the crosstalk of microstrip lines on PCB board, a method to reduce the crosstalk of microstrip lines using interdigital capacitance is proposed. In this method, an interdigital capacitor is added symmetrically to the two ends of the microstrip line to compensate the capacitance to balance the unequal coupling capacitance and inductance, thereby reducing the crosstalk. The simulation and actual measurement of remote crosstalk and insertion loss are carried out by using electromagnetic simulation software (HFSS) and vector network analyzer. The results show that the simulation and measurement are in good agreement. The addition of interdigital capacitor can reduce the remote crosstalk by more than 9 dB, and the production cost is low and easy to realize.

**Key words:** crosstalk; interdigital capacitance; microstrip line; PCB

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