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**DESIGN A POWER DIVIDER FOR A RADAR ANTENNA
RECEIVER SYSTEM.**

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ABSTRACT

Limitation in the current Radar system is incomplete measurement and incomplete sampling, due to the quality of the receiving signal. The Radar system is a very expensive set-up; therefore there is a crucial need for a backup system to enhance the system capabilities. The proposed backup system can be used for monitoring and surveillance purposes. Accurate data can be determined based on the quality of pickup or receiving signal, thus one of the important area is to maintain the quality of receiving signal by designing a power divider.

Conventional power divider operates at a fundamental frequency and odd harmonics. This project focuses on the design of a microwave power divider with the capability of operating at multi frequencies. The design made use of the odd and even-mode approaches to determine the power divider circuit parameters for suitable power division. The design starts with the conventional power divider which was simulated using AWR Microwave Office 2004. Further modifications have been performed on the basic power divider. The circuit performances are investigated using Scattering parameters related to a multi-port network. These include the return loss, isolation, forward and transmission coefficients. The simulation results are then analyzed and compared.

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CHAPTER I

INTRODUCTION

Nowadays necessity of communication aspect grows rapidly. Availability of low frequency and middle frequency band, which are already fully utilized, becomes limited. Regulators supported by scientists start to peer at higher frequency band, which was not much popular in the past regarding its complexity to cope with. The behavior of higher frequency band is also unique and needs specific treatment when dealing with it.

Power combiner and divider are passive devices, which are required in microwave technology to combine power from several inputs in combining case or to distribute input power into several outputs in dividing case. These devices are broadly employed in many areas of microwave communication. In a radar or ELINT station power divider is used to combine all communication paths from subsystems prior to be simultaneously amplified by amplifier. A lot of researches have been done to ensure the successful of electronic warfare equipments.

This thesis presents the objective of the project, the problem statement, project background, the scopes of projects, and the organization of the thesis.