

MULTILAYER BANDPASS FILTER USING COMBLINE RESONATOR

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ABSTRACT

In this paper a bandpass filter using combline resonator is presented. It operates at centre frequency of 2.58GHz. The miniaturized band-pass filter is implemented using a proposed novel multilayered technique. The RO3003 substrate used is 0.75mm thick and has a dielectric constant of 3.0. The results of simulated response are presented to validate the idea.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This chapter gives an overview of the overall work involved in designing, simulating and analysis of the multilayer bandpass combline filter.

1.2 BACKGROUND OF PROJECT

Bandpass filters are an essential component in the RF front-end of current communication systems. As known, these circuits have a frequency-selective transfer function, allowing the power transmission in a predetermined frequency range assigned to the desired signal band, and rejecting the unwanted interference signal and noise allocated in the rest of the spectral components. So, very efficient filtering solutions for band selections are needed to assure a minimum received signal quality.

Microstrip filters are themselves already small in size compared with other filters such as waveguide filters. Nevertheless, for some applications where the size reduction is of primary importance, smaller microstrip filters are desirable, even though reducing the size of a filter generally leads to increased dissipation losses in a given material and hence reduced performance. Miniaturization of microstrip filters may be achieved by