SIMULATION OF 2-CAVITIES RESONATOR USING CST

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ABSTRACT

2-cavities resonator functioning with TE_{211} and TE_{311} mode is studied and presented in this project. The circular cavities are cascaded to obtain a second order bandpass response. Simulation is done to make comparisons between single and 2-cavities. The resonant frequencies are found at 5.65GHz and 7.36GHz Two probes are used in the simulation for wave excitation into and from the cavity. The best length of penetration probe is found to be 3mm. Probe is located at the maximum point of electric field. The work shows very close agreement between calculation and simulation. The simulation process is using CST process. The success of this project may lead to the usage of 2-cavities resonator in filter application.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

Recent advances in RF technology, dominated by defense, national security and scientific research system such as radar, communication, electronic warfare and radiometry, have occurred in the 1-100GHz frequency band. With the advent of affordable systems, improved performance with continued affordability is in demand. Reduced size and weight for mobile and airborne platforms and reliability for long term satellite platforms require innovation in RF system architecture.