Accurate parameters extraction of defected ground structure and its applications for designing microstrip filters

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ABSTRACT

This paper presents an accurate design technique for a low-pass filter with defected ground structure(DGS).We extract the defected ground structure (DGS) equivalent circuit component values for designing filter.The DGS not only can significantly increase the characteristic impendance of microstrip line,but also improve stopband performance by rejecting the higher order passband.For increasing efficiency and reducing the area of circuits, we usually utilize the defected ground structure, but the conventional design did not consider the parasitic effect of stub at high frequency． The parasitic effect may result in significant frequency deviation.In order to improve the accuracy of the low pass filter design with DGS, an equation to find the parasitic inductance is suggested.This inductance is used to modify the frequency deviation of low pass filter.

Keywords : defected ground structure、low pass filter、parasitic effect

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