

AN EXTENSIVE STUDY, DESIGN AND SIMULATION OF MEMS GUIDED MEDIA: MICROSTRIP LINE

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Abstract- In this paper, some design issues of one of the planar-guided media known as Microstrip line has been presented. The main purpose of this paper is to study the fundamental transmission properties of the microstrip line in view of varying the length, materials used for device formation/fabrication and highest frequency of operation. The paper is mainly divided in to two portions; first portion deals with theoretical portion because, it is necessary to know how the characteristic impedance, phase velocity, and attenuation constant of the dominant mode of microstrip depend on geometrical factors, on the electronic properties of substrate and conductors used, and on the frequency. Since this is a “mixed” dielectric system, the TEM mode can not be supported [2] and the second portion of the investigation was devoted to the effect of variation of length and frequency on the RF performance of the line. Although many papers are available on this topic, but the issues described in this paper have somewhat different point of view.

Index terms: RF MEMS, TEM mode, HRS, TFMLs.